A Case Study on Long-tail Risks and Risk Mitigation in Risk Management

How can AGCS make best use of risk mitigation measures for drafting product liability policy wordings?

Pierre André Rinaldo Iversen
Abstract

A Case Study on Long-tail Risks and Risk Mitigation in Risk Management.

How can Allianz Global Corporate and Specialty (AGCS) make best use of risk mitigation measures for drafting product liability policy wordings? A case study on Triclosan as a possible Endocrine Disruptor with the potential for Mass Litigation.

With external forces, the insurance industry has been facing issues since before 9/11 but the evolvement of risk managers and risk management programs in organizations has become a standard for all corporations due to the realization of the potential impact these external forces and risks possibly possess. These programs have emerged to reduce the risk and uncertainty factor that organizations are facing. The factors have been identified in previous literature, as the regulation through authorities (Carroll et al., 2016), the customer relationship that to a certain degree even embraces risk (Kerr, 2016), the agency risk in risk taking (Eling & Marek, 2013). In terms to prepare for these risks, the corporations need to go through a rescaling of their business which was associated with the establishment of Risk Management Processes on all levels (Thislethwaite and Wood, 2018). As such, the rescaling in general can be seen as a Risk Management (RM) structure that would framework the communication of risk in a company.

The insurer AGCS is studied on its Risk Management (RM) processes, especially in the fourth phase of RM which is the phase of risk mitigation or reduction. Here it has previously been identified there being no other possible ethical actuarial mitigation methods for long-tail risks (Carroll et al., 2016). Therefore, a risk with such categories was studied with the study on Triclosan. Triclosan is a widely spread and commonly used chemical substance with certain and uncertain causations that can pose several risks with one of them being the possibility of mass litigation. The underwriter tool to mitigate such long-tail risks has been defined as the policy wording which can be used to create an optimal contract in the product liability insurance to reduce the risk of mass litigation.

To answer the above research question, this study has taken an interpretivist stance and the form of a quantitative study to follow the framework of Yin’s (2009) case study approach. With the goal to research the meaning behind a phenomenon, rather than to quantify a phenomenon, the use of semi structured interviews with experts of the insurance industry was conducted. These experts were found in the departments of Allianz Risk Consulting, Underwriting, and Claims.

The findings, similarly to the previous research that has been discussed in the introductory chapter, found that there are certain macro forces that shape the risk mitigation phase and here the influence on the policy wording within was touched upon. It was found that regulations do play a vital part and pose as leverage for the insurer and a pillar that would carry the weight of policy wording. It has further been identified that the costumer relationship and the costumer strength in the market are responsible for a functioning risk mitigation and also that certain demands stemming from the market, will shape the product liability insurance. While the more specific answer to the research question was, yes, the corporate insurer should cover triclosan related risks on a claims-made basis, with serial-loss clause and a retroactive date, there would be other factors that influence the policy wording. The grounded theory that has been established in this research is thus:

To manage liability insurance coverage for long-tail risks, product liability policy wording language needs to reflect main pillars as being used for comparable base materials. This includes but is not limited to claims made trigger, retro-active dates and other coverage elements. Macro forces and drivers of the policy wording, include but are not limited to, costumer strength, market demand, risk perception and market regulations. To ensure a successful risk management on an enterprise level for coverage of long-tail risks, the above factors have to be accounted for when offering product liability coverage.

Based on the aforementioned theory, Triclosan is a manageable risk from a corporate liability insurers perspective, hence insurance coverage can be given under product liability policy wordings.

Here it is proposed that further research be conducted on the identified macro forces and their impact on the product liability insurance and the more general RM in organizations. Also, it is proposed to research such a possible framework for including the costumer in the process of risk mitigation in terms of reducing the risks form where they start with the starting point being at the costumer. This is a future vision that as such would need further research to reach scientific saturation.
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Acknowledgement

At this point, I would like to thank all the involved parties that have led to a stimulating experience during the research for this thesis. Especially, I would like to thank my mentor at AGCS. Thank you, Oliver, for taking your time throughout the process and being a valuable source of information and inspiration. At AGCS I would also like to thank the rest of the Underwriting team who have invested time and resources into making this research possible. I also want to thank Umeå University for enabling this type of collaboration which truly shows its international competitiveness. A big thank you to Peter, you have been a great help with valuable comments and your flexibility throughout the research phase. Also, thank you to all the interview participants for your time and knowledge investment.
# Table of Contents

1. **INTRODUCTION** ......................................................................................................................... 1

   1.1. **PROBLEM BACKGROUND** .................................................................................................. 1
   
   1.1.1. *The risks identified in this research* .................................................................................... 5
   
   1.1.2. *Triclosan – Possibly a Risky Substance* ............................................................................ 5
   
   1.1.3. *Endocrine Disruptors – A Possible Risk & Uncertainty Factor* ........................................... 5
   
   1.1.4. *What is Triclosan?* ......................................................................................................... 6
   
   1.1.5. *Where is Triclosan?* ....................................................................................................... 6
   
   1.1.6. *Chain of Commerce of Triclosan and the Parties Reasons for Including Triclosan* .......... 7
   
   1.1.7. *General Overview on Legal Framework* ........................................................................... 7
   
   1.1.8. *Risk Transfer & Third-Party Liability Insurance* ............................................................. 8
   
   1.1.9. *Options for Corporate Companies – Product Liability Insurance* .................................... 9
   
   1.1.10. *Tasks & Options of Corporate Liability Insurers* ............................................................ 9
   
   1.2. **RESEARCH GAP** .............................................................................................................. 10
   
   1.3. **RESEARCH QUESTION** ................................................................................................... 11
   
   1.4. **PURPOSE** ....................................................................................................................... 11
   
   1.5. **DISPOSITION OF THE STUDY** .......................................................................................... 12

2. **THEORETICAL FRAMEWORK** ................................................................................................... 13

   2.1. **RISK OF MASS LITIGATIONS – CLASSIFICATIONS AND SCENARIOS** ......................... 13
   
   2.2. **RISK & UNCERTAINTY DEFINITION** ............................................................................... 15
   
   2.3. **RISK MANAGEMENT** ....................................................................................................... 16
   
   2.3.1. *Concept of Risk Management* .......................................................................................... 16
   
   2.3.2. *Risk Management Process* ............................................................................................... 17
   
   2.4. **RISK RESPONSE, THE FOURTH PHASE OF AN RMP** .................................................. 19
   
   2.5. **RISK APPETITE** ............................................................................................................. 20
   
   2.5.1. *Definitions of risk appetite* ............................................................................................... 20
   
   2.6. **POLICY WORDING IN PRODUCT LIABILITY INSURANCE** ........................................ 21
   
   2.7. **THEORETICAL DISCUSSION** ............................................................................................ 22
   
   2.8. **THEORETICAL FRAMEWORK SUMMARY** .................................................................... 22

3. **METHODOLOGY** ......................................................................................................................... 23

   3.1. **REFLECTION ON THE CHOICE OF LITERATURE** ............................................................ 23
   
   3.2. **WRITING UNDER COMMISSION** ....................................................................................... 23
   
   3.3. **RESEARCH PHILOSOPHY** ............................................................................................... 24
   
   3.3.1. *The Paradigms & Philosophical Assumptions* ................................................................. 24
   
   3.3.2. *Ontology* ....................................................................................................................... 25
   
   3.3.3. *Epistemology* ................................................................................................................. 25
   
   3.3.4. *Research Approach* ....................................................................................................... 26
   
   3.4. **RESEARCH METHOD AND DESIGN** ................................................................................ 26
   
   3.4.1. *Theory Building* .............................................................................................................. 29
   
   3.4.2. *Data Collection* .............................................................................................................. 29
   
   3.4.3. *Participant Selection* ...................................................................................................... 30
   
   3.4.4. *Interview Design* ............................................................................................................ 31
   
   3.5. **DATA ANALYSIS** .............................................................................................................. 33
   
   3.5.1. *Inductive Qualitative Data Analysis Method – Grounded Theory* .................................... 34
   
   3.6. **QUALITY CRITERIA** ......................................................................................................... 35
   
   3.6.1. *Generalizability* ............................................................................................................... 35
   
   3.6.2. *Validity & Reliability* ...................................................................................................... 35
   
   3.7. **ETHICAL CONSIDERATIONS** ............................................................................................ 36

4. **EMPIRICAL FINDINGS** ................................................................................................................. 37

   4.1. **POTENTIAL HUMAN RISKS POSED BY TRICLOSAN – THE SCIENTIFIC LITERATURE** ...... 37
   
   4.2. **TECHNICAL ASSESSMENT OF WORKFLOW – RISKS WORKFLOW IN AGCS** ............. 39
   
   4.3. **ASSESSMENT OF RISK AND RISK APPETITE IN AGCS** ............................................ 41
   
   4.4. **THE RM AND ITS PHASES IN AGCS** ................................................................................ 44
List of Figures

Figure 1 (Chain of Commerce) ................................................................. 7
Figure 2 (Risk Transfer) ........................................................................ 9
Figure 3 (Theoretical Framework) ............................................................ 13
Figure 4 (Portfolio of Clients with coverage) .......................................... 14
Figure 5 (Asbestos) ................................................................................ 14
Figure 6 (Risk Management Processes, ISO) .......................................... 17
Figure 7 (Research Paradigm Continuum) .............................................. 25
Figure 8 (Risk Workflow in AGCS) ......................................................... 39
Figure 9 (The Risk Assessment process at AGCS) .................................. 40
Figure 10 (Top Risk Assessment process) ............................................... 40
Figure 11 (Risk Management processes in AGCS) .................................. 44
Figure 12 (Open Coding Process 1/2) ..................................................... 53
Figure 13 (Open Coding Process 2/2) ..................................................... 53
Figure 14 (Axial coding Process) ............................................................ 54
Figure 15 (Adjusted Workflow) ............................................................. 55
Figure 16 (Macro Forces on Product Liability Insurance) ..................... 56
Figure 17 (Structure Pathway of the Thesis) .......................................... 75

List of Tables

Table 1 (Where is Triclosan) ................................................................. 6
Table 2 (Theory Building Framework) .................................................... 29
Table 3 (Interview Guide) ................................................................. 31
Table 4 (Type of Questions) .............................................................. 33

List of Abbreviations

Allianz Global Corporate and specialty (AGCS)
Allianz Risk Consulting (ARC)
Endocrine Disruptors (ED’s)
Enterprise Risk Management (ERM)
Risk Management (RM)
Risk Management Process (RMP)
Triclosan (TCS)
Underwriting (UW)
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1. Introduction

The introductory chapter will provide some general background that has led to the research question. It will provide some basic knowledge on Triclosan and its possible risk of endocrine disruption based on the current scientific research. It later goes into the third-party liability insurance and risk transfer that will connect the identified fields through risk management theory presented in the theoretical framework chapter. The research question itself will further specify the scope of research. Lastly, the purpose is set, and a disposition of the further study is specified.

1.1. Problem Background

In today’s society, industries are in a race to offer the best and most effective products. With the science that exists and the knowledge of substances, specific chemicals can be used to make the best and most effective product on the market. While for many substances that are used, the knowledge and research has shown that it is in fact significantly effective and not significantly damageable to humans or the environment. Just as many substances have long-term effects that are unknown. This uncertainty poses multiple risks.

Industries that make use of substances that have unknown effects, expose themselves to risk. The risks that are unknown vary from humanly harmful risks to environmentally harmful risks and further. For this case, the human and environmental health effects that are known and those that are unknown are of interest and pose as the risk and uncertainty variable. These risks could lead to litigation cases if there were to be an occurrence that can lead back to the exposure of the substance Triclosan as the defined trigger for the litigation. In other words, the industry could, as one example of risk that this uncertainty poses, be held legally liable to indemnify for any damage caused to third- and first- parties through the exposure to the substance provided by the insured.

Industries that don’t feel comfortable to engage in the game of big numbers, and as such don’t feel comfortable to rely on their assets alone to be enough in a litigation scenario, have, amongst other options, the possibility of sharing the risk with a corporate liability insurer.

The corporate insurer thus makes it its business to manage the risk. There are many different risk management guidelines and standards created by risk management organizations (ISO 31000, 2009; IRM, 2011; COSO, 2004) that have been published. While many agree on steps and measures that need to be taken for appropriate risk management, they disagree on the application and views on for example risk appetite.

As this risk transfer is an insurer’s business, the corporation is assumed to have structured processes within their risk management departments that should ensure the application on the company’s risk appetite on the risk purchased. The existence of these processes has been identified early on, however, there is a degree of risk that remains in the dark which can be classified as uncertainty. This uncertainty is usually explained as the remaining part of risk that is unknown after accounting for all the known risks. Thus, uncertainty is not a numeric value that can be quantified and as such it is hard to account for. There are existing studies that relate to the insurance industries and risks therein that need to be studied first to get a good approach on the standing of the insurance industry.

Serio (2006), in his article “External Forces Shaping the Future of the Insurance Industry” has described the issues the insurance industry has been facing since 9/11 and the
evolvement of risk managers and risk management programs in organizations. He starts with the explanation of why regulations have worked to compound challenges to insurers in the areas of underwriting, rating and claims settlement areas. He then goes on to describe how these internal issues are related to the areas of natural catastrophe, terrorism and risk management and how these issues further reflect the problems the governments and the public are facing, who are coming to rely more upon the insurers to address those issues. Serio (2006) then points out the importance of the insurance industry facing those problems with being at their peak of operability, financial and ethical effectiveness and efficiency when addressing these external forces. The external forces such as regulatory forces as the Insurance Marketplace Standards Association (IMSA) operated with a goal to bring greater transparency into the great financial institution that the insurance companies pose. While these might have been of issue for the insurances at first, they evolved into tools that the insurance companies can use in their underwriting process. Such tools for example would be standards such as the National Fire Protection Association 1600 on the standard on Disaster/ Emergency Management and Business Continuity Program which aims to “encourage the development of preparedness programs as a matter of good public policy and sound citizenship, helping to mitigate for both government and insurer, the risk of loss from emergencies” (Serio, 2006). Further acts of congress with Sec. 7804, Private sector preparedness, issued a tool for underwriters as it states, “that the insurance industry... where relevant, should carefully consider a company’s compliance with standards for private sector disaster and emergency preparedness in assessing insurability... to ensure that private sector investment in disaster and emergency preparedness is appropriately encouraged” (Serio, 2006). This evolved in the rise of Chief Risk Officers that are closely cooperating with the board members to ensure good risk awareness throughout the company and industries. The International Federation of Risk and Insurance Management Association (IFRIMA) later brought a broader definition of the risk management officer role:

The “overall understanding of the business objectives and the leveraging of these through, when available, risk management techniques to enhance the corporate objectives” (Serio, 2006). Secondly, “the establishment of a transparent framework for corporate governance, including the approval of the risk management programs by the boards, and reporting pro-active risk management prevention initiatives to shareholders and regulators” (Serio, 2006). Thirdly, “the understanding all internal and external risks to the enterprise and assuring adequate risk transfer, be it through insurance, hedging and other financial alternatives” (Serio, 2006).

This also shows the importance the insurance industry has for a risk manager and how important a close relationship between the risk management of corporate companies to insurers is. If the stability of prices and coverages the insurer offers does not stay stable, the risk manager is free to seek other alternatives that would better mitigate the risk, and this might not be beneficial to the insurer and the insurance business (Serio, 2006).

