



UNIVERSITY OF GOTHENBURG  
SCHOOL OF BUSINESS, ECONOMICS AND LAW

# Establishing a Bonded Warehouse in Singapore

A case study of a company's establishment of a bonded warehouse in Singapore

## Bachelor Thesis

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# Abstract

With the lion share of the world's clothing being produced in Asia there are few who are unfamiliar with the multi-decade long trend of production offshoring to Southeast Asian countries. The phenomenon known as "fast-fashion", meaning clothing produced rapidly to mass-market consumers in response to latest trends, is putting flexibility in the supply chain under the microscope and today there is a growing realization of the benefits to be physically close to main markets. A Swedish clothing company, Company X, has decided to address this issue by establishing a complementary bonded warehouse in Singapore. However, Company X lacks knowledge to execute the establishment. The purpose of this thesis is therefore to identify relevant factors to consider when establishing a bonded warehouse in Singapore. This by applying identified resources and capabilities of Company X, combined with an evaluation of the logistic business in Singapore, an assessment of warehouse related costs and the conducting of interviews with experienced professionals. The result shows that location is important. It is important in two ways. First, there is the decision of establishing the warehouse inside or outside a Free Trade Zone. Secondly, whether to locate it in proximity of the airport, seaports or in between.

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# Definitions

To aid the reader, this section will offer explanations of abbreviations used in the thesis.

FTZ	Free Trade Zone
SGD / S\$	Singapore Dollar
553PL	Third Party Logistics
4PL	Fourth Party Logistics
5PL	Fifth Party Logistics
SQM	Square Meters
MOM	Singapore Ministry of Manpower
€ Euro	\$ SGD to € Euro = 0.643453*
B2C	Business to Consumer
B2B	Business to Business
<i>*2017-05-25 06.23 UTC. Source: XE - Universal Currency Converter XE <a href="http://www.xe.com/ucc">http://www.xe.com/ucc</a></i>	

# 1. Introduction

*This chapter will provide a background to the problem at hand and a short introduction of the case company. A problematization discussion will follow where the reader will be enlightened of the problem, resulting with the declared research question. The chapter will then conclude by stating the purpose of the thesis and the delimitations that has been made.*

## **1.1 Background**

With almost 60% of the total world output, Asia is the dominant clothing exporter of the world. Many clothing companies have their production offshored to Asia and the chosen countries are often China, Bangladesh, India, Turkey and Vietnam (Dicken 2015).

Despite the reality of increased offshoring, there is today a growing realization of the benefits for companies to be physically close to their main markets (Simchi-Levi, Peruvankal, Mulani, Read & Ferreira 2012). According to an article by Simchi-Levi et al.(2012) one reason to be physically close to the customer is due to the volatility in crude oil prices, which affect transportations costs. If oil prices rise, so does transportation costs. Another reason to be closer to the market is the continuously changing demand of customers which has put pressure on the industry and accelerated the fashion supply chain (Simchi-Levi et al. 2012). The phenomenon known as “fast-fashion”, meaning clothing produced rapidly to mass-market consumers in response to latest trends, is putting flexibility in the supply chain under the microscope.

Warehouses, either be it small stock rooms or large hubs, have an essential role in today’s supply chains, making appearances at several stages of a good’s journey. They serve, for example, as holders of raw materials straight after procurement, holders of semi-finished goods that are awaiting shipment to an additional manufacturing plant and as a packing and send-off point directly to end consumers (Rushton, Coucher & Baker 2014, pp. 256).

The prime objective for a warehouse is to *facilitate* the movement of goods through the supply chain (Rushton, Coucher & Baker 2014). Holding inventory is one role warehouses take through that movement. Other roles of warehouses are; *consolidation centres or*

*fulfilment centres*, bringing together different product articles and deliver them simultaneously, *cross-docking centres* where goods pass from one transportation to another without being put in storage or *sortation centres* which are similar to cross-docking centres but the goods are in this case to be sorted for a specific region or customer. Warehouses can also take the role of assembly facilities when there is a need for last minute add-ons or changes as well as handle returned goods. (Rushton, Coucher & Baker 2014, pp. 258).

Company X, the chosen case company for this thesis, is a fashion company founded little over a decade ago in Sweden. The company initially started selling through stockists such as Carlings, ASOS, Zoovillage, Stayhard, Nelly and eventually through its own website. In 2014, the company opened its first physical store in Stockholm with Gothenburg following shortly after. Another, larger store, is prospected to open in Stockholm during 2017. The company's web shop currently ships to the European Union, the US and Canada. It has stockists either online or physically in several of the European countries as well as in: Australia, New Zealand, Thailand, Hong-Kong, Indonesia, Malaysia, Singapore, South Korea and Israel (Company X 2017).

## **1. 2 Problematization**

As mentioned above, the global trend of "fast-fashion" has made it increasingly important to be in closer proximity to main markets. David Simchi-Levi(2012) concludes that this has meant that many companies are reconsidering their previous strategy of offshoring, outsourcing and consolidation of warehouses and distribution centres. Instead a Regional distribution strategy has become more attractive. Following this strategy, achieving minimized distance from warehouse to retail outlets could be solved through the adding of complementary warehouses. For Swedish retail companies, which are entering new markets, it should according to these trends be beneficial to have warehouses closer to the final customer.

This leads up to the thesis's case of Company X which currently has all its production located in Asia with an exception of some small-scale production conducted in Sweden. Almost all clothing is sent from their respective production country to a warehouse hub in Sweden, where it is coordinated and shipped onwards to its final destination. The warehouse in

Sweden executes orders from all of Company X's points of sale. Thus, the wholly-owned stores in Sweden, stockists all over the world as well as an online shopper in Toronto, are all supplied by the warehouse hub in Sweden (Company X 2017). Some shipments to Australia, which is an important market for the company, go directly from production country to Australia.

Company X has acknowledged the increased pressure of decreasing lead time and being closer to customer due to rapidly changing demand. It also recognises that cost reductions could be achieved through reduced freight costs as transportation distance could be diminished. The company therefore wishes to investigate a potential establishment of a *bonded* warehouse abroad, with the intentions to serve both consumers (B2C) and stockists (B2B) When establishing a warehouse in this context abroad it is considered a prerequisite that it is a *bonded* warehouse as it allows the company not to be levied with double taxation.

A bonded warehouse or a customs warehouse as it is sometimes called could either be within a country's Free Trade Zone (FTZ) or be "stand-alone" as in not part of the FTZ but an ordinary building with special laws reigning within (Farole 2011, pp. 27; World Bank n.d). FTZs are geographical areas where companies can store, re-export, manufacture or manipulate goods without being subject to duties collected by the customs authorities (World Bank n.d; Britannica 2017; Valentine & Park 2005). A bonded warehouse requires appropriate country specific permissions from the customs authority. A bonded warehouse is a FTZ in the sense that you could store and exports goods duty-free thanks to the bond that is given with the security carried by the goods. The main advantages of a bonded warehouse solution lie with the bond that is held by the country's customs. This bond makes it possible for the importer or trader to delay the payments of taxes and duties or not to pay it at all if the goods are re-exported. This could improve a firm's cash flow (Shakya & McLinden 2009).

By "establish a bonded warehouse abroad" it is, in this thesis, meant to have either (a) a wholly-owned operation or (b) a contractual agreement with a third-party logistics provider (3PL) anywhere outside of the home country's border.

By a wholly-owned bonded warehouse operation it is meant that everything from the land, the building, equipment, staff and software systems are all managed by Company X.



When looking at which country that potentially could serve as a bonded warehouse location, Company X has concluded that Singapore would prove to be the best option in regards to its current situation. The company has next to all production concentrated to a handful of Southeast Asian countries, all relatively close to Singapore. Furthermore, the company sees great growth possibilities in terms of sales in the Asian region. It is already present in several Asian countries such as Hong-Kong, Thailand, Malaysia, South-Korea and Singapore but sees great opportunities to further penetrating this market and region. China for example, is yet to be entered and with the increasing purchasing power of the Chinese population Company X sees untapped possibilities.

When concluding that the company wanted to place the warehouse in the Asian region, Singapore was an obvious candidate due to its reigning business friendly climate and the fact that it is a large port city with a focus on transshipment and trade. Hong Kong was also a considered contender for Company X but ultimately Singapore was chosen because it is such an important hub for logistics and due to its proximity to the important market of Australia.

When the location of the bonded warehouse was decided, Company X recognized that it needed more knowledge about the reigning business system, free-trade zones and bonded warehouses in Singapore.

The regional distribution challenge of establishing a complementary warehouse abroad, lies within the research field of International business and Warehouse logistics. By identifying relevant factors to consider, this thesis will add to the broader subject of how to develop a regional distribution strategy.

### **1. 3 Purpose**

The aim of this thesis is to distinguish factors of relevance for Company X and by extension Swedish clothing companies wanting to establish a bonded warehouse in Singapore.

The thesis intent is to present an overview of factors to consider when investing in a bonded warehouse in Singapore. It does not mean to provide an accurate approximation

of the related cost but to offer an initial glance of factors to consider.

