

Waste management on cruise ships

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<p>The production of waste is a huge topic in every business branch. The question how to deal with the leftovers is asked everywhere. This of course also concerns the hospitality industry. Within this industry, the topic used to stay in the background as the main goal of the industry is to create the perfect stay for its guest. The reason for staying in a hotel or using the facilities are therefore not important. Especially for the cruise ship industry this topic is even more important, as they have to deal with limited facilities as well as limited space.</p> <p>The object of this thesis is the waste management on cruise ships. It not only concerns the common standards regarding waste management, but further shows what different groups, involved in the topic, think about the topic. Therefore primary data was collected from interviews with cruise ship industry representatives. Furthermore a survey was conducted with the persons traveling on cruise ships in the harbor of Hamburg, Germany; in the spring of 2014.</p> <p>The report further includes the description of the general waste categories produced on a cruise ship as well as the disposal treatments. Further it provides an impression on how important the topic of sustainability has become for the hospitality industry.</p> <p>The thesis closes with the conclusion. Within this very last part the research questions are answered as well as the whole topic is reviewed. The last chapter further includes the authors personal resume and suggestions for the future.</p>	
<p>Key words Waste management, cruise ship industry, sustainability, awareness, environmental impact</p>	

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1 Introduction

In a broad spectrum sustainability and thinking green have become more and more of a bigger issue in modern society. Expertise people of all types of industries think and talk about the importance of sustainability and acting green in general.

When it comes to a vacation most people stop thinking about others or their environment, as the main goal becomes their personal wellbeing.

In a hotel the traveler is nowadays confronted with energy and waste saving facilities. This can be shown through examples such as how the electricity in a room can only work while a guest's keycard is in the room. Rainwater is used for example to flush the toilets or to water the plants. These solutions are already common, and therefore no one gives a second thought to them.

As the cruise ship industry is a rapidly growing part of the hospitality industry and gains more and more importance, the question comes up: how to deal with the daily leftovers on a ship? How to think sustainable with such limited resources?

The following report tries to answer the questions stated above, and furthermore give suggestions on how to improve the standards given within the cruise ship industry concerning waste management and sustainability.

1.1 Research subject and question

The research subject of this thesis is "Waste management on cruise ships".

The author planned an internship in the cruise ship industry on a cruise ship directly, to be more specific. After lots of research in hospitality magazines, the internet, several kinds of articles and brainstorming it was concluded that the subject of the thesis should be related to the internship as well as to the trends and changes in the hospitality sector. Nowadays sustainability and waste management are one of the biggest issues

the hospitality sector is dealing with. This is not only the case because the topic is all over the media, but the industry is known to have a huge environmental impact.

To clarify the research problem and the subject the author chose several research questions that should be answered within this thesis.

The research questions of the study of this thesis are the following:

- Inventory of the current situation. What is the current situation and how is it handled?
- Perception of the situation. How do the related parties experience the situation?
- Rules and guidelines. What rules are given currently and how are those obeyed?
- Ideas for improvement. What ideas are there and is there any way those can be implemented?

The aim is to show the current situation based on different examples within the industry. The basic idea behind this work is to find out the current practices. Furthermore there will be a glance at what the passengers think about the topic of waste management on cruise ships or how they experience it at all. After all it can be said that the current situation will be investigated, weaknesses will be identified and solutions will be suggested, as far as possible.

The industry may benefit from this thesis, as it also will provide an outlook into the future as well as give suggestions for better solutions. Of course companies in the industry might have their own departments working on this topic night and day, but the author as an independent and outside observer might deliver a different point of view, that might help the companies to rethink their current plans. As this work will compare different companies, the companies involved in this thesis may also gain the opportunity to compare their programs to the competitors programs and therefore deliver new ideas to all of them.

1.2 Research methods

In order to reach the best possible outcome data and result wise, different research methods were applied to this thesis.

The first step is to get an overview of the topic. To receive it, literature reviews were the first choice. Books, specific journals, newspapers, magazines and several websites were chosen.

The literature review not only gave an overview, but also helped to get deeper into the topic. As the cruise ship industry is growing there are a lot of sources that state different opinions and therefore give a wide range of knowledge from the beginning.

Primary research was part in the research methods twice. First of all interviews with responsible representatives of the cruise ship companies are the most important information source. The companies selected for these interviews mainly operate on the German market. This means that the trips are planned to suit German travelers and the language aboard the ships are German as well.

The persons interviewed stated that they do not want their companies named in this public work. If the companies should be named they wanted the right to black out whole paragraphs of this thesis. As the delivered data are of highest importance for the value of this research it seemed impossible to black out whole passages or change them the way the companies wished. Therefore the author and the thesis supervisor came to the solution, that the companies should not be named. In order to keep the information as confidential as possible it has been decided, that the persons giving the interviews will not be named as well as only the interview questions will be published.

The second method of collecting primary data was from the cruise ship passengers directly. As the author was not given the opportunity to do this on a ship during the journey, she handed out the survey to passengers arriving with ten different ships of different companies in the harbor of Hamburg. This survey was not concluded in one day but over one month to give a wider range of influences on the passengers.

Within the studies at the Haaga Helia University of Applied Sciences the author had to fulfill a six months internship which was planned on a cruise ship. The internship was cancelled last minute. As the author already put a lot of effort into this work she decided to stick to the chosen topic. Although she would not gain her own experiences with the topic she got firsthand information about the real practices from friends, former coworkers and fellow students that work or have been working for cruise ship companies.

Then the author got into trouble with confidential information from her sources. To ensure her topic as well as the information used, she collected a lot more data than she planned in the beginning. Using all the different data she got a wide and deep view into the topic. This way it was ensured the topic was implemented correctly for the thesis.

1.3 Research purpose and justification

This topic was chosen because of the authors personal interest. Furthermore the author wanted to link the work during her last study required internship to the work for this thesis. The author is sure that this topic will deliver an enormous outcome, regarding several points:

- This thesis can show the other side of the cruise ship industry and therefore will function as an eye opener for the customers as well as the industry itself.
- The work will provide an outlook to the future of the cruise ship industry and provide suggestions for improvement.
- The cruise ship industry can show what they are already doing to change the situation regarding waste management on cruise ships.
- The travelers interest in sustainability during a cruise can be evaluated directly.
- The personnel's influence on the working procedures as well as the implementation of their ideas can be shown as well.

1.4 Contents of the following chapters

All the chapters can be obtained from the table of contents in the beginning of this very thesis.

Chapter 2 and 3 provide the theoretical framework that helps the reader to get an insight in the topic. Furthermore the information given in those chapters lead to a broader, and better general comprehension of the topic.

Primary data is the main data used in this thesis. Chapter 4 describes how, why and from whom the primary data was collected. The data, which the author collected by herself, is then evaluated in this chapter as well, also with the use of self developed graphs.

The conclusion summarizes the end of this thesis. Within the conclusion the reader will find the answers to the research questions as well as the author's personal resume towards this thesis and its production.

The thesis closes with the bibliography, that shows all the sources used, and the appendices that include for example the used questionnaires.

2 The waste on ships

There is not only a huge waste production on cruise ships, but on every ship in general there is a huge waste production. There is the waste produced by the people working and living on the ship as well as the waste produced by the ship itself, meaning for example the waste produced from the ships engines.

An industry that is producing so much waste needs to think about how to handle this issue. The actions that need to be taken to take care of the waste are called waste management. There are different definitions. One for example states, that waste management includes the generation, prevention, characterization, monitoring, treatment, handling, reuse and residual disposition of solid wastes. Of course there are various types of solid waste as well as fluid waste produced on cruise ship that needs to be taken care of (Waste management 2014).

To give a better overview of what kind of waste is produced and has to be disposed the next chapter will provide more detailed descriptions.

2.1 Domestic waste and food debris

A cruise ship produces different kinds of waste. Domestic waste means basically the same kind of disposals everybody produces at home. A cruise ship produces a lot more of this waste as a lot of people are living on it. This kind of waste is mainly things like paper, cardboard, plastics, packaging and cans (Bavarian ministry of environment 2013).

As there are hundreds of persons on a cruise ship, one can imagine the tons of food which are on the ship as well. Although the cruise ship companies and the kitchen brigade try to calculate the food consumption as detailed as possible, it is quite hard to succeed. Every guest shall be satisfied and have the opportunity to try all the dishes available during their journey. On the other hand there shall be no food disposal at all (Berlin city cleaning 2013).

There are also laws that produce a lot of food debris as well. If a cruise ship is traveling within American coast waters the crew has to keep an eye on the milk. If they opened a package of milk they have to label it with the exact time. Once four hours passed after the opening the whole package of milk has to be thrown away. It does not even matter if it is stored chilled or not, or if it is fresh milk or long life milk, it has to go to the trash. This regulation also includes other dairy products, like cream for example (Business ethics 2011).

2.2 Waste water

A cruise ship is a swimming city. As mentioned before a lot of people call the ship their home for a short period of time.

Water is probably the main resource that is consumed on a ship. The resource is meant for drinking, cleaning, toilets and other necessities. Having said that, it is obvious that the water is not used completely, but will be polluted one way or another.

To be more specific the sewage is classified in several categories regarding the pollution (Cruise Lines International Association 2013a).

2.2.1 Greywater

Greywater is defined as sewage that is slightly polluted and free of feces. It is produced through showering, washing the hands or through laundry. The water used for laundry can only be assigned to greywater as long as no bleach is involved.

The dishwater on the other hand cannot be counted as greywater. The oil concentration as well as the food debris in it exclude this water from greywater. This water mostly is merely categorized as other fluids (Sustainable earth technologies 2013).

Greywater can be recycled quite easily. Using a biological membrane filter the sewage can be treated and afterwards used again for cleaning, toilets or laundry. The recycled water is occasionally called process water (Nolde, E.2005).

If the so called process water is then filtered and cleaned furthermore it can be turned back into drinking water quality. Many cruise ships nowadays have the capability of processing greywater to bring it back to drinking water quality (Cruise Lines International Association 2013a).

2.2.2 Black water

Regarding ISO 6107-7:2006 black water is defined as domestic sewage including feces, this basically means the sewages from toilets.

Black water is highly polluted with bacteria. Having said that, it is obvious that black water sewages cannot be recycled as easily as greywater sewages (ISO 6107-7:2006. 2006).

Black water can be divided in yellow and brown water. For the recycling of this kind of sewage this additional separation is important. The physical separation is only possible with special toilets. It separates urine and feces right away before rinsing (Lange, J. & Otterpohl, R. 2000a).

Yellow water means sewages that are mainly polluted with urine. The concentration therefore does not matter, as once the urine has gone through a toilet it is assigned to yellow water. The sewage is highly loaded with different kind of bacteria (Lange, J. & Otterpohl, R. 2000a).

Brown water on the other side is defined as sewage with a highly concentration of feces, toilet paper and other solids. The concentration of bacteria in brown water is even higher than in yellow water (Lange, J. & Otterpohl, R. 2000a).

The sewage in black water quality can also be treated to gain a better water quality again. It is by far easier to treat yellow and brown water separately if possible (Lange, J. & Otterpohl, R. 2000b).

The black water recycling cycles need a lot more work than the greywater procedures. Different kinds of filters as well as special kind of bacteria are required to treat this sewage thoroughly. The main resource used to treat black water might also be time. As one can imagine it takes a while until this highly polluted sewages are cleaned and usable again. Space is also a resource required to treat black water carefully. Having mentioned all this it is reasonable that all cruise ships only collect this kind of sewage and leave it for treatment in the harbors around the world (Lange, J. & Otterpohl, R. 2000b).