Another interesting aspect that applies to the risk management in corporations is the concept of agency conflicts in relation to risk taking of employees within insurance companies which was studied by Eling & Marek (2013) in their “Corporate Governance and Risk Taking: Evidence from the U.K, and German Insurance Markets”. Their study focuses on the variables of compensation, monitoring, blockholders, others (price, product, or capital, regulation) and their relationship to risk taking. They managed to test these variables in a combination, which is better to explain the complexity of risk taking in an insurance company than using the single variables and also, they managed to separate business risks and financial risks to study the right variables. Their study concludes that
with the total effect of compensation, monitoring, and blockholders on the risk measure are negative and thus when there is a higher level of monitoring, or blockholders (which was also viewed upon as monitoring, then there is a lower willingness to take risks (Eling & Marek, 2013). Also, unexpectedly, higher compensation was not found to be significant in terms of being related to higher risk taking (Eling & Marek, 2013). Further, company size was associated with higher level of governance and thus a lower level of risk taking (Eling & Marek, 2013). This shows the complexity of problems that might be posed for an insurance underwriter and when taking decisions but also it shows the complexity of risk management the risk management programs have to deal with and that it is every level issue at the company. In an insurance business, this study shows what problems that might occur during the underwriting when there is an agency risk.

Further literature on insurances and risk and the management thereof is provided by Kerr (2016) who discussed the importance of the insurance business in the art industry in his study “The art of risk management: the crucial role of the global art insurance industry in enabling risk and security”. While his study focuses on the possibilities ensured through the art insurance, his study also focused on the possibility of risk being embraced through the coverage of insurance and it is discussed if it is embraced to an unnecessary degree. This risk in the art industry is created through the uniqueness of the arts existence and the display, the risk factor, is at the same time the profit driver and thus, while risk should be limited, here it creates a value (Kerr, 2016). Further, his findings might be arguable to say that, yes, risk was or is embraced, but positively and that the cooperation between the insured and the insurer in the risk management process becomes ever more important (Kerr, 2016). This is especially highlighted by the help the insurers offer on risk management for the insured with its own specialists with their specialist knowledge of the market.

Carroll et al. (2016), in their “Engineered nanomaterials: risk perception, regulation, and insurance” study the confusing and uncertain field of nanotechnology within insurance. In their study they pose the variables of risk perception and regulation together with the uncertainty around the matter that has led to failed attempts when regulating the nanotechnology cases for insurers. These insurers do not seem to understand the complexity and fail to categorize or exclude exposure of nanotechnology issues with current risk management methods.

This confusion is explained through the ill-regulation that stems from the perception of nanotechnology being an emerging trend with a positive association which is explained through the argument that “civic societies require only minimum regulation” (Carroll et al., 2016). This ill-regulation as seen in the asbestos\(^1\) case, is a possibility of ill-litigation meaning a possibility for litigation seekers to start litigation in an area that is uncertain where claims might not be able to be fought off due to the misunderstanding in regards of regulations (Carroll et al., 2016). The authors also go into the mitigation methods that are posed by control bonding and RMS or control through design. The control binding (cb) is a method that is based on an iterative process that tries to categorize risks and treatment or exposure minimization of those risks that are posed to workers (Carroll et al., 2016). This is a process of subsequent trials that can only commend if the method has been found that will secure the workers from exposure to hazardous nanomaterial. As such, this is a method that can be exploited on the short-term (Carroll et al., 2016). The second method posed, is also called the ‘holy grail’ within the field of science. The control through design

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1 Asbestos is a chemical substance that was used in the construction industry to prevent material from burning. Its fibers are highly toxic and associated with several diseases and injuries. Its consequences to the insurance industry are further discussed in chapter 2.1.
method is based upon the integration of public and private organization to create nanomaterials that are inherently safe. The method to achieve this is through the modification of existing nanomaterials and their surface but maintaining their initial industrial function (Carroll et al., 2016). This would eliminate all safety control and the associated costs thereof (Carroll et al., 2016). These methods are subsequently used to mitigate the short-term risks as these are only based upon the short-term observations but would help to primarily get a better premium and coverage (Carroll et al., 2016).

Carroll et al. (2016) also mention the more commonly known risk management methods of reinsurance, catastrophe bonds, and state guarantees, of which all are deemed as inappropriate to deal with long-tail risks. Carroll et al. (2016) even state that “In general, long-tail risks are not insurable using orthodox actuarial techniques”

Thus, the authors propose an alternative approach in “the development of a new nanomaterial-specific regulatory framework that would include a nanomaterial-specific nomenclature necessary for drafting precise regulation and providing insurers with a necessary policy language” (Carroll et al., 2016). While it is commonly not the goal to exclude or limit coverage on everything, a clear definition on the matter of nanotechnology would make it easier for insurers to offer better and cheaper coverage for the companies involved with nanotechnology. However, while this approach is proposed it is not further specified than it being made possible, possibly through stronger regulation (Carroll et al., 2016).

Thislethwaite and Wood (2018) in their study “Insurance and Climate Change Risk Management: Rescaling to look beyond the Horizon” present the risk management on the current market on maybe the single greatest risk there is for insurers (Thislethwaite and Wood, 2018). The risk being climate change has been calculated to have possible financial damages that could amount to 1.4 trillion USD to be paid by the insurance market (Thislethwaite and Wood, 2018). This is in comparison to many other risks, even Asbestos, the highest risk on the scale. Their study is based on the integration of Climate Change Risk Management on the levels of Corporate Governance, Underwriting, and investment and into the Enterprise Risk Management (ERM) (Thislethwaite and Wood, 2018). Their conclusion on this was that 8% of the studied corporations included climate change related risks on at least 1 level, 3% into two levels, and 1% into all three levels (Thislethwaite and Wood, 2018). The investigation also looked into the rescaling of business that meant that these climate change risk management measures should be incorporated in various levels of the corporation, starting with climate change modeling and stress testing the policies existing and new ones to be written, then the company providing internal and external information on their climate change efforts, then the investments undertaken need to be cautious about their investments made as to climate change related risks in the industries that are invested in (Thislethwaite and Wood, 2018). Lastly, the inclusion of executive staff working on the matter and being educated on the matter. The firms that are doing this are defined as rescaling corporations compared to the nested corporations that assume a ‘business as usual’ stance as this in their opinion is enough (Thislethwaite and Wood, 2018). The authors have studied these nested and rescaling corporations and insurers and found out that the reinsurers like Swiss Re and Munich Re are the ones who take the rescaling stance due to it being ignored by many of their clients, the primary insurers (Thislethwaite and Wood, 2018). Their study also shows that historical data analysis to mitigate and calculate for these aspects are not of great use as there is not really a historical precedent (Thislethwaite and Wood, 2018). Their study provides a great framework for how and where risk management on risks with great uncertainty, and on a major scale, have to be implemented.
1.1.1. The risks identified in this research

In this study, the variable of risk and uncertainty is posed by Triclosan as an Endocrine Disruptor, which is a chemical substance included in cleaning products, soaps and toothpaste with certain and uncertain negative effects on the hormonal system of organic beings which has the possibility of a mass litigation scenario. The risks that are known can be quantified and managed but the uncertainty might not and as such in risk management it might be disregarded and either too big a risk taken, or an opportunity missed. If a corporate insurer wants to make a financial gain on the risk transfer, there are uncertainties that the insurer has to consider.

These are the main risk variables to the different parties involved in the chain of commerce with Triclosan:

1. The risk to human and environmental health, the risk for the Industry producing & selling the risk to end consumers and the disposal thereof into the environment.

2. The risk of accumulation of litigation and case suits brought forward from damages caused to consumers. This risk of mass litigation is a risk that has driven companies into bankruptcy.

3. The risk of accumulation in the portfolio of clients that are covered for the risks posed by the substance.

The reduction and mitigation of risks a corporate insurer faces is a response taking place under the risk management process (ISO 31000, 2009). In this case, the response of risk mitigation and a certain method of mitigation, through product liability insurance policy wording, is researched.

The following chapters of the problem background, includes the introduction to Triclosan and Third-Party Product Liability Insurance to build a foundation of knowledge for the study’s research question and research.

1.1.2. Triclosan – Possibly a Risky Substance

Triclosan is a substance used in cleaning products, soaps and toothpaste with risks and uncertainties surrounding the matter of the long term human health effects. The following parts will specify on Triclosan to facilitate some general knowledge on the substance. Here it is important to note that Triclosan is a heavily researched topic since it’s discovery as a possible endocrine disruptor has lead Triclosan being subject to heavy testing. This testing is partly responsible for the many effects that have been found and associated to the substance. While some effects here are the wished effects of being an anti-microbial disinfectant, it has been studied on the effect of causation in regard of immunity against anti-microbials. This only goes to show that there are no chemical substances that don’t have any effect as the effects are the reason we incorporate chemical substances. There are only unwished side-effects that either are known or not known and have different potencies. This is an aspect to bear in mind to not judge the substance prematurely as this study takes no opinion on the substance itself.

1.1.3. Endocrine Disruptors – A Possible Risk & Uncertainty Factor

Since the discovery and publication of the first list of suspected Endocrine Disruptors (ED’s) by Theo Colborn in 1993 (Daston et al., 2003), ED’s have been a widely discussed subject in terms of human health and environmental issues. More recently, in 2016 ED’s
have been in the media due to the ban of Triclosan in hand wash soaps by the Food and Drug Administration (FDA). Suspected ED’s are and have commonly been used in household products such as detergents, plastics, pesticides, and common body care products such as makeup or toothpaste (Maurer & Nardi, 2013). These chemicals enter organic bodies and are alleged to cause hormonal disruptions causing diseases, developmental problems, and fertility issues (Beyond Pesticides, n.d.).

The endocrine system is an organic system that is made up of glands such as the thyroid, gonads, and adrenal glands. Those are responsible for the production of hormones such as thyroxine, estrogen, testosterone, and adrenaline. These and other hormones travel through the blood system and are responsible for the development, growth, fertility and more. This applies to organic bodies, whether human or animal (Beyond Pesticides, n.d.).

Endocrine disrupting chemicals are substances that mimic, block or affect the synthesis of the natural bodily hormones. As such, they disrupt the human and animal hormone system, causing the body to react to false signals leading to fertility problems, cancer and other diseases (The Endocrine Disruption Exchange, n.d.). The exposure to Triclosan starts as early as through the consumption of breast milk infused with Triclosan (Allmyr et al., 2006). Later through the absorption through the gums in toothpaste or skin in the case of soaps (Beyond Pesticides, n.d.). To further be considered throughout the study, there are some sources that are consumer protection organizations, that while they might base their claims on scientific research, the selection of scientific research could be biased. Nonetheless, this highlights the discussion and ambiguity around chemical substances, endocrine disruptors and Triclosan.

1.1.4. What is Triclosan?
Triclosan has evolved from the use in disinfectant substances used during surgeries to the inclusion in cosmetics and daily household products such as toothpaste and soap where it is used as a non-ionic anti-bacterial agent of which 450 tons have been consumed in 2016 (SCCP, 2009).

1.1.5. Where is Triclosan?
The Following table gives an overview of a few of the most common products that include Triclosan. While EWG is a consumer protection organization, they base their list on the labels of products and update it regularly.

Table 1 (Where is Triclosan)

<table>
<thead>
<tr>
<th>Product</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dial Body Wash Clean and Refresh</td>
<td>Body Wash Cleanser</td>
</tr>
<tr>
<td>Arm &amp; Hammer Essentials Deodorant with Natural Deodorizers, Unscented</td>
<td>Antiperspirant/deodorant</td>
</tr>
<tr>
<td>Edge Sensitive Pro Relief Shave Gel</td>
<td>Shaving Cream (men's)</td>
</tr>
<tr>
<td>Edge Shave Gel, Ultra Sensitive</td>
<td>Shaving Cream</td>
</tr>
<tr>
<td>Colgate Total Advanced Toothpaste Gel, Fresh &amp; White</td>
<td>Toothpaste</td>
</tr>
<tr>
<td>Colgate Total Whitening Anticavity Fluoride and Antigingivitis Toothpaste Gel</td>
<td>Toothpaste</td>
</tr>
<tr>
<td>Cetaphil Antibacterial Gentle Cleansing Bar</td>
<td>Bar Soap</td>
</tr>
</tbody>
</table>
1.1.6. Chain of Commerce of Triclosan and the Parties Reasons for Including Triclosan

Triclosan would be produced by a chemical company such as BASF, who promote the product in areas such as oral health, where it has the benefit of being a preventive substance against gum disease (BASF, 2018). Here they support their claims on clinical trials that show that oral products using Triclosan are significantly more effective than products without Triclosan (Niles et al., 2005; Davies et al., 2004; Niederman, 2005). Further, they leverage the Triclosan containing products on the basis of studies that show that there have not been any harmful findings on the resident oral flora based on a study conducted over decades (Fine et al., 1998) and based on the method developed by Bernhard Guggenheim who is an expert in the area of dental hygiene (Guggenheim et al., 2001).

Colgate Palmolive has been criticized for the use of Triclosan (TCS) in their toothpaste Colgate Total. In 2016, this potential ED has been banned for use in soap by the Food and Drug Administration (FDA) but not in Colgate Palmolive’s toothpaste (Colgate Palmolive, n.d.). Critics have thus come forward, arguing that when Triclosan is used in soap, small amounts enter the body and that when used in toothpaste, the gums instantly absorb higher amounts and enter the substance directly into the bloodstream and should thus be of higher risk than soap (Cenicola, 2016). Colgate Total came forward with a response, arguing that the gains of using Triclosan outweigh the risk of harm. This is underlined by results of studies on more than 14,000 subjects over a period of three years. However, this study’s main research was on the effects towards gingivitis and removal of plaque rather than on the long-term health effects of Triclosan caused by the usage of the toothpaste. The study still concluded that, during those three years of conducting the study, there were no findings of harmful bodily injuries caused by Triclosan (Colgate Palmolive, n.d.) but still remaining inconclusive towards what Triclosan actually does to the human health as the way the study was conducted did not have a purpose to examine long term health effects on humans. As such, in comparison to Colgate Palmolive, the soap company failed to show that the benefits outweigh the risk.

Colgate Palmolive would distribute their toothpaste branded under Colgate Total to wholesale vendors and supermarkets who would sell the products to the consumers.

The chain of commerce of Triclosan shows what parties would be involved with the substance from producer until end consumer and where approximately Colgate is positioned and what parties are included in the process of producing and selling Colgate Total, a toothpaste with the substance Triclosan posing the threat of possible endocrine disruption with sales of 172.9 MUSD in 2017 (Statista, 2018). It is important to understand for the later set scenario of mass litigation.

1.1.7. General Overview on Legal Framework

There have already been class action lawsuits, where Triclosan has been the focus. Colgate Palmolive agreed to pay $2M to resolve multi district litigation on the matter of

(Source: EWG’s Skin Deep data base. Products containing TRICLOSAN, 2018).
Colgate falsely advertising their soft soap containing Triclosan as being antibacterial and killing most germs when in fact it was proven that it is not (Van Acker, 2015).

In the U.S., the Food and Drug Administration (FDA) is responsible for such regulations. As previously mentioned, in 2016 the FDA disapproved of the usage of Triclosan in bar soaps but not in Colgate toothpaste. Further, they forbid the marketing of antiseptic products being more effective than products not containing Triclosan. This is due to the missing evidence of these products actually being more effective than products without Triclosan (FDA, 2016).

As a response, further markets have phased out the usage of the 19 banned substances by the FDA including Triclosan in that list. Japan is one of these examples, having decided in 2016 to phase out all of the products using the 19 substances banned by the FDA. The countries are phasing out products due to the connection to markets where bans exist and can thus be considered a snowballing effect (Spencer, 2016).

As the risks to the environment and human health have become clearer, both the U.S. and Europe have created restrictions. In Europe, in 2016, the European Commission adopted new restrictions and a disapproval on the use of Triclosan as a preservative in cosmetics and other leave-on products (European Parliament, 2016). Further, this regulation limits the use of Triclosan to a 0.3% ratio in toothpastes, hand soaps and body soaps. Also, the restriction on mouthwashes with a ratio of 0.2% has been set by the European Commission with the Decision 2016/110/EU (European Parliament, 2016).