#### **1. 4 Research question**

The questions emerging with the establishment of a bonded warehouse in Singapore were: What are possible warehouse locations? Are there aspects to consider in the Singaporean business system? What determines if the company should outsource or not? What are potential cost items to consider?

With the problematization and purpose above as a send-off, the main research question was composed as: *What are relevant factors for a Swedish clothing company to consider when establishing a bonded warehouse in Singapore?*

#### **1. 5 Scope and delimitations**

Within the timeframe of this thesis and since the authors are located in Sweden and not on-site in Singapore some delimitations have been made. This thesis will not discuss costs in numbers but the presented costs are the result of extensive data collection from both commercial and governmental sources and should therefore represent a fair snapshot of current cost and price levels. Thus offering a first glance and gateway into what to consider and investigate further when looking to establish a bonded warehouse in Singapore. Furthermore, this thesis will treat the actual warehouse and will not in-depth discuss the transportation, freight-forwarders and other important sub-features of establishing a bonded warehouse in Singapore.

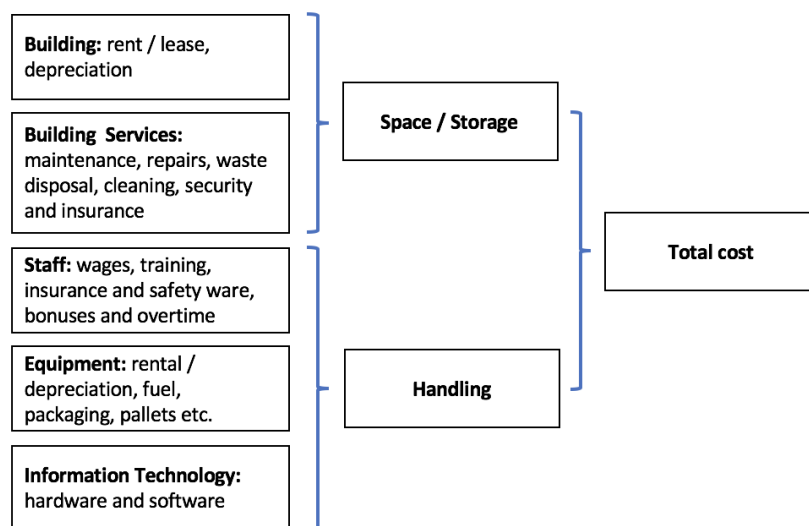
## 2. Theoretical Framework

*Concepts that have been recognised as important for this thesis are costs, outsourcing decisions and competitive advantages.*

### 2.1 The warehouse cost tree

In the context of the research question, it is difficult to ignore cost as a factor to consider. To calculate the total costs of warehouse operations fixed and variable costs related to the operations must be known. General cost items are presented in the base of the warehouse cost tree below:

*Figure 1: “Base of Warehouse cost tree” - The figure shows general cost components that add up to the total cost of warehouse operations.*



*Source: Richards (2011); Rushton, Croucher & Baker (2014)*

To find price data for all the cost items presented above is not only time consuming but also resource demanding. An approximation of costs is more manageable and offers the possibility to exclude the actual size of some costs. This means that even if no valid cost data is found the researcher at least knows what costs to look for.

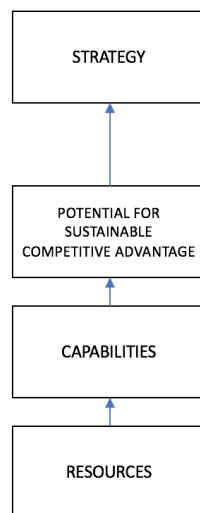
### 2.2 Resource Based View (RBV)

The Resource Based View is a theoretical framework developed in the 80's and 90's mainly through the works of Birger Wernerfelt, C.K Prahalad and Gary Hamel and Jay Barney

(Jurevicius 2013) and aims to understand how competitive advantage is created and sustained (Eisenhardt & Martin 2000).

It is a framework that looks internally at the firm and analyses its resources and capabilities which in turn is used to develop, establish and sustain a competitive advantage. According to the RBV framework, firms are made up out of a *unique* set of resources and different capabilities to handle those resources. When the resources and capabilities are identified they can be appraised as to which of them are the most important in conferring a sustainable competitive advantage. The firm can then strategically exploit key strengths and manage key weaknesses (Grant & Jordan 2012).

*Figure 2: The RBV framework*



*Source: Grant and Jordan (2012)*

Resources are what companies *have* and capabilities what they *can do* with those resources. According to Grant and Jordan (2012) resources can be defined as tangible, intangible and human assets. Tangible assets are financial and physical assets such as cash, loan capacity, buildings, equipment and land while intangible assets are technology, reputation and culture such as patents, copyright, brand and image. Human resources are the skills and know-how of the employees. Training, motivation, adaptability and capacity for communications are other factors of human resources. Capabilities, are the *processes embedded in the firm* (Eisenhardt & Martin 2000) and what a firm *can do* (Grant & Jordan 2012).

The RBV has sometimes been criticized for being vague and lacking empirical grounding (Eisenhardt, Martin 2000). Despite this it is however considered to be very significant to the literature of strategy and is frequently used.

### 2.3 Outsourcing Decision Matrix

Figure 3: The Outsourcing Decision Matrix

STRATEGIC IMPORTANCE	HIGH	FORM A STRATEGIC ALLIANCE	RETAIN
	LOW	ELIMINATE	OUTSOURCE
		LOW	HIGH
		CONTRIBUTION TO OPERATIONAL PERFORMANCE	

Source: Mindtools (n.d); Brighton School of Business and Management (2016)

The Outsourcing Decision Matrix is a tool for assessing what activities a firm could outsource. The vertical axle describes the strategic importance of the activity meaning how much it contributes to the competitive advantage. The horizontal axle describes the activities impact on the firm’s organizational performance meaning activities that are done correctly, keep the firm’s operation running smooth and friction free and if they are executed badly can cause great disruptions (Mindtools n.d; Brighton School of Business and Management 2016). The four quadrants are presented below:

#### Form a strategic alliance

Activities that are strategically important but not crucial to the operational performance fits in the upper-left quadrant. Example of such activities is the firm’s relationship with an advertising agency (Ibid).

#### Retain

These activities are important both from a strategic and operational performance point of view and it is important to keep control over their execution. Examples of such activities can be the design department of a fashion company where it is important to keep the desired style

and tight deadlines under control (Ibid).

### **Eliminate**

Activities that are not strategically important or important for the operational performance ends up in this quadrant. The firm should assess why these activities are being executed and if it possible eliminate them or chose another more effective set of activities to realise the firm's strategy (Ibid).

### **Outsource**

Tasks in this quadrant are very important for operational performance but not so important strategically. The activities here do not contribute greatly to the competitive advantage and could be outsourced. (Ibid)

## **2. 4 Summary**

Figure 1, showing the base of the Warehouse cost tree, offers an initial look of the general costs involved in warehouse operations. When discussing warehouse operation costs it was viewed appropriate to present an outtake of cost estimation methods as there are many to choose from. The cost estimation method of choice depends on how important the accuracy of the estimation needs to be and the resources provided. A bottom-up estimation would be the most certain way of receiving an accurate total cost, but as this method is very time-consuming and resource demanding Company X may find other methods better befittingly.

The Resource Based View (RBV) is presented due to its suitability of explaining the relationship of resources and strategy. The concept is used in the empirical section to contextualize Company X resources in order to demonstrate its competitive advantage. The competitive advantage is then used in the analysis when discussing whether to outsource or to keep operations in-house. In the Outsourcing Decision Matrix the competitive advantage is utilized when determining how strategically important a task or activity is. If an activity is assumed to contribute a great deal to a the competitive advantage is is also to be considered strategically important according to the Outsourcing Decision Matrix.

## 3. Method

*This section starts by presenting the methodologies chosen and continues by describing how the data was collected and then analysed. The chapter will conclude with a discussion regarding credibility of the study.*

### 3.1 Research approach

The purpose of the thesis is to distinguish factors of relevance for a specific company with specific circumstances. With this in mind, the research approach considered best suited to fulfil this purpose was therefore an abductive one. Theories regarding, for example, the cost structure of warehouses and outsourcing decisions are presented and will aid the authors in understanding and explaining the findings in order to then draw conclusions.

Given the complex and specific data needed to answer the research question a qualitative research strategy was chosen. A qualitative research values words and the ways in which individuals interpret their social surroundings over the quantification in collection and analysis of data (Bryman & Bell 2011). Semi-structured interviews were chosen as a research method because it allows for the extraction of complex data.

This type of method which emphasises words over data and allows an interpretivist epistemological position, puts pressure on the researchers to understand their limitations in objectivity.

### 3.2 Research methodology

This thesis point of origin is Company X and its problem of how to establish themselves a bonded warehouse in Singapore. The research design can, being a case of a single organization and a specific situation, be classified as a Case study design (Bryman & Bell 2011).