2.2.3 Hazardous fluid waste

This category of fluids is heavily polluted or really hard to dispose. It is not categorized through the grade of pollution but the kind of contamination. Basically it describes water that is polluted with several other fluids, mainly speaking of heavy oil, diesel fuel and other oily fluids (United States Environmental Protection Agency.2012a).

The treatment of this sewage needs a lot of time as well as bacteria and chemical solutions. The ships are supposed to collect all of these fluids and deliver them for disposal to the next harbor. In the past, meaning twenty to thirty years ago, the ships were still allowed to dispose even these heavily polluted fluids to the ocean while not being close to the coast lines (United States Environmental Protection Agency.2012b).

2.2.4 Chemical waste water

This chemical waste water category includes water that is polluted through chemical substances for example from photo shops or copy shops on board. The chemical waste water is probably the smallest category of waste that is produced on and within a cruise ship. As the disposal and treatment of this kind of sewage is quite laborious it is still worth mentioning it, although the amount produced through a cruise compared with the other waste categories is vanishingly low (Cruise Lines International Association 2012).

The main share is still produced within the laundry facilities. Bleaching and dry-cleaning are necessities on a cruise ship or just services offered for the guests. Although the methods and the materials changed and are nowadays further developed, the chemical waste on cruise ships is still a problem. These days only a quarter of the amount of chemical waste is produced compared to the amount twenty years ago (SeaWeb - Leading Voices for a Healthy Ocean 2013).

The chemical waste water has to be collected separately. The different chemical substances that polluted the water or fluid have to be separated as well, as far as practicable. This way the disposal as well as the sewage treatment can be handled more efficiently (Cruise Lines International Association 2012).

2.2.5 Other fluids

This category of waste water includes all the fluids that cannot be counted to other categories. Mostly this means fluids which are polluted with chemicals and oil, as well as feces (Cruise Lines International Association 2012).

Dishwater is a good example for this kind of fluids. Processing this kind of water is quite hard as it has to be treated with several different filters, bacteria and chemicals. The process is time-consuming and needs a lot of resources as well (Cruise Lines International Association 2012).

The disposal of other fluids on the other hand is quite expensive as it cannot be counted on any other fluids and needs the previously mentioned special treatment (Cruise Lines International Association 2012).

2.3 Waste disposal

Waste disposal in general is a huge topic and could be the subject of a whole thesis by itself. In the case of waste disposal on ships there are other points to consider and take care of, compared to waste disposal on dry land.

2.3.1 Domestic waste and food debris

In the past decades the cruise ship industry rethought the waste disposal. Especially food debris, which was often just thrown overboard as all of it is compostable. Also paper, cardboard and plastics were thrown into the ocean as nobody could find out where the waste came from. The change of the customers' awareness caused the industry's thinking to change to adapt to its customers. Green thinking and having a good reputation became the main goals, which is why the domestic waste as well as the food debris are nowadays disposed and recycled correctly (Tuicruises 2013a).

The aspects to take into consideration are obvious problems like the limited space on the ship. There are only a few facilities that provide the possibilities of keeping the disposals the correct way. Another important factor is the route the ship is traveling along, especially concerning the climate. While traveling in warmer areas along the globe it is a simple necessity to keep most disposals chilled. In other areas only brown waste and most of the simple domestic waste needs to be stored in special refrigerating plants. These plants keep the entire disposals at a chilled level and therefore prevent from odor development. Most cruise ships even have extra refrigerating plants. In case of a technical problem or an unexpected change to the route the ship can keep an extra amount of disposals or the technical problem can be fixed while the waste is safely stored in another plant (Costa sustainability report 2011).

The harbors on the traveling route are also a factor the cruise ship companies have to keep in mind. Some minor harbors in smaller communities or on minor islands are just not able to take the ships' and passengers' leftovers logistically. In other harbors some laws make it impossible for the ships to leave the waste for disposal. Furthermore it should be mentioned that the harbors charge a high amount of fees for the waste dis-

posal. There is rent for basically everything in harbors. Also the waste disposal is a massive component for making money for the harbor operators. While traveling certain parts of the world the industry needs to dispose the waste at certain places. The harbor operators are well aware of this fact and charge a lot higher fees for the disposal. They also have agreements with each other concerning the fees that will be charged. Therefore the companies have to plan the traveling routes even more detailed and of course carefully (Tuicruises 2013b).

2.3.2 Fluid waste disposal

In the past the fluid disposal was quite easy. All the fluids were pumped back to the ocean. The fluid waste mixed up with the ocean and therefore there was no chance to make out the source of the waste. A lot of ships used to drag along a dark oily water curtain, which showed the disposal way too clearly.

Hazardous fluids were identified decades ago. Laws prohibited the immediate disposal of any kind of fluid wastes into the ocean. Other fluids like black or greywater were still pumped to the ocean although the mentioned laws became applicable. As previously mentioned the society's awareness towards waste disposal and sustainability changed so pumping the fluids into the ocean is no longer an option.

Nowadays the fluid disposal is a whole industry of its own. The ships carry huge defecation tanks, cooling tanks, clarifying tanks and collecting tanks on board to meet the legal requirements. All the waste has to be collected in separate reservoirs, meaning different kinds of waste are collected in different containers (Toxic action center 2012).

Minor water processing plants on board of the cruise ships are a standard now. For using the water processing plant aboard the ships also need to carry different kinds of bacteria and specialized employees. This way the industry tries to reduce the waste and reuse the resource (RWO 2013). There are three reasons for this:

- Recycling the water brings a better reputation within the society, as the company is thinking green and being sustainable.

- The company is saving a lot of money, as they are only disposing minor quantities of fluid waste. This way the waste can be kind of pre-cleared, so the ship is disposing only minor polluted fluid waste.
- The ship does not need to load up as much of the resource, therefore the space, normally needed for carrying the resources, can be used in other ways (RWO 2013).

When disposing the waste the industry has to follow certain guidelines and laws. As mentioned earlier, the waste has to be gathered separately to give the possibility to dispose it separately as well. Furthermore not every country takes all types of leftovers. As mentioned before some are not able to take it logistically since they do not have the capability, meaning the technology to recycle and dispose it correctly. Others take the fluid wastes knowing that they cannot dispose it correctly only to make money. As the disposal is so expensive, it gives a wide field for corruption and illegal agreements (Mountain Empire Community College 2013).

To limit the illegal practices of the whole cruise ship industry, as well as all the other shipping companies, they agreed to follow the guidelines of MARPOL. This guidelines regulate the waste disposal as well as other environmental impacts the cruise ships produce. MARPOL for example regulates the distance to the coast that ships need to obtain when draining waste water, only the allowed categories, to the ocean.

The guidelines are followed by every company. Some companies even follow stricter guidelines. The MARPOL agreement was settled in 1973 and was revised 1978. Although the agreement is that old it is still valid; new technologies are considered in annexes which are constantly added to the agreement (MARPOL 1973/1978).

3 Sustainability in the cruise ship industry

Keeping the descriptions of chapter two in mind the topic of sustainability in the cruise ship industry in general comes to one's mind.

The public awareness of sustainability has grown over the past decades. Nowadays the media is all over the topic.

3.1 Travel behavior

The diagram from the World Tourism Organization (UNWTO) shows the travel behavior changed a lot from 1995 until today. 2012 was the year that showed over one billion international worldwide arrivals. These are not just tourists, but persons that travel for no reason but leisure reasons.

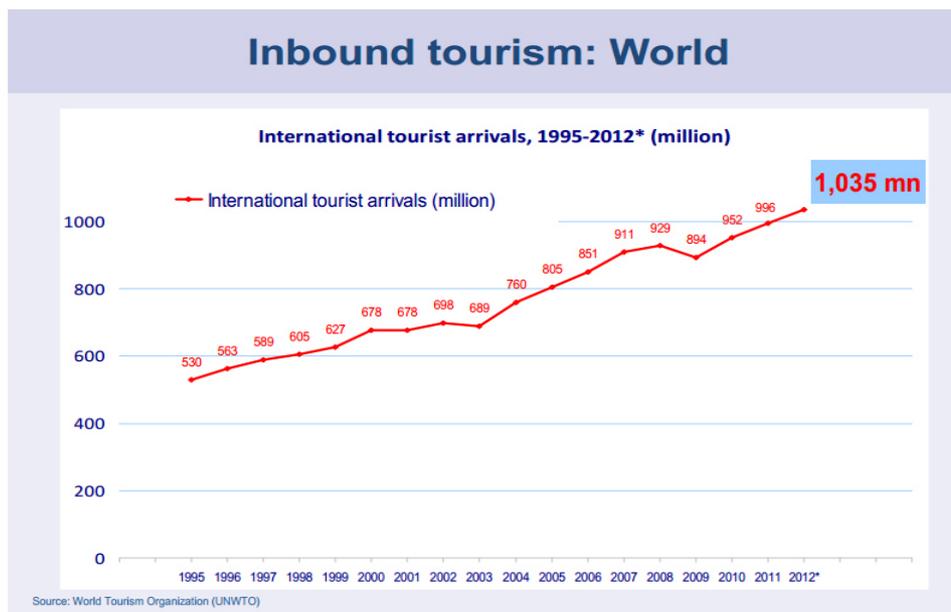


Figure 1 : International tourist arrivals, 1995-2012 (UNWTO 2013a).

As the international arrivals increase, the study leads to the suggestion that it is getting easier to travel and that people want to explore and see more of the world. This especially concerns hotels as well as the whole tourism industry, therefore this diagram is of

enormous value. It shows the fact of an increasing travel behavior in the future and therefore shows an increasing business for the industry as well.

The reasons for traveling often seemed to be unimportant. During the past decades these reasons changed and seem nowadays more important to the traveler as well as to the industry.

The world tourism organization found out that the travelers have the following reasons:

- 51% are leisure, recreation and holiday travelers
- 27% visiting family and friends, health or others
- 15% business, professional
- 7% not specified (UNWTO 2013b).

These are all travelers in general. For the cruise ship industry the meaning is obvious. Half of the travelers are still traveling for recreation and holiday reasons and that is what cruise ships are build for. As the travelers want to experience something new during their vacation time cruise ship trips have become more popular during the past two decades.

3.2 Customer awareness

In each and every business sector the company's reputation is more important than ever before. As the media gains more influence in the societies decision making process the reputation of a company, hotel or even cruise ship is probably of the highest value in gaining new customers.

For the travelers points of choosing a destination are wide spread but can be brought down to four major points:

- new destination (never been there before)
- experience with the destination (been there before and enjoyed the experience)

- reputation of destination, hotel, cruise ship, etc
- carbon footprint (thinking green and sustainable) (Lighthouse foundation 2003)

The reputation and the point of sustainability during a vacation are quite new in the travelers focus. If you would have asked the same question ten to twenty years ago most people would not have mentioned the reputation of the hotel or destination. The same can be stated for the sustainability factor.

Nowadays it is clear that the climate change is rapid and that the human race is responsible for it, which is a topic that is everywhere in the media lately. Most people want to reduce their carbon footprint and reduce their personal impact on the topic. A lot of people now start to think about doing this even on their vacations (Greenpeace 2008).

Cruise ships produce a lot of waste and exhaust gases during a trip and therefore might not be as attractive to the travelers as it was before.

4 Finding and analyzing data

As waste management on cruise ships have two lobby groups it was a simple necessity to collect data from both groups. Naming the groups is quite simple. One is the stakeholders who are the travelers. The other one is the industry itself meaning the cruise ship companies and the operators.

The author decided to collect the data separately to guarantee the smallest impacts between the groups. To clarify this, the author wanted to get honest answers without one group or even participant fearing any kind of prejudice or consequence for the given answer. The data afterwards was analyzed separately and then brought together for the conclusion.