On the other hand, countries have responded that while there might be a harm to organisms there is, according to their regulations, no harm to the general environment and/or humans. Therefore, there is no further restriction planned on Triclosan. An example of such a response is Canada with their assessment report on Triclosan in 2016 stating that Triclosan does not meet the standard for human health toxicity nor does it pose a danger on the environment (Government of Canada, 2016).

1.1.8. Risk Transfer & Third-Party Liability Insurance

When talking about risk, we commonly associate it with the exposure and possibility to danger. Liability risk from a business perspective can be described by the definition out of the online business dictionary: “Risk to a company arising from the possibility of liability for damages resulting from the purchase, ownership, or use of a good or service offered by that company. Liability risk can be identified and mitigated through careful product design and testing but may also be inherent in the nature of the product to some extent, as in the case of automobiles or pharmaceutical supplies” (Business Dictionary, n.d.).

“Liability” itself can be considered a legal term, that defines the responsibilities for one’s actions and omissions which in terms is enforceable by civil remedy or criminal punishment. Companies are thus the risk carriers and when insuring themselves against this risk, they transfer parts of the risk on to the insurer who in turn will be responsible for the transfer of assets in case of claims (Business Dictionary, n.d.).
The simplest example of how liability insurance works, is that of a car crash caused by an insured individual who has insured himself for the damages he created by crashing into the third parties’ vehicle. Thus, the third-party claims for damages in terms of medical costs and/or remuneration for damages of the vehicle. The insurer pays for legal costs and damages created through the insured individual and to the insured individual without any direct contact to the third party (Investopedia, n.d.)

Now, this model is applied to industries and corporations and, in AGCS’s case, on organizations with revenues exceeding 500 million euros annually and 150 million internationally. To diversify that risk, many of these corporations buy corporate insurance products that will cover such damages caused by their products or services.

1.1.9. Options for Corporate Companies – Product Liability Insurance

The corporate companies deal with liability risk on a daily basis whether internally or externally. If the corporation evaluates the risk as too great to carry it on its own it can share or transfer the risk to a corporate insurer who in turn will charge a risk premium for taking or sharing the risk. Insurance is thus simply put, a way to finance risk (Åkenes, n.d.)

The rationale for a company to buy corporate insurance can thus be explained by the insurance services that a corporate insurer offers from a corporate company’s point of view. Firstly, the insurance would readily supply capital when there is a shortage of capital due to an unforeseen event or incident (Åkenes, n.d.). Secondly, it is a way to spread risk over several budgeting periods which can reduce variability of losses and thus be a benefit for the bottom line of the annual report (Åkenes, n.d.). Further, it is a way to adjust losses and minimize further impact in for example liability litigations (Åkenes, n.d.). Lastly, it might be necessary to comply with legal requirements in businesses such as marine cargo for example (Åkenes, n.d.). The product liability insurance becomes of importance to cover the bodily injury or property damage to third parties caused by a certain product of the insured (Irmi, n.d.) and this further incorporates the environmental pollution that an insured could potentially cause and all the animals that potentially are damaged in that process. Further, the corporate is possibly insured against pure financial loss that for example covers the operating losses that the corporation as an insured might suffer due to potentially further damaging first or third parties or the environment by further operating and also in case it has to pause or stop the operating activities which possibly poses a financial loss.

1.1.10. Tasks & Options of Corporate Liability Insurers

The insurers that transfer a certain amount of the risk towards themselves, make themselves responsible for damage caused by the industry insureds product and its bodily injury, property damage or environmental pollution and damage to third parties. However, these shared risks need to be accounted for and profitable for the insurer to transfer the risk. The difficult part of this is knowing the exact risk and predicting the possible outcome of the product. The next part, after analyzing and identifying the risk, in the Risk Management Process can be seen as the Risk Response and treatment of risk by the insurer. As such, insurers try to minimize exposure to some known risks by excluding coverage on damages that have their potential root cause in the excluded risk. For example, insurers might exclude coverage of Asbestos due to its heavy financial impact. Some insurers might still insure Asbestos but only under certain circumstances defined in the policy wording. While now Asbestos and its hazardous effects are known, there are many substances where the long-term effects are still not known but the risks are...
transferred and used by an insurer to make financial gains with the uncertainty of its future findings.

Other options are those to further distribute the risk to a re-insurer that would cover the financial damage caused to the insurer in case of litigation. Also, an option for corporate insurers is that of avoiding and not taking the risk or trying to through investment of the finance department out-do the possible financial loss a mass litigation scenario poses. These are responses that are part of the Risk Management Process and are further analyzed in the theoretical framework.

1.2. Research Gap

Due to the abundance of scientific research on Endocrine Disruptors and the more specific substance Triclosan, but its inconclusiveness towards long-term human health effects, there is an open field on the study on this specific risk and uncertainty and how the insurer deals with it. As Triclosan is a substance that has and still is being used in cleaning products, soaps, and toothpaste and more specifically in a common and much-consumed toothpaste, Colgate Total, the research on the insurers that would partly cover the damages caused, and as such carry part of the risk and uncertainty posed by Triclosan, seems highly relevant.

There is no identified specific research on the topic of Triclosan and the corporate insurer’s implication of insuring it. While there is literature that has studied hazardous material such as nanotechnology and the mitigation through risk management measures where there has been established that there are too few regulations to use policy wording as a mitigation method but there being no other possible ethical actuarial mitigation methods for long-tail risks (Carroll et al., 2016). These ethical actuarial methods are interpreted as to not being ethical in terms of the criteria that to ethically insure a risk, it must at least share these traits (Carroll et al., 2016):

1. Risk is diversifiable
2. Risk is quantifiable
3. Risk is fortuitous
4. Cost of risk is affordable
5. The risk is non-catastrophic

This puts down the foundation for the qualities a risk should possess to insure it under orthodox circumstances (Carroll et al., 2016). Based on the risk to insure, these criteria can guide the insurers in terms of the uncertainty level that it is dealing with in regard to the insurable or uninsurable risk. Insurable or uninsurable depending on the circumstance of the above traits. Here this provides the opening of looking into non actuarial methods that underwriting can use to mitigate for risks that do not fulfill all the above criteria.

Further, there is a decent amount on literature when it comes to risk management, risk appetite and uncertainty management with a big part of it in the insurance industry. However, the main part of this research is focused on the organizational efforts towards risk management, the possible financial aspects of risks, and behavioral aspects behind risks.

With the early detection of risk management procedures, the substance that not only poses a risk but also uncertainty and the response to such a risk and uncertainty in a corporate insurers risk management procedure can be studied on the basis of risk management theory. To study it on a deeper level a certain risk mitigation method can be studied. Here,
the risk management through policy wording has been mentioned in previous studies but not defined.

1.3. Research Question

To fill the identified research gap, this thesis aims to answer, the following research question: *How can AGCS make best use of risk mitigation measures for drafting product liability policy wordings?*

Sub questions surrounding the policy wording to be answered are; *what are the influences and drivers of policy wording? Would there be a possible standard to be drafted for such a risk?*

The case study focuses on the company Allianz Global Corporate & Specialty SE (AGCS) and based on their liability policies and the policy wording within, the use of the optimal policy wording will be researched. Here optimal wording refers to the insurer’s point of view in terms of limiting the risk and fulfilling their operational goal. It will be looked into, with what kind of policy wording a mass litigation scenario possibly caused by Triclosan could be mitigated in AGCS’s product liability policy wording. Also, elements surrounding the policy wording and influences on policy wording are aimed to be identified and researched to see how they would influence the policy wording. Thus, the policy wording is defined as a tool to be used in the risk management structure of the studied insurer.

1.4. Purpose

The Purpose of the study is to contribute with more scientific research on the risk management procedure of risk reduction and mitigation as a risk response out of the found standards and guides of risk management procedures. In this study the focus is put on the product liability insurance and the product liability policy wording that poses as a risk response variable.

While the study specifies on Triclosan and endocrine disruption as the possible risk by that substance, the risk variables can easily be changed, and any other substance could be studied on the specific matter and thus there is an aim to provide more knowledge of how the policy wording can be used but also how the policy wording is influenced. However, as endocrine disruption and the substance Triclosan has emerged in the media due to the previous bans and changes of regulations further insight and research will be offered into how these factors influence a corporate insurer and what the response from a corporate insurer is on substances with possible risks like endocrine disruption as these decisions will have major impact on the market and products created.

As mentioned, there is an abundance of scientific research on the environmental impairment Triclosan poses or could pose. The studies conducted on waste water treatment plants and on the waste water sediments and the effect on aquatic ecosystems show that they might have a drastic effect on the environment (Paxus, 1996). The studies on humans that will show more information about the long-term health effects on humans need to be considered. While there is no scientific conclusion on the matter that Triclosan is an endocrine disruptor it is a possible endocrine disruptor (Cooper et al., 2009), where the emerging new technology might enable new findings in the future through new screening technology (Schymanski and Williams, 2017). These aspects and how these are incorporate in a corporate insurers Risk Management process will be shown by the study and thus it will make a contribution towards the theoretical knowledge on risk management literature and corporate insurers.
Further the purpose is to identify a general treatment of risk and uncertainty that could be adopted for substances with similar uncertainties such as endocrine disruption that have the potential for mass litigation.

The study also analyzes the complexity of risk and uncertainty a corporate insurer deals with and proposes further points for future research to be conducted on the studied matter and makes a contribution both practical from an insurers point of view and theoretical from an academic point of view.

1.5. Disposition of the Study

Chapter one has provided the background to the studied material. Starting with a discussion on existing literature and explaining the substance and the insurance aspect that this study takes and in regards of this, what the research question and purpose are.

Chapter two, the theoretical framework will explain the existing theory that has been found in existing literature. This theory will be used in the study to draw a conclusion on new explanatory theory.

Further, the third chapter will provide the methodological procedures that this study will adhere to. Thus, it starts with the philosophical beliefs, the right methods to use for the chosen philosophical stance and lastly how the study will adhere to its associated quality criteria.

The next chapter, chapter 4, will show the empirical results in a structured manner. Here the full Interviews can be requested if wanted.

The analysis chapter will provide the findings and relationships that were found within. An important aspect here are the variables studied and possible new variables found that have a relationship to the studied question. It further goes into the analysis of the research question and purpose and whether or not these have been answered.

Lastly, chapter six will provide the general conclusions of the study by laying out the contribution that this study has made and possible recommendations on the studied case with a suggestion for further studies.
2. Theoretical Framework

The theoretical framework will provide the theories used and studied to come to an answer for the question at hand. The chapter will guide the reader through Risk Management and the definitions within needed to conduct the study. Starting with the risk variable which has been identified and defined as the mass litigation scenario. In this first part of the chapter, the theory around mass litigations is explained. The Later part defines risk and uncertainty to continue to the Risk Management part. Here the theory and processes around the chosen risk management guidelines are provided and the differences explained. The use of different techniques is identified and laid out with the risk management processes. The risk appetite theory provides a framework for identification of risk appetite and its use in risk management. Ending up at the final part, where the most important phase of risk management in this study is explained more thoroughly as it includes the risk mitigation and reduction in corporations.

![Theoretical Framework](image)

2.1. Risk of Mass Litigations – Classifications and Scenarios

Due to the globalization and growing interdependency within our global market today, it has been found that vulnerabilities within have grown and multiplied. In casualty events it has become more frequent that multiple insurance coverages are affected due to the accumulation and concentration of insured risks. An event that impacts a multitude of insured risks causing substantial losses under multiple insurance policies, is defined as a casualty accumulation risk. When looking into possible outcomes and catastrophes of casualty liability insurance and more specifically into casualty accumulation risks, we can classify them into three categories (Jandeck et al., 2015):

- Classic Clash
- Systemic Losses
- **Serial Aggregation**
The classic clash situation refers to the triggering of multiple claims, generated through an unexpected event or events, like for example the collapse of a building which could lead to the spark of claims in i) general liability ii) employer’s liability, and iii) professional indemnity. Which was the case in the Mont Blanc Tunnel Accident (Jandeck et al., 2015).

Secondly, systematic losses refer to a faulty business practice rather than a faulty product. This is a risk more common in financial sectors when for example dealing with IPO’s and leading to IPO laddering scenarios that have arisen since the 1990’s (Jandeck et al., 2015).

When looking into Triclosan, Systematic Losses and Classic Clash situations might be applicable but for this study will be out of scope.

Finally, and an in-scope scenario for this study; the Serial Aggregation Type, which leads back to a serial of losses caused by one event or one incident (Jandeck et al., 2015). With the evolving technology, new possibilities of testing products using chemical tests and further innovative tests, has brought forward new findings of risks that are associated with the use of certain chemicals or substances within products that previously were thought to be safe.

![Cumulative Incurred Asbestos Losses – U.S. Property Casualty Insurers](image)

Source: Towers Watson analysis of annual statement data compiled by A.M. Best and other industry data

Figure 5 (Asbestos)
For those ED’s where no link to a specific adverse health outcome has yet been established, it might be likely that some adverse health implications are connected once the long-term effects are better known. These findings can lead to a Casualty Insurance Accumulation Risk which like previously mentioned, is the concentration of insured risks or insurance coverages that may be affected by events or circumstances that cause substantial losses under several insurance policies, and potentially over multiple years and geographies (Jandeck et al., 2015).

The case of Asbestos explains such a possible outcome and its implication on the liability insurance industry. Asbestos being the most infamous historical event in the US Property and Casualty sector, was to blame for losses around USD 250 billion (Rappaport, 2008). Falling under the serial aggregation type of casualty catastrophe, Asbestos was commonly used in industrial construction and the production of construction and consumer applications where it was used for its favorable characteristics of being nearly unburnable. The later findings showed that Asbestos is cancerous and highly damageable to organic organisms. With its wide spread usage throughout several industries and its catastrophic economic damages that stem from the public exposure resulting in deadly diseases, it triggered claims and litigations throughout entire industries towards producers such as asbestos fiber producers, asbestos product manufacturers, and asbestos product distributors. Asbestos from a liability insurer’s point of view, is considered to be the worst-case scenario (Jandeck et al., 2015).

When graphically looking at the case of asbestos, the high economic impact and long tail on the insurance industry becomes more understandable. The drastic economic impact on the industry is linked to the long reaction time it took for the insurers to change their policies and exclude asbestos from their casualty liability insurance coverages or change the policy wording and language (Jandeck et al., 2015). This shows how relevant these uncertain risks are in the insurance industry today and how important it is for risk underwriters to have a good overview over their portfolio and what risks they include and what risks better to exclude, and how to mitigate it through policy wording to always keep an eye on what might become the next Asbestos.

2.2. Risk & Uncertainty definition

As risks differ within industries, business and professions it is important to go forward using a definition that best applies to studied question (Samson, 2009). The specific liability risk has been specified by a definition out of Investopedia in chapter 1.1.8. and a broader definition for Risk in the insurance business itself can be drawn from Webb’s (2003) definition; “Risk is a situation in which he possesses some objective information about what the outcome might be. Risk exposure can be valued either positively or negatively”. This definition is chosen as it is in line with the main business perspective of an insurance, that of valuing risk and to possibly make financial gains from them.

A part of risk that carries a broader definition is that of uncertainty. Cleden’s (2009) definition being “Uncertainty is the intangible measure of what we don’t know. Uncertainty is what is left behind when all the risks have been identified. Uncertainty is gaps in our knowledge we may not even be aware of”. As this definition best poses the uncertainty that can be associated with the substance Triclosan it seems to be the most appropriate to go forward with in this study.
To further classify the applicability of risk in this study, risk can be classified into operational or financial risk. Where operational risks are the one stemming from daily physical non-financial operating activities (Banks, 2004). The latter financial risks are the risks stemming from the purely financial activities of a corporation (Banks, 2004). In this case, the risk is operational, and the underwriting of the uncertainty posed by Triclosan and its possible mass litigation scenario are a risk to the operating of the corporate insurer.