Within the qualitative methodology span, the research was conducted through semi-structured interviews with experts in the field of logistics as well as expats working in and towards Singapore. The purpose of using semi-structured interviews is that it offers flexibility and enables the interviewee to expand its train of thought and not to be

stumped with the researcher missing valuable information as a result (Ibid). This to be able to extract in-depth knowledge and allow for a broader view, respecting the complexity of the research question stated. Additional data was collected through desk research of secondary data for land prices, building prices, renting and other factors specific to Singapore which was if not already known, aggregated and divided to create averages that could be used as a foundation in approximating warehouse operations costs relating to land, construction, rental and staff.

Initially, a cost estimation method based on a general warehouse cost structure was considered to calculate total costs. The percentage proportion offered by the general cost structure was in the end deemed too uncertain a way to approximate costs. The idea was that if costs were found for one category, say staff, and the general cost model claimed that staff was usually 25 percent of total warehouse operation, staff costs could be used as a base to approximate the total costs. As proportions will differ from country to country and location to location estimations will be unsure. For example is land most likely to be more expensive in Singapore than in, let us say the US, and staff costs are probably lower than in the US. To make a valid and correct total cost calculation, a great deal of specific data needs to be collected. This thesis will only provide an overview of costs and numbers presented are purely of indication and visualization functions.

### **3. 3 Literature study**

Secondary data, being previously accumulated data by other researchers(Bryman & Bell 2011), was used in this thesis as a way of initially forming an overview of the business logistics sphere in Singapore and the research fields of Supply Chain management and Warehouse Logistics. This initial literature study led the authors to the concepts, theories and models used to drive the study onwards. The literature used were scientific and recognised articles from databases in the field of business and administration as well as books by established authors and publishers. Some reports from trade agencies, consultancy firms, governmental agencies and some expert blogs were also used. These reports were read with caution and with the sender's possible biases in mind.

Keywords when searching for literature, theories and models were *Supply Chain Management, Warehouse Operations, Business system of Singapore, Logistics in Singapore*



and *Bonded Warehouse Schemes*.

### **3. 4 Empirical data collection**

The empirical data collected comes from both primary and secondary sources. The secondary data derives from a collection of articles, reports and handbooks regarding doing logistic business in Singapore and the rules of having a bonded warehouse licence in the country. This secondary data was then merged with primary data collected through semi-structured interviews with field experts to create a broad view of the possibilities and conditions for a retail company from Sweden to establish a bonded warehouse. Primary data regarding Company X has been collected through internal meetings with the owner of Company X. Some primary data was created from the secondary sources when numbers were extracted and then divided appropriately to create an average of costs specific to warehouse operations in Singapore. This mimics a “bottom-up estimate” that starts at the most detailed level of the warehouse cost tree and sums up its parts to an estimation (GAO 2009). This data is not to be counted as exact and absolute as many underlying factors are uncertain and should only be considered as providing context.

#### **3. 4. 1 Selection of interview population**

As we use a qualitative and interpretivist approach and the possibilities to generalize the study are limited, the selection of population has not been randomized but are subject to the authors’ subjectivity and to the choosing of the companies approached. The selection of experts was done by approaching Swedish firms with a presence in Singapore with the research question of the thesis. The company could then guide us to the best person within the company and that person could then choose to be part of the study. In some cases if that person did not feel suited for the task, he or she would guide us further providing us names of more relevant experts within logistics in Singapore. Due to geographical distance interviews were conducted over telephone and due to time difficulties and interview objects preferences some interviews were conducted over e-mail.

*Table 1: Presentation of Interviews*

<b>Name</b>	<b>Position</b>	<b>Company</b>	<b>Relation to Singapore</b>
Soon Yan	Audit Associate	A Singaporean based top tier accountancy firm	Auditing expat working and living in Singapore.
Interviewee 1	Paper Trading Manager	Large Swedish Trade-house	Manager of a large Swedish trading house's branch in Singapore.
Interviewee 2	Logistics Manager	Large Swedish logistics company	Responsible for the Asian market.
Michael Exenberger	Chief Information Officer	Bufab	Experience of establishing a warehouse for BUFAB operations in Singapore
Sara Gerdner-Kalle(email)	Fast-fashion Manager	DB Schenker	Several years of experience with logistics solutions for fashion companies.
Björn Moberg (email)	Nordic Prospect Manager	PostNord	Responsible for PostNord's e-commerce venture in South-East Asia.

### **3. 4. 2 Interview approach**

The structure of the interviews was a semi-structured one. This type of qualitative interview was chosen as it encourages the respondent to speak freely and provide detailed and rich answers which will create a perceptiveness of the interviewee's reality. The semi-structured interviews allows the researchers to change direction and ask follow-up

questions to relevant issues coming up during the interview (Bryman & Bell 2011). This type was chosen because of the need for in-depth knowledge when answering the thesis' research question. Before each interview, specific topics and questions were discussed and developed to best suit the interviewees' knowledge and background. The interviews were as mentioned earlier, conducted over telephone and by email due to geographical distance, time difficulties and to accommodate interviewees preferences.

There are disadvantages of using telephone interviews as the interviewee can end the interview quicker than a face-to face meeting, with the result of the researcher possibly missing valuable information. Another disadvantage is not being able to witness the body language of the interviewed (Bryman & Bell 2011). The respondents interviewed by email was first spoken to over the telephone in order to establish the knowledge and areas of expertise. After the short telephone interview a customized interview guide was constructed in order to excerpt the most expertise and know-how of that specific interview object. After the email interview were concluded the respondents were available for additional questions and clarifications. Despite this, it needs to be made clear that there are several disadvantages of conducting interviews by email such as not being able to hear the reasoning of the interviewee and the lack of flexibility and agility semi-structured interviews offer. Advantages is that the respondent can take the time necessary to answer the questions as well as providing more correct information as they can conduct mini-researches of their own before answering certain questions.

Interviews were recorded and then transcribed in order to allow for a closer examination and dissection of the interview as well as to limit the interview analysis to the influence of the researchers (Ibid). If not recorded for any reason, a summary was written by the researcher which was sent to the interviewee, who in turn approved and authorized the data for usage.

#### **3. 4. 4 Ethics**

There are some areas of ethical concern when conducting business research. These are; harm to participants, lack of informed consent and deception (Bryman & Bell 2011). In order to avoid this from occurring, all interviews commenced with a presentation of the thesis and its purpose. Consent to record and use the respondents answers in the thesis was always asked. Furthermore, to insure confidentiality and anonymity, the respondents were asked if their

name and company name could appear in the thesis or if they wished to remain unnamed. Their answers was consistently honored and abided by.

### **3. 5 Empirical data analysis**

The strategy of analysing the empirical data can be described as *iterative*, meaning the data collection and the analysis of the data occurs parallel to each other and that the analysis of the initial data decides the direction of the data collection (Bryman & Bell 2011). More specifically, the analysis of data was done through a grounded theory perspective. This method allow for theory to be created from the collected data which is gathered and consistently analysed throughout the whole process(Ibid).

### **3. 6 Credibility of the study**

Credibility of the study depends on the reliability, replicability and validity of the study (Ibid).

#### **Reliability**

Reliability depends on the repeatability of the obtained results (Bryman & Bell 2011). The population pool of respondents consists of only 7 interviews with each of them having very specific areas of expertise and if the population pool had been larger the results would be considered to be more repeatable. The data collected and created regarding warehouse operations costs specific to Singapore<sup>1</sup> is more likely to be repeatable. However, this data as well as the data from the qualitative interviews, are subject to social settings and change.

#### **Replicability**

Replicability means how likely it is for another researcher to carry out a reproduction of this study. To enhance the likeliness of replicability, we have carefully described the research process, choice of method and mode of procedure. (Ibid).

#### **Validity**

Internal validity assess the certainty that studied variable has contributed to the result. The

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<sup>1</sup> Created in Google Sheets and can be found in the appendix.

external validity concerns the generalizability beyond the specific research point of the case. When conducting a case study it is important as researchers to recognise that a single case is difficult to generalize to other contexts (Ibid). Despite this it is according to some researchers possible to theoretically generalize. One way that we heighten the validity of the study is the range of the population pool, meaning that the interviewed people are from different companies, with different backgrounds and sometimes even different industries. The use of secondary data together with the thesis created primary data provides a triangulation which enhances the validity of the study.

## 4. Empirical studies

*In order to distinguish factors of relevance the empirical section will consist of findings on how to establish a bonded warehouse in Singapore. It will take off with an introduction to Singapore and its logistics business sphere in which Company X wishes to operate. This will provide the foundation for a cost estimation framework that will identify and exemplify relevant costs to consider. The empirical studies will then continue with findings regarding outsourcing to third party logistics providers and conclude with a Resource Based View analysis of Company X in order to contextualize its prerequisites for when establishing a bonded warehouse in Singapore.*

### 4.1 Singapore

Singapore was under British colonial rule from 1819 up until 1942 when the island was taken by the Japanese during the World War II. When the war ended, it again became part of the British commonwealth and remained so until it, in 1959, was granted self-rule and had its first democratic election. In 1963 the country joined the federation of Malaysia but left only two years later at Malaysia's request. In 1965 Singapore became its own fully independent nation(The BBC 2017).

