



Sustainability's Effect on Companies Packaging Choices in Air Shipping

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<p>Abstract:</p> <p>This thesis is a qualitative analysis on sustainability's effect on company's packaging decisions in air shipping. Comparing two companies whom of which ship items via air were interviewed for pertinent information. The aim of this thesis is to find out does sustainability effect a company's choice of packaging in air transport. As well as is sustainable packaging beneficial in air transport? The limitations of this thesis are that sustainability is a fairly new topic and may be difficult to find information, as well as the topic being niche and difficult to research. The method used in this research is interview process. The companies were interviewed, and their responses were then analyzed to produce the results stated. The company's responses were compared and contrasted. The results show that sustainability does affect a company's choice of packaging when shipping by air. Results also show that sustainable packaging is beneficial in air transport. Sustainability is the way of the future and it is important for companies to switch to sustainable options. Furthermore, for air shipping sustainable options can be better overall.</p>	
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1 INTRODUCTION

Sustainability is a word that has become increasingly popular in recent years. It is usually referenced with climate change. With climate change becoming more relevant, it is important to find ways to battle this change and how to be more conscious of the things that are used, and the way humans live their everyday life. In today's culture, ordering and shipping goods are a part of almost everyone's life. Sustainable packaging's impact on air transport is an interesting niche within the umbrella topic of sustainability to research. Not only is the topic relevant but it is also something that does not have much prior research.

1.1 Background of Sustainable Packaging

The idea of sustainable packaging is still a fairly new concept. The phrase "sustainability" only recently became accepted by the packaging industry as recently as 2006. Sustainable packaging is said to be originating from the environmental movement of the 1970's. It did not really gain much traction until the 1980's. In the 80's, "the Garbage Barge" became a media sensation- with the waste from Long Island residents being rejected at a number of landfill sites before eventually being incinerated. What this did was raise awareness to just how much waste the average person was producing- and how large a proportion of this was packaging. Following that incident, it turned into an attempt to lessen the volume of waste. (GWP Group)

To better understand sustainable packaging, it is important to comprehend the actual definition of the term.

"sustainable packaging: A. is beneficial, safe & healthy for individuals and communities throughout its life cycle B. meets market criteria for performance and cost C. is sourced, manufactured, transported, and recycled using renewable energy D. optimizes the use of renewable or recycled source materials E. is manufactured using clean production technologies and best practices F. is made from materials healthy throughout the life cycle G. is physically designed to optimize materials and energy H. is effectively recovered and utilized in biological and/or industrial closed loop cycles" (2011, Definition of Sustainable Packaging).

That is the technical answer for what sustainable packaging is. To make the definition a bit more user friendly, it can also be defined as “packaging which reduces the environmental impact and ecological footprint” (GWP Group). Sustainable packaging is a term that once understood is not so intimidating.

1.2 Research Questions and Objectives

Within the research of sustainable packaging’s impact on air transport, there are many important research questions to ask. The primary research question for this thesis is does sustainability affect a company’s choice of packaging in air transport? Is sustainable packaging beneficial in air transport? The main objective of these questions is to see how sustainable packaging impacts air transport. And if sustainable packaging is the best option overall for air transport. Although sustainable packaging is better for the environment and is overall a great thing, is it great for air transport? With that being said is it beneficial for companies to use?

1.3 Possible Limitations and Scope of Research

The research of sustainable packaging’s impact on air transport can bring newfound information to the shipping industry. It is also important to note that there can be some limitations to this research. With sustainability being a rather new topic there is a limited amount of information. As well as the information of sustainable packaging in air transport, it may be difficult to find information pertaining to packaging, more specifically packaging in air transport.

2 LITERATURE REVIEW

The literature review of this thesis is to create the theoretical framework. In this chapter many aspects are taken into review, such as sustainability, packaging, and air transport. Within the sustainability topic, the history of sustainability itself is considered. The important events that catapulted sustainability to what it is today as a term and the implementation of said term. As well as tying in sustainable development within air

transport. In this literature review, the sustainable practices in packaging are briefly discussed. As well as in this review packaging is explained, and the common types of packaging along with packaging uses. The benefits of packaging are examined along with the issues with poor packaging. The topic of air transport is dissected and broken down into how it works and what kind of options there are for shipment by air.

2.1 Sustainability

Sustainability has become a word often used in today's vocabulary. An issue with the word is "*sustainability*" meaning everything to everyone" (Farley, Smith, 2013, p.13) This meaning that there is not one definition that is widely used. The word is usually left up to one's own interpretation. According to the Brundtland Commission, as referenced by Portney (2015) sustainability has three equal parts, environment, economy, and equity; also known as the "Three E's of Sustainability". The basis of this is that sustainability is achievable by "protecting the environment, preserving economic growth and development, and promoting equity" (Portney, 2015, p.6). According to this concept, all three pillars should remain equal in achievements (Portney, 2015, p.6).

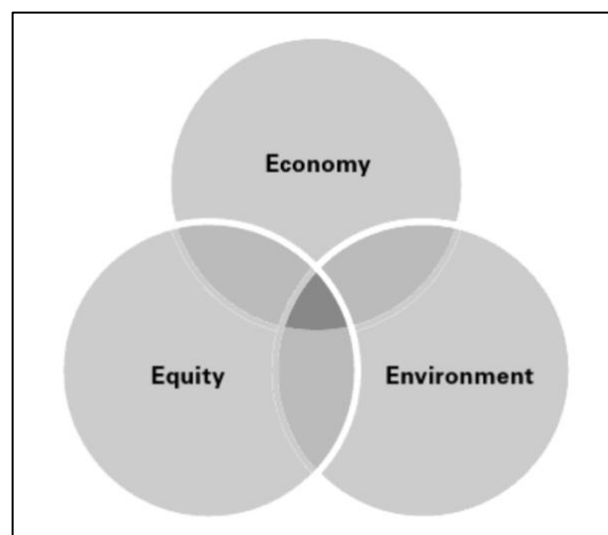


Figure 1 The Three Elements of Sustainability (Portney, 2015)

"Sustainability, then, is often associated with maintain Earth's carrying capacity, usually through alteration of individual and collective human behavior or through the application of new and developing technologies to minimize the effects of those behaviors" (Portney, 2015, p.12).

The possible requirements to keep up with earth's carrying capacity unfortunately are not well understood, as well as not consistent with the values that are shown today in industries across the globe (Portney, 2015, p.13). According to Francis, Legge, and Learner, as referenced by Portney (2015) they state that sustainability can be defined as the "persistence over an apparently indefinite future of certain necessary and desired characteristics of socio-political system and its natural environment".