4.1 Finding the travelers data

During her planned internship on a cruise ship the author wanted to hand out questionnaires to the travelers. The internship was cancelled last minute so the author asked friends working on cruise ships to hand out the questionnaires. Although the companies operating the ships were asked beforehand the supervisors on the ships prohibited the action, meaning the survey, in general, stating that the passengers are on vacation and therefore should not be bothered with filling out unnecessary questionnaires.

As the companies had agreed with the procedure beforehand the author protested against the supervisors prohibition with no success. The companies stated that indeed the travelers are on vacation and should not be bothered with the authors research. The supervisors aboard reacted correctly by evaluating the given circumstances and situation and prohibit the research in general.

As the passengers point of view was indispensable, another way of collecting this kind of data had to be found. It turned out the companies were still willing to help certain premises given:

- The travelers should not be interrogated during the travel.
- The questions should only regard this thesis topic nothing about the journey (especially the costs), the ship or the company operating it.
- The questions had to be approved by the company.
- The author is only allowed to ask the questions right after the passengers left the ship in the harbor.

The preconditions set up, it was clear that the data had to be collected in the harbor of Hamburg, as the author lives in the city and there are a lot of cruise ships arriving at the cruise ship terminals. To accomplish a wide spread picture of answers, the questionnaires were handed out during one month to passengers of ten different ships, operated by three different companies. The passengers also did several different trips, meaning some were on a trip to Northern Europe, others to America and the Caribbean and others were doing a round-the-world-trip.

The survey was conducted during the months of January and February 2014 over a time span of five weeks. All the questionnaires were handed out in the port of Hamburg, Germany. To gain a wider range of passengers both cruise ship terminals in Hamburg were covered.

Developing the questionnaire for the passenger survey was one of the most important steps within this research. A questionnaire needs to be as short and precise as possible. The people answering surveys are in the majority of cases in a hurry and not really willing to take some time to answer any kind of question. For this matter the author needed to narrow down the topic to easy understandable questions that could be answered by any passenger.

The questionnaire should provide a mixture of open and closed questions. This means some of the questions have given answers. The passengers just have to check their opinion on those, while others need to be answered more detailed by the passengers themselves. These questions are called open ended questions as they do not provide

given answers. The author used this technique to make sure to get data that can be evaluated.

The questions in the questionnaire were the following:

- What is your nationality?
- What is your gender?
- How old are you?
- Where did your journey go?
- Did you ever see, hear or smell something concerning waste disposal on the ship?
- Did you ever think about the waste disposal during your journey?
- Did you think about it beforehand, or now that you have this questionnaire in hand?
- Did you register any special measures concerning the waste management aboard?
- Did you think everything was handled as it should be concerning the waste produced on the ship?
- Do you have any ideas for improvement concerning the matter of waste disposal on cruise ships?

For the operating companies this questionnaire was alright and the permission for the survey was given. While conducting the survey persons representing the different companies public relations department were always close by to make sure everything went under the premises agreed on beforehand.

Furthermore the questionnaire was designed to help answer the four research questions. The goal was to get a wide range of answers to help form the author's personal opinion concerning the research questions:

- Inventory of the current situation. What is the current situation and how is it handled?
- Perception of the situation. How do the related parties experience the situation?
- Rules and guidelines. What rules are given currently and how are those obeyed?
- Ideas for improvement. What ideas are there and is there any way those can be implemented?

In the beginning of the developing process, the author had three different kinds of questionnaires. One questionnaire only provided closed questions, one only open questions and one was a mixture of both. After testing a small sample of each it clarified that the mixed questionnaire would bring the greatest out come and therefore was chosen for the survey. The closed questions where the travelers only have to check boxes will produce the general data while the open questions will help to show the travelers' thinking and experience.

4.2 Analyzing the travelers data

It turned out that the passengers were really willing to answer the questionnaires and give further information, this might be influenced by their really relaxed mood, while leaving the ship. Still it was too many people to handle for one person to conduct the survey alone. The author took a friend to help hand out, explain an then collect the questionnaires.

The questionnaires were not all valid for evaluation. Unfortunately the hand writing of some travelers was unreadable. Further there was one question added to the questionnaire. This question came up while analyzing the data from the first day of survey. This left 142 questionnaires to be analyzed.

As there were open and closed questions, as described earlier, there were also different ways of analyzing and interpreting the answers. As the society in general gains more and more influence in the peoples thinking and opinion the author could not be sure how honestly her questions were answered. In general there was no fixed scale used to

evaluate the questionnaires. Over all the validity of the answers became obvious while reading through the questionnaires. As the questions were designed as open and closed questions, there was no need for the author to develop a scale for the whole questionnaire.

4.2.1 The nationality

The question concerning the nationality was asked to see if certain prejudices concerning the awareness of sustainability, environmental pollution and waste management in general are to be confirmed. Furthermore it should help to clarify the picture of the survey group. The nationality of the participants gives a lot of validity as well as significance to the survey itself.

This was one of the questions where there was no doubt concerning the honesty of the travelers answers.

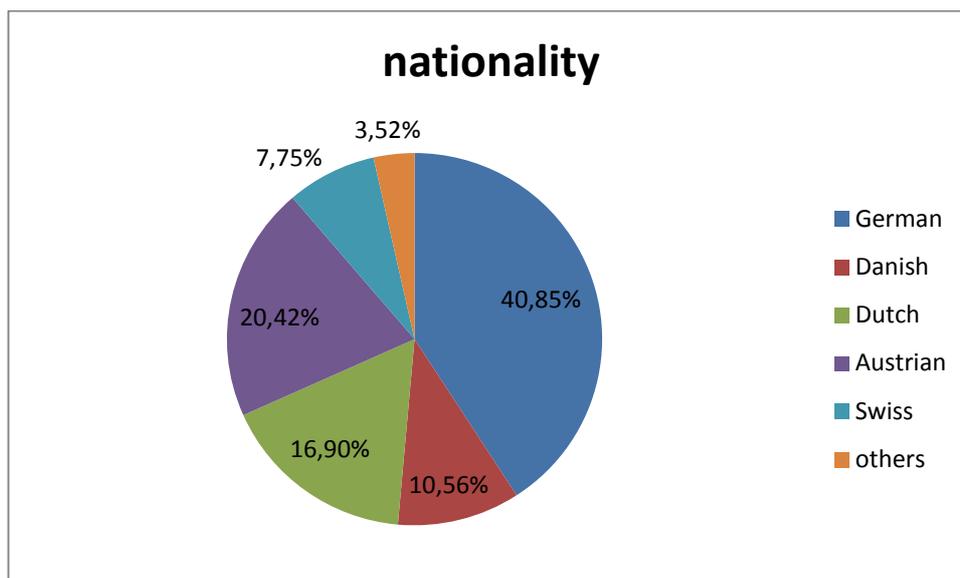


Figure 2: The passengers nationality

The nationality is stated in percentages and can be seen in the chart above. The segment named others includes five persons. These five persons are all from different origins, two were Italian and three French. To verify the clarity of this diagram the author decided to join these two groups.

Having a closer look at the origin of the survey participants, it is obvious that the main part is German or at least German speaking, including the Austrians and the Swiss travelers. This finding is for sure related to the fact that Hamburg is the biggest cruise ship harbor in Germany. For German speaking passengers there is no language barrier. They often use the point of exit for another short trip. In Hamburg for the German speaking travelers it is not only the famous sights, but also the musicals that are in the theatres all over the city.

For Germans as well as other Central Europeans it would be convenient and fast to get home to their final destination. This fact arises looking at the other nationalities given from the survey participants. Especially for Dutch travelers there are a lot of other possibilities as the Netherlands itself have a lot of harbors where a lot of cruise ship traveling is processed. The 10,5% Danish passengers also have own harbors in their country. They might have the same issues as the Dutch choosing Hamburg:

- It is close to the home destination, so it is easy, convenient and fast to get home.
- A short trip to the city after the cruise is finished is planned for the end of the vacation.
- The passengers just wanted to travel this special route on the ship which is why they end up in this combination in Hamburg.

The expectations regarding this question were perfectly met.

4.2.2 The gender

The inquiry regarding the gender was also one of the questions where the honesty was not to be questioned. The meaning of the question within the whole survey was clear from the beginning. The question was put there to make sure if the answers were given from average people, meaning no majority or minority regarding the gender.

The given answers showed that almost an equation was given.

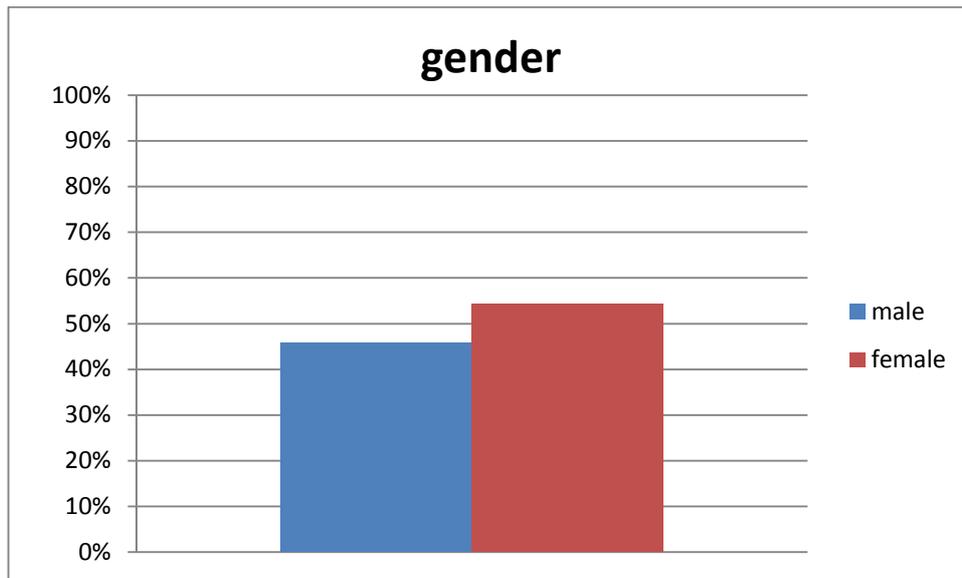


Figure 3: The passengers gender

54% female passengers facing 46% male passengers. In total number this means 77 female travelers were interviewed as well as 65 male travelers, which can be seen in the appertaining bar diagram.

This outcome leads to two different assumptions.

The first supposition might be, that most cruise ship passengers travel as couples. Stating this their civil stand and life circumstances can be left behind. Basically this means for the survey it is not important how the couples are related, married or not, friends or not, important is only the fact that the travelers appear to cruise as couples or pairs.

The second assumption is coincidence. That implies that the outcome of these questions analyze could have been any other, if the questionnaires were handed out to other people.

The second assumption might have its right to exist for any other question as well, especially the earlier handled question of origin. For the aspect of gender it is worth mentioning because the cruise ship industry is well known for its special offers for sin-

gle travelers. As there is still an equation showing it might be also an interesting point for further research.

4.2.3 The age

The age might be one of the most important indicators regarding the topic of waste management on cruise ships. One would think that elderly people with a larger life experience and wisdom about the facts of life would answer questions differently than others, not having this experience. On the other hand here should be added that the topic of waste management and disposal or simply recycling has not been a topic, the elderly generation ever has been confronted with. Decades ago while they were educated these topics just did not come up at all because the topic was not yet existing. This leads to the conclusion that the elder generation does not know more about the topic than the younger generations.

As a matter of simplicity the author formed age groups to show the passengers age participating on her survey. There were four segments formed. The sectors were named up to 25, 26-40, 41-60 and 61 and above. The proportional distribution can be seen in the following pie chart.