The reason for the colonization by the British empire was Singapore's geographical position which was beneficial to the East India Company (The Economist 2015). This position as an important trading hub continues to this day. During its 140 years long rule, the British encouraged migrants from its other colonies in South Asia as well as Chinese traders to settle in Singapore creating the foundation for the cultural melting pot that Singapore is today. Chinese is the largest ethnic group making up three quarters of the population followed by Malays and Indian. Within these ethnic groups there are even greater diversity speaking many different languages and dialects. The four official languages of Singapore is English, Mandarin Chinese, Malay and Tamil. English remains the language used in commerce, industry and for administrative purposes(Ibid).

Ever since its independence in 1965, Singapore has been a country dependent on foreign capital, multinational businesses, entrepôt trade and the institutions created are greatly influenced by this. With this dependence in mind the government has enforced global

financial standards, strong protections for shareholders and investors and an efficient legal system modelled on the British system which all generates high levels of institutionalized trust (Carney 2013). The openness to world trade and Singapore's political system has had an influence on institutions such as financial systems, labour relations, education and social capital(Ibid).

This high institutional trust can be seen in the rather low corruption that is found throughout Singapore's institutions. GAN Integrity (2016) claims that Singapore is one of the least corrupt countries in the world. Although some exceptions can be found for example in the judicial system, where if the State is one of the parties, they are often found to be the winning party.

Singapore today is what The Economist Intelligence Unit (2016) refers to as a "Flawed democracy" and is considered much less democratic than fellow developed countries (Carney 2013). A "Flawed democracy" is defined as a state with free and fair elections and a respect for basic civil rights but still has issues regarding media freedom and low levels of political participation (Holodny 2017).

#### **4. 1. 1 Business in Singapore**

Singapore is the second best country to do business in according to the World Bank(2017) and its project *Doing Business*. The Doing Business project provides measures of business regulations environment for 190 countries with the help of different indicators such as the ease of starting a business, dealing with construction permits, registering property, paying taxes, protecting minority investors, trading across borders, enforcing contracts and so on.

Having such a large ethnic Chinese population it is not strange that the society is somewhat colored by values similar to the Confucian philosophy that is present on the mainland of China. Since its creation Singapore has relied on five official values that can even be seen incorporated into national law. Those five values are; nation, family, community, consensus and harmony (IOR n.d). Geert Hofstede states, in his article regarding cultural relativity from 1983, that when it comes to decisive dimensions in organizations the Singaporeans are driven by the family as a model where you have a fatherly leader with great authority but not so many formal rules. In other words he is saying that the Singaporean society is highly

hierarchic. Interviewee 1, a Swedish Trading House manager of its Singapore branch says: *“In general, one has much bigger respect for management here than in Sweden. Age matters a lot”*. When describing doing business in Singapore Interviewee 1 said *“It is very easy”*. When Michael Exenberger, Chief Information Officer at BUFAB was asked to describe his view of doing business in Singapore he says that it is easy to do business, but it is hard to get a fair price and honest answers from potential suppliers, with time consuming negotiations as a consequence. If one wants to ensure a fair price and the right supplier he recommends to source help from the Swedish Chamber of Commerce. When interviewee 1 was asked if he had experienced some kind of cultural difference he said *“Often one has to dig a little deeper to get a straight answer, especially if it of the negative kind but otherwise it is much more westernly oriented than other countries around here”*. Continuing to describe doing business in Singapore Interviewee 1 says: *“It is very fast paced and it is good if there is some kind of relationship”*. This is something that interviewed Soon Yan seconds. He says that it is a fast paced place of business where supervisors expect employees to work long hours and overtime (Yan). When asked if Interviewee 1 has adapted his way of doing business since coming to Singapore he answered: *“No, actually I have not”*.

#### **4. 1. 2 Logistics business in Singapore**

Singapore has since its independence and really since its colonization by the British in the early 1800 had a very strong focus on trade. Today transportation and storage stands for almost 10% of all employment and is a large contributor to the country’s GDP (Department of Statistics Singapore 2016). The country’s government is in constant pursuit to improve its status as a major trading hub and as a result Singapore now has the most efficient customs administrations in the world and is ranked as number one on The World Economic Forum’s list of enabling trade (World Economic Forum 2014). Sometimes the whole of Singapore can be argued to be a FTZ in relation to the size of the country (Valentine & Park 2005, pp. 45). There are several FTZs in Singapore, some for sea cargo, some for air and some located inland Singapore (Moberg). The FTZs offer free storage for import and export of conventional and containerized cargo for 72 hours and for 14 days when it comes to transshipment/re-export cargo. Most of the FTZs are designated to transshipment cargo as it is rather expensive to store in FTZ due to shortage of land (Gerdner-Kalle). Most logistics providers therefore has storage space both within the FTZs and outside (Valentine & Park 2005, pp. 47). To operate within a FTZ will provide a quicker outflow into the world, but is



generally more expensive than operating outside. According to interviewed Björn Moberg from Swedish PostNord's branch in Singapore a difficulty, if having a wholly- owned warehouse operation, is that it can be more difficult to attract labour as a count of poor communications to and from the FTZs.

According to Björn Moberg, almost all the largest players in logistics are present and also have their Asian HQ located to Singapore. This is supported by the Belgian Foreign Trade Agency's report by Yuling (2014) on logistics in Singapore that claims that 21 of the top 25 global logistics firms are in some way represented in the country.

Singapore has developed the world's largest transshipment port that handles vessels with shipment to 600 different ports over the world (Lam 2017). Singapore has two important ports operating; the port of Singapore and the Jurong Port. The port of Singapore is currently undergoing an expansion phase which will, when fully completed in 2040, be able to handle double the amount of container units as today (Kaur 2017). The Singapore Changi Airport, voted the best airport in the world by passengers for several consecutive years (Skytrax 2016) is also one of the largest cargo airports in Asia.

According to Björn Moberg there are really three locations to consider for a warehouse in Singapore; by the harbour, the airport or internally in the country. All three options offers different advantages. Björn Moberg states that it is the product type and the range of the products that determines where the best location is. Is it large, bulky and heavy B2B products, sea cargo is recommended. For light and more exclusive e-commerce goods that are meant for consumers (B2C), air freight is recommended. He continues to state that in a situation of a combination of B2B and B2C goods, a bonded warehouse outside the FTZs which then distributes to the correct hub, either be it the airport or the port, could be an option.

#### **4. 2 Establish a Bonded Warehouse in Singapore**

*"We find many names for things we love" is a saying true for bonded warehouses. They go under many different names depending on where they are located, who is doing the defining and naming. In Singapore a bonded warehouse go under the name of a Zero-GST Warehouse.*

### **4. 3. Zero-GST Warehouse scheme**

All goods when entering Singapore are subject to import tax, but with the Zero-GST Scheme companies can suspend its taxes to improve cash flow and reduce administrative costs. It is, more specifically, a licence that is granted to qualified companies who wishes to store imported non-dutiable goods with suspended Goods and Services Tax (GST) (Singapore Customs 2014). This licence grants the company to store the goods for an indefinite time in a designated area, a licenced premises, very much like one's own Free Trade Zone (FTZ). GST is only payable if goods are released into the local market while the goods that are re-exported will not suffer the GST.

A Zero-GST Warehouse may be a whole warehouse, a particular part of the warehouse, a storage tank or any other designated place approved by the Singaporean Customs (Ibid). It is not allowed to store non-Zero-GST goods in the area designated for Zero-GST goods unless a computerised and up-to-date inventory system is in place, if so it is possible to seek approval to waiver this condition. There is an annual fee to hold the licence, which is based on the average annual stock the operator carries in the warehouse and ranges from 1000-4000 SGD (Ibid)

Operators of Zero-GST Warehouses can either be the owners of the good or service warehouse operators such as third party logistics provider that take responsibilities for the accountability, security and control of the goods. All goods except dutiable goods, locally produced goods and GST-paid goods may be stored in a Zero-GST approved area. Value adding activities of the good is only allowed if it is to make the good ready for the next step in the supply chain, such activities can be; re-packing, stamping, sorting and labelling (Ibid).

To qualify for a licence there are several conditions that need to be meet by the licensee, such as that the company seeking the licence need to be registered as a GST-trader with the Inland Revenue Authority of Singapore (IRAS), registered with the Singapore Customs (SC), good compliance records with the SC and IRAS, the premises need to be a well secured storage based facility, it has to have good stock record-keeping and procedures so that it is made sure the goods can be accounted for and the company must have undergone a TradeFirst Assessment which is a SC framework to assess a company as a whole and then enables the company to be rated into one of five levels according to risk.

After considering the company's eligibility to import goods to Singapore with duties, the next step is choosing the warehouse type that best suits the company's need. There are three different licensing types:

Warehouse Type I:

The first type of Warehouse licence is for importers who will re-export a minimum of 80% of the goods.

Warehouse Type II:

This type of Warehouse does not have a minimum requirement of re-exports and therefore suits a company that intends to sell more than 20% of its goods on the local market.