To even further specify, the risk is either pure or speculative (Banks, 2004). Where a pure risk is that that has no upside but only a certain downside and thus only generate losses (Banks, 2004). The speculative risk has a potential upside and thus potential financial gains (Banks, 2004). Here the underwriting of Triclosan would pose as a speculative risk where financial gains would be made through underwriting of the risk with the mitigation of policy wording.

In insurance, the term ‘risk’ does not denote an actual event nor general event occurring in reality but the mode on treatment of the event that might occur and have an effect on a population of individuals (Ewald in Burchell et al., 1991, p. 199). Therefore, the term of ‘taking risks’ has evolved out of the calculus that is the rearranging and braking down of certain elements of reality which then describes insurance procedure when thinking of risks (Ewald in Burchell et al., 1991, p. 199). This, in a more simplified manner would describe that the insurers see risks in a different perspective as the ‘risk’ by itself is not actually the risk but the effect it has on a given population, is the risk that the insurer sees.

### 2.3. Risk Management

Risk management (RM) is a nowadays common practice in corporations as it deals with risks throughout the entire organization and specifies procedures to deal with risks. Risk management itself can thus be defined by its objectives to identify, evaluate and prioritize the risks. Further, RM includes the process of application of resources to minimize, monitor and further control the risk (Hubbard, 2009). For the Thesis, risk and uncertainty will be specified and the concept and management of risk are studied by reviewing existing literature.

#### 2.3.1. Concept of Risk Management

Risk Management can be applied through a multitude of ways and be used as a tool, not to predict the future but to provide a framework for decision making based on the information known and what can be known and use this for a better overall performance (Smith et al., 2006). Loosmore et al. (2006) state the Risk Management as being a proactive decision-making process involving the decisions to take a risk or to take steps of mitigation of identified risk to minimize threats of said occurrence and maximize the opportunity of said occurrence. Thus, the risk management definition stated by Cooper et al. (2005) uses the mentioned points from 2.2 and states the definition as follows;

“The risk management process involves the systematic application of management policies, processes and procedures to the tasks of establishing the context, identifying, analyzing, assessing, treating, monitoring and communicating risks “(Cooper et al., 2005).

The definition mentions the Risk Management Process (RMP), which in further will specify the procedures and phases within Risk Management needed to gain an understanding and knowledge on the risk at hand. Those Phases include the;
1. Establish the context
2. Risk Identification
3. Risk Analysis
4. Risk Evaluation
5. Risk Response
6. Monitor and Review

There are a multitude of variations of this Risk Management Process including a variation of different steps where the most common is the use of five steps where the first step out of the listed steps, “Planning” or “establishing the Context”, would not be included in the risk management process as it is the case in Smith et al.’s (2006) RMP. In the literature (He, 1995; Chapman, 1997; Tah and Carr, 2001; Standards Australia/Standards New Zealand, 2004; PMI, 2004; Loosemore et al., 2006), there are usually five steps included within the RMP. As the question at hand includes a question on mitigation and treatment of risk, focus is put on the fourth step of “Response & Treatment”. For this study, the framework that is most similar to the framework found at the studied insurer is a risk assessment process that has been broken down into four steps, where the first step of risk identification includes the establishing of context and risk identification. The second step would be the risk analysis and evaluation as a combined step which has been named the risk assessment. Thirdly, the risk mitigation which can be identified as the Risk response in the above graph. Lastly, the Sign-off and reporting, which relates to the Monitoring and Review above.

2.3.2. Risk Management Process

A successful and effective implementation of a Risk Management Process (RMP) will ensure a high awareness of a posed risk, understanding of the consequences the risk carries with it, a structured approach, a better transfer within the organization (Goh & Abduhl-Rahman, 2013). Further it will help ensure the worthwhileness and viability of a project or investment (Smith, 2003). It does not promise a removal of risk but reduces the probability of occurrence and induced impacts, making it possible to manage risks in the most efficient way (Capper, 1995). Here the steps within the RMP will be introduced and further specified. The identified RMP associates with the International Standards Organization 31000: 2009 standards (ISO 31000) and the Committee of the Treadway Commission (COSO). While both carry the same characteristics for their RMP’s they have each gained popularity in different parts of the worlds with the ISO 31000 being popular in Australia and New Zealand and the COSO framework being favored in the U.S. (Woods, 2011).

The first phase of Risk Planning involves the planning of how the risk management should be approached in regard to the project or investment at hand. The focus here lays in the level type and visibility is in accordance to the risk level. With this step, objectives and responsibilities are assigned (PMI, 2014).

Risk Identification, the second step, identifies potential risks and filters and ranks them in a risk profile. Here the classification of risks is vital for the identification purposes (Zhang and Wang, 2007). Further, this step will thus use the different risks identified and put them into different classes with considerations to their predetermined characteristics (Aleshin, 1999).
The third step of risk analysis captures all different outcomes of the risk at hand and makes it possible to see the severity of the risk (Flanagan and Norman, 1993). Risk response as the fourth step covers the strategy to minimize the impact of the potential threat and the maximization of opportunities (PMI, 2014).

In the fourth step, there are six typical responses that involve (1) retention, (2) reduction, (3) control, (4) sharing, (5) transfer and (6) avoidance (Loosemore et al., 2006; Kerzner, 2003). The selection of response must thus follow the severity of the risk but also follows the risk appetite of the corporation.

The review phase, the fifth phase or alternatively fourth phase, risk monitoring and control are the main features. Simply put it is the monitoring of the previous phase to check whether the response can be kept and has the expected outcome. This is an ongoing process that needs feedback throughout the involvement of the risk. In case of the outcome having a negative impact, the process might go back to phase three and start over from there to find a suitable method (Banks, 2004).

The previous analyzed phases put forward a framework that organizations can include in their risk management procedures to effectively manage and predict risks extracted from the risk management literature.

### 2.3.2.1. RMP Techniques used Iteratively

The phases involve different techniques for identification or analysis purposes. From the Techniques listed by David Valis and Miroslav Kouchky (2009), some are more applicable than others depending on the question at hand. The techniques can be distinguished into Quantitative, Semi-quantitative, and Qualitative. Where quantitative techniques are used for practical determination of statistical probability but lacks the influence that human factors pose and sometimes might lack data to be viable (Valis and Kouchky, 2009). The Semi-quantitative will use numeric values to apply them to consequence and probability statistics to classify and identify risks (Valis and Kouchky, 2009). The Qualitative techniques are used for risk classification in terms of “high”, “medium” or “low” risk (Valis and Kouchky, 2009). They have identified general terms and characteristics to be met when applying what kind of technique. (1) It should be justifiable to the situation or organization in consideration and (2) it needs to provide information on the risk so that it enhances the nature of the risk and understanding to how it can be treated and lastly (3) it needs to be traceable and repeatable for verification matters (Valis and Kouchky, 2009). It has been found that companies tend to use qualitative methods rather than quantitative methods when classifying the risk as it is better for understanding the severity of a risk and also more convenient to later quantify the qualitative data (Lichtenstein, 1996).

Risk management literature has provided a collection on techniques starting from informal brainstorming and workshop like techniques through to Interviews and up until benchmarking techniques (Smith et al., 2006; Lester, 2007; PMI, 2014).

Valis and Kouchky (2009) specify techniques like the Delphi technique which is a brainstorming like method that includes expert opinions and can be used throughout any phase of RMP. (Valis and Kouchky, 2009). While this method would be a very reliable method, it can be hard to get expert opinions in work shop like set ups for every risk a third party is exposed to.
Another technique that can be involved in the RMP is the Scenario Analysis, which includes development of descriptive models that would show sets of outcomes that could be classified into “worst case”, “best case”, or “expected” scenarios possibly based on both quantitative and qualitative data (Valis and Kouchky, 2009). These scenarios can then be included in the analysis like for example a sensitivity analysis (Valis and Kouchky, 2009). This technique, can be implanted in various phases of the RPM.

A closely related technique but quantitative approach is the Monte Carlo simulation. This method will take historical data and similar statistics and run them through software to display the previously mentioned “worst case”, “best case” and “expected” scenarios (Mun, 2006). This method is based on historical data and used for predictions that will display the possibility of an outcome in a percentage term (Darnall and Preston, 2010). As this is mostly based on historical data, such techniques are limited by the data existing which in some cases might not be enough to say it is reliable.

Further a technique that is of importance especially when talking about documentation purposes is that of the study of specialist literature. this method is a time-consuming study on existing literature that might show conclusion to risks associated to substances procedures or any other risk that might be associated to the question at hand (Smith et al, 2006; Lester, 2007; PMI, 2004) While this is a very reliable method it is not an economical one if thousands of articles have to be scanned, again, to identify every risk to third parties.

While there is an abundance of techniques, there is not enough time nor a need to specify the further methods in this study. However, the technique chosen should meet the three criteria stated above and the criteria thus, act as a guide.

2.4. Risk Response, the Fourth Phase of an RMP
As previously mentioned, the fourth phase includes the risk treatment which comes after the risk evaluation and categorization and as such this phase focuses on implementing controls as measures to modify risk (ISO Guide 73:2009). as mentioned previously, in the fourth step, there are six typical responses that involve (1) retention, (2) reduction, (3) control, (4) sharing, (5) transfer and (6) avoidance. Risk retention (1) is the acknowledgement of risk and acceptance of it without any efforts to mitigate it (Kerzner, 2003). Risk reduction (2) is the mitigation of risk to an acceptable level that would fit the organizations risk appetite (Kerzner, 2003). Risk control (3) is not the removal of the risks source but the reduction of the risk itself (Kerzner, 2003). Risk sharing (4) and risk transfer (5) involve the principal of transferring risk through a contractual mechanism (Loosmore et al., 2006, PMI, 2014). This for example includes the contractual purchase of parts of risks by insurance companies or re-insurers. Risk avoidance (6) is the refusal of the risk and not accepting any operating procedure to include the identified risk.

As seen from the above definition of the existing responses, can more easily be summarized into four responses which are; avoidance & prevention, reduction & mitigation, transfer, and retention (Potts, 2008). Winch (2002) claims that the lower the risk impact, the easier it is manageable but also, it is difficult to take a decision if too little information on the risk is available. While the little information or the uncertainty part could be handled by waiting until enough information is available and thus acting with a delay decision, it could lead to a risk becoming too critical to handle and thus the risks need to be handled early on in the process and handled through active decision-making processes involving the following techniques (Banks, 2004).
Avoidance and Prevention
From a corporate insurers perspective, the act of ceasing underwriting and renewal of policies because of the expected losses or improper return (Banks, 2004). This response method has been identified and briefly explained but as it is of no further interest for the study it will not be indulged further.

Transfer
The corporate insurer has the option of purchasing reinsurance coverage for portions of its portfolio from reinsurers and thus minimizing the financial impact a mass litigation scenario would have on the insurer (Banks, 2004). This response method has been identified and briefly explained but as it is of no further interest for the study it will not be indulged further.

Retention
Risk retention from an insurer’s perspective is the identification and analysis of a risk and its impact on a business without mitigation the risk itself but charging appropriate premium which will cover expected losses and provide a fair return (Banks, 2004). This is only an option for smaller risks where otherwise the premium might go through the roof and the insurer might not have any market competitiveness due to other insurers possibly providing the same coverage for a smaller premium. This response method has been identified and briefly explained but as it is of no further interest for the study it will not be indulged further.

Reduction and Mitigation
Here a mitigation method would be that the insurer might create additional reserves to compensate for unexpected losses from already underwritten risks (Banks, 2004). A further method of mitigation is that of issuing an insurance linked security or structuring a contingent capital facility to provide additionally funded or unfunded cover (Banks, 2004). The reduction factor would be a process that reduces the actual risk itself. In this case, a corporate insurer can form a policy wording that would specify when indemnification is triggered and can thus reduce the impact of the risk of mass litigation on the corporate insurer. This Response method is of great interest for the study and will be further investigated through interviews explained in the later chapters.

2.5. Risk Appetite
As there is much literature on the risk management and its processes within organizations with about 80 different risk management processes that have been identified (Olsson & Wu, 2008), there are differences in application of risk appetite within. While the previous chapter of Risk Management was based more upon the ISO 31000 and COSO standards, they provide a good framework for risk management implementation but have not been talking about the application of risk appetite. The following chapter will explain risk appetite and its role in RM and RMP’s.

2.5.1. Definitions of risk appetite
While the ISO 31000 standard takes a silent approach to risk appetite (IRM, 2010), the standards still provide a definition of risk appetite being; “the amount of and type of risk an organization is willing to pursue or retain” (ISO, 2009).

The COSO puts more weight on the risk appetite as they state that in an organization risk appetite is to be determined before the strategy as it “helps the management select a strategy that is consistent with [the organization’s] risk appetite” (COSO, 2004, p. 28). Their definition of risk appetite is bound to risk tolerance, which are the amount of risk
that an organization is willing to take in order to pursue a set objective. As such the COSO (2004) has explained risk appetite as follows:

In setting risk tolerance, management considers the relative importance of the related objective and aligns risk tolerances with risk appetite. Operating within risk tolerances helps ensure that the entity remains within its risk appetite and, in turn, that the entity will achieve its objectives (p. 16).

Further, the COSO (2004) argues that the risk appetite has to be adopted on a portfolio view which would help top management take decision on a portfolio basis to see whether the organizations overall risk tolerance and appetite coincides with the overall goal of the organization (COSO, 2004, p. 60). The portfolio is as such, a response to the different risks and risk tolerance within different units of an organization and can cover the interrelated risks within its risk appetite (COSO, 2004). Thus, risk tolerance and risk appetite are correlated to the extent of risk tolerance being an applied risk appetite to a specific objective (Rittenberg & Martens, 2012).

The Institute of Risk Management (IRM, 2011) take the stance of risk appetite being a “core consideration in any enterprise risk management approach” (p. 1) and defines risk appetite as being the goal to “express clearly the extent of [the organization’s] willingness to take risk in order to meet their strategic objectives” (p. 1). They also adopt the different ranges of risk appetite within an organization and the variation over time (IRM, 2011). For the purpose of reliability, the risk appetite should be measurable but the IRM does not propose any single measurement method, but that management needs to be aware of the risk and how performance drivers are impacted by it (IRM, 2011).

In summary, there are many different views on risk appetite and what it is but from the previous definitions, it becomes clearer that the use of it is applied on an organizational level to help meet objectives and form an organizational view on what amount of risk is tolerable to meet the set objectives. In terms of the corporate insurer, risk appetite can thus be seen as the amount of risk exposure an insurer is willing to take on to meet the set objectives and meet the expectations of the shareholder.

2.6. Policy Wording in Product Liability Insurance

The change in regulation (in chapter 1.1.7. General Overview on Legal Framework and Litigations) and the findings of scientific research is cause for concern for Insurers and Re-insurers that have or will sign policies and agreements with companies making use of dangerous or potentially dangerous substances such as Triclosan. For an insurer, it is an option to exclude coverage on substances banned in countries of usage or substances that have been qualified under local categories as harmful to the human body (Chemicalwatch, 2010). While litigation claims that have its root cause during the period that covered litigations stemming from such substances can be claimed far after the exclusion or change of policy of said substances. The insurer can change these policies for future contracts and change the wording to mitigate future risks and its economic impact on the insurer.

The tail of the insurance policy, explains the length of time where the insured party can claim for indemnification. As seen in the Asbestos case, casualty liability risk insurance has a long tail with claims dragged out over years. Whereas, the property insurance is short since, after the contractual year, the insurer knows what has happened and how high the claims are and what the overall impact on the insurer is.
To conclude, the tail can be regulated through the language and wording in the individual policies sold. Due to the mentioned potential risks that Triclosan poses, it is beneficial and a goal for insurance industries alike to be ahead of these legal regulations to manage the risk and mitigate the potential future negative impact on insurers and have exclusions lists, and beneficial policies with language and wording that suits the insurers risk appetite on substances and products they insure to mitigate for this risk to prevent the next asbestos. The exclusion of products and substances in countries where no bans are applied is thus based on the company’s own policy wording and thus a viable field for business research in to what extent an insurer can make use of policy wording strategies or theories as a mitigation method from the risk management procedures.