2.1.1 History of Sustainability

Sustainability is a rather new term and idea. Sustainability can be traced back to 1962 with the release of the book *Silent Spring* which talked about what is now known as sustainability. The environmental movement spread internationally with major catalysts such as the Cuyahoga River fire in Ohio, the smog in London, as well as many oil spills throughout the oceans. There were many other environmental issues that helped to bring awareness to the citizens of the world, also helping to bring forward more international cooperation. (Farley, Smith, 2013)

"Early conceptualizations of ecologically sustainable development began during the 1968 Intergovernmental Conference for Rational Use and Conservation of the Biosphere, organized by the United Nations Educational, Scientific and Cultural Organization (UNESCO)." (Farley, Smith, 2013)

For the first time ever, many governments were starting to see the Earth being destroyed, and that it is not a national problem but one of global scale. Then President of the United States, Richard Nixon signed the National Environmental Protection Agency (NEPA) in 1970. The National Environmental Protection Agency set standards for doing environmental impact assessments (EPA), which set the bar for the rest of the world's environmental impact assessments. In 1971, the United Kingdom established the International Institute for Environment and Development (IIED). This was made to help countries which wanted to progress economically, without wiping out all the natural resources in the process. (Farley, Smith, 2013)

The first United Nations International Conference on the Human Environment was held in 1972. This was the first attempt to bring nations together to talk about international environment issues. Skipping forward many years the next major event was the Brundtland report that was released in 1987. (Farley, Smith, 2013)

“The report serves as a useful reference point because of its function in popularizing the term *sustainable development* and bringing the concept into the mainstream.” (Farley, Smith, 2013)

The Brundtland report was a huge success. The report was approved by the UN General Assembly as well as some 100 nations. Earth summit was then held in 1992 by the United Nations. The summit was formally called the United Nations Conference on Environmental and Development (UNCED), which took place in Rio de Janeiro. The goal of the summit was to arrange a global international approach on how to achieve sustainable development. The result of the summit was many conclusions that were supposed to help guide governments to collaborating on international sustainable development. Within the outcomes were some persistent ideas. The ideas were “humans are the central concern for sustainable development. Humans must make changes to live in harmony with the natural environment. (Farley, Smith, 2013)

Eradication of poverty in developing nations and reduction of excessive consumption in affluent countries are indispensable requirements for sustainable development. Developing nations require special attention and accommodation to ensure parity across nations. The protection of the environment and increasing development are interconnected and can be mutually supportive rather than adversarial goals. Sustainable development is a mechanism for meeting the needs of both the current and future goals.

The three pillars of sustainability which were mentioned earlier, are common thoughts from Brundtland to the Rio summit. Ten years after the summit in Rio, a follow-up conference called the World Summit on Sustainable Development was held in Johannesburg. This conference was called to review the progress of Agenda 21. Although Agenda 21 was a good idea, the plan did not offer enough guidance for the participating countries. (Farley, Smith, 2013) However, the loose guidance in turn meant that countries were to

“interpret *sustainability* in a way that was convenient and acceptable within the confines of the dominant ideology of the governmental system. Sustainable development in this period remained more of a discourse than a plan of action”. (Farley, Smith, 2013)

Over the past ten years not much has changed for the definition of *sustainability*.

“It is the gap between the scope of the problem and the actions taken to address the problem that remains a central challenge for sustainable development”.

(Farley, Smith, 2013)

2.1.2 Sustainable Development in Air Transport

Sustainable Development can be defined as ‘development which meets the needs of the present without compromising the ability of future generations to meet their own needs’. Although this definition can be interpreted in many ways, the central idea remains the same, balancing the economic, social, and environmental aspects of development for the present and for the future. The relationship between sustainable development and air transport can be difficult to define. (Daley, 2010)

“One way of assessing the relationship between air transport and sustainable development is to ask what extent the operation of the air transport industry is aligned with those core principles. The broad popularity of ideas about sustainable development means that the air transport industry, like many other activities, is under considerable pressure to demonstrate its commitment to promoting sustainable development.” (Daley, 2010)

There is a lot of rhetoric or verbal persuasion surrounding the air transport industry and sustainable development. Many statements put out by authorities of the air transport business have very little regard to sustainable development and usually suggest business-as-usual or growth for the aviation field.

“The idea of sustainable development is often used to justify the environmental impacts of air transport on the grounds that those impacts are far outweighed by the economic (and associated social) benefits of the industry.” (Daley, 2010)

With that being said the economic benefits of the industry are not as forthright as they seem, thus bringing forth doubts that the economic benefits surpass the environmental impact. (Daley, 2010)

The air transport business is highly reliant on kerosene and is highly affected by fuel prices. This being said, the industry has a large incentive to lower fuel costs by developing better fuel efficiency, which in turn cuts down on airplane emissions. There is always a continual desire to improve efficiency for the air transport industry. There has been favorable progress made with engaging in the principles of sustainable development, through the Sustainable Aviation partnership. The Sustainable Aviation

partnership came about from the UK Department of Trade and Industry (DTI) and the Department for Environmental, Food and Rural Affairs (DEFRA). This partnership came out with a strategy called *A Strategy Towards Sustainable Development of UK Aviation*, its purpose was to acknowledge the imposition of building a sustainable future. In said document it was recognized that

“the future growth of the air transport industry represents a major challenge to the sustainable development of the industry and that more effective management of aviation environmental impacts is required.”

In summary of the document, the main focus was the aspect of aviation in a sustainable society. As well as the document showcased the

“issues, commitments and recommendations for action, and it acknowledged that the strategy represents the first step in an iterative process of promoting sustainable development across the international aviation sector.”(Daley, 2010)

Although the strategy displays a feeble version of sustainable development, it showcases an effective addition to recent deliberations about the air transport industry and its relationship with sustainable development. Overall, there is still a lot of work to be done in creating a more homeostasis relationship between the two, but the strategy helps to open the conversation on how to create that relationship. (Daley, 2010)

One company to switch over to a more sustainable packaging material is Worldwide Flight Services (WFS). They are a major air cargo company. The company is making the swap from plastic products to sustainable alternatives. These alternatives are made by M&G Packaging. The alternative plastic made by M&G

“is made from a blend of resins including LDPE and a plant-based biopolymer, which is biodegradable in a landfill, reducing fossil fuel-based plastic and greenhouse gas”. (Muir, 2019)

This new plastic is stronger and more resistant to puncture than the traditional polyethylene plastic. The company used over “27 million plastic water bottles in a year in protective plastic sheeting and wrap”. To change that much plastic to something sustainable is a great step in the right direction. (Muir, 2019)

2.1.3 Sustainable packaging in Shipping

When companies make the effort to reduce their environmental impact, they are rewarded with lower costs, and they become more appealing to the modern-day

customer. Sustainable packaging can be simply put as something that has added to the reduction of environmental impact. Sustainable packaging is noted to have many benefits. One main benefit is it boosts a company's brand image. Customers and consumers are more aware of the environmental impact of packaging and are more cautious of what materials they consume or buy. Sustainable packaging can be used as a marketing tactic to attract customers. As well as being good for company image, sustainable packaging is easy. Making the switch to sustainable packaging is very straightforward. Cost is another attractive benefit to sustainable packaging. Recycled or recyclable packaging materials can be the same or cheaper than the less environmentally friendly options. Sustainable shipping is another issue. Shipping something sustainably means that it "incorporates greener and more environmentally responsible means for getting your goods to your customers" (Shipping and Freight Resource, 2020).

Technology now plays a big role in making shipping more sustainable. For example AI or artificial intelligence is able to plan the most efficient and responsible route for the transport. Being that sustainable in packaging and in shipping go hand in hand with one another. (Shipping and Freight Resource, 2020)

"If the packaging is more specific to the size and type of each product, more packages can be shipped in one load. The fewer shipments your brand has to make, the less energy used and the smaller your carbon footprint" (Shipping and Freight Resource, 2020)

2.1.4 Sustainable Practices of Packaging

Sustainability is becoming a larger concern in the packaging industry. There are many ways to make packaging more sustainable. One unusual way to become more sustainable is to switch out petroleum-based inks to soy- based or vegetable-based inks. When printing with these inks, the paper which they were printed on can be more easily de-inked thus making it easier to recycle. Paper is one of the packaging materials that has a very significant impact on the environment. Using recycled paper instead of virgin paper can benefit the environment greatly.