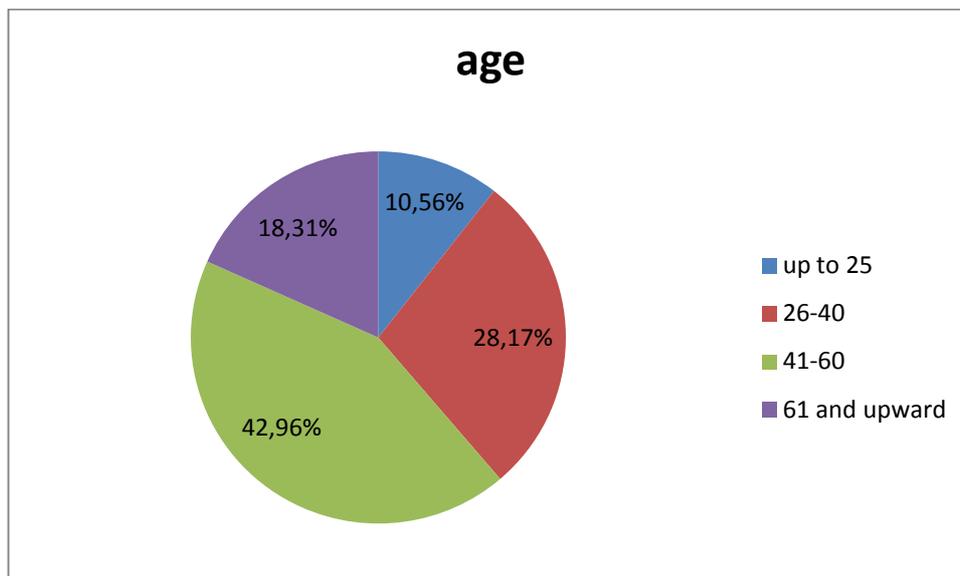


Figure 4: The passengers age

The diagram exposes that the groups up to 25 and 61 and upward only delivered only around a quarter of passengers compared to the other groups. The strongest group form the segments form 41 to 60 with almost 43% and the segment from 26 to 40 with about 28%. The prejudice that only elderly and retired persons go on cruise ship vacations is clearly refuted. Midaged people seem to be the main target group of the cruise ship industry, at least concerning this survey.

For this inquiry this means that the majority of the participants is in the middle of their lives. They are educated and trained on the one hand, as well as experienced on the other hand as well. Furthermore this leads to the assumption that the answers given to the questions concerning waste management are more honestly and less influenced by the society, media or other people's opinions.

The youngest group including the persons up to 25 is just represented from 10,6% which in total means 15 people questioned were 25 or younger. Either traveling with a cruise ship is not interesting enough to younger people or they might not be able to afford the quite expensive costs. Either way this group is the smallest represented in this survey.

As there are special offers to single travelers, as mentioned before, there are also special offers for retired persons. Having said that their segment seems to be represented poorly with only 18,3%. Here again it might just refer to the people that have answered the questionnaire but not to the passengers on the ship. Another reason for this outcome could be the ships selected for this survey. The special offers mentioned here are maybe just not available on the ships observed in this very survey.

4.2.4 The destination

In the beginning the question about the destination was only put in the survey in the function of an icebreaker. The author thought with the fresh memory of a nice vacation, the passengers were more likely to answer the questionnaire, while remembering the awesome cruise.

It turned out that from 142 passengers questioned 89 noted they have been to a trip to Northern Europe, while 32 travelers came from a trip that had started someplace in the Caribbean or Northern America. 21 of the survey participants even stated they had been on a world tour.

During the research for this topic the fact of special rules and regulations for special destinations became clearer. Therefore this question might help to find a link between the destination and the passengers experience regarding the waste management on cruise ships.

4.2.5 The passengers perception of waste disposal

To find out about the passengers perception of waste disposal the question, "Did you ever see, hear or smell something concerning waste disposal on the ship?" was put in the questionnaire.

This question is the first that is directly related to the topic of this thesis "waste management on cruise ships". Although the travelers were on vacation there was the given possibility that one or the other were suspicious and noted at least something.

The question is quite detailed in the survey. It asks directly for the senses of seeing, hearing and smelling. As 95% stated they have not noted anything the answers of the seven passengers that have observed something can be described more detailed than planned beforehand.

The only things that have been seen is the dumping of the waste in the harbor. There are several dustcarts that came to the ship to take the produced waste and deliver it to the harbors dump site. Furthermore there were fuel tankers noted. These tankers were not delivering the fuel but were taking the heavily polluted waste water which was then the first thing the travelers smelled concerning the waste.

One passenger stated that he left the bar area as one of the last persons at one night and was able to watch the bar tenders preparing the bar for the next day. He saw how

the bar tenders had different containers for everything, for storage and disposal, each labeled. Everything seemed to be well structured, organized and prepared.

Overall the travelers stated that even the cleaning and therefore the direct waste disposal was very discrete. Even the personnel cleaning of the cabins had been seen and even hardly noticed.

4.2.6 The passengers awareness of waste disposal

The passengers awareness is closely linked to the travelers perception. Both points require a thoroughly and separate consideration. "Did you ever think about the waste disposal during your journey?" is the chosen question to find out about the survey participants state of mind

The answer to this question was no. All the travelers, even those who have noticed something regarding the waste disposal in the harbors or something else answered this question with no.

This shows how sensitive this topic actually is. The companies as well as the staff aboard want to create a positive and relaxed atmosphere for the passengers to relax. There is nothing to think about and nothing to care about. The travelers are only there to relax, enjoy themselves and have a good time. The topic of waste, its production, its classification and certainly its disposal just does not fit into the picture created for the customer.

Although the topic is huge for the employees on cruise ships, as they have to make sure to follow all the rules and regulations, the passengers just do not care about it at all, because they do not have to.

4.2.7 The effect of the questionnaire to the level of awareness

The question is, if the travelers are at all aware of the topic of waste production, disposal and management, in this case of course, on cruise ships. To clarify the level of awareness question number seven was framed: "Did you think about it beforehand, or now that you have this questionnaire in hand?".

The fact is, that this question was not in the first questionnaires. While interviewing the first participants of the survey they often stated things like "I have never thought about this before, but now..." or "Well I read some stuff before, but then I just did not care during the trip". They did so answering the question in 4.2.6 "Was waste management a topic during your journey?". Therefore question number seven: Did you think about it beforehand, or now that you have this questionnaire in hand? was added to the questionnaire.

The two parted question was mostly answered with two responses. Around 90% of the questioned travelers stated that they have not thought about the waste produced on and through a cruise ship before. 10% answered that they have read or heard something about the sustainability and the carbon footprint of cruise ships before their journey.

The second part of the question was answered differently. Now being confronted with the topic directly, 38% replied they were thinking about the waste production and the disposal on cruise ships. 60% said it was too hard for them to think about it now as they just came back from such a beautiful trip. Three passengers, which are 2%, stated things like they did not care before they started the journey, so they are not caring now.

Overall the answers to this question were not surprising. The passengers had other things in mind then thinking about the waste disposal on cruise ship, environmental pollution nor their carbon foot prints.

For the cruise ship industry this is the perfect outcome. The travelers enjoyed the journey so much, even when brought to their mind directly they are not interested in the

topic. The illusion of the perfect world is created so well from the industry and especially from the personnel aboard the ships.

4.2.8 The perception of special waste management measures

"Did you register any special measures concerning the waste management aboard?" is the question phrased to find out about the passengers perception of special waste management measures.

The travelers unfortunately also answered this question mainly with no. The structures on the ship, concerning the personnel and their work procedures always seemed well organized to the passengers, so they did not note any special measures at all concerning the waste management. One survey participant stated, that every minute of their journey was planned organized and structured so they basically did not even have the time to look left or right.

The reply to this question was obvious after analyzing the question before. Apparently the passengers had other things in mind then environmental pollution or their carbon foot print on their vacation.

Further it should be noted that special measures are hardly discovered ever. The special ideas are covered in working routines so the passengers will not recognize them as such. The only possibility to display or recognize them as such is with the experience of several cruise ship journeys, meaning there is something to compare the personnel's work to.

4.2.9 Compliance of rules and regulations

The compliance of the rules and regulations is an important topic for the cruise ship industry itself. The industry needs to make sure not only the guidelines are followed, but the law is followed. Still the passengers awareness is noteworthy.

"Did you think everything was handled as it should concerning the waste produced on the ship?" is the question included in the survey to find out about the passengers point of view.

As mentioned several times already the passengers did have other things in mind while being aboard the ships. Only 21% of the survey participants, which is a total of 31 persons, did have an opinion concerning this question. 79 % persons answered the question with phrases that stated they never ever thought about the rules and regulations and therefore were not able to form any opinion concerning this question.

The 21% of the participants that were able to conceive an opinion mainly shared the opinion that the compliance of the rules and regulations was given 100%. There are reasons for this positive outcome. The passengers never made any other experience of this kind before, so they have no event to compare the new experience with. Another reason is the pure satisfaction of their journey. The perfect picture, which was mentioned before, created from the industry and especially the personnel aboard made the travelers think everything worked as it should during their journey.

Only three travelers did not share the wide spread opinion. These travelers were on longer trips and had done several vacations on a cruise ship before, as they stated in their answers. This does not mean that they were more critical than the others they just had a better eye for detail.

Overall the statements conveyed the idea that the travelers have had better experiences with cruise ships before. One stated that the personnel was not trained well enough. One used open milk containers, although new containers had to be opened. Others, who were responsible to fill up the lunch buffet just dropped the fresh stuff on top although it is common knowledge that the fresh dishes have to be put down behind or underneath the older ones. Another crew member responsible to check the public toilets aboard was seen wiping almost every surface with one cloth.

Leaving out the statement with the milk, which refers to a special law while traveling the Northern American territorial waters, the statements refer to common knowledge or international standards that are followed all over the world. The participants note

incidents that unfortunately happen quite often although the society is not accepting them and even deploring this situation. Not to follow these rules and regulations can happen through a simple careless mistake, but the consequences are certainly and definitely not acceptable.

Here should also be mentioned that special rules, regulations and laws regarding the waste disposal and management on cruise ships do yet not belong to the widely spread common knowledge. Only passengers really interested in the topic or traveled on several trips would notice these factors and therefore could judge if the rules are being followed or not.

4.2.10 Ideas for improvement

The last part of a questionnaire mostly always asks for the participants ideas of improvement. So does this survey: "Do you have any ideas for improvement concerning the matter of waste disposal on cruise ships?"

The travelers did not have any idea for a better waste disposal. Of course if they did not register the tiniest hint of how it works now, how could they give any suggestions about improving the situation.

On the other hand the survey participants did have some ideas for diminish the waste production and therefore lower the waste level, collected for disposal.

- Sea water should be used for the toilets and the pool.
- The amenities in the cabins should only be renewed when empty.
- The food especially on the breakfast buffet should not be packed in the small portion packages.

These ideas might be good ideas on some points, but definitely not the solution for the problems.

Taking the idea with the breakfast buffet. It differs from ship to ship if they are using packed groceries on the buffet or if bigger containers are presented on the buffet. Also

the route the ship is taking plays a role, in some areas the food would go stale to fast if not packed. After a certain amount of time the food presented openly has to go to the waste. There is no chance of using it again or elsewhere. The problem is clear, either the ship happens to produce more food debris or more packaging waste.

If the amenities were not constantly renewed for example some passengers would call it a poor service experience regarding the money they paid for their journey. This suggestion is a good idea, but will never come to action at all.