2.7. Theoretical Discussion
This study uses two common guidelines, that of the ISO 31000 and that of the COSO which both propose a very similar framework but different view on certain aspects such as the risk appetite within organizations and its importance. This is literature that is followed in research on the construction industry but can be applied to the financial industry as well as these are highly theoretical guidelines. These are common RM programs, they have been used together as one provides a better insight into risk appetite in an organization and both treat the important phase of risk treatment the same way. The risk appetite and its meaning were defined and can be used for a definition on the studied substance and risk. The later identification of different possible accumulation scenarios has defined how it can lead to a mass litigation scenario with the studied substance and there is clear indication through the introductory chapters how this applies to Triclosan as an endocrine disruptor and the position of the parties within a mass litigation scenario when looking back at the chain of commerce in the introductory chapter.

While the mass litigation scenario and its possibility pose a complex study on its own, for this study with the information collected and the theoretical build up to mass litigation are assumed as possible for the investigation purposes of the question at hand.

2.8. Theoretical Framework Summary
The previous chapter started with a definition of one the risk variables and the theory around it, namely the mass litigation and how it poses a risk to corporate insurers. The risk and uncertainty have then been defined to further handle it in the RM where the theoretical processes and techniques have been laid out. Together with the risk appetite theory they lead to the fourth phase of RM which is the process investigated to answer the research question and purpose.
3. Methodology

The right research methodology is a vital part of a research study. It encompasses the entire process of a research study starting from the theoretical underpinnings, on to the data collection and analysis method, finalizing with the development for solutions to the question at hand. It is thus the foundation for creating a credible study. The methodology chapter explains the procedure of investigating the problem in this study.

3.1. Reflection on the Choice of Literature

This chapter studies the literature on thesis writing that provides a framework for valid and reliable business studies. Much of the methodological literature is based upon Collis and Hussey’s (2014), “Business Research” book where the references have been used to find further literature. In their book, the mentioning of Yin (2009) who has a great amount of case study research literature led to the finding of the research framework guide around the methodology around case study research that this study follows. Yin (2009) provides a framework that can be followed throughout the case study research but also states that it is a research method where there are no strong guidelines that have to be followed as it is a rather iterative procedure and method. With Eisenhardt’s (1989) framework on theory building, the case study research which is heavily based on theory testing a building is enriched and by following his framework on theory building, the research will adhere to the quality criteria a case study research should follow.

3.2. Writing Under Commission

Allianz Group is a global financial services provider with services predominantly in the insurance and asset management business. 86 million retail and corporate clients in more than 70 countries rely on their knowledge, global presence, financial strength and solidity. In fiscal year 2016 over 140,000 employees worldwide achieved a total revenue of 122.4 billion euros and an operating profit of 10.8 billion euros. Allianz SE, the parent company is headquartered in Munich, Germany

In 2016, 42% of Allianz’s revenues stem from their property and casualty insurance which encompasses insurance that does not directly deal with life insurance, health insurance or property insurance but the liability of an individual organization for negligent acts or omissions (Wikipedia.com, 2018).

Within Allianz, the division “Allianz Global Corporate & Specialty” (AGCS) is responsible for these insurance products and cover industries on a broad basis from Agribusiness through Pharmaceuticals to Marine insurance (Allianz.com, 2018).

The researcher is a working student, part of the Global Chief Underwriting Office in Liability based in Munich and as part of the agreement is a collaborated project thesis. This led to presentation of possible themes and topics that would be interesting for the department. Under it were Cyber and Endocrine Disruptors. Due to the rather small existing literature base on Cyber the topic was disregarded. As such, the topic of endocrine disruptors was chosen and specified into one substance, Triclosan. With the work in the department and the discovery of Asbestos as a litigation agent causing mass litigations, the possible scenario of mass litigations was chosen. The Liability perspective is self-explanatory through the position the researcher has in the “Chief Underwriting Office & Liability” department.

While the researcher’s department itself is not responsible for the risk management
processes, the department works closely together with said departments and thus a multi-departmental collaboration on this topic was enabled.

While writing under commission is a stimulating process that allows the academic and professional view to take place at the same time, it is at times a process that might pose barriers to the research due to the different views from an either professional or academic view. As it is an academic research for the title of a degree thesis, the academic view needs to be adhered to and thus the paper will follow a more traditional academic structure.

3.3. Research Philosophy

The research paradigm explains the philosophical issues that come with every distinct research and that will make way for a foundation for the philosophical assumptions made to deal with the methodology and its philosophical framework which will be elementary for the right research design and method.

3.3.1. The Paradigms & Philosophical Assumptions

The research paradigms stem from the most classical ancient positivist research paradigm that has its root in the field of the commonly known natural sciences (Collis & Hussey, 2014, p. 43). According to Smith (1983), the researched areas were mainly within the physical world, objects and energy and their interaction and relationships within. While this is still a viable and much used philosophical approach, there is a newer form of research known as social sciences with its philosophical assumptions stemming from Kant’s (1724-1804), Weber’s (1864-1920), and further later philosophers drawing their beliefs from the principles of Idealism (Collis & Hussey, 2014, p. 43). The philosophical approach guides the researcher through the study allowing assumptions and interpretations about the world (Saunders et al., 2012, p. 129). Remenyi et al. (2003) even goes as far as stating methodology as the “overall approach to a problem which could be put in practice in a research process, from the theoretical underpinning to the collection and analysis of data”. It is thus of great importance to understand the different views when creating knowledge (Saunders et al., 2014, p. 128).

According to Levin (1988), a positivist researcher takes the stance of being objective during his research. This said, researchers still use the positivist stance for conducting social scientifically researched data but stemming from ‘positive information’ to be statistically verifiable (Collis & Hussey, 2014, p. 44). As such, the manipulation of an independent variable and its later findings towards a causal relationship is used to describe the results under one reality bound by certain theories and laws which makes it possible to measure social phenomena and apply quantitative research methods and statistical analysis (Collis & Hussey, 2014, p. 44).

The interpretivist philosophy takes a more subjective interpretational stance, allowing more realities to exist during the research and clarifying that it is impossible to separate the social world from the researcher’s mindset and knowledge (Smith, 1983; Creswell, 2014). Thus, the interpretivist researcher will make use of methods that give way for interpretation and meaning of complex societal phenomena rather than concerning itself with the frequency of phenomena (Yin, 2009). As such, the qualitative approach is used to get a deeper understanding of the phenomena in question (Collis & Hussey, 2014, p. 43).

This study takes a more interpretivist stance, as the research question in hand asks, “How can AGCS make best use of product liability policy wording …”, concerning the opinions and thus the different realities created by different studied subjects and further looking for
a meaning rather than a frequency. Thus, a study with interpretivist research methods or at least mixed research methods is best for the question at hand.

While positivism and interpretivism are considered to be the two extremes of the philosophical paradigms, there are new paradigms taking their stance in-between the continuum taking more relaxed assumptions (Morgan & Smircich, 1980)

**Research Methodology and Strategy Continuum**

Since it has been observed that there is no intrinsically better research method (Benbasat et al., 1987), Kaplan and Duchon (1988), have come forward with using multiple methods, quantitative and qualitative methods, to ensure a quality stronger research with methods and philosophical approaches within this continuum. To simplify, the further philosophical assumptions will still be based on the two extremist stances of an interpretivist and a positivist.

**3.3.2. Ontology**
The ontological assumption concerns itself with the natural reality of the research and while a positivist will assume an objective and external reality, the interpretivist will assume a subjective and socially constructed reality that can differ from subject to subject (Collis & Hussey, 2014, p. 47). In further detail the researcher can ask the question whether reality is more like a fixed structure with social structures existing independently from social actors or is reality constructed in the human mind and social entities are a construct within the imagination and thus the realities are only a construct of the social actors (Bryman and Bell, 2015, p. 32; Morgan and Smircich, 1980, p. 492). The two differing stances researchers use to validly produce knowledge are namely known as objectivism (positivist) and constructionism (interpretivist).

For this study, the constructionist approach qualifies as best. This is due to the reason that, as previously mentioned, the research question and researched subjects have realities that can differ from subject to subject and thus, are created in the subject’s mind by the social actors around. This more simply translated, means that while one expert in the insurance business has his beliefs (reality) on the studied question, another expert from the risk management department will have a different belief (reality) and this might be due to the different knowledge they have on the matter, which is inseparable from the study.

**3.3.3. Epistemology**
The epistemological assumption concerns the validity of knowledge and the relationship of the researcher to the researched subject or in other words the “how we know what we know” (Crotty, 1998). Thus, epistemology helps to find a philosophical grounding in regard to what knowledge is possible and how it is adequate and legitimate (Maynard, 1994). A constructivist will believe that there is no objective truth that can be known (Hughly and Sayward, 1987) and thus putting a focus on the diversity of knowledge. According to Lincoln and Guba (1985), the researcher and the researched object are linked and thus findings are created throughout the proceedings of the research. The positivist in the other hand, will believe that there is only valid knowledge in what can be observed.
and measured while keeping an objective stance to the research (Collis & Hussey, 2014, p. 47).

Thus, this study agrees with the earlier philosophical assumptions of taking an interpretivist or constructivist stance. The research questions, concern themselves with knowledge based on expert opinions that cannot be quantified and thus not measured or observed. However, the constructivist approach will allow a study on the diversity of knowledge and add value to an answer on the question at hand which is trying to investigate a deeper meaning rather than to statistically quantify a phenomenon.

### 3.3.4. Research Approach

For a valid study, it is important to be aware of what theories to include in your research and in the later research method and design (Saunders et al., 2014, p. 143). Trochim (2006) states the research approach as two “broad methods of reasoning as the inductive and deductive approach”. The approaches differ in the way that a deductive researcher is said to start from the specific working towards the general, or “works from the top down”, from a theory to hypotheses to data to add to or contradict the theory” (Creswell & Clark, 2007, p. 23). Thus, the deductive researcher will begin with the general and end with the specific making it appropriate to be used when examining laws, rules or other fixed principles (Trochim, 2006, p. 1). On the other hand, an inductive researcher works from “bottom-up, using the participants’ views to build broader themes and generate a theory interconnecting the themes” (Creswell & Clark, 2007, p. 23) and thus, according to Trochim (2006), an inductive researcher will move from the specific to the general, making it more applicable when researching arguments or experience on an observation. In terms of theory, deduction generates hypotheses from already existing theory and induction generates theory from observations (Ghauri & Grønhaug, 2010, p. 16).

In this case, the research question is very specific with its focus on one company (AGCS) and one of its products (product liability insurance) with a focus on one aspect of the product (policy wording) going into the broader field of risk mitigation. Thus, like Creswell and Clark (2007) said, observations will be made in order to establish theory based on the different views build broader themes and generate a theory interconnecting the themes. It can therefore be said that this study takes an inductive approach.

### 3.4. Research Method and Design

As Churchill and Saunders (2007) noted, it is of importance that the research strategy is kept in consistency with the theoretical and methodological approach but also with the research question asked. The research methodology is thus based around the philosophical approaches and assumptions and aims to give an answer to the research question. Cresswell (2007) points out the importance of choosing a method that best suits the study and bases this on three points;

1. Matching the approach to the research problem: Where a quantitative will be best suitable to make explanations on trends and the qualitative will be better suitable for problems where a deeper understanding needs to be created.
2. Fit the approach to the audience: who will read and use the findings.
3. Relate the method to the researcher’s experience: whether quantitative or qualitative, there are fitting research methods such as surveys, interviews, archival studies or case studies that need skills in conceptualizing and conducting the research in said manner.

As Yin (2009) and Saunders et al. (2009) give caution to the fact that various research methods exist and that there are certain overlapping’s within the different research
methods, it is of importance to choose the more advantageous research method. While there have been many methods realized for both quantitative and qualitative approach, some methods are more suitable than others when conducting the research. Galliers (1991) lists fourteen research methods, each with a tendency either towards quantitative or qualitative approach and some that might use both. Depending on the philosophical stances, it is important to keep in mind the research question at base. As it has been determined that the study will take interpretivist stances and philosophical assumptions, research methods associated to the interpretivist philosophical assumptions and with quantitative approaches have been analyzed to see what research method would be most advantageous for the research question at hand.

Firstly, the experiment method has been analyzed. As this method tries to determine different behavior of the dependent variable through manipulation of the independent variable (Collis and Hussey, 2009), it was deemed inapplicable due to the lack of control the researcher has over the phenomenon studied.

Secondly, the survey method. This method has its roots in the deductive approach (Saunders et al., 2009) and a positivist philosophical stance (Collis and Hussey, 2009). Due to the interpretivist stance and inductive approach, the survey method was deemed as inapplicable for the research at hand.

Thirdly, the ethnography method. This method is used to understand a phenomenon by becoming part of a group and setting, while the researcher was part of the organization, he could not take on the knowledge and experience of the studied subjects to gain understanding of the phenomena. As such, the ethnography method was also deemed inapplicable.

Finally, the Grounded theory method which seeks to develop a set of concepts that provides a theoretical explanation of phenomena under study (Corbin and Strauss, 1990). This implies the analysis of systematically gathered and iteratively analyzed data to provide theory for the research question at hand (Bryman, 2008). Argumentatively, because of the state of research question, the grounded theory would provide a valid research method for this research. On the other hand, this research aims to study a phenomenon in real life context that draws theory from general risk management issues and applies them to AGCS. Thus, it is not purely the goal to draw theory from data but to apply existing theory to the research question at hand. It was thus deemed less suitable in comparison to the case study research method. However, the grounded theory method provides a thorough framework for the collection and analysis of qualitative data where it has been found that case study research lacks information on this phase of research study or at least as Eisenhardt (1989) also mentioned, is the least codified process. This case study will make use of the grounded theory concept of qualitative data analysis which will be explained in the later data analysis chapter.

For this study, a method that is viable in accordance to its philosophical standpoints and its research question is the case study method. There are many papers and articles describing the case study approach. Of great importance is the article by Benbasat et al.’s (1987) paper on the approach of case study research and definitions for it. In combination with other sources (Stone, 1978; Benbasat, 1984; Yin, 1984; Bonoma, 1985 and Kaplan, 1985) in Benbasat et al. (1987, p.370), the definition for a case study is as follows;

A case study examines a phenomenon in its natural setting, employing multiple methods of data collection to gather information from one or a few entities (people, groups or
organizations). The boundaries of the phenomenon are not clearly evident at the outset of the research and no experimental control or manipulation is used.

Yin’s (2009, p. 13) definition of a case study is the “empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident”. This put a greater focus and explanation on scope of a case study research and the second part of the definition covers the range of characteristics. This shows that phenomena and context are not always distinguishable in real life. The definition of the multiple texts and Yin’s definition, clarify the technical characteristics of a case study research. Those include the possible multiple sources of evidence, benefits from prior development of theoretical prepositions to guide data collection and analysis, and the technically distinctive situation a case study deals with.

A discernible characteristic of case study research from the Yin’s definition above, has later ben captured by Dul and Hak (2008). They define the case study research as a study in which, single case study or multiple case study (comparative study), can be applied to analyze their real-life context and their scores can be analyzed in a qualitative manner (2008, p. 4). Also taking away from this definition, the possibility of a multiple or single case study where in a multiple case study the study would be based on multiple cases.

Further, Yin (2009) in his book “Case Study Research Design and Methods”, identified three criteria or conditions to be met when conducting a case study type research;

1. Type of research question posed – a case study approach was preferred when the research question dealt with the “How” and “Why”. Where this studies research question is based on the question; “How can AGCS make best use of risk mitigation measures for drafting product liability policy wordings?” and thus, favoring and fulfilling the criteria for the case study research method.