Warehouse Type III:

In this third version of Warehouse types there is, like in type II, no limitation on how much Zero-GST goods are released on the Singaporean market. This licence extends beyond one premise and enables the operator to have multiple Zero-GST warehouses in different locations anywhere in Singapore. Under this licence it is possible, if you have large releases onto the local market, to compound all GST payments to a weekly basis(Ibid).

#### **4. 4 Establish a wholly-owned Zero-GST Warehouse**

##### **4. 4. 1 Creating the company**

First step in establishing a wholly-owned Zero-GST Warehouse is to create a company in order to operate in the country (Interviewee 2). According to The World Bank (2016) and its project called Doing Business, there are three steps to start a business in Singapore. First step is to register with the Accounting and Corporate Regulatory Authority, also called ACRA. Second step is to make a company seal and third one is to attain an Employee Compensation Insurance at insurance agency. These steps take 2,5 days to conclude at a cost of € 248, excluding the Work Injury Compensation Insurance which will vary depending on insurance provider.

If an existing building is bought for the warehouse and needs to be converted into a warehouse, a permit by the Urban Redevelopment Authority (URA) is needed. If even larger

renovations are needed to the building, a permit by the Building and Construction Authority of Singapore (BCA) is necessary. To operate in the building the Occupational Safety and Health Division at Ministry of Manpower (MOM) need to perform an inspection as well as a Fire Safety Certificate (FSC) needs to be obtained through an engineer or architect via the Singapore Civil Defence Force (Rikvin 2016a).

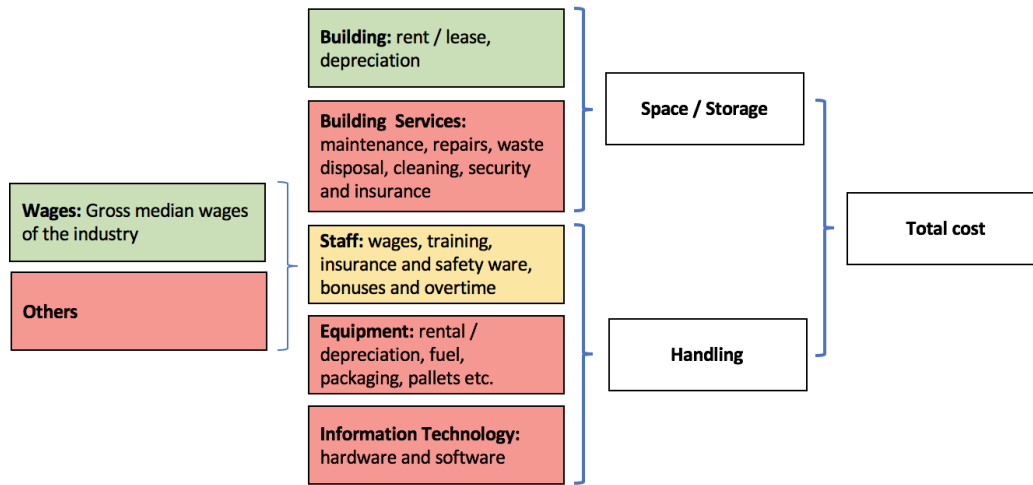
With the registration with ACRA the company will obtain an Unique Entity Number and a digital credential called SingPass which will be used to access online government services such as to activate the company's customs account (Rikvin 2016a). The customs account can then be used to set up the company as a registered trader to use the customs' tool, TradeNet which is needed to register every ingoing and every outgoing good (Rikvin 2016b).

The final step of the establishment of a wholly-owned Zero-GST Warehouse is to apply for the Zero-GST licence and choose the warehouse type best suited as described earlier.

#### **4. 4. 2 The cost findings of warehouse operations**

This section is an extension of the cost-tree base of figure 1, presented in the theory section. The framework gives an overview of costs needed to make an adequate total cost estimation. The traffic light color coding signals the amount of cost data found; grading from red to green. The more green boxes the higher accuracy of an eventual cost estimation, much in line with the "Engineering build up" estimation method.

Figure 5: “Cost-tree findings overview” - The figure shows an overview of the costs needed to make an adequate total cost estimation. The traffic light color coding: Green = costs data found, Yellow = cost data missing, Red = unknown.

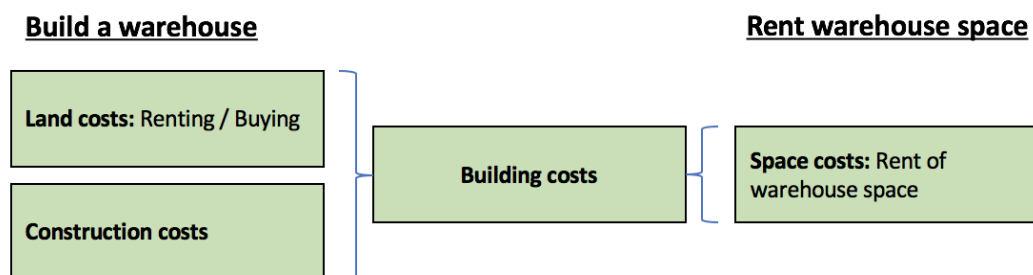


Source: Richards (2011)

Costs related to the building category as well as the part of costs of the staff category have been found. Cost data related to the categories of building services, equipment and information technology is yet unknown. Known costs are presented and explained throughout the coming section. This is followed by findings related to where to look for yet unknown costs.

### Building costs

Figure 6: “Building cost overview” - The figure shows the cost components that make up the building category of the cost-tree.



Source: Richards (2011)

As stated earlier, land is a scarce resource in Singapore (Valentine & Park 2005; Gerdner-Kalle). If land is needed, there are two main alternatives. The first alternative is to rent the

land and the second is to buy the land on a 30-year leasehold for a fixed square metre price. In Singapore The land prices in table 2 below are collected from the leading industrial property developer in Singapore, JTC. It is a governmental agency that aims to develop infrastructure to nurture the growth of enterprises and businesses in Singapore (JTC 2017b).

Table 2: "Land prices: overview" - The table shows JTC land prices for eight locations and six logistic parks.

<b>Price per square metre and year for buying or renting industrial land within JTC logistic parks</b>				
		<b>Lowest (€)</b>	<b>Average (€)</b>	<b>Highest (€)</b>
Airport Logistics Park Singapore (ALPS, FTZ)	<b>Rent</b>	15	21	27
	<b>Buy (30-year leasehold)</b>	233	334	474
Changi International LogisPark (North)	<b>Rent</b>	11	14	17
	<b>Buy (30-year leasehold)</b>	169	222	288
Changi International LogisPark (North) - with runway access	<b>Rent</b>	15	15	15
	<b>Buy (30-year leasehold)</b>	264	264	264
Changi International LogisPark (South)	<b>Rent</b>	14	17	20
	<b>Buy (30-year leasehold)</b>	228	289	361
Tampines LogisPark	<b>Rent</b>	14	15	17
	<b>Buy (30-year leasehold)</b>	222	246	270
Toh Tuck LogisPark	<b>Rent</b>	21	23	28
	<b>Buy (30-year leasehold)</b>	326	384	481
Toh Guan LogisPark	<b>Rent</b>	30	30	30
	<b>Buy (30-year leasehold)</b>	457	457	457
Clementi West LogisPark	<b>Rent</b>	18	18	18
	<b>Buy (30-year leasehold)</b>	285	285	285

Source: JTC (2017a).

Apart from the land costs there are another large cost that adds to the building cost category. Constructions costs are complex and depends on various factors like land conditions, building standards, design complexity, intended use and a like. The complexity means risk for cost escalation. (Langdon and Seah 2016) The cost data of constructions were collected from Langdon and Seah’s Singapore’s annual *Construction Cost Handbook 2016* and shows average square metre prices based on competitive tenders received of the 4th quarter of 2015:

*Table 3: “Warehouse construction costs” - The table shows Langdon & Seah’s construction cost data from lowest to highest construction cost per SQM in Singapore. The cost includes no land cost, operating equipment, external works or overhead costs.*

<b>Warehouse construction costs for flatted and single storey warehouses in Singapore</b>			
	<b>Lowest (€/SQM)</b>	<b>Highest (€/SQM)</b>	<b>Average (€/SQM)</b>
Flatted Warehouses (multi storey)	759	849	804
Single Storey Warehouses	663	849	756

*Source: Langdon & Seah 2016*

### ***Warehouse rent cost***

If the firm does not want to build a warehouse an option is to renting one. The data for renting a warehouse is retrieved from the Singaporean property listings website Commercial Guru and is based on a search for warehouse rentals using keywords such as: *Warehouse, Warehouse FTZ, Warehouse Space, Bonded Warehouse*. The rental cost per square meter (SQM) and month for 100 listings was aggregated and then divided into an average. The cost of renting inside a FTZ is based on five data points as there are less spaces to rent inside FTZs. The listings include varieties of warehouses where some were clean spaces and some facilities were equipped with racks, and decorated offices.