Concerning the usage of sea water there are experiments already going on. For the pool it seems to take a lot of treatment to process it properly. This means a lot of energy, of course, as well as chemicals. On the other hand the passengers request for a freshwater pool, as the seawater is everywhere around them. Currently it is tested by several companies to use the seawater more properly on the ship, as it is the only resource that is constantly given to the ship.

4.2.11 The survey outcome

Overall the outcome of the survey was disappointing. Although the passengers were astonishingly willing to answer the questionnaires, they had just other things in mind during their trips and therefore could not answer the questions properly or form an opinion about the topic in general.

As the number of participants was relatively low compared to the huge amount of travels the cruise ship industry lists as customers per year the author is not sure if the survey is significant at all. On the other hand the survey participants represented quite a range of age, gender and nationality and still stated the same things. They all were impressed by the well organized and planned structures aboard the ships, so they did not realize any of the measures concerning the topic.

Overall the prior assumptions cannot be reinforced nor undermined. The information given in the passengers answers were just not meaningful enough. Due to these results there was no chance to link the answers to make a clear statement. The age and the gender as well as the nationality cannot be linked to one question thoroughly.

The question answered in chapter "4.2.9 Compliance of rules and regulations" was mainly answered by female survey participants. In general only 21% of the questioned persons had an opinion regarding this topic which was a total of 31 persons. This question was positively answered from 26 female passengers compared to five male passengers that were able to form an opinion towards the topic. This leads to the assumption that females are more interested in the environmental impact of their doings as male travelers or they just have a better eye for detail, so the tiniest hints given by the personnel aboard comes to their awareness.

Due to that fact the author decided to collect additional data from the personnel working on cruise ships. The crew should know best about certain measures, rules and regulations disposed by the companies to keep the given guidelines and get the maximum outcome with the minimum input. This data will be analyzed within the industry's data.

4.3 Finding the industry's data

The industry's data were collected from two interviews as well as websites showing the companies guidelines. The interviews were with two different cruise ship operators. The persons interviewed were responsible for public relations and customer relations.

As the companies are direct competitors both wanted to know the information given from the other person. Furthermore they wanted to change passages of this thesis according to their business practices, public relation strategies and of course because they just wanted to look better than their competitor.

Due to this the author decided, in agreement with the thesis supervisor, not to name the companies nor persons interviewed as she feared the validity of her thesis might be lost, with the companies changing entire paragraphs of her work. Those responsible for the companies agreed to that, so the sources will remain unnamed.

Furthermore the personnel working aboard the ships were interviewed. This step was not planned in the beginning. After analyzing the travelers questionnaire and finding the poor outcome the author decided it was necessary to find another source for in-

formation. Therefore the personnel working on different cruise ships were consulted. The persons either just finished their work on the ship or were currently employed by a cruise ship company.

4.3.1 Developing the industry's questionnaires

Developing the industry's questionnaire was one of the essentials during the work for this thesis.

There were two interviews with cruise ship company representatives. The author decided to ask both representatives the same questions to create the opportunity to directly compare the answers to each other. Another option would have been asking the representatives different questions to gain a higher amount of information in general. This could have led to a more detailed point of view but on the other hand differences between the companies would have stayed concealed.

As the goal of the interviews was to gain as much information as possible the questionnaires were designed with only open questions that did not give any hint towards the required answer. For comparability it was already mentioned that both interviews proceeded with the identical catalogue of questions.

- What is the size of your company?
- What is the company's attitude towards sustainability in general?
- How is the waste management currently regulated on your cruise ships?
- Are there differences between the ships regarding their category and the standards?
- Does your company provide special rules and regulations regarding the waste management?
- If so, how is the company developing these?
- How does your company make sure the personnel is following the restrictions?
- Have you ever been on a cruise ship journey yourself? What is your personal experience?

- Does your company have specific plans for the future, to improve the current situation?

The same issue had to be considered while developing the questions for the cruise ship personnel. Providing them with the same questionnaires would deliver better comparability while asking them different questions would deliver a wide spread picture to be analyzed. As the personnel itself as a source was added later to this thesis, it was easier to provide only one questionnaire for all participants.

The questions on the questionnaires for the cruise ship personnel were as well designed as open and closed questions.

- What is the size of your company?
- What is your company's general attitude towards sustainability?
- How is the waste management currently regulated on your cruise ships?
- Does your company provide special rules and regulations regarding the waste management?
- Do you have any ideas for improvement?

The questionnaires handed out to the personnel include not the same catalogue of questions, the cruise ship representatives during the two interviews were asked, although some questions are quite similar. The author thinks that the representatives have an abstract opinion regarding the topic of waste management, while the personnel actually working with the guidelines for sure have some practical examples. Both questionnaires can be found in the appendices.

4.4 Analyzing the industry's data

This chapter is divided in two parts. The first part deals with the two interviews conducted with the cruise ship companies representatives. The second part explains the personnel's point of view.

4.4.1 The cruise ship companies' representatives

The two companies chosen for this research both operate a humongous amount of ships in different categories. The cruise ship industry in general is also talking about categories like the hospitality sector, focusing on areas such as hotels. Likewise the hotels the categorization for ships works with a star rating as well. 5 star ships are then the high class luxury category, while 4 star ships are high class and 3 stars then middle class ships. 1 and 2 star ships are basically none existing. Even really basic ferries can make the 3 star classification, due to all the extras they are offering, like sauna, cinema, theatre, spa, etc.

The chosen companies only operate high class luxury and high class cruise ships with the highest standards. This was one of the criteria of choosing the companies. If high class standards are offered the information that is given to the public and society mostly is also of the highest value. The companies then are eager to create the best picture of themselves to have a better impression on their customers' mind.

Another important point in choosing the companies was their location. As the author preferred to do the research in Hamburg it would be convenient if the companies would have offices in the city. Some major cruise ship companies have their head offices in Hamburg or important branch offices in the harbor of the city. Although the companies are for example German, parts of the personnel are employed for example in Cyprus. This is mostly the case for the cruise ship personnel. The ship cruises under the flag of Cyprus so the personnel is employed there as well. For the personnel working in the offices, the situation differs from the cruise ship crews situation. If the office is situated for example in Great Britain their personnel is employed directly in Great Britain and not in any other country.

The first person interviewed is the assistant public relations manager of a global operating ocean carrier that operates a huge fleet of luxury cruise ships and luxury yachts as well. The company's headquarters is in Hamburg.

The second person interviewed is the head of the departments responsible for customer care and public relations. The company's headquarters is located in the German city Rostock. This company also has offices in Hamburg, because a lot of its ships travel from or through the harbor of Hamburg.

Both interviews were conducted during one week to minimize the chance of internal arrangements and agreements. As the companies will not be named the author from now on will call the company from Hamburg "company A" and the company settled in Rostock will be called "company B". This is no kind of judgment, it is just for better comprehensibility. Both representatives will be treated and described as male interview partners also for better tangibility.

The interview with company A proceeded on 9th of October 2013. The appointment was settled for an hour to gain the information. In the end it took 90 minutes until all the questions were answered. The second interview with company B proceeded on the 11th of October 2013 and had the length of almost two hours in the end.

4.4.2 The representatives' companies

As stated earlier the companies as well as the representatives will remain unnamed, although the details given as answers in this chapter will deliver more than a clear hint to the companies' names and functions.

Company A is a global operating ocean carrier situated in the German city of Hamburg. This company does not only operate cruise ships. Also the big cargo ships belong to the fleet of this company. Although the society only notices one name for both businesses, the real situation changed in the beginning of the century. The branch of cargo shipment was partly sold and the city of Hamburg in the meanwhile is the main shareholder of this branch. The cruise ship sector of the company is still belonging to the mother company which is a huge travel operator.

The company operates five cruise ships at the moment. Not all the ships are owned by the company some are also chartered. Luxury cruises and the so called expeditions

cruises are the main segments of the company. Overall the company's major revenue happens on the German market.

"The size of the company, regarding the number of employees, is basically daily changing", states the company's representative. Approximately 180 persons are temporary employed by the company ashore. For the cruise ships it is a bit more difficult. The staff turnover aboard is quite high. Once one person leaves in the next few days the next crew member comes aboard. This means a little fluctuation, of course. A cruise ship of this company's quality needs around 400-450 persons belonging to the crews. "Vaguely calculated this leaves a range from 2.180 employees to 2.430 employees currently working for us", states company A's representative.

For company B the situation is little more complicated. The company is basically only a branch of a bigger American and British company. As well as company A company B is also focused on the German-speaking market.

The so called fun ships were introduced to the German and European market by this company's predecessor company in the middle of the 1990s to create a kind of swimming club resort. At the moment ten ships are belonging to the fleet of this company. The ships are not directly owned by this brand, but by another brand of the parent company, an Italian ocean carrier. This is the reason why all the ships are traveling under an Italian flag.

At the moment company B does not offer any world trip yet. The newest ship that will join the fleet in the beginning of 2015 will then offer the first world trip ever for company B in its maiden voyage.

Regarding the company size the representative stated that currently about 6900 persons are employed by the company. Only around 900 persons are working ashore while approximately 6000 persons work aboard the ships. Overall the company is employing in 25 countries all over the world. The number of employees as well as the number of ships already gives the hint that this company is the market leader on the German - speaking market.

4.4.3 The companies attitude towards sustainability

As sustainability slowly starts to gain influence in the society's awareness, thinking and decision making processes, all the industries and companies start to think about it as well.

For the hospitality industry the topic of sustainability was discovered rather lately. The common thinking throughout the industry was that during a vacation or while planning a vacation nobody thinks about the sustainability or their personal carbon footprint. At first the industry was right, but as the influence of sustainability grew the industry discovered the need for actions.

In the cruise ship industry the topic of the huge amount of waste production was always there. The industry tried to create a perfect illusion for the guest and just did not talk about the topic at all. This attitude changed during the last decade. Due to some accidents with ferries and also cruise ships their pollution level came to the public mind. As a direct reaction to that the cruise ship industry started to talk about the issues with waste production and environmental pollution. Although some companies already did so before that, now every single company felt the need for publishing for example an annual sustainability report.

"Waste is just a topic you do not like to consider while being on vacation, so why should we blame our customers with it? That is exactly what we thought!" states company A. This thinking changed of course. In the meanwhile company A recognized the importance of the topic. "Currently we are publishing an annual sustainability report, such as other companies within our industry do. This is of course not enough for us" continues the representative. The company wants to create an unique selling point by working with the best routines concerning environmental friendliness.

All the ships have been refurnished lately and are now traveling with the best technical support currently available. This support means not only the best navigation system, but also the latest developments concerning the engines were consulted to save energy. Further the company is nonstop looking for future developments in this field. Regarding the waste there is also the latest technique that is used aboard the ships of company

A. The newest garbage compactors are installed aboard as well as the best water filter systems available at the moment. These are of course enormous expenses for the company, but on the other hand they can proudly state to be one of the most environmentally friendliest.

Another important step in the company's plan of action towards sustainability are the travel routes and the working routines aboard. Company A nowadays plans the traveling routes on special conditions. With the latest technology the cruise ship can keep more waste aboard so the waste can be disposed in bigger harbors with better standards and technical equipment, for the best waste disposal possible. "Sustainability is one of the most important aspects of our cruise ship trips. The customer is on vacation, that is why our personnel has to take care of it" is the company's argument for the strict training for each crew member.

Company B shows some similarities of course. The thinking also changed within this company but they already started a little earlier. "In the middle of the 1990s when we got the first ship of our current fleet we already started to consider sustainability and tried to keep the waste production on a minimum. This has not changed in the past two decades" is the company's clear statement.

On the other hand company B is well known within the German-speaking market for the club resort vacation they offer on the seas. How does this fit with the topic of sustainability, is the question, the company is confronted with a lot.