2. The extent of control the researcher has over the actual behavioral events. In this study, the researcher does not have any control over the behavior or events of the company nor the studied subjects. This is to ensure that during the research, the dependent variable cannot be manipulated through the researcher.

3. Degree of focus on contemporary issues. This study tackles the mitigation of a risk that a chemical substance poses that is used in every day consumer products. Recent events (Asbestos) have shown the significance this matter has on the liability insurance industry, where the insurance industry is a major financial institution with great impact on the economic situation regionally and internationally.

As the three criteria are met with the research question at hand, and with the previously analysis of other research methods, the case study method, is the one to add most value, and to be more valid in comparison to other research methods.
3.4.1. Theory Building

Eisenhardt (1989) describes the development of theory as a central activity in organizational research and that the intimate relationship to the data in a case study allows for development of testable relevant and valid theory. Eisenhardt’s (2004), “Building Theory from Case Study Research”, provides a framework for the theory testing and creation in case study research that can be followed in this case.

<table>
<thead>
<tr>
<th>Step</th>
<th>Activity</th>
<th>Reason</th>
<th>Chapter in this Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Getting Started</td>
<td>Definition of Research Question</td>
<td>Provides better grounding of construct measures</td>
<td>1. Introduction, Research Question</td>
</tr>
<tr>
<td>Selecting Cases</td>
<td>Neither theory nor hypotheses, Specified population</td>
<td>Retains theoretical flexibility</td>
<td>1. Introduction, 2. Theoretical framework</td>
</tr>
<tr>
<td>Crafting Instruments and Proposals</td>
<td>Multiple data collection method</td>
<td>Strengthens grounding of theory</td>
<td>3.4.2 Data Collection</td>
</tr>
<tr>
<td>Entering the field</td>
<td>Overlap data collection and analysis</td>
<td>Reveals helpful adjustment to data collection</td>
<td>4. Empirical Findings, Chapter</td>
</tr>
<tr>
<td>Analyzing data</td>
<td>Within case analysis</td>
<td>Gains familiarity with data preliminary theory generation</td>
<td>4. Empirical Findings</td>
</tr>
<tr>
<td>Shaping Hypothesis</td>
<td>Iterative tabulation of evidence for each construct</td>
<td>Sharpens construct definition</td>
<td>5. Empirical Analysis</td>
</tr>
<tr>
<td>Enfolding Literature</td>
<td>Comparison with conflicting/similar literature</td>
<td>Builds internal validity</td>
<td>6. Conclusion</td>
</tr>
<tr>
<td>Researching Closure</td>
<td>Theoretical saturation when possible</td>
<td>Ends process when marginal improvement becomes small</td>
<td>6. Conclusion</td>
</tr>
</tbody>
</table>

(Eisenhardt, 1989, p. 533)

The above graph is based on the framework provided by Eisenhardt (2004) and the relevant chapters in this study confirming to his suggested case study approach. With this approach the study will provide a suggested theory on the studied topic in the conclusion chapter.

3.4.2. Data Collection

The data collection method is important and according to Yin (2009) can be drawn from multiple sources. It is also important to distinguish between primary and secondary data (Saunders et al., 2009). Simply put, primary data consists of data collected during the research and for the research purpose and is new data that is generated during the research. Secondary data will still serve the purpose of the study but has been collected from either other studies or sources and thus have purposefully been generated for or during the research with applicability for the research.

3.4.2.1. Primary Data Collection: Semi-Structured Interviews

Interviews are a valid method to collect primary data as these allow for an investigation into deeper knowledge in meaning perception and explanations (Yin, 2009). Yin (2009)
also states that it is better to conduct the interviews on conversational basis meaning that they should not have to follow a strict guide.

While there are several kinds of structures for interviews the semi-structured interviews have been defined by the pre-set themes and topics that the interview is supposed to cover but that it is possible to differ between situations and interviews (Saunders et al., 2009) and thus allows for the flexibility mentioned by Yin (2009). Further, the advantage of semi-structured interviews is the possibility of going into different topics that might evolve during the interview and thus, new perceptions can be extracted and taken into consideration when going on with the study. It thus follows the interpretational stance the study.

**3.4.2.2. Secondary Data Collection**

During the research, secondary data such as company presentations on risk management have been gathered to identify first standardized procedures and to find interesting points that could be of interest during the Interview phase. Further, the information on the risks and uncertainty posed by Triclosan have been researched through secondary data or meetings with colleagues that have provided this secondary data. Further, the website cometarisk.com provides a great tool for finding risks on chemicals used in industries.

**3.4.3. Participant Selection**

As the organization is a multinational enterprise with a vast number of employees and a vast number of different departments, the departments that seem of most value for the study have been targeted.

**ARC (Allianz Risk Consulting):** Is a global team consisting of mainly engineers providing a global risk consulting service to all corporate clients. The service incorporates the identification, analysis, and the evaluation of a wide spectrum of potential risks associated to companies and their operations. Further, ARC takes on the responsibility of managing exposures and implementing global efficiency standards and processes. They are thus able to provide a thorough insight into the risk management procedures for liability insurance on the identification and analysis methods. Here there were three participants that contributed to the interviews.

**Underwriting:** Here the global underwriting team is responsible for the coordination and collaboration with regional and local teams. They are the authority holders that offer the specialized and tailored liability insurance solutions. Be it in general liability or the specialized solutions in crisis management, environmental impairment liability or clinical trial insurance. The underwriters act upon the analysis of risks provided by the ARC colleagues and determine the risk appetite. The three Underwriters will provide the best input on how they act upon risk that has been analyzed and then what measures they choose to mitigate it.

**Claims:** They deal with the incoming claims from customers that want indemnification for an incident. Here the experts then are responsible for handling the client with great care, analyzing the incidents possible coverage through the determined contract and determining what costs possibly have to be allocated towards the client for the occurred incident but also the possible cost of litigation and defense cost have to be determined. Thus the claims team provide legal expertise for the client. As such, in the workflow within AGCS, they are the last ones to come in touch with the analyzed risk. Claims will be able to provide input into the different severity of policies that are handled and thus provide the input to the policy wording part on the research question and to what extent it
is useful and whether or not there is a better mitigation method. Here, two respondents contribute to the research.

As it is the goal to get a deeper understanding of the studied subject, it is in qualitative studies not as important to get a high number of respondents as it is in quantitative studies (Yin, 2009). It is however of greater importance to get the right respondents, which then, even if it is not supposed to be thought of as a sample as previously mentioned, it would however be called a purposive sampling method (Saunders et al., 2009).

### 3.4.4. Interview Design

The Interview guide is based on the theoretical background that has been presented earlier and the questions are thus based around these themes and topics. To generate a variety of input on the same themes the interview guide will be held the same for all interviews. As previously mentioned, the interviews are semi-structured, the questions are only there to provide a guideline for the direction of the conversation. To ensure a variety on input on the topics and themes, the participants from different departments and interviews with them will be held on the same interview guide. The guide will be structured as follows:

#### Table 3 (Interview Guide)

<table>
<thead>
<tr>
<th>Topic</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awareness of Triclosan to the participant</td>
<td>What do you know about Triclosan? Endocrine Disruptors?</td>
</tr>
<tr>
<td>Intro to Study</td>
<td>How can AGCS make best use of risk mitigation measures for drafting product liability policy wordings? A case study on Triclosan as an Endocrine Disruptor with the potential for mass litigation. Diagram (see Figure 18 in Appendix)</td>
</tr>
<tr>
<td>Risk Analysis</td>
<td>How would you go about to analyze the risk of such a substance? In detail.</td>
</tr>
<tr>
<td>Uncertainty Analysis</td>
<td>How would the Uncertainty factor be treated?</td>
</tr>
<tr>
<td>RM structure and process &amp; Reporting and Ownership</td>
<td>Have these processes been written down and are provided as sorts of guidelines?</td>
</tr>
<tr>
<td>Risk Appetite</td>
<td>How would this risk be reported? To whom would it be reported? And who would own the risk?</td>
</tr>
<tr>
<td>Risk Appetite</td>
<td>How would the risk appetite towards substances such like</td>
</tr>
<tr>
<td>Risk Treatment: Reduction and Mitigation</td>
<td>Triclosan be determined? Industry wide risk appetite? In this case, would you not underwrite a producer or product that includes Triclosan based on the industry risk appetite?</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Policy Wording as a risk reduction or mitigation method</td>
<td>When the previous steps have been taken, what kind of response methods (reduction, avoidance, acceptance) do you have to deal with the identified risk of mass litigation. Common Response Methods being retention, reduction and mitigation, avoidance or transfer What policy wording measures are there? What are the most common trigger clauses used for substances with Triclosan product risks Do you think there is a better reduction or mitigation measure in the case of Triclosan with a potential for mass litigation? Are there guidelines or written down procedures for this risk treatment process?</td>
</tr>
<tr>
<td>Possibility of application of study to more substances</td>
<td>Would this proposed measure be the same if you would apply the situation and risk to the substance that have not been excluded?</td>
</tr>
<tr>
<td>Summary</td>
<td></td>
</tr>
</tbody>
</table>

This structure should provide clear answers towards the research question with a structure following the structure of the thesis. It will start off with an introduction of Triclosan and its risk of endocrine disruption. The interviewees are not all expected to know what this certain substance is, and if not then they now know which is important for the further analysis of risk management and response towards such risks. The mass litigation scenario is introduced and will provide the risk that the corporate insurer and their organization is trying to reduce or mitigate. Then the more specific parts of the interview will take place to analyze what steps these experts take to identify, evaluate and treat the risk at question. This structure is the second version as the pilot started with a reversed stricter which showed to lead to confusion when tested. This new and final structure was a result of further testing and is the structure for the final interview. The question selection follows the guide provided by Collis & Hussey (2014, p. 135) and is based upon what types of question are good for what types of answers that are wished.
### Table 4 (Type of Questions)

<table>
<thead>
<tr>
<th>Type of question</th>
<th>Useful for</th>
<th>Not useful for</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open question (e.g. Tell me what happened when …)</td>
<td>Most openings to explore and gather broad information</td>
<td>Very talkative people</td>
</tr>
<tr>
<td>Closed question (e.g. Who did you consult?)</td>
<td>Getting factual information</td>
<td>Getting broad information</td>
</tr>
<tr>
<td>Multiple questions (more than one in a sentence)</td>
<td>Never useful</td>
<td>Never useful</td>
</tr>
<tr>
<td>Probes (e.g. What happened next?)</td>
<td>Establishing sequence of events or gathering details</td>
<td>Exploring sensitive events</td>
</tr>
<tr>
<td>Hypothetical question (e.g. What might happen that could change your opinion?)</td>
<td>Encouraging broader thinking</td>
<td>Situations beyond the interviewee’s scope</td>
</tr>
<tr>
<td>Comparison question (e.g. Do you prefer weekly or fortnightly team meetings?)</td>
<td>Exploring needs and values</td>
<td>Unrealistic alternatives</td>
</tr>
<tr>
<td>Summary question (e.g. So, am I right in thinking that the main issues are …?)</td>
<td>Avoiding ambiguity, validating data and linking answers</td>
<td>Premature or frequent use</td>
</tr>
</tbody>
</table>

(Source: Collis and Hussey, p. 135)

### 3.5. Data Analysis

According to Eisenhardt (1989), analyzing data is the heart to theory building from case study research but also the most difficult and least guided part.

One important aspect in data analysis is that of ensuring that there is no premature leap to conclusions which can be prevented through the analysis of cross-case patterns. These are best analyzed through a 2x2 frame and the comparison of dimensions and group similarities and then choosing between cases (Eisenhardt, 1989). As this is a single case study, this approach does not seem to be applicable for the case selection and data analysis per se but has been considered in the participant selection from the different departments to see where the different data comes from and what similarities or differences these groups have and how it might impact the data collected.

Further, the collection of data is based on a pre-selected construct, that of a mass litigation scenario and Triclosan being the trigger thereof. Here, secondary data will provide a valid construct (Eisenhardt, 1989). This leads to a similar method in the hypothesis testing research which is that researchers use of multiple sources of evidence to build construct measures in effort to establish construct validity and strong theory (Eisenhardt, 1989). This is an iterative process where secondary data and primary data are compared and analyzed. In this case study it was iterative on a small scale due to the time limits set for the study.

In this case the theory building or testing from case study research is particularly appropriate due to the theory not stemming from previous literature or data but on the collected data and insight to develop a novel theory or test the assumed theory (Eisenhardt, 1989). As such, as previously mentioned, this research follows an inductive approach which according to Yin (2009) will be difficult in a case study when there is a time constraint which will not allow for the iterative process needed. As Yin (2009) has no specified data analysis procedures for an inductive approach his deductive method of pattern matching was studied but deemed inapplicable in this research which follows an
inductive approach. The method identified to be most applicable to this study is the inductive qualitative data analysis method of grounded theory.

3.5.1. Inductive Qualitative Data Analysis Method – Grounded Theory

Grounded theory has been stated as a data analysis method under which prominent theories can be drawn or explained that are centered around the main topics that are studied (Saunders et al., 2012). Corbin and Strauss (2008) also state that the grounded theory is based upon the previously discussed purposive sampling which indicates the use of cases that will support the question and theories at hand. Corbin and Strauss (2008) provide a structured and systematic procedure for every step or phase of the analysis which need to be followed to provide a substantial and valid analysis (Saunders et al., 2012). The three steps included in their framework for data analysis are open coding, axial coding, elective coding (Saunders et al., 2012). These will now be explained further.

Open coding is the procedure of disaggregating the data collected into conceptual units and labeling these (Saunders et al., 2012). The same label will be given to similar units of data. Normally, this would end in a multitude of labels as these are not necessarily based on existing theory or literature but more on the *in vivo* terms from the study (Saunders et al., 2012). As in this case, the questions asked in the interviews are based on concepts that have been studied previously, some labels can be applied from these existing questions and new ones will be added (Saunders et al., 2012). This process is especially vital when analyzing the transcribed interview and when taking notes during the interviews. Corbin and Strauss (2008) also conclude that the use of existing theory and concepts during the labeling process has to be done under caution as these might then be misunderstood by the reader due to the existing conception and views of these theories but not how it was meant during the in vivo data collection (Saunders et al., 2012). The categorization of this data will provide a clear perspective on where to focus future research or questions. Through this process it is also possible to limit the scope of the research question.

Axial coding is the process of looking for relationships between the categories of collected data and poses a process of theoretical development (Saunders et al., 2012). With the development follows the rearrangement into a hierarchical order of categories with sub categories emerging therein (Saunders et al., 2012). The main concept in this phase is the exploration of the phenomena at question through the identification of what has happened and why it has happened and topics surrounding the studied question so in this case the mass litigation scenario, or the policy wording and the product liability insurance itself. Once the relationships have been detected these are tested through collected data. Which can be done by testing them through hypotheses created or formulated questions on that topic (Saunders et al., 2012). This phase will thus look for positive data verifying, or negative data to demonstrate variations.

The final phase of the analysis in grounded theory, the selective coding, is based on the principal categories developed throughout the research where these categories then will show what is the central category to be studied and where research can be included, and theory developed to finalize the research with a grounded theory or explanatory theory (Saunders et al., 2012).

With the stated processes, the time constraint becomes a clear variable that will be difficult for this study with a time constraint. However, it seems to be the most fitting method to analyze the collected data.
3.6. Quality Criteria

To ensure a quality rich study, it is important to see to that the study is reliable, that is if the study were to be repeated it should generate the same results. Secondly, it needs to be valid, in the method chosen meaning that the procedures and methods chosen should be valid in terms of answering the question at hand. Thirdly, the generalizability which ensures that the research could be set in another setting or in case of an interpretivist, the findings could be generalized onto another setting or research (Collis & Hussey, 2009). The following chapters will explain the criteria further and its implications for a case study research and how this thesis will tackle the quality criteria.