"One ton of recycled paper used 64 percent less energy and 50 percent less water, creates 74 percent less air pollution, and saves seventeen trees." (Ellicott, Roncarelli, 2010)

2.2 Packaging

In relation to the supply chain there are four main types of packaging. The first being containers.

“Containers are receptacles that hold, protect and organize products and materials during storage and transport. They come in a variety of forms, including bags, barrels, drums, cartons, cases.” (CITATION NEEDED!!!!!!!!!!)

There are many materials used for containers. The most common include “corrugated cardboard, welded wire mesh, metal (including steel and aluminum), corrugated plastic and high density polyethylene (HDPE) which is the material most frequently used in the construction of reusable and returnable containers.” (MHI)

Within the reusable containers there are three most commonly used forms. The first being a bin. A bin is just a box used to store and organize small parts before a product is assembled. The second type of reusable container is a tote. A tote can also be called a crate. The tote is a box that can be transported by hand. The third reusable storage container is a bulk container. The bulk container is the largest of the three reusable container types. It is a pallet-sized container.

The second kind of packaging would be a pallet. A pallet is usually made from plastic, wood, or metal. The pallet is a portable unit that acts as a base for items to be placed onto. It is utilized as a “returnable, reusable surface for assembling, storing, stacking, handling and transporting of goods as a unit load”(MHI). The next type of main packaging is the dunnage. The dunnage is the material or device that secures and/or braces whatever is being shipped. Dunnage can be packing peanut or inflated air pillows to protect the contents of the shipment. The last main type of packaging is the unitizers. The unitizers are “materials that hold several items together to form a complete load. They can be applied as a tie down, or a means to secure a load to a pallet. Some common unitizers are stretch film, which is essentially a roll of plastic film that is tensioned when wrapping the unit. Another type of unitizer is shrink-wrap. The shrink wrap is similar to the stretch film, but it is tensioned when heat is applied to it, it shrinks tightly to whatever it was wrapping. The last type of unitizer is strapping. Strapping can be made from “low and medium carbon steel, hot roller high tension steel, polyester, nylon and polypropylene”(MHI). Packaging has many utilizations. The first utilization of packaging is to protect products when they are on their way to the production process. Automation is another place where packaging is utilized.

“automated systems require standard-sized totes, trays or pans to function” (MHI). Arguably the most known utilization of packaging is during transportation. Packaging protects items and loads when moving throughout the supply chain. Packaging is also used to protect items in storage, whether this be at a warehouse or another storage facility. The final use for packaging is order picking. “holding stored products prior to their delivery to picking areas, and acting as receptacles for picked orders” (MHI)

Packaging protects products and components during shipping and storage. It is used by nearly every industry, including:

- Aerospace
 - Appliance
 - Automotive
 - Beverage
 - Chemicals
 - Construction
 - Consumer goods
 - E-Commerce
 - Food
 - Hardware
 - Hospital
 - Manufacturing
 - Materials processing
 - Paper
 - Pharmaceutical
 - Plastics
 - Retail
 - Warehousing and distribution
- (MHI)

2.2.1 Benefits of Packaging

Packing offers a plethora of benefits. It creates a barrier for protection. Packaging helps to protect against outside elements, such as dust, water, and dirt. Another benefit of packaging is its ability to contain. Packaging can contain many smaller items in one place. This helps aid with the handling of the package. Packaging is also convenient.

“Packaging can have features that add convenience in distribution, handling, stacking, displaying, opening, reclosing, use, dispense, reuse, recycling, and ease of disposal” (MHI)

As well packaging also provides physical protection. Packaging can help to protect from a drop, a shock, temperature shifts that are extreme, and impact. Furthermore packaging can provide security.

“Tamper resistant and tamper evident packaging can reduce the risk of theft, or indicate that damage has occurred during handling” (MHI)

Likewise, packaging can be sustainable. Many types of reusable and returnable packaging can be used various times before being recycled. Also there are packaging materials specifically designed to be able to biodegrade. (MHI)

2.2.2 Issues with Poor Packaging

Packaging plays a substantial role in selling a product. The condition of the package an item is being shipped in is very important. If a package shows up damaged to its final destination it can create a poor image for the company sending the package. Once a company has a poor image, sales for the company will usually suffer as a result. If the package is too small this also creates issues. The product inside can become near impossible to remove from its packaging. As well as if the item is shipped with many other products there is a greater likelihood that the item or items inside will become damaged. If the item is just wrapped in paper or something that is not a sort of box, the package has a high likelihood of tearing and exposing the product to the elements whilst being shipped. Likewise when exposed, to elements there is the possibility of moisture which creates mold. On the flipside having packaging that is too large is also an issue. The packaging being too large is mainly an annoyance. Additionally can negatively affect the brands image. (Scott, 2015)

Packaging plays a big role in selling a product. This being said it is important that the packaging design is paid attention to. If a package has misleading labels, this can cause consumer confusion. This in turn leads to lower sales of that particular product. Consumers are known for having ridiculously short attention spans, so it is important to get the product across quickly and concisely. Another mistake to avoid with packaging is making the package too secure. There is a difference between making a package secure and making a package impossible to open. The problem often times is that companies do not think about the packaging once it is with the consumer and off the shelves. If a product is too difficult to open this will also drive down sales. Another prominent thing to think about with packaging is does it really need to be changed. If a previous packaging design is doing well, is there a need to change it? if something is not broken there is no need to fix it, and this applies well to packaging design. Sometimes a redesign of packaging can be for the worse and again drive down sales. (Roberge, 2017)

2.2.3 Packaging in Air Transport

There are some requirements for packaging in air transport. “Air cargo packaging requirements fall into three categories: these are safety, resistance, and acceptance” (Supath Air Freight). Safety is dealing with how safe the contents are. Resistance is dealing with the resistance to stress. “Acceptance denotes the legal aspect of wood packaging material”(Supath Air Freight). Essentially, is the packaging material compliant to legal requirements. (Supath Air Freight)

There are 20 guidelines for air freight packaging:

1. Sturdiness to withstand rough handling
2. Resistance to stress factors: lateral and vertical
3. Resistant to weather factors: heat, rain, moisture
4. Safe against manipulation- air cargo security point. Can items be smuggled into the package?
5. Uniform weight distribution.
6. Temperature insulation needed?
7. “This Side Up” label required?
8. Is the content fragile? You need a label showing that

9. Wood used? Packaging material, filling (dunnage)?
10. If wood is used, is the IPPC Logo visible outside
11. If dangerous goods, used certified packaging. It is mandatory
12. Edge protection for cartons. Prevent straps from cutting into the carton
13. Palletes? If content is extremely heavy avoid palletes with chocks (feet)
14. Palletes: suitable for forklifts? Must be.
15. Maximum pallet height for air freight: lower deck (long haul flight) 160 cm
16. Cartons on pallet: use shrink-wrap
17. Cartons: strong and free from slits. Multiple straps to avoid manipulation
18. No bark on wood!
19. Wood: Treated? See point 9 above
20. Multiple cartons: affix carton numbers, attach content list to individual cartons
(Supath Air Freight)

Shipping items by air can be quite challenging due to the many restrictions and requirements. When shipping by air there are many requirements to consider. Depending on what a company is trying to ship there are a variety of packaging options that could be suitable for the user.

2.3 Air Transport

There are a few options when it comes to shipping by air. Air transport has become very popular with the growing urgency today to have everything done as quickly as possible. The quickest way to ship is without a doubt by air shipping. Therefore, many places offer next day shipping or two-day shipping. “In 2018, commercial airlines carried just under 64 million metric tons of freight worldwide.” (PLS Logistics, 2019). The three options for air freight shipping are air parcel, dedicated air cargo planes, and air charter for urgent shipments. The air parcel option is transported on passenger lines.