Table 4: Average warehouse space rent in Singapore

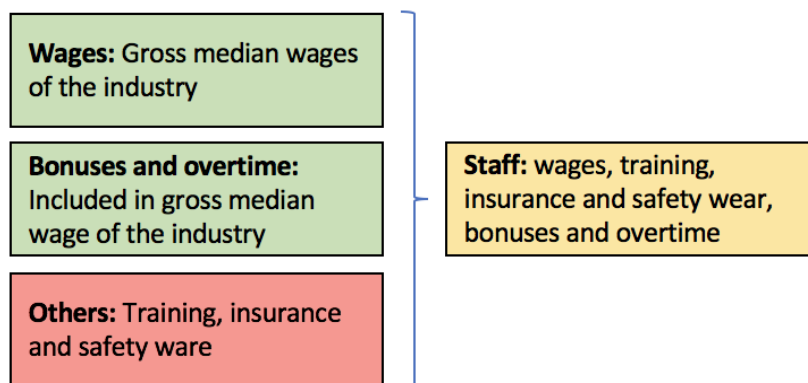
Average warehouse space rent in Singapore		
		€ / SQM (Month)
Both flatted and single storey warehouses	<b>Inside FTZ</b>	13
	<b>Singapore average</b>	10

Source: Commercial Guru 2017.

The space rents summarizes the cost data findings related to the building category and leads us to the next part which is an overview of the staff cost category.

### Staff costs

Figure 7: “Staff cost overview”- The figure shows the cost components that make up staff costs.



The figure shows the cost components that make up staff costs. Source: Richards (2011)

As shown in the figure 7 above, cost data for insurance, training and safety wear are not known. The insurance called *The Work Injury Compensation Premium* is mandatory for all employers to pay (Ministry of Manpower 2017).

The findings of staff costs are derived from the Ministry of Manpower (MOM) (2017) and its data of Transport and Storage industry wages, where warehouse employees reside.

Table 5 below shows the gross median wage of workers in the industry:

Table 5: Median income of Transportation and Storage Employees

<b>Median monthly gross income of full-time employed Singaporean residents</b>		
Transportation and Storage Employees	<b>Including Employer CPF*</b>	€ 1876
	<b>Excluding Employer CPF</b>	€ 1616
*Central Provident Fund (CPF) and CPF contributions are a part of Singapore's welfare system and manages healthcare and pensions among others (Central Provident Fund 2017).		

The table presents wages from the Singapore Yearbook of Manpower 2016 by MOM (2016).

There are over 76 different job titles in the Transport and Storage category. To offer perspective of common warehouse occupations table 6 is presented below.

Table 6: Median income of common occupation within the Transportation and Storage industry

<b>Median gross monthly income of full-time employed of common occupations in Transport and Storage industry in Singapore</b>	
<b>Category</b>	<b>Excluding Employer CPF</b>
Go-down Labourer (Warehouse Labourer)	€ 1342
Forklift truck operator	€ 1289
Despatch worker	€ 1195
Warehousing manager	€ 3363

The table shows wages from MOM regarding common warehouse occupations (2016).

#### 4. 4. 3 Case specific input

Company X currently uses a third-party logistics provider in Sweden. The company uses 3000 square metres and six full-time employees of that provider's capacity. This warehouse is the only one in Company X's supply chain and handles all order fulfilments except for a small proportion of goods that are shipped directly from the manufacturers to the Australian

market. As Company X does not yet know how much of their sales will go to the east Asian and Australian market in the future, the following calculations will be based on the same warehouse footprint as the existing one in Sweden.

#### **4. 4. 4 Estimated costs for possible scenarios**

This section presents cost calculations and estimations based on the data provided above and the theoretical framework. First, calculations based on the following assumptions will be made:

- The median gross wage of Transport and Storage Industry.
- A single storey warehouse with a footprint equal to 3000 SQM.
- Average prices for buying and renting land.
- Average cost of renting space.
- 30 year depreciation on both land and building.

Four scenarios are created based on the assumptions above together with the data gathered regarding land, construction and warehouse rent. The annual costs of scenario one and two include depreciation of the land and the building. This means that the total annual costs presented in the right column most likely are lower than they actually would be, since costs for building services, equipment and IT is excluded.

Table 7: Possible cost scenarios

POSSIBLE SCENARIOS		
Scenario #	Type of cost	Value €
No 1: Buy the land, build and operate the and warehouse	Land and Construction costs	3 296 088
	Annual depreciation and staff costs	244 964
No 2: Rent the land, build and operate the warehouse	Construction costs	2 408 123
	Annual rent and staff costs	269 415
No 3: Rent warehouse space and operate the warehouse	Annual space and staff costs	465 432
	Annual space costs	367 874
No 4: Rent warehouse space and operate the warehouse inside a FTZ	Annual space and staff costs (FTZ)	600 526
	Annual space costs	502 969

The table shows possible scenarios that Company X can face when establishing a warehouse. The costs are calculated based on table 2, 3 and 4.

#### 4. 5 Establish an outsourced Zero-GST Warehouse

One discovery has been that it is necessary, when discussing outsourcing in logistics, to discern the variety of terms that are used to describe the hiring of an external party to handle activities in the supply chain. The term Third Party Logistics Provider (3PL) is often used when talking about outsourcing of logistics but can sometimes be used quite haphazardly as a collective compounding of all kinds of outsourcing. This is not really the case as 3PL is actually just a point on a sliding scale of outsourcing.

3PL is when three parties; supplier, customer and an external party are involved in the logistics of a good (Lumsden 2012). The third party is hired to handle specific activities throughout the supply chain. These activities are often transportation and warehousing

(Rushton, Croucher & Baker 2014). Fourth Party Logistics is when external companies provide its customers with overall supply-chain-wide solutions through an incorporation of the services of third party logistics providers. A large difference between 3PL and 4PL is that the latter do not have any physical assets but only carry intellectual capital and IT systems (Rushton, Croucher & Baker 2014). There is an additional step on the outsourcing scale of logistics which is the Fifth Party Logistics provider (5PL). The concept of 5PL is quite a new phenomena but has been growing in recent years. A 5PL provider will manage the supply *networks* rather than the supply chain meaning it will develop, plan, organise and implement the logistic solutions of the customer. 5PL has a strong focus on e-businesses (van Leeuwen 2014). According to Gerdner-Kalle is 5PL still quite unusual especially in the Asian region.

Michael Exenberger states that there is no shortage of third-party providers in Singapore, especially if you trade with goods that does not need to be manipulated. Moberg states that in Singapore there is high competition due to the many logistics providers. This competition leads, according to Moberg of PostNord, to flexible solutions for the buyers and 3PLs that are willing to adapt for specific needs of delivery and expansion. In Singapore there are providers that can offer whole packages, everything from inbound logistics, to warehousing and exporting.

Moberg states that one possibility for retail firms to reduce costs is to negotiate everything separately. Moberg's understanding is that most retail companies buy a complete warehouse package but that for example the overall management and quality-control is kept in-house. However there are cases where parts of a warehouse is rented but the staff who runs it, is the retail company's own. The most important to think of when considering to outsource the warehouse operations is according to Moberg to find the right partner who understands the company's needs and can be a provider to grow with. Interviewee 2 concurs this by saying that choosing the right partner and researching the market is the most important to consider when choosing to outsource.

### **Outsourcing versus in-house operations**

Björn Moberg of PostNord was asked if he had encountered firms which operates their own bonded warehouses in Singapore and he said that the ones he had come across was a large french sport retail company which had their own bonded warehouse but which he believed

they now had outsourced, some smaller companies that have fulfillment centers in the FTZs and he also believes a danish toy company has a bonded warehouse in Singapore (Moberg).

Sara Gerdner-Kalle, DB Schenker's fast fashion manager in Singapore says, when asked if she thought is possible for a Swedish medium sized company to succeed in having a wholly-owned bonded warehouse: *"it all depends on the contacts with customs, as such is essential when dealing with bonded sites. Definitely possible, with a need for an account manager towards customs"*. However, when asked what she thought to be the best option, she stated: *"You outsource the warehouse"* (Gerdner-Kalle). When asked if many companies choose to have a wholly-owned warehouses, Interview 2 says: *"Not many companies have wholly-owned operations. I have been involved in some cases but then the companies are large like for example ABB and Volvo"*. He continues on: *"If you want to own it yourself you have to start a company"*. In addition to this he states that the Company needs to gather a lot of market knowledge. He states that it is a whole new network to gain insight into and many companies find this, together with the greater risk, much too difficult of an endeavour to accomplish. *"When the walls are there, they are there. They are not flexible"*, he says referring to the risk of fluctuating volumes. *"Is it worth it? Yes maybe if you intend to stay for 15 or 20 years, but what are the chances of that?"* Furthermore Interviewee 2 says that if the bonded warehouse is of a smaller type, such as a small stockroom or alike, it is more probable the company can do it themselves.