3.6.1. Generalizability

Yin (2009) highlights the difference in generalizability from a more traditional statistical generalization method to the method that should be applied in case study research. In case study research the generalization should stem from an analytical approach (Yin, 2009). This is the use of previously identified theory and comparing it to the collected data and drawing conclusions or theory from the new data points in an analytical manner which in this case is the theory stemming from risk management, risk appetite, mass litigation and the data collected from a corporate liability insurer. To emit from thinking in the more traditional and statistical way of thinking, in this study and in general in case study research, the idea of sample sizes has to be left aside as it is not a sample size due to the too small number of respondents a case study would include and thus it would not be sufficient to draw statistical conclusions from a case study.

3.6.2. Validity & Reliability

While case study research is a much-criticized research method that arguably is hard to ensure a valid a reliable research (Yin, 2009), there are criteria that can be adhered to into account to ensure a good case study research. These criteria or tests can be categorized into construct validity, internal validity, external validity, and reliability. There are tactics to ensure the application of the quality criteria.

Construct validity can be ensured through:
- Use of multiple sources of evidence
- Establish chain of Evidence
- Review of draft case study reports by key informants

According to Yin (2009), this first test is especially important and problematic. It needs to be assured when collecting data that relevant and “subjective” judgements are used to collect the relevant data (Yin, 2009). In this study, the question focuses on How can AGCS make best use of risk mitigation measures for drafting product liability policy wordings? The data collected thus needs to be important and justifiable as data to answer the question at hand.

Internal validity can be ensured through:
- Pattern matching
- Explanation building

The internal validity has gained the most attention in other literature and is of main concern when conducting an explanatory research and determining causal effects as in x caused y (Yin, 2009). As this is not an explanatory but exploratory case study, the internal validity and the error therein will not be explained further. What can be taken away from the internal validity to always think of, is any possible variable z that exists but has not been identified. Thus, every research needs to be sure of the variables studied.
External validity can be ensured through:
- Use of replication logic

This third test, is applicable when going into outside generalizability of the study. As such if this study could be applicable to a wider universe because of the studied sample that would have statistical conclusions. However, as previously mentioned, samples and statistical generalizations are an incorrect form for data analyzing in a case study (Yin, 2009). While there is a possibility to include this test in the study would be the replication logic, which would mean to test the study on further corporate liability insurers with a product liability insurance. If these then were to give the same results, a generalization could be drawn for a greater population but as this is a single case study, this replication logic is out of scope and will not be explained further.

Reliability can be ensured through:
- Use case study protocol
- Develop case study database

This last test is a rather known test that would ensure reliability. This would be ensured through re-doing the same study over and over again and coming to the same result (Yin, 2009). To ensure this, the study will follow Yin’s (2009) framework on case study research.

3.7. Ethical Considerations
During the research it is important that the ethical aspects of data collection are adhered to. Thus, Collis and Hussey (2014) provide a checklist that needs to be included in an ethical research. The main criteria are, Anonymity and Confidentiality, Informed Consent, Dignity, and Publications. To ensure anonymity and confidentiality, the respondent’s names are not included in the thesis but only their departments name. The interviewees are asked to participate in the research and will be told what the research is about, as it is not a study on employee behavior the information on study will not have an impact on the reliability of the respondent’s answer and the informed consent is thus adhered to. Thirdly, the publication issue is dealt with by asking for consent of publication of the data collected. This can be ensured by sending the transcript of the interview and asking for consent of publication. This step will eliminate any potential sensitive data to be published. Lastly, the dignity will be ensured by keeping a professional relationship with the interviewees.
4. Empirical Findings

The Empirical Findings Chapter will provide the first secondary information used to get a deeper insight to the topic of Triclosan and Endocrine Disruptors. This information has been used during the interviews. The chapter then provides the actual interview responses in a compressed and structured presentation that follows the method used for analysis.

4.1. Potential Human Risks posed by Triclosan – the Scientific Literature

Triclosan in the scientific literature has been identified to five major risks that are associated to the endocrine disruption. Firstly, that of causing antibiotic resistance traits in bacteria that allow them to survive when treated with one or more antibiotics (Cooles et al., 2004). Secondly, that of developmental injury, which has its root cause from the early life exposure (Haggard, 2016). Thirdly, that of breast injury, which includes injury to the breast tissue with possible malignant tumors (Belpoggi et al., 2017). Fourthly, that of a direct injury to the endocrine system which includes the injury to the pancreas or thyroid, with possible implications leading to developmental injuries, cancer and other systematic metabolic diseases (Beltramo et al., 2016). Lastly, that of reproductive injury which includes the injuries to adult reproductive systems including the testicles and ovaries leading to reduced fertility (Minguez-Alarcon et al., 2017).

The tool provided by Praedicat, is a tool used by AGCS that provides information on risks that have been identified through an algorithm scanning published medical papers which analyzes the abstracts for the risks associated to a substance and the direction of acceptance throughout the medical field (Praedicat, 2018). Praedicat provides analysis on information that based medical publication which includes studies of Triclosan and then Praedicat can analyze the general direction of agreement. Therefore Praedicat has the possibility of giving a scientific answer on a hypothesis on risk correlated to a substance. Endocrine disruption and Triclosan are on the rise to agreement but there is still uncertainty (Praedicat, 2018).

Other sources, that as such do not necessarily have the scientific reliability have been posed by the earlier mentioned consumer protection organizations (ewg, beyond pesticides, keep a breast) but they certainly pose as an influential force that is in touch with the consumers and might have greater influence on the consumers than the scientific articles and studies that are not published towards these consumers. Such organizations have statements e.g.; In the animal world, there have been findings as to hormones having the extensive impact as to the possible change in sex as in the finding with frogs where male frogs turned into female viable egg laying frogs due to exposure to the ED herbicide atrazine in the water. Further, fish have been found where male fish were carrying viable eggs in their testicles (keep a breast & ewg, 2007).

These organizations also base their claims on scientific research and thus include recent human studies that show the link between ED’s and attention deficit hyperactivity disorder (ADHD), Alzheimer, Parkinson, diabetes, cardiovascular disease, obesity, early puberty, reproductive problems through to infertility. Further, Specialist have found that sperm count has reduced by 50% since the 1930’s due to exposure to estrogen or estrogen like substances produced by ED’s (Beyond Pesticides, n.d.). These outcomes even if not caused by Triclosan, show what an impact endocrine disruptor can have and possible future causation to be identified with Triclosan.
The impacts on the ecosystem are not to be forgotten. Triclosan has been found to be toxic to organisms such as algae, keystones and further complex aquatic ecosystems that are exposed to higher ratios of Triclosan. This has an impact on the survival of species within that ecosystem. Even though, the species impacted are at the bottom of the food chain, their survival and re-productiveness will impact on species higher up in the food chain. The findings of high levels of Triclosan and their impact on the food chain are highly speculative as such studies have not been conducted yet or have not been finished (Chalew & Halden, 2009). This again highlights the uncertainty about Triclosan.

Environmentally speaking, Triclosan has an influence on the bio culture when exposed to it. In the United States, of the consumer products containing Triclosan, 95% are disposed into residential household drains leading into the sewage systems and finally ending up at a wastewater treatment plant where only 58 – 99%, depending on the plants technique and systems, can be removed (SCCS, 2010). A U.S. Geological survey on 95 organic wastewater plants showed that Triclosan was one of the most common detected compounds and at the highest ratios. This raised the awareness in U.S. news when in 2008 national news reports revealed the exposure to pharmaceutical antibacterial compounds in national watersheds. Further concerns of Triclosan in our natural environment include the conversion of Triclosan to a highly toxic dioxin compound when in contact with sunlight and water. Further, when Triclosan and chlorine react they form chloroform, which has been listed as a probable carcinogen. This reaction is not uncommon due to the usage of chlorine to cleanse out tap water (Beyond Pesticides, n.d.). In Europe, until 2005, the highest amounts of Triclosan have been found in Sweden, with samples extracted from sewage systems, surface water, sediments, and fish, food stuff such as milk and eggs and meat (Dye et al., 2007).

However, another important aspect when reading this is the different potencies that chemicals have due to the differing exposure and also the accumulation effect which does not happen in the human body or environment in case of Triclosan (BASF, 2018). Triclosan would be broken down in body and dispersed off into the environments water. Bacteria and sunlight would further break it down thus, while there is consistently Triclosan added into the body or environment, there is no accumulation effect (BASF, 2018).

It is safe to say that it is a well-researched subject with many ongoing studies and some concluded studies. Still, it is hard to, with certainty, conclude what the effect of long term exposure to Triclosan causes to human health as the studies are mainly conducted on animals and on a later phase on humans. The few studies on human samples are still not concluded but will offer more insight in future (FDA, 2017).

For some ED’s clear causation to human exposure and health effects has been scientifically proven whilst for many ED’s there still remains a considerable uncertainty. The future findings of studies will thus grant a better inside to what the real risks on human- and wildlife exposure to Triclosan are. With its uncertainty today, those risks are fairly unknown but have to be dealt with or taken in considerations in various aspects of business. This study focuses on the casualty liability risk that ED’s pose or will pose on the Example of Triclosan and how, in a mass litigation scenario Allianz, as a risk carrier, could or is changing its policy wording to mitigate future risk and its financial impact on the insurer.
4.2. Technical Assessment of Workflow – Risks Workflow in AGCS

The workflow that risks go through in the setup of AGCS was relatively clear from the beginning on. The Departments, from which the participants were chosen, have a pretty clear structure and definition of work of what they do.

This graph is based on the department description and also verified through the interviewing Process. Where ARC will be responsible for the primary risk analysis for all the risks that clients are exposed to but also the risk exposure to AGCS themselves. Their analysis is based on scientific literature, market analysis, product and substance analysis, and scenario analysis, of which the findings on risk analysis will be further described in the following chapter.

Underwriting (UW) was identified as the risk owner and decision maker on how to act on risk identified by ARC. Thus, UW is responsible for the risk treatment phase, of which the findings will be further explained in the following chapter.

Claims has the latest touchpoint on risk, in terms of them being responsible to report to UW the big incoming claims and litigations that the company is facing. They are thus to some extent more included in the risk treatment and risk reporting phase of which the findings will be presented in the following chapter.

There has also been an early detection of the inclusion of the board of management with the head of ARC, UW, and Claims reporting to the board of management Which can be seen in the structure of the Company.
Secondary data provides a more detailed structure of the actual Risk Management Circle in the corporate insurer. It can be seen from figure 11 that the circle that is adhered to follows the structure that had been studied in the theoretical framework chapter. This is the ISO (31000) structure, with four steps. These steps are those that have been identified in the Risk Management process that are; **Identification, Analysis and Evaluation, Steering (or treatment), and monitoring.**
In coordination with this information that has been provided by the Allianz Risk Consultant department, it has been found that ARC is responsible for the first two phases, that of Risk Identification and Analysis & Evaluation. Underwriting as the risk owner assumes the Risk Steering (or mitigation) responsibility and Monitoring being a responsibility of claims who in terms will monitor the risk of mass litigation. The risk towards the consumer that needs to be monitored, the risk of endocrine disruption has been found to be a shared responsibility.

The figure 12 further specifies the procedures that the corporate insurer would take for the assessment of top risks. As seen from the figure, the tasks of the risk owners is further specified as to choosing the right risk mitigation strategy and signing off on the procedures and the later reporting to Group Risk Experts. The following chapters will present interview findings that are related to the identified processes in AGCS and further verify them to come to a conclusion on the question at hand.

4.3. Assessment of Risk and Risk Appetite in AGCS

The Interview phase started off with the introduction to the studied substance and its associated risks, where the participants knowledge varied from non-existent to deep and expert knowledge. A rather unanimous perception on the risk and its applicability was found. Therefore, the bias which was assumed to have been a problem in analyzing the risk and its implication on the company processes have not been implicated in a negative way as if the perception differing between the participants with existing knowledge and the ones without was not identified. The exposure and degree of exposure as an important factor of when talking about risks, was identified early on, with many references made to the Asbestos case and its effect it has had on the processes of an insurer. Thus, the perception of the risk itself was unanimous inside the company.

"in liability we always have this risk that there are unknown scenarios which nobody expected and then they materialize. That’s what we do. In part we have to live with that and there are of course scenarios that have been tough. Asbestos for example which you know, has killed some insurance companies. But that was probably the worst case considering an individual substance” (Interview 6 - UW).

However, the perception of the risk was found to be reliant to the perception of the risk in the market. If the market, authorities, and companies who are assumed not to be frivolous, perceived a risk not to be emerging, this is a perception that is adapted to. While this does not mean that there is no further investigation into the risk, on the contrary, there are monitoring procedures and risk dialogs that will keep going until certainty on the risk is established.

“I would find statements from regulators, authorities and consumer protection groups or from serious user companies like Colgate, Procter and Gamble and Unilever. The internet search would show me that there is a controversial discussion about the potential endocrine effects of Triclosan. Then I would realize that there has not been any real class action against Triclosan yet and no verdict by a US-court.” (Interview 5 - ARC)

As the possibility of mass litigation was assumed and also seen as a possibility as a risk towards AGCS in the case of Triclosan by the participants, it brought up the different ways in which this risk poses a threat. Here the different accumulation scenarios and categories were determined. Such categories were the geography, regulation, and exposure as a driver in mass litigation scenario.
"From a portfolio point of view, it is also important to consider potential accumulation effects, i.e. how many other manufacturers with Triclosan containing toothpaste does AGCS insure. In a wider context (i.e. not only considering Triclosan-containing toothpaste but also other products containing Triclosan), massive accumulation is sure as Triclosan is found in so many products from a large number of manufacturers." (Interview 1 - ARC)

New threats and risks were found. Such as a new regulation that could enhance the risk of mass litigation on a greater geographic perspective like it would be with the new EU initiative which would enable mass litigation in Europe. While this is uncertain and thus yet again poses new uncertainty, this would have to come into consideration when thinking about the risk of mass litigation.

“Yes, it is called “Muster festellungsklage” and it is an EU initiative to support consumers and it is called the EU consumer deal and their initiatives fall under this headline. There is also one that is to support the educated/qualified organizations, “Qualifizierte Verbände”, who are the ones that will be allowed to start litigations and the consumers can then opt in.” (Interview 8 - Claims).

On the other hand, such mass litigations have been found to, with experience, be very rare and usually caused by other errors but the inherent feature of the substance or product itself. While if that really were the case, that the inherent feature of a substance is the causation for a certain hazard, then it is possible to be an Asbestos-type of implication on the insurance market. For this to happen, there is however the burden of proof that lies with the third party, which is extremely hard to establish and thus to show substantial correlation is considered to be difficult.

“But we must know that it is very hard, at least from a scientific point of view, to prove that some findings point towards an endocrine disrupting effect of Triclosan and cause some abnormality in a child, no matter how sad that may be, but it is very very difficult to prove that this has been caused by Triclosan.” (Interview 5 - ARC).

“I have never seen a claims case that was based on the fact that the inherent property of the chemical caused the loss. We must bare in mind that these cases are very very rare, but having said that, if they occur then the magnitude of the loss is probably higher than of a normal loss caused by contamination. But the likelihood that a situation like that occurs is very small.” (Interview 5 - ARC).