“An average passenger plane can more a freight volume of 2 semi-trailer trucks, apart from the passengers on the board. The dedicated air cargo planes are made to maximize space for the items being shipped” (PLS Logistics, 2019)

“The largest cargo airplane can more up to 26000 cubic feet of large, heavy, and even hazardous freight” (PLS Logistics, 2019)

The air charter for urgent shipments is dedicated to get items from point A to point B as fast as possible. This is the most expensive of the freight options. The main uses for the charter planes are “mining and energy industries, movie production, pharmaceutical items, and other urgent shipments”. (PLS Logistics, 2019)

The workings of the air freight are quite simple. The general process is usually four steps but can differ depending on the shipping company. The first step is to choose the company to ship with. Step two the air company or a third-party logistics provider will register the goods for shipping and arrange the pickup from the warehouse or storage facility. Step three the freight is taken to the designated airline, the followed by loading the items onto the aircraft. The final step, the freight is picked up from the airplane upon arrival, then taken to the final destination. One of the most attractive benefits of choosing air shipping is the speed of delivery. If wanting to ship to another part of the world and have it arrive the next day, the only possible option is air shipping. As well as speed, air shipping is also a very safe way of shipping. A few other attractive benefits of air shipping are the fact that the service area is very large, and there are very minimal interruptions. The choice of air shipping is a great option, however, also can have its downfalls. A major drawback would be the fact that the price of air shipping is quite high. (PLS Logistics, 2019)

3 METHODOLOGY

Methodology can be defined as “the analysis of the principles or procedures of inquiry in a particular field” (Merriam- Webster). A qualitative approach was applied in this thesis to investigate sustainable packaging’s impact on air transport. The qualitative approach was the better approach due to the fact that this set of data cannot be quantified. The approach for data collection will be done through an interview process. There will be an interview guide in which to base the interviews off of. See appendix 1.

The data will then be analyzed, and an overall conclusion will be formed. It is also important to understand the validity and reliability of the study. The interview is the best method to obtain insight into the topic. There are a few reasons behind choosing to interview instead of other methods. For instance, a questionnaire is too impersonal and could be confusing. Focus groups also would not have worked for this specific research because one opinion in the group could possibly change that of another’s and allow for the study to become invalid. To be able to understand the impact of sustainable

packaging on air transport, it is paramount to ask the right questions from the right people.

3.1 Interview Procedure

The setting of the interview will take place over the phone or in person. A questionnaire sent over email may not yield enough information. This kind of data collection is best done face to face. “The interview method of collecting data involves presentation of oral-verbal stimuli and reply in terms of oral-verbal responses” (Kothari, 2004, p 97.). There are many benefits to using the interview method. More information that is involved in an interview and can be more comprehensive (Kothari, 2004, p.98). With interviews, there is also an allowance to be able to change on the fly, the questions can be reworded on the spot to obtain a better understand from the interviewee.

“Every effort should be made to create a friendly atmosphere of trust and confidence, so that the respondents may feel at ease while talking to and discussing with the interviewer” (Kothari, 2004, p.100).

The perspective that the research will focus on is that of the companies that ship through air. There will be two selected companies that ship with air that will be asked for an interview. The aim is to gain their perspective about air shipping and the impact of sustainable packaging. The motivation behind the company perspective is that it is just more feasible than asking the shipping companies themselves. As well as more feasible, the companies sending their products are the ones who are aware of what packaging they are using and the effects of it. The shipping or freight forwarding companies simply accept the packages and ship them.

3.2 Data Analysis

Data analysis can be demanding when dealing with qualitative data. This being said because qualitative data does not have any discernible numbers to go from, it also does not show any numerical outcomes. Whereas with quantitate data the data is all numbers and can be easily analyzed. Qualitative data does not show numerical outcomes.

The data will be analyzed by content analysis. Content data analysis is done in four steps. Step one is decontextualization. Step two is recontextualization. Step three is categorization. And finally step four is compilation. (Bengtsson, 2016)

The data analysis is better understood when looking at the figure below.

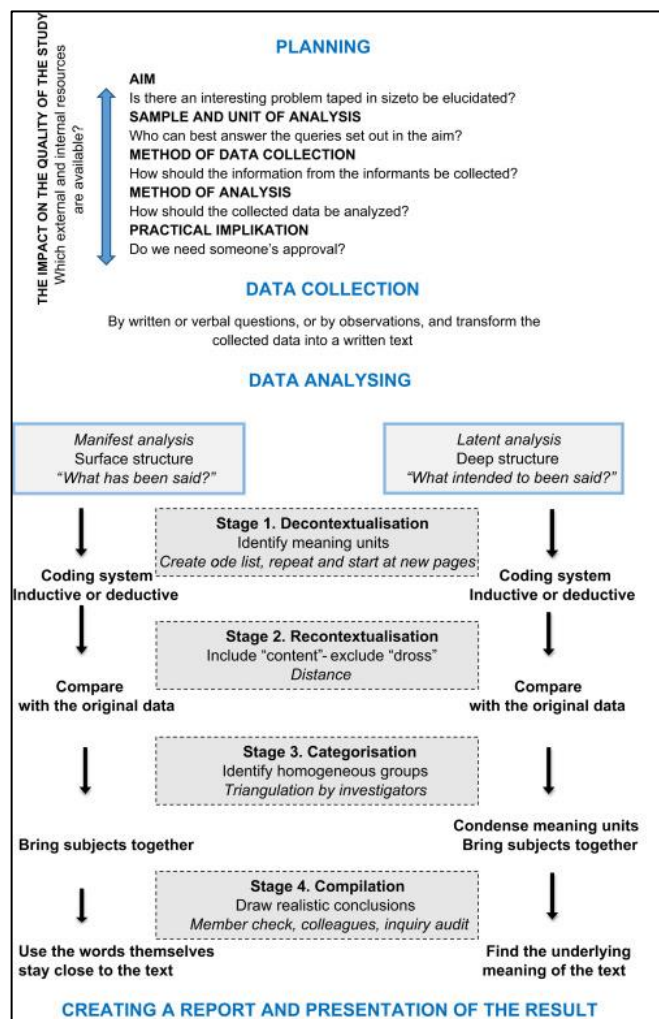


Figure 4 How to: Qualitative Content Analysis (Bengtsson,2016)

The analysis is more open to interpretation. The main problem with content analysis is that it is done by humans, thus allowing for the possibility of human error to occur. The data from the interviews will be analysis to see if there is a common denominator. The concept is that, does sustainability affect a company's choice of packaging in air transport. The analysis of the data will hopefully result in the ability to see which materials are used, and if there is any consideration in accordance with sustainability.

3.3 Validity and Reliability

The validity and reliability of research is essential to sound research. Validity can be defined as "the quality of being well-grounded, sound, or correct" (Merriam-Webster).

With that being said the research needs to be done properly in order to maintain validity. The interview will remain controlled with only two people in the interview, the interviewer and the interviewee. This way there is no possibility of outside influence for the interviewee. While conducting interviews to make sure that the interview guide is followed and that all the main questions are answered.

Reliability on the other hand means “the quality or state of being reliable” (Merriam-Webster). Which in turn means that is it able to be depended on. This is difficult to measure with qualitative research. Can the answers of people be relied upon? The questions asked in the interview leave room for human error which can in turn make the interview unreliable. However, this is somewhat to be expected with qualitative research as the data is not numerical and cannot be fully relied on.