Gerdner-Kalle continuous on saying that due to the high cost of rental caused by the scarcity of land in Singapore, it could make sense to have wholly-owned operations as to escape high rental costs but a disadvantage is that you have to employ customs experts which is often not the company's core business and a wholly-owned bonded operation only really makes sense if the goods are meant for the Asian market. If the future capacity need and flow of goods is rather unknown and might fluctuate, it is better to outsource (Gerdner-Kalle). When Gerdner-Kalle was asked what factors determine when to outsource and when to keep operations in-house she replied that is depends on the company's strategy and that it is a question of control core business alignment. In her opinion, it is rather risky to initially start with in-house management if you are not familiar with the local market practises. In her experience as fast-fashion manager at DB Schenker, some Swedish larger companies prefer to take over operations after a while, maybe 3-5 years, when the market is well developed, with no major

risk factors and the firms has a large enough presence to attract good staff.

#### **4. 6 Company X**

Company X is a family owned company which currently employs around 30 people at the headquarter in Sweden and had, in 2016, a turnover of over 200 million SEK (Company X). This turnover has been on a steady rise since the company's creation and the company is continuously expanding its scope of sales. Company X do not own any factories, plants, warehouses or have any physical assets as such. Tangible resources are instead made up out of inventory or stock, cash and loan-capacity (Company X 2017). The intangible resources are the company's strong-point with extensive networks of production and distribution, a well-known brand, its design and a respected reputation. Regarding human resources the company has a logistics department, located at the head quarter in Sweden, that manages decisions regarding all logistics. The physical handling of distribution and of warehousing is outsourced to 3PLs. Company X (2017) states that although the company does not possess the in-house knowledge needed to have a wholly-owned operation in Singapore today, the owner does not see any difficulty in acquiring the knowledge and know-how needed.

## 5. Analysis

*After gathering empirical data of the general business system and the logistics business sphere and in Singapore, how to establish a bonded warehouse and the appreciation of some costs involved, this following analysis will discuss the importance and accuracy of the findings.*

### **5. 1 Logistics business in Singapore**

Singapore is one of the largest trading hubs of the world and has increasingly become more and more important for logistics providers. The large pool of third party logistics providers has its benefits as it provides a one-stop-shop for companies who wishes to expand their business in Asia. More companies on the market also means tougher competition which will likely push down prices and up the performance as not to be ousted from the logistics providers expanding market. This is indeed a good thing for purchasers of logistics services such as Company X. As many of the major logistics companies are indeed present in Singapore (Yuling 2014) it increases the chances of being able to extend that current relationship with one's already existing provider across the globe which could prove to be time saving and easier. This is an advantage for Company X as its existing 3PL providers and freight forwarders are international and present in Singapore(Company X 2017).

Even though Singapore is considered to be a flawed democracy according to The Economist Intelligence Unit's Democracy Index (2017) it does not seem to have an effect on the way business is conducted. With the low threat of corruption and high level of trust in institutions that reigns in Singapore, companies operating in the context can expect to be treated fairly and correct. Rules are respected and easy to understand by foreigners, especially due to the prevailing of English as an official language.

The fact that Singapore has been elected best country to conduct business in is something that has been repeated and fortified throughout the interviews. Several of the interview objects conclude that is very easy to do business in Singapore. The government is well functioning and efficient and provides all the information needed to succeed. The initial conception was that the confucian culture of the 75 per cent ethnic Chinese population had quite a large effect



on the business system of Singapore. This was, according to interview subjects, proven to be true in some aspects. The interviewees claim not to have changed their behaviour much when conducting business in Singapore. However two interviewees stated that even though it is quite easy to do business in Singapore, sometimes they had to dig deeper to get correct and straight answers. This could be a factor to consider whether it be when trying to find a 3PL provider or when hiring contractors, staff and buying equipment.

### **5. 1. 1 Location**

Among the findings of the logistics business in Singapore is that there are several FTZs, where some are dedicated for sea cargo, some for air and some located in inland Singapore (Valentine & Park 2005). There are also many possibilities to have bonded warehouses outside of those FTZ's. The FTZs are mainly for transshipment of goods that are meant for repacking and re-exporting rather quickly after landing on Singaporean soil while warehouses outside the FTZs can hold goods for a longer period (Moberg). The empirical findings seen in table 4, show that warehouse's are more expensive inside a FTZ. This is second in interviews by Gerdner-Kalle and by Valentine & Park (2005).

Where to place the potential warehouse depends on whether the goods are intended to be shipped by sea or by air. Since Company X's intention is a warehouse function of both B2B and B2C it could be that both options are to be used (Moberg). Consumers today, expect fast deliveries of maximum a few days, which puts pressure on distribution and direct deliveries to consumers and it is often necessary to use air freight (Company X 2017). Delivery to stockists could potentially be carried out by sea cargo as it does not require the same instant deliverance. Air cargo could be used as a mean of transportation to consumers that demands quicker delivery.

An important decision factor regarding whether to keep it in a FTZ or outside, seems to be the turnover rate of the stock (Moberg) and the strategy of the firm. If choosing to use a FTZ the choice between port or airport depends on who the goods are meant for.

If the company decides to establish themselves outside an FTZ the company needs to obtain a license for a Zero-GST warehouse. This does not appear to be very difficult as the government tries hard to be accommodating to foreign companies establishing presence in the

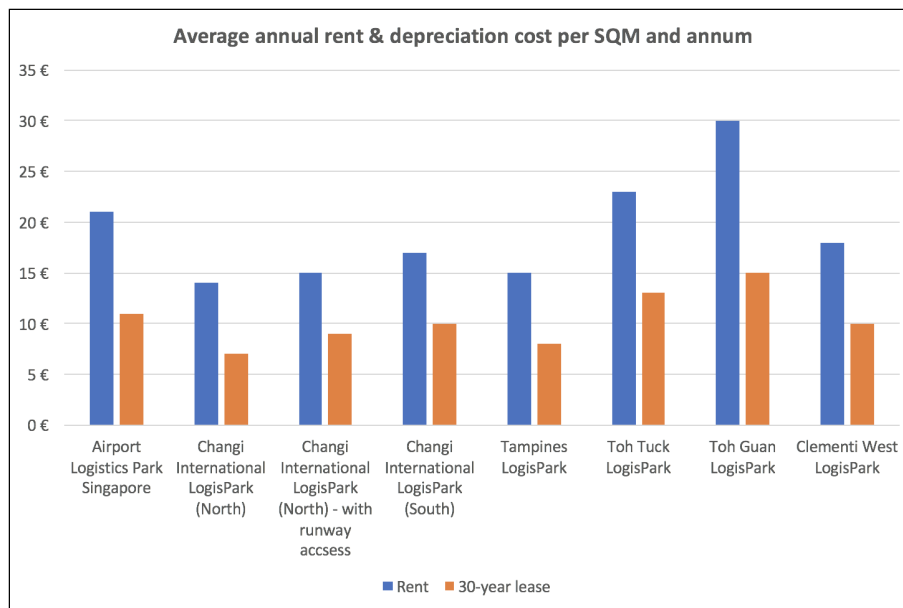
country (Interviewee 1). What is a factor to consider in the context of a licence for a Zero GST-warehouse is which type of Warehouse licence to choose. There are three different types of licences. First, it is necessary to decide how large a part of the imported goods are meant for re-exportation. Type III of Zero-GST warehouses allow the licensee to have multiple bonded warehouses at different locations. This type of warehouse is very beneficial to 3PL providers but not really for Company X as one location is really all that is needed. That leaves type I and II to choose from.

## 5.2 Cost analysis

*This section will take a closer look on the empirical cost data.*

### **Land costs**

*Chart 1: “Average annual rent and lease costs of land” - The chart shows empirical data over average annual prices for renting or the depreciation cost of land, with a 30-year leasehold, for eight locations within six logistic parks in Singapore.*



*The chart is a visualization of table 2.*

As seen above the costs for renting and depreciation of land vary between different locations. They sometimes even fluctuate within the same logistic parks as seen in the Changi International LogisPark. Enough facts are not known of the differences of the logistic parks and it is only possible to speculate of the reasons of price variations. Supporting infrastructure and the geographical location are potential drivers of land price. It should be noted that is it not fair to compare the rent costs with the depreciation for one location since

the rental costs most likely includes building maintenance and depreciation does not. However, it is logical to assume that building maintenance costs does not vary within Singapore. This means that the relationship between rental and depreciation costs are comparable between locations.

### ***Construction costs***

The construction costs are complex in their nature and depending on various variables such as warehouse design and land conditions. To get fair cost comparisons between different locations it is important to assess the land conditions. The more groundwork needed the more costly project.

### ***Warehouse rental costs***

The warehouse rents are seemingly more expensive inside an FTZ than outside, seen in chart 2 below. It should be reminded that the population pool of renting warehouse inside FTZs is quite small of five listings. A question for consideration is if the higher prices within a FTZ could be overlooked due to the high costs of administration of a bonded warehouse licence and customs management.