Of course the company as well as most of the other ocean carriers belonging to the cruise ship industry, publishes an annual sustainability report. Company B's report is highly valued in the industry as it always shows new ideas and techniques to save the environment and reduce the waste production.

Company B is one of the companies that tries always to think outside the box. This is why they are experimenting with the ships silhouette for example. The reduction of the friction between the water and the ship. The ship's hull of the latest ships is formed unconventionally. Also the company announced that the ships joining the fleet in 2015

and 2016 will have special engines that will not require for heavy oil. This will save a lot of energy and will reduce the production a waste water humongous.

Stating all these positive news company B does not hide the fact that they are often confronted with hostility. Environmental protection organizations criticize the company a lot. The company is too much focusing on saving the energy and reducing their own costs, is their statement. The accusation further states that company B is not caring about the air pollution. Company B's answer is clear: "We do not have the best filter systems available, that is true, but we are not operating any ship without any filter system as those environmental organizations state all the time. It is true, at the moment we are focusing at saving energy, but at least we are doing something to change the current situation to make it better and improve it for our following generation"

4.4.4 The current situation regarding waste management

The current situation is valued differently by both companies.

Company A states that they are satisfied with the current situation. The company is known to be very sustainable and work environmentally friendly practices, therefore the company states that also regarding the waste management the practices are the best within the cruise ship industry.

The company is also continuously planning and developing better practices concerning the waste management and therefore improve the situation. currently although the company is satisfied with the situation there is internal research for mistake detection. The company thinks that their practices could be better if the personnel would follow it by 100% instead of 95%. All the ships were refurnished lately so they offer the best technical equipment available, not only for the waste.

The garbage compactors are the best available and work really quietly, which is highly important on the cruise ship of course, because of the limited space available. Further the walk-in refrigerators used for the waste are situated on different locations than all the other cooling units. This helps to prevent false openings, because somebody opens

the wrong cooling unit for any reason, which then of course prevents from scent development. The filter systems used for the water processing are the best currently available. The processed water can be reused. The ships therefore have their own water cycles.

It is not only the technical support aboard the ships, states company A. The routes are mostly planned also thinking about the waste disposal. For the cruise ship industry it is cheaper to dispose the waste in bigger harbors, because they are mostly better equipped and have higher amounts of waste to process. The waste storage is then filled up to its maximum until it is disposed in a major harbor. This maximum is mostly reached within three days.

Company B follows a different technique. After the accusations brought up by the environmental organizations the company now makes sure to follow all guidelines strictly and in detail. The companies' public relation department makes sure that everybody who is interested in this topic finds out that the guidelines and rules followed within the company are strict and very detailed and follow the international laws concerning the topic.

As this is a rather vaguely statement, company B gives an example.

For the crew it is a tradition when ending their work on board the ship to throw the shoes overboard. Generally this is forbidden and valued as environmental pollution. The company states that if an employee is caught doing so, he or she is fired right away and the punishable act will be reported to the police. All the employees witnessing the ceremony will be admonished and also reported to the police as they did nothing to stop the act.

This has nothing to do with the current waste management situation aboard the ships of company B, but it shows how strict the rules have to be followed states the companies' representative.

The company employs one waste manager and one assistant waste manager per ship. They work aboard together with the whole crew to make sure the level of waste production is the lowest possible and all the standards are being followed. Furthermore their work aboard the ships brings continuous improvement. The waste manager and the assistant continuously evaluate the working routines and procedures to find opportunities for improvement.

Company B states that it follows the perception of learning by doing and consequently improving by seeing. Normally the daily routines are planned and developed by former crew members ashore. Company B has the two experts aboard every ship to create the best situation possible for the crew. Furthermore all the experts, of the different ships as well as the experts ashore, have a weekly meeting to discuss new problems and solutions.

For company B it is important to communicate the continuous push forward. Company B wants the competitors to know what they are currently doing regarding their waste production as well as their environmental pollution level and what they are doing to improve the situation.

Regarding the waste disposal company B uses the same technique as company A as well as most of its competitors do. The waste is collected in special cooling units or compacted in the garbage compactors and then disposed in bigger harbors as they are better equipped than minor harbors.

The fluid waste is categorized and stored separately. The fluids are processed and reused as far as possible. Company B states they even spend more money in reusing the resources and therefore minimize the waste production. In the end this means they are still saving money for themselves, as well as aiding the environment.

Although company B has the specialized crew members working on each and every ship, the working routines are standardized. This means that the basic steps of working as well as the guidelines of how to deal with the waste and how the disposal works are the same on every ship that belongs to company B's fleet.

4.4.5 The differences between the ship categories

This is one point where both companies answered 100% alike. There are no differences between the individual ships or the particular categories.

Some ships are build and furnished completely different from others and some ships are just looking alike. Although there are visual differences, both companies state that those are the only differences.

All the laws, rules and regulations are of course to be followed on every ship. The working routine was noted as another possible difference between the ships. This difference can be neglected, states company A, as the working routine itself does not matter at all, as long as it leads to the same outcome and all rules are followed.

Company B noted that most of their ships look quite alike and therefore the working routines are alike as well. "One crew member, trained on one particular ship can work on any other ship belonging to this companies fleet" states the representative of company B. The working routine belongs to the standards as well as is standardized throughout the whole company.

Company B plans to include a new category of ship into the fleet. The new category then will represent a whole new era of cruise shipping. The new ships will not need the heavy oil as fuel but will function with liquid gas. This will not only save energy costs for the company but also reduce the emissions drastically. Further the fluid waste water production will be cut to a minor level as well which then of course consequently leads to a radical decline of the disposal costs for the company. Here again the company's major strategy arises, saving money through the investment in new techniques.

4.4.6 Special rules and regulations

Special rules and regulations are a quite vaguely put phrase which was chosen to get a wider range of answers from the companies and not guide them to any special direction. Special rules and regulations now leaves space for interpretation for the company's representatives.

Universal laws and generalities form the fundament for the cruise ship industry's rules and regulations. Every company then worked out their own procedures and working routines to follow the laws and the general agreements amongst the cruise ship industry.

"Basically there are no special rules and regulations within our company" is company A's statement regarding this question. They are following the given laws and every agreement within the industry. The company further makes sure to meet the society's expectation especially concerning the topic of environmental pollution but there are no special rules worth mentioning here.

After a second thought company A was able to find a special rule within the company. The employees, all ashore and aboard the ships, get a special training concerning for waste production prevention. With this special training each and every employee shall be able to do two things: First, to prevent the waste production in general and second, find out about potential savings within this topic.

Company B was able to give more detailed answer and name special rules and regulations within the company that only concern the topic of waste production, disposal and the management of those.

In order to communicate and develop these rules the positions of the waste manger and his or her assistant was developed and established aboard every ship. This positions were already mentioned before, but they also represent a special regulation that is chosen within company B. These positions gain the possibility to change the rules and the working procedures according to the surroundings. This on the other hand gains

the opportunity to act flexible and therefore save resources as well as save money for example in disposing the waste.

A special rule that was named from company B regards the food debris. Company B is indicating this new rule aboard the ships at the moment. Food debris are one of the biggest waste shares produced on a cruise ship. As most food is provided in buffet style it always has to be refilled. At some point the food displayed on the buffet is not chilled enough and has to be disposed. Other food has to go to the trash when opened up once. This is a big problem for the buffet style menus. As mentioned earlier some companies think about or use single portion packages which then on the other hand do not produce food debris but packaging waste, which then has to be disposed again. During the breakfast time, for example, company B is counting the passengers entering the dining area to have their breakfast. When 70% of the passengers are in the dining area and it seems that most of them have been at least once to the buffet, the personnel starts to remove parts of the buffet. The offerings on the buffet stay the same but the portions get smaller. This way the passengers coming later still get to choose from the whole variety and everything is fresh, chilled and stored as required, and not boxed in any kind of containers. The outcome for the company is enormous. The passengers are still satisfied and the food debris were cut in half since the company first started this procedure.

Another rule that was named by company B regards the water consumption aboard the ships. All the ships have their own water-processing unit aboard. This saves costs in disposing the fluid wastes and also reduces the consumption of the resource water as it can be reused. The special rule now concerns the usage of the shower and washing supplies. The crew members are only allowed to use special shower gel for example. The shower gel is easier to process and therefore saves energy and money in the water processing procedure. The guests are on vacation and the company thinks it would be rude to tell them what to do, so the usage of the special supplies is a hint or proposal to the customer to save the environment. The company of course is providing these supplies for the crew as well as the guests.

The water consumption is also topic on another procedure described from company B's representative. The water used for the toilets all over the ship is processed sea water. All the toilets have water-saving flushing. When the toilets are flushed the water is processed that only brown and yellow water have to be disposed and the rest can be lead back to the ocean. This is not the rule but the mechanism belonging to this rule. The rule says it is forbidden to flush anything in the toilets that does not belong there. Furthermore the crew is told to use as minor toilet paper as possible to also save costs and reduce the contamination of the water itself.

4.4.7 Developing the special restrictions

How the rules and regulations are formed within the company is an interesting step in understanding the working procedures as well as the hierarchy involved in the decision making processes within the company. These processes regard all the business areas of the company of course, not only the waste management and environmental policies. First of all the common laws form the general rules and regulations, which the companies work with. The laws have to be followed, but in most cases the law does not give the working routine that helps to follow it. Here it is the companies' experience to develop easier rules and of course working routines to make sure the laws are followed.

For company A the development involves mainly the personnel ashore. The details concerning the waste production, the amount of the disposed waste through the journey and the costs are the numbers that help company A to find opportunities for improvement. This key figures of course only show the areas where potential savings could be hidden, but do not show any procedure to reach this very goal. Those responsible to investigate the current procedures in the field where the potential savings were discovered. They do so in interviewing the cruise ship personnel or take a look at the procedures aboard directly. This takes some time, of course, but on the other hand is thorough and profound research that helps then to develop new procedures to improve the current situation.

The next step then is to compare the collected data to clarify the starting point. Now the experts develop and decide on a new working procedure or a new rule that has to be accomplished by the personnel working aboard the ships.

An example given from company A concerns the problem with dairy products while traveling in Northern American territorial water. The American law says that dairy products like milk or cream have to be disposed after a time span of four hours after opening the containers. This produced a lot of food debris for company A. Therefore the earlier described committee of experts decided to use smaller boxing for the dairy products while traveling these areas as well as to replace the fresh milk and cream with milk powder and comparable products wherever possible.

Company B's rule and regulation developing procedure is very different from company A's doings. While company A has a pretty theoretical way to handle any kind of regulation company B tries to work on the rules and regulations more practically. As mentioned before company B employs waste managers on each and every ship. On most ships the waste managers even have an assistant. This way the experts are able to develop better rules, or can improve the current working procedures as they are already aboard the ships, and can then detect spots for improvement more easily. As they are members of the crew already it is also easier to find out what the other crew members think of the improvement ideas and how the ideas can be implemented.

In a weekly meeting with the other waste managers from the other ships the ideas are discussed to find out how a general rule for all ships and employees can be developed. In this way, easy seeming ideas as the usage of tap aerators came up to the company's mind. Tap aerators are little devices that are installed on top of a tap. The device breaks the spout in little pieces. This way the amount of water is reduced while the pressure is kept the same. The customer does not register any change but only needs half the water.

Company B states that they were searching for a way to improve the situation in general in the decision and developing processes, that is why they formed several positions aboard the ships as for example the waste manager. On one hand of course this brings

up new costs regarding the personnel costs, but then on the other hand helps to fasten up several processes and find saving potentials more easily which then leads to saving costs.