4 RESULTS

Two companies were interviewed for the interview process. The companies were selected by the criterion that they both ship items via air. The first being STERIS Finn-Aqua a company based in Finland and the other, Automated Packaging Systems located in The United States of America. The companies were interviewed following an interview guide which included eight pertinent questions. The aim of the interviews was to answer the initial research questions presented in chapter one. The interviews were obtained face-to-face and by video call. The interviews were recorded with permission from the interviewee, then later transcribed.

4.1 STERIS Finn-Aqua

STERIS Finn-Aqua is the Finnish branch of the larger company “STERIS”. The company mainly ships by air water stills, sterilizers, and large pieces of equipment. Furthermore, STERIS Finn-Aqua does not usually ship by air, only when they need express shipment. The equipment is packaged in fiber wood crates. The crate has a wooden bottom with fiber board sides. Also, the crate has a sheet of plastic on top of it to protect it from the rain and elements. The packaging material is chosen because it keeps the products safe and keeps the equipment secured safely inside the crate. The company follows their S.O.P , standard operation procedure, as guidelines for packaging and shipping and as well as ISO standard in Europe. When asked “what are

the main reasons you use the packaging material you use” it was the same answer as prior, to keep the equipment safe when shipping by air. When asked if they take into consideration sustainable packaging options when shipping by air, all the materials they use for the packaging of the equipment is recyclable. When selecting materials for the equipment that STERIS Finn-Aqua manufactures, they always chose recyclable materials and kept materials to a minimum without compromising the quality of the item. This is how they keep sustainability in their core values.

4.2 Automated Packaging Systems

Automated Packaging Systems is the second company that was interviewed. The company mainly ships bubble wrap and plastic bags via air transport. As well as the company also ships some machinery but primarily bubble wrap and plastic bags. The main packaging used is cardboard to encompass the rolls of bubble wrap or plastic and then if it is large enough it is put onto a pallet. The value of the items being shipped affects the choice of packaging materials used. They do not want to have damage to their items. “Over time you figure out what’s the best way to protect your product without incurring damage.” The company follows guidelines to minimize damage and to keep the product as safe as possible with minimal cost. So, the primary reasons they use the packaging they use is for cost efficiency and protection.

They also take into consideration sustainable options in a few ways. They are big into recycling and as well as bio-materials. “ things that can break down and have the least impact on the environment”. The company includes sustainability in their core values as well as it is reflected in their mission statement, shown in figure 3 below. The mission statement is from the company “SealedAir” which is the parent company to Automated Packaging Systems. The company implements sustainability in the everyday work environment. “Oh I get that it's well with this mission statement coming from the top. So it's you live and breathe it. Top management all the way down to customer service and production”.

Our Purpose

Our Sealed Air purpose statement encompasses the reason for our business' existence, the value we provide as a business, and the impact we wish to have as a business and as individuals. It is our reason for being, for coming into work every day and for relentlessly challenging ourselves to improve and grow.

Everything we do and every decision we make should create value for our customers and our shareholders. We will not succeed unless we are able to find the ideal operational balance between our products, our price and our commitment to sustainability.

We don't just protect products from damage or food from spoilage. We protect against pathogens and food borne illness. We protect our brands from reputational risk. We protect our customers' operations from waste and unnecessary cost. And we create products, processes and partnerships that help protect our planet.

We are in business to protect,

to solve critical packaging challenges,

and to leave our world better than we found it.

We are proud to have a reputation as leaders in innovation. But we don't stop with ideas and concepts. From our labs and manufacturing sites, to our teams in the field, we are committed to doing whatever it takes to solve problems for our customers and finding better, more efficient ways of getting things done.

The way our world buys, sells, creates and consumes is constantly changing, resulting in a cascade of complex problems that affect industries, governments, and people around the world. We have a responsibility to wield the power of packaging to ensure food safety for all consumers, reduce the gap between food that is wasted and people that go hungry, to stop carbon waste before it occurs, and to create new infrastructure for the collection and reuse of the world's plastic.

We have the humility to admit that we alone cannot save the world or reverse all the effects of global consumerism. But we also have the science and the strength of will to make a major, meaningful impact on the environments and communities in which we live and work, and to set the pace for what sustainable packaging can be. We also believe in the capability of each Sealed Air employee, no matter what their role,

to have a measurable, positive impact on the business and on our customers.



5

Figure 7 SealedAir Mission Statement

5 DISCUSSION

In this chapter the interviews are discussed, and some personal thoughts are shared. The interviews were smooth and straightforward. The interviewees were happy to answer my questions as well as add in additional information. The interviewees helped me to understand not only their packaging decisions but gave me a well-rounded idea of what their company is and what they do. The companies are not similar in the sense that they ship very different items, but they have many of the same ideas when it comes to packaging. It is interesting to examine the contrast between a Finnish company and an American company. This is because although both are western countries the cultures vary substantially, as well as their standards. America is notorious for being a consumer economy, so it was intriguing to see that Automated Packaging Systems was really into being more environmentally friendly. With that being said it is difficult to say whether they are actually more into it or if was just relayed across better in the interview process. STERIS Finn-Aqua on the other hand, had as well an environmentally friendly approach, however, was not as emphasized. It could very well be that they have more

sustainable practices, but it was not brought across in the interview as strongly. Hence a downfall of interviews, is that not everything can be said. As much as interviews aim to be thorough there is always something omitted.

Both interviews conveyed their use of recyclable materials for packaging. The companies benefit greatly by this for potential customers as previously stated in 2.1.3 “sustainable packaging in shipping”. STERIS Finn-Aqua and Automated Packaging Systems both use sustainable packaging materials when shipping by air, that can act as well as a marketing strategy to market their environmentally friendly decisions to potential customers. For STERIS Finn-Aqua in particular, sustainability was not a major consideration for long-standing customers. Long-standing customers already have a well-established relationship with the company and trust their decisions. To a vast majority of people now it is important to purchase and ship with sustainable companies using sustainable options. As well as other benefits the companies have gained due to their packaging decisions refers back to 2.2.1 “Benefits of Packaging” the companies are in line with many things stated. The use of recyclable packaging is convenient. Not only is the packaging convenient it helps to protect the product physically. Both companies have protected the product using minimal packaging, and sustainable options. Using a sustainable option for packaging can just as safe as traditional packaging.

Both companies responded saying that keeping the product protected was a main reason why they chose the packaging they chose. Furthermore, comparing the packaging decisions of sea shipment, ground shipment, and air, the packaging does not vary much from one to the other. The companies both took major considerations into the safety of their products when shipping by air transport. Automated Packaging systems even stated that they had stopped using some forwarding companies because they were consistently messing up in some way. As stated in 2.2.2 “Issues with Poor Packaging” having a damaged package can create a poor image for the company as well as resulting in the company having to spend more money to make up for the issues.

It interesting to note that neither company answered “because of its environmental impact” or “it is the best for protection and leaves a small footprint” for example. Yes, both companies expressed that they are environmentally conscious, and sustainability is important to them, it was not stated directly at least when discussion which packaging materials were chosen and why. Companies were expected to talk about recycling, and their recyclable materials, and that was received in the interviews. From both interviews

it was found that the environmental impact of packaging materials is taken into deep consideration, as well as both companies made sure to not use an excess of materials in packaging. I did not have much expectations prior to researching the topic. Nowadays companies have an obligation to be sustainable and eco-friendly. There is more pressure with the growing concern of climate-change and other factors for companies to keep up with the trends and become more environmentally friendly.