### ***Staff costs***

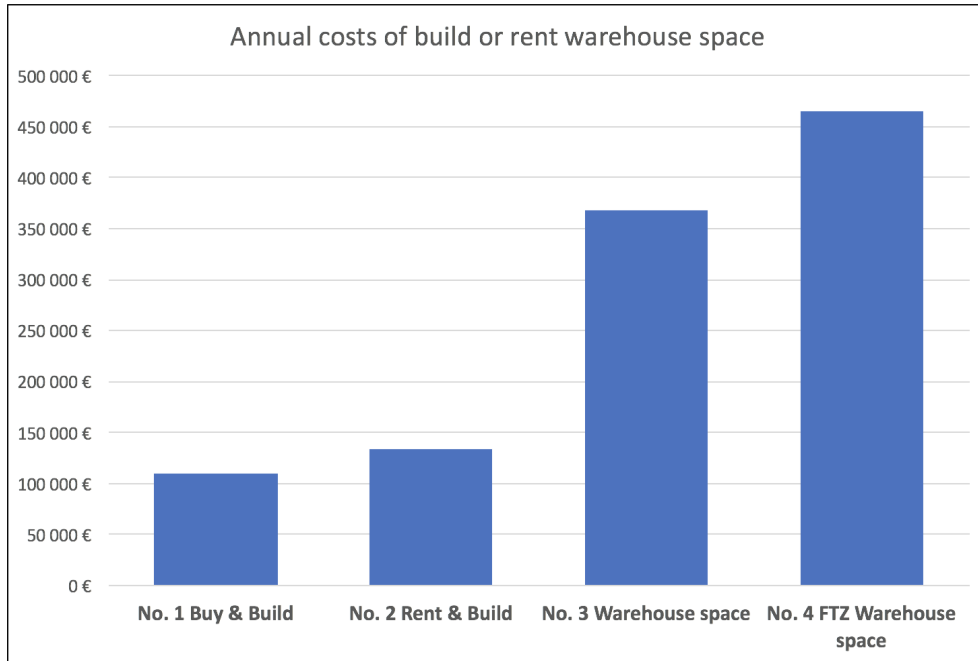
The staff costs of the cost-tree in figure X consists of wages, training, insurance, bonuses and overtime. Staff is an important part of the operating costs and usually makes up the lion share of warehouse operating costs (Rushton, Croucher & Baker 2014). The costs known are the median wages, including bonuses and overtime. Not known, are costs regarding insurance and training costs. It is important to acknowledge that these costs could be very high and the presented staff costs in the empirical section is not therefore the total staff cost.

### ***Building versus renting a warehouse***

The build or rent decision is important since it has a profound effect on both long and short term profitability. When comparing the building costs with the rent costs it is clear that buying the land and building the warehouse is the low cost alternative. Although it is the lowest cost alternative, many costs such as planning, projection, time, building maintenance additional internal resources and external consultants are not included. Buying land and building a warehouse also incorporates the risk of cost escalation during the construction.

These risk are non existing when renting a warehouse since the responsibility for the building lies on the owner of the building not on the tenant. Renting a warehouse means less responsibility and less risk, higher degree of freedom and flexibility but to the price of a higher annual cost.

*Chart 2: Annual costs of building or renting warehouse space The chart is a visualization of table 7 “Possible cost scenarios” and shows difference of building and renting warehouses in Singapore.*



*The costs are based on average land, construction prices and depreciation of buildings and land.*

### **5. 3 Outsourcing versus in-house operation**

As seen in the empirical section, it is not simply a yes or no answer when deciding whether to outsource or not to outsource a firm’s logistics operations. Outsourcing is a sliding scale so it is more about deciding *where* on the outsourcing scale it is most beneficial for the company to be.

Outsourcing a firm’s warehouse operations have many benefits such as not tying up a lot of capital and not risking becoming stuck with high fixed costs when volumes fluctuate (Interviewee 2). In addition to this, using 3PL entails hiring specialists in the field meaning quicker and smoother operations than if the company, which core competencies are not logistics, would do it themselves. The main drawback of a 3PL solution is the losing of control that comes with handing over operations to someone else.

Gardner-Kalle states that when deciding if to outsource, it is a question of control, the company's strategy and its core business. The company's core business or rather its competitive advantage lies in the design, brand and the networks of production and distribution and not in logistics. Then, as warehouse keeping is not a core competency, should it not be outsourced? The answer is not an easy one, as it depends on other factors as well. To aid when making a decision of outsourcing or not, the Outsourcing Decision Matrix in figure 3 can be a useful tool (Mindtools n.d; Brighton School of Business and Management 2016).

To determine where in the matrix the task is located there are two main questions that need to be answered: *How strategically important is the warehouse in Singapore to the company? How important is the warehouse for operational performance?* (Ibid)

For a fashion company involved in ecommerce that has customers almost all over the world dependent on correct, smooth and fast deliveries, warehouse operations is deemed as very important for Company X's operational performance. If the warehouse operations in Singapore are executed badly, large losses and disruptions could be the result. Thus is it very much in Company X's interest that operations are done correctly.

A company's resources and capabilities create the competitive advantage (Grant & Jordan 2012). Company X's competitive advantage, apart from its brand and design, is its extensive networks of distribution and production. A complementary warehouse in Singapore would expand that network and most likely streamline distribution, improving that competitive advantage. A warehouse in Singapore could therefore be argued to contribute to the competitive advantage of Company X, hence being strategically important. As the warehouse is important for operational performance it wanders between in the quadrants of "Outsource" and "Retain". In which of the two quadrants the company will end up, depends on just *how* strategically important the company deems the warehouse to be.

From the interviews with Gardner-Kalle and Moberg it is clear that it is possible for a medium sized retail companies to operate their own bonded warehouses. It seems however that it is more common to outsource, at least part of the operations (Gardner-Kalle; Interviewee 2). Findings from the interviews of the difficulties of not knowing the market

practises and the markets in general indicates that it could initially be better for Company X to enter the warehouse business in Singapore with a 3PL provider and then eventually start an own warehouse when having built a local network. Company X should take this, the magnitude of the warehouse's strategic importance and the level of control it is willing to forgo, into consideration when establishing a bonded warehouse in Singapore.

## 6. Conclusion

*This section will, from the analysis section, extract factors deemed important for Company X to consider when establishing a bonded warehouse in Singapore.*

Findings show that it is easy to do logistics business in Singapore. There is a large pool of 3PL providers that can provide customized solutions to fit the need of Company X. Business system aspects turned out to be somewhat important, especially when discussing whether to outsource or not as knowledge of the market could be important according to Gerdner-Kalle. Furthermore it was seen that there might be issues of getting straight and accurate answers. This could be argued to be important factors to consider as it might require extra time and resources to extract the information needed to make well founded decisions.

An important finding regards the location of the warehouse. The costs of being inside a FTZ is higher than outside, thus needing careful consideration of the role the warehouse will play. If goods will be stored for a shorter time and mainly be intended for B2C, location inside a FTZ close to the airport will most likely be the best option. If, on the other hand, a large part of the goods are intended for B2B a FTZ close to the sea port is better suited. In addition to this, is the option of not being inside a FTZ at all. An inland-located warehouse, outside a FTZ, will be able to transport to both the seaport and airport in order to supply customers in need of fast delivery as well as to some B2B customers that may be able to wait longer. The choice of being inside a FTZ or not, ultimately comes down to the weighing of the administrative costs associated with handling of customs versus the higher land and rental costs of being inside a FTZ. In summary, the choice of being located in inland Singapore or close to either of the ports as well as the choice of being inside a FTZ or outside it, depends on the composition of goods the warehouse intend to carry.

When assessing the question of building or renting a warehouse, the important factors that emerge are land, construction and warehouse rent costs. Since the warehouse will operate in the same way regardless of whether the building is built or rented, the costs for building services, staff, equipment and IT will be the same, indifferent of location within Singapore. It is important to note that the overhead costs for building a warehouse are likely to be higher than if renting one. Construction projects require special skills either from in-house

employees or from external consultants, which will add to the overhead costs. Building or renting a warehouse is also a matter of risk. When building a warehouse the building owner is exposed to the risk of cost escalation and delays, where the warehouse space tenant is not.

When it comes to the choice of outsourcing or to keep operations in-house, a factor to consider is the magnitude of the complementary warehouse's strategic importance. How much will this warehouse contribute to Company X's competitive advantage? When trying to pinpointing this, it is important to consider the level of control the company is willing to forgo when outsourcing. On the other hand there are greater risks involved when owning the warehouse as fixed costs are rigid and will not fluctuate with volume. Ultimately it comes down to a trade-off between lower cost and control versus less risk and flexibility.

### **6. 1 Further research**

The factors presented above aim to offer an initial overview of the challenges and complexity of a warehouse establishment, thus contributing to the research fields of International Business and Warehouse logistics. Further research of transferability of the factors to other countries, could offer an interesting subsequent research area.



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# Appendix

## **Interviewees**

### **Phone interviews**

Soon Yan (2017). Auditing expat from Malaysia working and living in Singapore. Interviewed XX of April 2017.

Interviewee 1 (2017). Paper Trading Manager of a large Swedish trading house's Singapore branch. Interviewed 12th of April 2017.

Interviewee 2 (2017). Logistics manager at a large Swedish logistics company responsible for the Asian market. Interviewed 20th of April 2017.

### **E-mail interviews**

Björn Moberg (2017). Nordic Prospect Manager, PostNord. Interviewed 10th of May 2017.

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