4.4.8 Personnel trainings

To train the personnel is one of the most important steps all companies within the cruise ship industry have to take care of. Normally an employee does not need any special training when starting a new job within their field of expertise. It is just the working environment that changes and some working procedures.

This is not true for the cruise ship industry. Here every employee needs special trainings for example concerning an emergency on the high seas. The companies have to make sure that every employee knows exactly what to do. This gives a feeling of safety for the consumer and the crew itself since they know they can rely on each other.

Concerning the waste management there is no special training in both companies. The personnel get their employee handbook which includes all rules and regulations that have to be followed while working for the specific company. The employee needs to read it and then afterwards sign a paper that states the employee has read and understood all rules and regulation and from now on will follow those as long as working for the company.

Special trainings then are required for special positions. This means the same as it means for employees working ashore. Personnel working in the kitchen for example get another on job training as the people working in the laundry department. For the ship this special trainings have a special focus on hazardous materials and substances. While working aboard a ship the personnel has to deal with several problems regarding this substances which is why the special on job trainings are necessary.

The problems result for example from the limited space aboard a ship. That means the storage capacity is quite limited. The disposal areas as well as the waste capacity that can stored is limited. To handle hazardous substances on limited spaces also leads to a

higher risk of accidents. Therefore the personnel confronted with such substances needs to be trained detailed and thoroughly. These trainings are not really important to waste management issues aboard the ships but concern the safety of the crew and the passengers to the highest degree.

4.4.9 The representatives' own experiences

The representatives' own experience is not really important to the outcome of this thesis, but then might help to evaluate and interpret the representatives' answers in the conclusion.

Company A's representative stated that he never traveled aboard a cruise ship yet as he just recently joined the company. He gained the position because of his experience in the field of public relations within a huge company operating in the tourism sector as well.

The representative states that he really is looking forward to the experience of traveling on cruise ship, which is planned for him in the upcoming months. As the company's spokesman he will get to know every ship, belonging to the company, in detail.

Company B's representative is the complete opposite of company A's representative. He traveled on all ships belonging to the company's fleet as well as most ships belonging to the direct competitors fleets. For him this does not mean vacation, but work.

Evaluating the ships on a professional level and also make out possibilities and opportunities by comparing the ships directly has become one of the main tasks for him, although this normally does not belong to the job description.

4.4.10 Outlook to the future

The question concerning the outlook in the future is a two sided question. It gives the stage to personal thinking and ideas of the representatives as well as the companies general ideas and plans of the companies. As it turned out the opinions were quite equal, so they are not described separately within this chapter.

Both companies agree in an optimistic outlook in the future. Mutually they see coming innovations to improve the industry in general, not only regarding the waste management and the topic of sustainability. Furthermore the companies note a currently increasing request for cruise ship journeys from the customers which also consolidates the situation and the positive aspects of the future.

The cruise ship industry will continue to grow. Most of the ships will get bigger and even more luxurious to satisfy the guests wishes completely. The destination will no longer be the countries where the ships stop by. The ship itself will become the journeys destination.

Furthermore there will be some smaller ships to please other guests. These consumers are still searching for something special and individual. These costumers are not the mainstream customers anymore in the future. The main companies will operate these branches only as a side branch. Until ten years ago these kind of customers were the main target group of the industry. This will definitely change in the future, at least the companies representatives think so.

4.4.11 The cruise ship personnel

The cruise ship personnel interviewed for this thesis belonged to three different cruise ship companies. A total of eight persons were willing and could afford their time to give answers to the questions asked by the author.

The questionnaire for the cruise ship personnel, which was mentioned in chapter "4.3.1 Developing the industry's questionnaires", was mainly not answered in personal

interviews, but in written answers. The people answering the questions were mainly working at cruise ships the moments they were questioned. This limited their time, but on the other hand the participants were able to give accurate answers as there were currently confronted with the situations.

The questionnaire actually answered by the employees also included questions asking for gender, age and nationality, comparable to the questionnaire given to the cruise ship travelers. As the group that answered the questionnaire in the end was such a small group the author decided to leave these questions behind in the evaluation process.

Regarding the common prejudices of men and female persons rating the values of sustainability and therefore the importance of waste management differently, the gender seemed the only question worth considering.

The personnel represents an equality regarding the gender representatives. This means the questions were answered by four female as well as four male cruise ship crew members.

4.4.12 The personnel's companies

The personnel's companies were not chosen before hands. The questionnaire was given to several people the author knew were working on cruise ships. These persons then asked colleagues and friends aboard the ships to also answer the questionnaires. As mentioned before the personnel seemed interested in the topic, but then in the end just did not bring up the spare time to answer the questionnaire thoroughly.

As a coincidence both companies described earlier as company A and company B were also given in the personnel's answers. There was also a third company named that from now on will be named as company C.

As company A and B were already described earlier and the personnel had no other detail to change the already given description, only company C will be described here more closely.

The headquarters of company C are in Geneva, which sounds strange if you concern the kind of business represented and the geographical position of the city. All over the world the company operates 43 places of business. For Germany for example the place of business is located in Munich. For the American market the company operates from Fort Lauderdale.

The Swiss-Italian company employs round about 12.000 persons in the 43 offices as well as aboard the ships. Until the year of 1994 the company was only operating containerships as well as liner shipping. In the year of 1995 then company C started operating cruise ships and therefore formed an own brand for cruise ships within the company.

Today the company offers cruise ship trips in the higher category. The company owns a dozen ships which are known for their Italian ambience mixed with the classical elements of cruise ships.

Spacious cabins with noble interior bring the best possible comfort for the guests. As the other companies, company C's ships provide huge spa areas and a variety of show and entertainment acts for the guest, to make sure all the needs and wishes are satisfied.

Company C operates trips in the South American seas, the Caribbean, the Mediterranean Sea, the Black Sea, Northern- and Western Europe as well as Africa. The company is also offering world tours on their ships.

A special feature for company C are the theme related cruises. There is a special topic or interested that functions as the red thread of the cruise ship journey. This red thread can be sports like Baseball or Golf or other interests like musicals or astrology.

4.4.13 The companies general attitude

This very question was also part of the questionnaires for the companies representatives. As now company A and B were already described before, company C again will have the main focus in explaining the situation.

The question does not only ask for special rules or something, but also leaves room for interpretation for the employees themselves. The author hoped not to hear a straight copy from the representatives answers, but also a personal point of view from the employees.

The influence of sustainability is obvious to the personnel working on the cruise ships. Currently the personnel is getting new and revised working procedures to reduce the environmental impact of the cruise ship travels in general. This is one of the major statements that can be put to paper from this question. There is constantly a change and current improvement regarding the general sustainability aspect of the cruise ship industry in general. Employees from all three companies made comparable statements in this direction.

Basically company C has the same attitude as any other company operating in the cruise ship industry. As stated earlier the industries production of waste as well as the environmental impact are enormous and an incontrovertible fact.

"The perfect illusion that was created for the customers earlier is no longer requested" state the employees of company C. The customers want to know about the impact their journey might have. Due to that fact, the company is publishing a sustainability report, same as company A and B.

The level of waste production and sustainability in general are topics that company C's personnel has to deal with every day, as well as safety issues. The safety aboard the ship was highly compromised due to the fact that one of the fleets ships had sunk within the past two years. As there had people died and the circumstances are still not quite clear, the safety became the number one topic aboard the ships.

As the safety standards were double checked on each and every ship the cabins and public areas of the ships were rebuild and refurnished taking company A as an example. This way company C not only guarantees the safety, but also did something to reduce its environmental impact.

The new ships that are recently build in the wharfs around the world for company C follow the highest standards concerning the air pollution for example. Company C therefore is following company B's model which is the pioneer in this field.

Overall the employees state that company C is orientating itself strongly on the competitors decisions and doings.

The personnel employed by company A and B stated quite the same things as the companies representatives did. This outcome leads to two suggestions, either the companies really operate the way it was described to the author or the training for the employees about the topic is really good. Either way, overall the companies have recognized the importance of the topic and moreover were able to deliver this thinking to the personnel directly.

4.4.14 Current situation regarding waste management

The current situation is a quite subjective topic, where personal experiences and the day to day work of the personnel can create a whole different picture than the one delivered by the companies representatives.

All the employees, no matter which company they belong to, get special trainings for working aboard the cruise ships. These trainings are mainly for the safety and rescue plans as well as the companies attitudes towards special topics. The trainings also help the employees to identify themselves with the corporate behavior as well as the values of the company. Noting this is important for this chapter, as the employees do not see anything else but the ship and the companies rules for quite a while. This leads to the fact that even the subjective feelings are highly influenced by the companies ideas of a certain topic.

Company A's employees state that they had felt a huge improvement regarding waste management lately. The employees just guess that this is related to the public focus of waste production on cruise ships.

"There is certainly more room for improvement." This is the common statement of the company's workforce. Identifying the problems is also easy for the employees. New ideas for improvement need to go through a long decision making process before they are even considered for a try out. This needs a lot of time, of course. Some of the ideas then turn out not to work the way they were supposed to, to improve the situation or to hinder other systems. These ideas are then turned down, but for that the idea has to go through this decision making process again. This needs a lot of time, as already mentioned, an enormous amount of money and also working power.

The personnel employed by company B state that they feel a current change. This is not only positive for the employees. While they see certain improvement for example in the water saving guidelines or in the general waste production they feel confused from time to time. Due to the waste managers working on each and every ship the rules and regulations obliged to the daily working routines are in a continuous change. "Generally it is a two sided medal", states one of the employees, " the company does what it can to improve the situation, save the environment and reduce the waste production, but for us, here aboard the ships, it is really hard to do not lose the track. The waste manager working with us aboard on the other hand really helps to implement the new ideas and also sees right away if an idea, that sounded so great on paper, just does not work in reality."

Company B now is the only company currently working with a waste management team aboard these ships. The other companies already know about this fact but so far did not adopt this practices. This leads to the fact that the statements of company B's employees needs to be seen a little apart from the others.

The workforce of company C sees huge problems in the current situation. The waste production especially in the field of food debris is just too high. The company offers to many different food choices in the eyes of the employees. Special diets and special

wishes are satisfied at any point for the customers. The company even advertises this. Of course the guests are satisfied but the food debris produced with this offer are enormous.

The personnel belonging to company C also sees positive aspects in the current situation. The company's policy regarding waste management aboard the ships is categorized as modest, which is seen positively. The guests traveling on the ships are not forced to think about sustainability or the waste produced aboard. If they are interested to know or learn more about the topic they can ask the personnel but otherwise there are no hints or suggestions given to the guests regarding their waste production.

4.4.15 Special rules and regulations

Concerning the personnel's answers, rules and regulations are given everywhere aboard a cruise ship. Even regarding the spare time activities there are rules on the ships for the employees.

Most of the rules are the same throughout the companies. These rules mainly concern safety issues, rescue plans and routines, as well as guidelines given by the common law.

The employees belonging to company A state that they do not have the feeling of any special rules and regulations within the company. The employees think that all the rules and regulations can also be given in any other cruise ship company.

Company A's personnel further stated that they have the feeling, that the company wants to change the rules and regulations. The general awareness of waste production and resource saving becomes a topic aboard the ships more and more often.

For company B the statements given from the employees differ from the other companies. The employees state that sustainability and especially waste management are huge topics aboard the ships and within the company. Every ship has its own waste manager that develops better working routines to save the environment.

The rules and regulations within company B are included in a current workflow. The personnel is not able to name any special rule, as the regulations currently change to improve the situation.

Company C has modest rules for the customers. The ideas concerning the reduction of waste production and resource consumption are really more or less hidden for the guests.