The research conducted was important and valuable. Although the small sample size, the companies relayed valuable information in the topic of sustainable packaging in air transport. I believe the research questions were in the right order to get a true response from the companies. As well as I felt though they were the right questions to ask to gain answers to be able to compare to the initial research questions.

Improvements could have been made up expanding the interview guide. After the research was conducted there were still some things that could have been asked. There could be some gaps in this research as I did not ask about pricing differences between the packaging they use now and what it would be if they used a traditional non-sustainable option. From prior research of the companies I did not know what to expect of their packaging decisions in air shipping. I assumed that to some extent both companies would be conscious of sustainability and making sustainable decisions. I did not expect that both companies would be so similar with many aspects due to the fact that they are on different continents and ship different types of items.

5.1 Possible Further Research

There are multiple ways that this research can be expanded upon and broadened. The fact that there were only two companies interviewed does not represent all companies packaging decisions when shipping by air. In future research more companies could be interviewed as well as in all different types. The interview questions could be expanded upon to create an even better picture of company's packaging decisions. For example, asking after knowing what kind of packaging materials they use, asking if they are virgin materials or are already recycled material being used again. Thus keeping the materials in use for longer and leaving a smaller climate footprint. Another interesting expansion upon this research is to see packaging decisions for not only air transport but ground and sea transport. It could be interesting to see how packaging decisions differ by type of transportation chosen. This is due to the fact that there are different

regulations when shipping by air, sea, or ground. The conditions differ quite drastically from one to another. Another thing could be that instead of picking a wide variety of types of companies there could be a study done with just one type of company but then many companies that are able respond. That would create an in-depth research in just one specific type of a company. This topic is a relevant and current issue so it can be adapted and expanded upon in countless ways.

6 CONCLUSION

Sustainability is an important and relevant issue today. To answer does sustainability affect company's choice of packaging in air transport, in short, the answer is no. From the scope of this research, sustainability has a small effect, but the companies interviewed do not revolve all packaging decisions around sustainability, they have other considering factors such as cost, product safety and quality before sustainability in packaging via air transport. The companies do make sustainable decisions, but they are not specific to air transportation. Is sustainable packaging beneficial in air transport? From this research it is beneficial. Although it is beneficial it is not specific to air transport. The primary considerations for air transport from this research are weight and volume. It shows that companies are following the trend with sustainability. As well as with the growing trend, sustainable options are becoming more readily available.

The aim of this research was to understand sustainability's effect on companies packaging choices in air shipping. Sustainability plays a large role in packaging decisions when shipping by air. Automated Packaging Systems and STERIS Finn-Aqua, companies from opposite ends of the Atlantic Ocean both take great consideration with sustainable packaging decisions. The companies show they are using sustainable options and are only going to improve upon those as new things come along in the sustainable packaging industry. Moving forward, sustainability will continue to play a large roll in companies and in packaging, and it is important for other companies to follow suit. With the rapidly growing shipping industry, especially by air, it is ever more important to choose sustainable options whenever possible to have the smallest environmental impact.

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APPENDICES

1. Interview Guide

1. What do you ship mainly by air?
2. Which packaging material do you use most when shipping by air?
3. What affects choice of packaging material?
4. Is there any packaging guidelines your company follows?
5. What are the main reasons you use the packaging material you use?
6. How do you take into consideration sustainable options when shipping by air?
7. Does your company include sustainability in their core values?
8. How is sustainability implemented in your company?

2. Automated Packaging Systems Transcription

Pauliina: Yeah, yeah, but is that fine that I use your company name in my thesis? Sure, yeah.

Respondent 1: OK, I mean, I work for a company called Automated Packaging Systems.

Respondent 1: Yeah, but we were bought out about one seven oh, maybe nine months now by my parent company is Sealedair. Yeah. And that's in my email address is now sealedair.com.

Respondent 1: OK, so yeah. Either one. I don't think it's a problem.

Pauliina: OK, cool. Yeah. I'm not, I'm not really exposing any secrets or anything.

Respondent 1: Depends on what you ask me

Pauliina: now and they're pretty basic questions but OK. Yeah I'm going to, I'm just going to write down the names so I don't get them wrong.

Pauliina: Um you said, So you said the your original company was what?

Respondent 1: automated packaging systems, and that's currently, you know who I work for.

Pauliina: Yeah

Respondent 1: but probably I can imagine in 2021 will be they're going to change our officially change our name to sealedair. All right.

Respondent 1: So at the moment I'm automated parking systems, but yeah. So it's sealed. S-E-A-L-E-D-air.

Pauliina: Yeah. OK

Respondent 1: we were we were a million dollar company, multimillion dollar company. And now, sealedair, there's a billion dollar company so.

Pauliina: Oh really.

Respondent 1: Yeah.

Pauliina: That's crazy. Yeah. Yeah. I just have um how do I ever go. Was loading on my iPad but I just have. Yeah. Seven No this is eight questions, but I don't.

Respondent 1: I'm only doing seven.

Pauliina: Well, the first question is, what do you mainly ship by air by air,

Respondent 1: and so our company does a couple of things. We we are plastic bags.

Pauliina: Yeah.

Respondent 1: All right. But along with the plastic bags, we also do bubble wrap.

Pauliina: Yeah.

Respondent 1: So two different, obviously, product lines, but made from the some of the same type material.

Pauliina: Yeah.

Respondent 1: And then we also do machinery too.

Pauliina: OK,

Respondent 1: those are the biggest ones. I've theres other things things we ship on a smaller like parts and things like that.

Pauliina: Yeah.

Pauliina: And then which packaging materials do you use most when shipping by air

Respondent 1: umm cardboard that encompasses the rolls of plastic or the boxes of bubble wrap.

Pauliina: Yeah,

Respondent 1: so we're using cardboard and then obviously if it's big enough you're using pallets to hold the cardboard boxes on the pallette. so does that kind of answer your question?

Pauliina: Yes,

Respondent 1: Yeah, I could go further and we ship machinery we're using. Some wood to keep things in place that again, those are on pallets too.

Pauliina: Yeah. And then what, what if. Yeah. What effects is that. Number three. What effects. Yeah. What effects your choice of packaging material.

Respondent 1: Oh, well, value comes into play, how much I mean, the machinery can be several thousands of dollars. I mean, but when you're talking plastic, it's sometimes most of the time it's not high value. So value comes into play. You know, obviously, you don't want to have claims and you don't want to have damage to your product.

Pauliina: Right.

Respondent 1: And so you use over time, you figure out what's the best way to protect your product without incurring damage.

Pauliina: Right.

Respondent 1: You know,

Pauliina: and then are there any packaging guidelines your company follows you?

Respondent 1: Yeah. Yeah. You know, just just to minimize damage, the guidelines would be to keep the product as safe as possible with a minimal cost.

Respondent 1l: I mean, that's kind of goes back to the last question,

Pauliina: right? Yeah.

Respondent 1: You know, yes. This is you know, you just want to want to make sure that you don't have a lot of damage.

Respondent 1: And you also want to take you find out that certain carriers are known to damage product, whether that's an LTL carrier. Yeah. Or freight forwarder. And if they have a high, you know, there's a lot of damage, a lot of claims of that carrier. I know that we've made decisions from a domestic standpoint that we won't use a LTL carrier

because they seem to toss our product around and damage it a lot. That's that's counterproductive. Counterproductive,

Pauliina: right.

Pauliina: And then what are the main reasons you use the packaging material you use? you kind of already said for cost and ?

Respondent 1: And for protection. You know, if you don't have any protection, you know, you're going to have a problem. And that's why our you know, our bubble wrap comes into play, too, just like anybody, you know. So when you order something from Amazon.

Pauliina: Yeah.

Respondent 1: You know, the bubble wrap is inside that is going to protect the thing. So now you want to use the right bubble wrap and you want to make sure it maintains its bubble. It's so that if you're ordering a glass product from China that it doesn't reach you in pieces right. Yeah. So I mean, yeah. So I mean, depending, you know, you want to make sure that you have proper packaging and it's important to keep whatever you're shipping secure.

Pauliina: And then how do you take into consideration how do you take into consideration sustainable options when shipping by air.

Respondent 1: We're big into recycle. Well, we weren't recycling material but bio materials.

Respondent 1: Those are big. So things that can break down and have the least impact on the environment.

Respondent 1: That was a big thing to my my new parent company right now.

Pauliina: Yeah,

Respondent 1: the sustainability. And it's real important to them. And then obviously it's important to us. That's why we had biomaterial and recyclable material. You know, now it's, you know, the keep the keep the impact or imprint on the environment as minimal as possible is kind of in our mission statement now too.

Pauliina: Yeah. So then the next question is, how does your company include sustainability in their core values?

Respondent 1: We do at sites like I said, it's in our mission statement. I could send that to you. You probably want that, right?

Pauliina: Yeah, that would be nice. Thank you.

Respondent 1: It's now that you're giving me an action I got to write it down, which is a

problem because, you know, if a company has put out things here that know from the president about the sustainability.

Respondent 1: So I'm kind of like what our mission statement is and and anything else.

Respondent 1: But that highlights the sustainability, right?

Pauliina: Yeah.

Respondent 1: Just yeah. And I got it.

Pauliina: OK, cool.

Pauliina: And then how is sustainability implemented in your company like overall.

Respondent 1: Oh I get that it's well with this mission statement coming from the top. So it's you live and breathe it. Top management all the way down to customer service and production.

Respondent 1: Maybe they make it a core value and an important role that we all should be eyeballing as our goals and our company goals and personal goals as to how to best to obtain it.

Pauliina: Yeah.

Respondent 1: So, yeah, they've made it a very important part of our sustainability over just to just our, our core values.

Pauliina: Yeah.

Respondent 1: So I guess when I, when I show you our mission statement or maybe some other broadcast stuff, it'll, it'll kind of show you that this is something that snaps systems practice, but it's preached.

Pauliina: Right. Yeah. OK, that's that.

Pauliina: All my questions. Thank you very much.

3. STERIS Finn-Aqua Transcription

Respondent 2: It's a very large company called Steris S-T-E-R-I-S.

Pauliina: Yeah

Respondent 2: and they have also kind of health care products. Pharmaceutical side products.

Pauliina: Yeah

Respondent 2: And what we do here in , we build machines that pharmaceutical industry uses.

Pauliina: Yeah

Respondent 2: In in their production or in their for their clients like this Pfizer, you know, the famous Pfizer now that came first.

Pauliina: Yeah.

Respondent 2: With this drug. Yeah. That's one of our biggest clients. Right. Yeah.

Respondent 2: OK, and we build machines here. They're sterilizers now or they.

Pauliina: Oh yeah. We have one or like it at work. We use one of those.

Respondent 2: OK. Those are probably some tabletop models that we don't do. Yeah. Too large. Yeah. We get it through.

Respondent 2: Oh yeah. So, so what we do is it's like a true sterilization because the products are used on humans. Yeah. It can be like Pfizer in product that has to be sterilized.

Respondent 2: Yeah. You know, not necessarily the drug inside but the device around it. Yeah. So that you know, when somebody puts a needle in you can be sure it's sterile.

Pauliina: Yeah. Yeah.

Respondent 2: Don't get any, any diseases or anything like that, you know, whatever.

Pauliina: Yeah.

Respondent 2: Or it's the sterilized product parts that they need in their own production to make this end product.

Pauliina: Yeah.

Respondent 2: Go out. Yeah. So those are basically shortly shortly where we do and then we build water stills used in generators, So the water still is, it's about distillation.

Respondent 2: So let's say if you go to a hospital and you need something, you know, through your veins, like just liquids or or drug, you know, you've seen a million times those bags.

Respondent 2: Yeah, that hang near patients beds.

Respondent 2: So the the water there has to be sterile, you know. To put in your immune system. So we make that those machines that make that water.

Pauliina: Oh OK. Interesting.

Respondent 2: Let's see, I haven't looked at our pages.

Respondent 2: So I all myself was like, oh, this is like this guy who is the head of our purchasing department.

Pauliina: Mm hmm.

Respondent 2: See what we have here. All right. This is what I want to show you the pictures.

Respondent 2: Because, of course, they didn't have what I wanted to show you. So

Pauliina: always when you want to find something.

Respondent 2: Yeah.

Pauliina: Do you guys work and finish or do you work in English?

Respondent 2: Well, of course, the people at the factory we all finish, but like myself, I use English half of the day.

Pauliina: Yes.

Respondent 2: You know, I talk so much with clients in English. It depends.

Pauliina: Mm hmm.

Respondent 2: But the official language of the concern is obviously the headquarters you mentor. OK, yeah, yeah. This was a bunch of horse**** that I found here, huh?

Respondent 2: Yeah, I was thinking that, you know, probably all the exporting companies would have to be maybe a better choice, uh, you know, for you to get some interviews.

Respondent 2: Yeah. You know, if out a couple months are not enough, uh.

Pauliina: How long have you been working for them?

Respondent 2: Oh, an awfully long time. you know What actually happened?

Respondent 2: You know, the company that I went to work for actually almost 34 years ago was a very small company. You know, a Finnish family was owning it. Yeah. And they actually became pretty famous for what they did, you know, because they they they

were the first ones to do like a high quality steriliser actually to the U.S. market. Yeah. And and.

Respondent 2: And the company was established back in 1930s and was purely domestic, you know, and, you know, doing the work internally in Finland and then during the war time, you know what to you know, they were helping the Finnish army.

Respondent 2: And when the war was over, then Finland was rebuilding itself. So all the hospitals, you know, were built you know, the big hospitals like the Helsinki Hospital. Yeah.

Respondent 2: All the big cities like Turku, Tampere, Oulu, you name it. The domestic market, kept the company busy for years and years and years. And they finally they went international back in 1970s with this water still as I was just describing to you.

Pauliina: Yeah.

Respondent 2: Yeah. And and and ever since it's been like, whatever, 90 percent of the production is going abroad. It's a very or North America. It's a very strong market. Always has been. Yeah. And it's still. And in Central Europe. OK. Of course, South America and this, you know, Far East and all that. But those, you know, Europe and North America really the in the main.

Pauliina: Yeah.

Respondent 2: I have gone through these pages, I don't really remember myself. I don't know why. Oh, no. OK, so this is what I wanted to show you.

Respondent 2: This is one of the sterilizers we built. Yeah. This load here, it's actually a whole bunch of small bottles.

Pauliina: Yeah.

Respondent 2: So it's something, you know, our our customers, you know, put their drugs into.

Pauliina: Yeah.

Respondent 2: And this is the whole steriliser and we have all different kind of sizes of these and different, you know, level of quality of these. But this is a very good basic picture how the products look like. Yeah. And the reason I wanted to show you these that now when you are talking about the airfreight, you know, these are rather large pieces to go on.

Respondent 2: I'll show you the other other ones still here. I'm not used to that. That's all. I have it. Oh, my gosh. What I kicked myself out? Oh, I was good. All right, let's go back. I just thought I'd show you this couple pictures so that it's not so abstract.