The personnel working for company C on the other hand has to follow some strict rules concerning the water consumption for example. The personnel states that the water pressure in the pipes that supplies the personnel quarters is lower than in the pipes supplying the guests cabins. The employees further state that resources of any kind are limited for them. "Often the impression occurs, that we get the guests left over's especially concerning food. Of course this saves the resources and then prevents the waste production", is the probably the most meaningful answer concerning this question for company C.

4.4.16 The personnel's ideas for improvement

Throughout the industry the companies seem to be willing to work and implement the personnel's ideas. The employees are working with the hardware on a day to day basis and therefore should come up with the best ideas for improvement.

Having new ideas is not always a good sign. With the idea for a change or improvement within a functioning system there are two major negative side effects.

- If you see an opportunity for improvement, you might criticize the ideas of somebody else or question a functioning system.
- New ideas always, once implemented, result in new working routines. These routines then mean more work and training for the coworkers and therefore even less spare time.

- Saving costs is one of the biggest issues in any industry. This is also the case for the cruise ship industry. Therefore a lot of ideas are just not further developed as the costs are too high.

In company A the decision making process is so long and complicated, that most of the crew members who made suggestions for improvement once, are not working aboard the ships anymore once the new ideas are implemented. This has the positive side effect that the personnel is not thinking about how the coworkers could struggle with the new ideas, but really think about improving the situation thoroughly.

Company B is the most innovative company, also in this sector. The personnel is asked for new ideas constantly while working aboard the ship. The employees general attitude towards this procedure is natural averseness.

The personnel employed by company C draws a complete different picture. "If I see something that could need improvement, I talk to my supervisor. He always says things like, 'go and do your work', 'that is not your concern' or simply 'no'. This is why I do not even bother to take notice of such issues." This one statement actually stands for all the answers given by company C's personnel. This leads to the conclusion that even if company C's personnel had ideas, nobody aboard the ships would care, so the personnel questioned does not even bother anymore.

However the ideas of the employees are treated, there are certainly some ideas, that were mentioned while answering the question belonging to this chapter.

One idea mentioned, for example, is that the sustainable thinking within the customers should be strengthened. Currently the topic of waste production is not one that is in the customers awareness. If you could connect the customers waste production to the price of the trip that would really help. The customer could get a discount on the trip if he or she saves resources during the trip. On the other hand the customer could pay extra fees if he or she produced more waste than the average.

5 Conclusion

Overall the topic of waste management on cruise ships is wider spread than the author thought at the beginning of this work. Aspects such as the society's influence or the current development of technical improvements were obvious facets that were considered from the beginning. Other related topics such as the companies or the personnel's influence were reconsidered while writing this thesis.

The complete evaluation of the thesis process, as well as the conclusion of this topic, with recommendations for the future will be provided in this very last chapter.

5.1 Answering the research questions

The research questions that were asked in chapter 1.1 basically were answered throughout this thesis. To summarize the outcome of this work, the answers to each question will be found in the following chapter.

The first question is concerning the current situation and is thoroughly answered in chapter 2. The author concludes that the current situation is quite complicated. The different wastes produced on a cruise ship need different ways and working procedures for processing. Therefore the result is clear, for managing the waste properly a lot of work, resources, space and of course money is needed. Overall the situation is not as bad as one might think. The companies do not just throw all the trash to the ocean right behind the ship anymore. The companies try to reuse the resources such as drinking water, of course to save money on one hand, but also to minimize the environmental impact.

The perception of waste management by the different parties was the topic, the second research question dealt with. The perception of something can be really subjective from time to time. This is the reason why the author decided to evaluate every group apart from the other and compare the answers later on. The first group questioned were the travelers. For the travelers the topic is not as important as the society might

think. In the research, done with questionnaires particularly for this thesis, it became obvious that for the travelers still the main aspects are holiday, relaxing and recreation. The second group then questioned drew a different picture. For the cruise ship companies, or at least their representatives, waste management and especially sustainability are huge topics. The representatives noted that the perception of waste management was a topic that was dealt with on an everyday basis and improvement in this area was from their point of view unworthy a discussion. The third party considered for this research question were the employees working on the cruise ships directly. This group's experiences and opinions were mainly influenced by the company's the single employee worked for. Overall the topic seems to not be as important to the personnel as long as it is not affecting the working procedures. In general the author would have expected a different outcome. As the society discovered the topic of sustainability and waste management years ago and the companies throughout the hospitality sector start adopting the topic, the consumers and especially the workforces knowledge and awareness has been expected to be much higher. The author therefore came to the conclusion, that within the cruise ship industry, especially the companies talk and care about the topic, while the other parties do not care yet.

The third research questions was also mainly answered through the different parties questioned for this thesis. The author's conclusion to this very question is quite simple. The common law is responsible for most rules and regulations aboard the cruise ships. Generally the rules, regulations and even the working procedures are quite similar within the companies. While company C had some safety issues in the past years, it is focusing on this sector at the moment. Company B tries to be a pioneer within the cruise ship industry. The company is the only one that currently works on and with the rules and regulations and willingly asks for and takes suggestions from within the crew. This method leads to two major things. Other companies copy the rules, regulations and working procedures of course, and company B's personnel is confused from time to time as the rules change so fast.

Ideas for improvement was the topic of the very last research question. This question also leads to the closure of this topic. In general there were no expectations towards this questions. It turned out that the cruise ship passengers did not have any ideas for

improvement. As their interest in the topic was suggested to be higher than it actually is, this outcome is not surprising at all. After all the passengers are just related to this topic as the consumer of the offer made by the cruise ship industry. The passengers are only there to enjoy themselves and are not thinking about the consequences that their behavior may cause. The travelers furthermore represent the group involved, this produces the main capacity of waste right after the ship itself.

The cruise ship personnel was highly valued before completing this thesis. The personnel deals with these issues on a day to day basis and therefore should produce ideas for improvement. The general result of this thesis shows, that the personnel comes up with minor ideas for situational improvement, but not with huge industry changing plans. Evaluating the personnel's answers regarding the ideas of improvement, it seems that the workload the personnel is dealing with hinders them to come up with ideas of improvement. Seeing the working hours and the stressful job on the other side delivers conceivable explanations for the perceived lack of interest.

The cruise ship industry, which represents the last group questioned, delivered the most astonishing outcome. One not familiar with the topic might think it is all about money and the industry has no interest in changing the current situation. The perception turned out to be not 100% true. It turned out to be the industry itself, that shows the biggest interest in changing the situation and generate improvement for the environment. The reasons for that are not as noble as one might think. It is all about saving money and generating a better reputation. The reputation then is used for advertisement and therefore helps to gain even more money. The companies are planning to develop the ship itself to become the destination. This would be a quite harsh change as in the moment the ship itself is not the most important component of the trip.

The ideas of the industry itself are more than just minor situation changing ideas. Company B, for example, plans to modify all ships belonging to the fleet, so those will work with fluid gas rather than heavy oil. Further the construction of the ships is currently rethought. There are several ideas that make the ships look different, even strange, but then help to save energy.

Minor steps as changing the buffet styles offered in the restaurant or limited choices of food offered in the restaurants, also already turned out to help saving resources and reduce the waste production.

Other ideas as using the produced waste, as a resource for example to gain energy, are still in the planning stages. The environmental impact should be as small as possible, while the costs are as low as possible.

5.2 Reliability and validity

The reliability as well as the validity are two main factors that have to be considered for a thesis. These factors basically decide about the value of the work.

As stated by Bryman and Bell (2007, 40): “Reliability is concerned with the question of whether results of a study are repeatable”. The statement is clear the justification towards this thesis not quite so. There is current change within this field of research. New technologies are developed and implemented to improve the situation regarding the environmental impact of the cruise ship tourism. Furthermore the customer awareness towards the topic is expected to grow further. All these presumptions lead to the conclusion that even a survey given the same circumstances as this research might not conclude in the same findings. The results would most certainly be similar, but certainly not the same.

According to Bryman and Bell (2007, 41) “Validity is concerned with the integrity of the conclusions that are generated from a piece of research”. To ensure that this thesis is valid the author checked different literature, magazines and also internet websites for information which she then compared to each other to make sure that the sources as well as the research are valid. The data is collected from interviews with cruise ship representatives, employees working on cruise ships, operated by different companies and a survey conducted with the passengers of different cruise ships. The interview partners are experts from the companies or directly involved in the topic on an every-day basis which should prove their validity for this research. Of course the validity also strongly depends on the interview partner, what he/she reveals and what not. There-

fore there has to be some kind of a trust relationship, between interview partner and the interviewer.

5.3 Personal resume

Choosing the topic for this thesis was probably the easiest part in its production. The author wanted a topic that was related to her final internship required for her studies. Furthermore the topic had not have been not researched within Haaga Helia University of Applied Sciences before.

Before starting the writing process the author had to think about the aspects that should be included in the topic. The research then brought up different ideas which made it really hard to come up with the theoretical framework.

The author was quite astonished to find out that it was the industry itself, that had the biggest desire to change the current situation and limit the environmental impact. As mentioned before the reasons are not really noble, but this outcome was still surprising. The industry has whole departments working to improve the situation and the ideas they come up with are really impressive.

Overall coming forward with this thesis was really hard. First of all the internship was cancelled, the author had to change the structure in agreement with the supervisor who then let her down.

Finding the interview partners is always hard and doing a survey and evaluating both is also quite tricky as well. In the end the author was exhausted and just wanted to get it done.

In the end, now that the work is done the author is glad that after all she brought it to an end. The outcome was completely different from what she had suspected which then shows her it was worth the effort. In the beginning the travelers awareness as well as the personnel's interest in the topic was thought to be higher. It turned out to be the industry to be the one party looking forward. This thesis is now relying mostly on the

German cruise ship market, although company C is not German. The personnel as well as the industries representatives mainly represent the German market, which leads to the fact that this thesis is very much relying on the German market, rather than provide an international overview. This fact does not change the validity of the findings, at least not in the authors point of view. The findings and results of this thesis can also be found within other cruise ship companies operating in different markets all over the world.

As a personal idea of improvement within the thesis writing process, the author thinks it would be really helpful, if one would not work a full time job with extra hours every day. It would also be beneficial to have a supportive supervisor as well as supportive sources. If the sources discuss the topic untruthfully in fear of looking bad compared to their direct competitor, it can be damaging to the thesis. If the sources can be named openly without their interference of the written parts of the thesis it would be more than satisfying.

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Attachments

Passenger questionnaire

- What is your nationality?

- What is your gender? Please check the box.

male female

- How old are you? Please check the box.

up to 25 26-40 41-60 61 and upward

- Where did your journey go?

- Did you ever see, hear or smell something concerning waste disposal on the ship? If you answer with yes, please describe.

no yes _____

- Did you ever think about the waste disposal during your journey?

- Did you think about it beforehand, or now that you have this questionnaire in hand?

- Did you register any special measures concerning the waste management aboard?

- Did you think everything was handled as it should concerning the waste produced on the ship?

- Do you have any ideas for improvement concerning the matter of waste disposal on cruise ships?

Interview questions cruise ship industry representatives

- What is the size of your company?
- What is the company's attitude towards sustainability in general?
- How is the waste management currently regulated on your cruise ships?
- Are there differences between the ships regarding their category and the standards?
- Does your company provide special rules and regulations regarding the waste management?
- If so, how is the company developing these?
- How does your company make sure the personnel is following the restrictions?
- Have you ever been on a cruise ship journey yourself? What is your personal experience?
- Does your company have specific plans for the future, to improve the current situation?

Personnels interviews

- What is the size of your company?
- What is your company's general attitude towards sustainability?
- How is the waste management currently regulated on your cruise ships?
- Does your company provide special rules and regulations regarding the waste management?
- Do you have any ideas for improvement?