Pauliina: Yeah,

Respondent 2: I know what I'm talking about. Yeah, it makes sense to use a code to get into the system securities and. And see if I can find you the water still. I could talk for hours on this, but I'll save you.

Pauliina: I understand when you work for something, you could talk about it forever.

Respondent 2: I wanted all right. All right, so this is the way they look.

Pauliina: Oh, my.

Respondent 2: Yeah.

Pauliina: Is it like as tall as a person?

Respondent 2: Oh, this is way taller.

Pauliina: Really?

Respondent 2: It would be good if there was a person standing next. Yes. It's probably this size here. It's one of the larger ones. It's probably about three meters high.

Respondent 2: Oh, my gosh.

Respondent 2: So. So that's why we don't do much airfreight. But we do sometimes. Yeah. Yeah. OK, so do you want to go to your questions.

Pauliina: Yeah, I can, yeah.

Pauliina: Yeah, so what do you ship mainly by air?

Respondent 2: So you saw the pictures now, so it's the equipment that we built here at the factory?

Pauliina: Yeah.

Respondent 2: Mm hmm. So, in other words, water stills, sterilizers, Pewsey generators, large piece of equipment.

Pauliina: Yeah. And then which packaging material do you use most when shipping by air?

Respondent 2: we use wood. So it's fiber wood the cases that we put or crates.

Pauliina: Yeah.

Respondent 2: that we put the Stuff in. So it has like the wooden bottom and then the fiberwood sides and yeah,

Pauliina: like a box basically.

Pauliina: Yeah. And then what effects the choice of packaging material?

Respondent 2: Actually, it is the size of the equipment and the fact that how much they weigh. So we have to make sure that the piece of equipment or the box where the equipment is going to be able to handle the weight of the equipment, the equipment has to stay in place inside the box.

Pauliina: Yeah.

Respondent 2: So we have to do all the precautions that it's not moving while in transit. Yeah. So basically we need to have strong material to hold it.

Pauliina: Yeah.

Pauliina: And then is there any packaging guidelines that your company follows?

Respondent 2: Well basically we have company S.O.P, which is a standard operation procedure.

Pauliina: Yeah.

Respondent 2: And behind there is the ISO standard, which is some standards that are found in Europe. Yeah. Yeah.

Pauliina: And then what are the main reasons you use the packaging material.

Respondent 2: Basically it's the same answer.

Pauliina: Yeah. Yeah. Because to keep it in one place and then do you take into consideration sustainable options and shipping by air.

Respondent 2: Yes, we do. And now when I was listening that we actually have fiberwood and we have wood, both of them are recyclable material. Yes. Also what I did not mention we use some plastic in there, which you can also recycle.

Pauliina: Yeah.

Respondent 2: So anything and everything in the packaging is recyclable.

Pauliina: OK, and then does your company include sustainability in their core values?

Respondent 2: Yes, we do. And the way I can put it here is that when we built the equipment that I was just telling you earlier about.

Pauliina: Yeah.

Pauliina: All the materials that we select in those, we try to keep them in the same same thinking that we want to have in the recyclable.

Pauliina: Yeah,

Respondent 2: of course, you saw the equipment. There's a lot of different kind of materials included in this, you know, metal and this plastics and there is electronics, some sort of stuff. But everything that is possible is used for recycling.

Pauliina: Yeah.

Respondent 2: And of course, we try to keep the material to minimum, but we have to ensure that the equipment is working properly.

Pauliina: Yeah. Yeah. And then how is sustainability implemented in your company?

Respondent 2: Well, basically this way with that I just described.

Pauliina: Yeah. Yeah.

Pauliina: All right, those are my questions. Thank you.

Respondent 2: If you need to say the name, who you interviewed, which companies to the company is STERIS, and you have to have that all in capital letters. Yeah. And then it's Finn like me finn, Dash Aqua and that small letters A is big and F is big.

Pauliina: Yeah. Yeah.

Respondent 2: But that's the way that the name is that STERIS big Finn-Aqua No it's two words.

Respondent 2: OK, so and then I took a photo for you. Just did you see anything, anything pops your mind. You need to find out more. Just. Yeah. You know what?

Respondent 2: So this is the way the box is, actually.

Pauliina: Oh, yeah, pretty much what I yeah.

Respondent 2: Yeah. And my. And this is this is a stark when I took this is just the one side. Yeah. To just the other details, you know, we put the plastic on top because we have to keep that material outside because those boxes are so large that we want to make sure that they don't get wet inside.

Pauliina: Yeah.

Respondent 2: So that's why we have the plastic on top. Right. Also, all the wood is treated. Yeah. Like gassed.

Pauliina: Yeah.

Respondent 2: So that, you know, some countries are very particular, that no insects or anything is coming there like China or Australia or. Yeah. Even I think U.S. has some

rules around it. And when it comes to air freighting, we actually have to a drill a small hole on a side.

Pauliina: Yeah.

Respondent 2: Particularly when it's large a crate like this.

Respondent 2: And that is so that the customs people and the people at the airport can stick in and the camera.

Pauliina: Yeah.

Respondent 2: To make sure there's no explosives or anything.

Pauliina: Yeah, they're interesting.

Respondent 2: Yeah, So I thought was there any details. There it is.

Pauliina: Wouldn't think about that.

Respondent 2: Have the basically, we don't use air freight unless, you know, the main reason is the size. Yeah, like when we deliver to us, you know, basically I would say 95 percent of the time they go by ocean.

Respondent 2: Yeah.

Respondent 2: So. So in practical terms, it means that there's a truck where this stuff gets into and he tries to somewhere in Central Europe or Amsterdam, drive them in there or whatever, where they get loaded on the boat and then they go going to whatever they need on, let's say like like in the U.S., there's many harbors that we go to. it can be on the east coast, of course, New York. So in Philadelphia, Florida if needed to. But we don't have much companies there, Boston.

Respondent 2: And then, you know, on the West Coast, of course, Los Angeles, Seattle, San Francisco, rather seldom, but I think that is one of the places, too. And then in the southern part, ah, I don't remember which one it was for Texas, which one is closest, you know, the cities there.

Respondent 2: So and when and if we need to airfreight, it's only for a couple of reasons. Customers in the rush to get the piece of equipment or we are late in our production and we need to meet the deadlines. Yeah, but the problem is the size they take off and a lot of space, and if you think of the shape of the airplane, so it doesn't really fit well, and the primary judging point is always weight.

Pauliina: Yeah

Respondent 2: but when the container or the crate is large like this, they, I think they have like a some sort of a formula that they, they count if the size is actually more of a sort of a limitation than the weight.

Pauliina: Yeah.

Respondent 2: So then they have some sort of OK, it's one point eight times this number or whatever and they charge more, as you know, if they just say, oh it's like let's say five euros per kilo and the weight is a thousand kilos, OK then from five thousand euros. Oh but now your crate is so big, blah, blah, blah, blah.

Respondent 2: They do a snappy calculation becomes the more money. OK, well which is of course somehow understandable.

Pauliina: Mm hmm.

Respondent 2: So, so this is the way where it works. And of course we have a lot of deliveries like, you know, through the carriers like UPS or FedEx, you know, excuse me if we need to send some documentation out or whatever.

Respondent 2: But those are, of course, just cardboard boxes

Pauliina: Yeah.

Respondent 2: Yeah. So I didn't think that was essential for your study, maybe. Yeah. So. So that's it.

Pauliina: Thank you very much.

Respondent 2: You're welcome.