The Risk Appetite was found to be owned by UW. In turn, they would define it on an industry wide basis rather than on a company wide basis or even substance basis. This means that there will not necessarily be a defined risk appetite on one company for one risk they are exposed to, but rather on an industry wide level. Therefore, the risk appetite was specified into three categories of risk appetite being; don’t accept it at all, partly accepting the risk, or fully accepting the risk or risks. This being said, the uncertainty factor is a factor that is always present and also acted upon as explained in the following chapter RM and its phases in AGCS.
"What is my appetite as a company to take that risk? Is it null so that I don’t want to have that risk at all? Then I would need to think how do I get rid of it? Or, do I fully accept that? Or in the middle, do I accept it to a certain extent that I feel comfortable with? The middle part is actually the regular one.” (Interview 2 – ARC)

As seen above the option of partly accepting the risk, considering the risk appetite, is the more common way, which also again is based on many drivers. One of these drivers again being perception, reputational implications, or implications on shareholders. When it is established that these categories, and many more categories are satisfied in a way of the risk scenarios not showing such a possibility or only to such a possibility that we would accept the risk, then part of the risk is written, and occurrences covered. There are however certain tools that are used during the assessment of the risk appetite. Such tools were defined as underwriting tools and would be posed by the exclusion list or chemical substance list to which extra attention has to be given.

“If I may continue with the technical risk mitigation measures that AGCS uses, like we do in case of exclusions and Triclosan, it is actually on our list of chemical exclusion. Nowadays, we like to refer from a technical point of view to exclusions more as a ‘chemicals of special interest’. These are chemicals which need extra analysis before we really say we cover them. We cover similar substances that are also on that list. It just means that we have to enter into a risk dialogue with a customer pre binding. That is something we could also do in case of Triclosan” (Interview 2 – ARC).

It can also be said that, the risk appetite of a corporate insurer is rather large, seeing as risk is a corporate insurers business, an exclusion and thus avoiding risk, might be the safest way to go for an insurer but that would also indicate no profit. That being said they will “not insure a burning house” (Interview 5 – ARC) but “there is always uncertainty” (Interview 4 – UW) in the insurance business.
4.4. The RM and its phases in AGCS

The Risk Management circle and the phases that are included in this study, were early on found to be easily associated to the departments that were included in this study but with a certain degree of overlapping and cooperation.

![Distribution of RM phases to departments](image)

**Figure 11** (Risk Management processes in AGCS)

4.4.1. Risk Analysis

ARC was found to be the most responsible when it comes to the risk analysis of all parties included. This is the analysis of substance and product liability risk, the analysis of exposure that the company might face. Further, they take the responsibility to run these risks report scenarios to UW and sometimes to the management board.

“I’m in the position to look at the entire book, I try to understand the risk. What is the potential impact on AGCS if the risk materializes? And what are potential mitigation actions?” (Interview 2 – ARC).

“...it is our job as risk consultants to highlight all these issues and bring this to the agenda and attention of the underwriter and discuss with the underwriter the potential coverage solutions for risk mitigation.” (Interview 1 – ARC).

Another seemingly important part during the risk analysis phase is that of the relationship with the clients themselves, who are the expert of their own products and also who want to know about their risk to get the best coverage and the best premium. This shows the faith that both the insured put into the insurer and vis a vis.

“...to understand the given risk which is associated with the information received from the client, there might be further information requested from the client to get a full understanding on the risks.” (Interview 4 – UW).

“I think that you always have to have a good and close relationship to the insured because they are usually the experts of their products and they need to be ahead of the market and development.” (Interview 8 – Claims).
The risk analysis that ARC undertakes is based upon research done by researching scientific literature, archival research to find similar cases, and market research and through all of the accessible information create the scenarios that AGCS and, or, the client might phase, and lay it out. These analysis methods have been innovating with new tools like Praedicat, explained in the first part of the empirical findings chapter.

“Praedicat would do the risk modeling and they would give us indication on potential litigation risks” (Interview 4 – UW).

“If it becomes an incident, what would be the accumulated loss for AGCS? Usually, in a very ideal world, you think about three scenarios which are: a very frequent scenario where only one or two contracts are affected; a midterm scenario (50-year event); and what would be an extreme scenario we speak about a 200 or 250 years event. The more seldom the scenario is the bigger would be the loss. The loss in a 250-year event has potential to be way bigger than one in a 5 year’s event. With that you would understand what the AGCS exposure is.” (Interview 2 – ARC).

It those scenarios that ARC would present to UW, who in turn have ownership and will decide whether or not this is acceptable or to what extent it is acceptable.

“They would then, if a risk is identified, contact underwriting on the development so that they can take action.” (Interview 7 – Claims)

4.4.2. Risk Treatment / Mitigation
While there are a number of treatment options that have been described in the theoretical framework chapter, and that have also been mentioned in the interview, the treatment method of investigation was that of risk mitigation or risk reduction. While it has quickly been established that there are lot of tools that a corporate insurer can make use of, it was relatively quickly established what kind of tools the risk mitigation would make use of as these tools were often referred to as underwriting tools.

“In regard to your question about mitigation, I think there are a number of things. First of all, there is the limit that you offer, then also associated with the limit is the question; do you buy reinsurance or not?” (Interview 6 – UW).

“And then of course, you have all the underwriting tools at your disposal like exclusions, sub-limits, premiums or self-deductibles and so on.” (Interview 5 – ARC).

“in terms of that, before we come to the mitigation, there are several things to consider. What comes to my mind is the potential loss in the areas which also plays a role in the risk mitigation later on and in liability. In that case, I would mainly think of bodily injury, as you know damage to humans, property damage, which would include animals because animals are property, and environmental damage in general. So those are the loss scenarios that come to mind. So, you do have different areas where the losses occur, and we have different limits up for environmental liability compared to bodily injury and property damage and so on.” (Interview 6 – UW).
Here it was established that there are different loss scenarios that would have to be treated differently with different tools or applying the tools in specific way required for the situation at hand.

“So, in regard to your question about mitigation, I think there are a number of things. First of all, there is the limit that you offer then also, associated with the limit is the question, do you buy reinsurance or not? And to which extent? Then what kind of self-insured retention or deductible do you require for such a risk. The trigger is a possibility and also a serial-loss-clause. Serial-loss endorsement is important, because what you don’t want to do, and that is what was really an issue in the Asbestos case, is that limits of a number of consecutive policy years are triggered. That is something that you definitely want to avoid.” (Interview 6 – UW).

The Underwriting tools were quickly associated with what is known as policy wording and all categories thereunder. These include, sub limits, different types of clauses, and different triggers, retro- active dates, excess layers, and finally also the possibility of exclusion.

“...for example, in the pharmaceutical industry, if you have a very large loss - and this example is publicly known - the cause of the loss was a contraceptive which increased the risk of thrombosis. That’s the same product and the same bodily injury, right? So, you have thousands of women affected by that, that is one series and that’s it. It is a bit simplified but generally speaking that is the situation.” (Interview 6 – UW).

The importance of the serial-loss-clause, is that of putting all the loss back into one policy year, which in a multi case litigation over a period of years for one series of events would otherwise be drastic because the litigation for this one series of loss for the same hazard would be dragged along over an unthinkable period of time and accumulation of several limits, like in the Asbestos case. Another critical policy wording measure is that of retroactive dates which are also associated with the trigger clause ‘Claims-made’ which is the opposing Trigger of ‘Occurrence’.

“The better one is the claims-made trigger which is our solution and the usual setup in the programs of our large clients. Claims-made has the advantage that if something occurs, it occurs under a recent policy year other than with occurrence with which you might pick up risks and exposure from years back which would mean that you would e.g. not have a chance to react on the premium side accordingly.” (Interview 3 – UW).

“You are close to what is happening or has happened. On the time-line there is first a causation that leads to occurrence and then later might lead to a claim. And with the trigger claims-made you are close to a currently existing coverage. So, if you cover for claims-made and not for occurrence and an injury has happened in 2010 and the claim is only made in 2015 that would mean you would pick it up under the claims made policy in 2015 and you can immediately react on that and ask for more premium or restriction or other measures for future happenings.” (Interview 3 – UW).

“If Triclosan, from our point of view as a corporate insurer becomes a too hazardous exposure and if it has been written on a claims-made basis, then
as a corporate insurer you could decide not to write Triclosan and exclude it from the future portfolio. This would cut off the coverage and mitigate the future losses a corporate insurer would face.” (Interview 4 – UW).

“Claims-made would be the right trigger for situations like that because with these kinds of products it will be quite a challenge to find out when the injury occurred and then there are already discussions between the insurers and insured about when the actual injury happened. This is the occurrence definition, for the occurrence-based policy. So, I could see that there would be discussions around that. Therefore, the applicable policy period would be clearer if you write such a risk based on a claims-made trigger…” (Interview 6 – UW).

“... then obviously, on a claims-made policy you have a retroactive date with the exception of France where this is not allowed, you have to cover the entire past. But in general, you go back only a certain number of years, ideally not 20 or 30 years.” (Interview 6 – UW).

The interviews have all led to the conclusion that ‘claims-made’ would be the trigger in many liability issues such as it would also be the case for the studied substance and the product liability insurance for it. Meaning that it has certain advantages that can be seen from the interview excerpts above where one of the main advantages is the reduction of the tail and the proximity to the incident and the possibility of changing premium or policy wording when something has occurred to mitigate for the future. It has also been found that it is not as easy to introduce a standard on the policy wording including these wording clauses due to the market force and insured strength in argumentation and also Regulation.

“I think in liability there is a certain trend towards the ‘claims-made’ trigger clause. This has the big advantage that there is no incurred but not reported losses (IBNR) out there, so there is significantly lower uncertainty.” (Interview 2 – ARC).

This is the aspect where claims-made and occurrence differ in their definition, as claims-made defines the trigger to be during the phase where the insured was covered and that it is during this phase that the claim has to be made. Whereas occurrence on the other hand specifies that the claim can be made after the policy has run out and there is an occurrence that leads back to the years that the policy covered. Meaning that Occurrence as explained in the previous chapter, is the trigger clause that would drag along incidents for a longer period of time.

“Claims-made is always, from an insurance point of view, the easier trigger. However, unless it is focused on chemical or pharmaceutical ingredients you would most likely face difficulties in most markets of the world to actually implement a only claims-made coverage. Everything is claims-made in France. It is the market standard there but not in the rest of the world.” (Interview 4 – UW).

“I do not see it as a general market standard. In the US, for example, in certain states, claims-made is prohibited. They generally do not except claims-made.” (Interview 4 – UW).
The claims-made trigger has been found to be the most effective trigger from an insurers point of view, but it also poses some difficulties when looking into the global market where there are different market standards and regulations.

Another possibility is that of exclusion, which was however quickly found to not be a satisfying solution. An exclusion would mean that the insurer decides to not take on any of the risk and exclude the risk entirely from the contract. This is not often the case but only in cases where there is an extreme hazard and causality to damages.

“The other point is that, understanding the market, we cannot rely on a situation which would allow that due to the case that certain risks are given, to just exclude everything. ” (Interview 2 – ARC)

“Nowadays, we like to refer from a technical point of view, to exclusions more as of a chemicals of special interests. These are chemicals which need extra analysis before we actually say that we cover them. We cover similar substances that are also on that list. It just means that we have to enter into a risk dialogue with a customer pre binding.” (Interview 5 – ARC).

Here we can even see that the exclusion has evolved to a more sorts of special interest list, which shows that the insurers are there to cover in case somethihng happens, but also as wihtout taking the risk, there is no profit to be made.

Some other not so traditional tools that are also used are the new collaborations with companies such as Praedicat, who enable the substance screening and scientific development to take on new levels to reduce uncertainty. While these certainly are very useful to do this, there are flip sides to it.

“The point is, with the tool we are getting closer and closer to reduce that level off uncertainty further and further. I am not saying that we will actually be able to eliminate that factor. Definitely not, because the flip side is, the more analytics advance, the more will be revealed. Take the example of diesel. When we talked about Diesel the first time four years ago, we were very relaxed because we said it is going to be very difficult to create a link between the company or person who caused the injury or the Diesel fumes at a certain location and the claimant which is the injured person to have suffered damages due to the Diesel fumes that were inhaled at said location. These days, with new analytics, just three years later, they are able to say that this person has worked in this area and the particle in his lungs are coming from that machine. In terms of workers, the whole litigation scenario has changed dramatically not for general traffic but if you think about all the people working at railways there is a completely different risk scenario. All of this only in three years.” (Interview 4 – UW).

Thus, while this innovation might be a positive tool to be used for risk mitigation or analysis, it possibly reveals new negative perspectives for an insurer, which in the end is not negative, but a possibility for the insurer to yet again improve but there are negative financial aspects associated to this. Also, While the interviews were conducted, it showed that a majority of the interviews revealed a perspective which is of major importance during the risk mitigation phase. This is the concept of costumer, or in this case, the insured relationship. As such, like during the risk analysis phase, the relationship to the
insured is necessary to have a good mitigation strategy, be it while discussing the policies to be drafted, or be it the discussion on the risk management in the insured company.

“I think even more important for the future it will be to mitigate the risk where it actually starts. Those tools we have available should be used to actually talk to the client. Triclosan is a disinfectant, so the question for me is: is there any other substance that does not have the reputation or potential risk of being an endocrine disrupter which could replace it? Then go back to the industry and to our clients and say; okay hey listen, you might be running into a risk here, let’s think about how you can replace that substance in the future and we would like to partner with you and we would give you the resources to work on this situation. Then further, we as a corporate insurer would provide the coverage for the residual risk of Triclosan. This would lead to a situation where the insured takes the effort to actually improve their risk. Yes, that for me, is the future rather than just sitting at our desks and providing coverage limits at a certain price.” (Interview 4 – UW).

“What is interesting on the Triclosan topic, which is quite evident, is that this gives us as a corporate insurer the opportunity to engage in a qualified discussion with our clients on a very early stage. You have talked about the mitigation of the risk at our end, which we do with the partly traditional tools such as risk consultancy, trigger wording, amendments, but also re-insurance etc. and less traditional tools like Praedicat, or our other service providers right now. However, even more important for the future will be to mitigate the risk where it actually starts. Those tools we are having available should be used more to actually talk to the client.” (Interview 4 – UW).

“You always have to have a good and close relationship to the insured because they are usually the experts of their products and they need to be ahead of the market and development.” (Interview 8 – Claims)

This shows a clear vision for the future, which was shared throughout the interviews, that of the importance of a good customer relationship and using the available tools, be it internal experts, or modern tools like Praedicat, to talk and engage with the client who anyways would like to stay ahead of the risk.

4.4.3. Risk Monitoring

The final phase that was included in this study, is the risk monitoring, which is mainly assumed by the claims department. This might be due to claims being the final step in the process of the risk, as their work starts with claims coming in, and in case of litigation the monitoring thereof, and the planning of the procedure.

“...if it comes to mass litigation, then our professional starting point would be when the insured notifies us about the claim and asks for insurance coverage.” (Interview 7).

The process involves all the planning until the litigation is settled, this is because AGCS also assumes responsibility for settling the litigation suits that are brought towards their clients.

“At that point in time, I would look into the risk report of the insured. I would look into the structure of the insurance program and I would certainly
as well monitor the ongoing mass litigation and then come to an assessment of our liability risk. First of all, our scope of coverage and insurance programs in the pharma industry have very high SIR’s or deductibles, so our attachment point in such a case might be in the nine-figure range, might be a bit lower. That would be part of our first assessment if I would be notified by our insured and then to do the first risk assessment for AGCS.” (Interview 7 – Claims).

It was previously assumed that the claims department would not be overlapping with UW or ARC too much, however, it was found that there are overlapping’s and important cooperation needed to reach a good settlement but also to serve the customer.

“I would go to our ARC colleagues or our Underwriters and ask them, are you aware of this already? We have to take into calculation that at some point our insured might be involved in mass litigation as well. Then I would become active but apart from that. For me the starting point is always that there is some real liability risk that we insure and that there are first claims so that we know that there has been an individual or a group of claimants is claiming that they were injured by a certain drug or substance.” (Interview 7 – Claims)

“...as soon as we become aware and we are notified by our insured, we will start the process and then we will evaluate whether this claim has merits, what is the right strategy to defend the claim, and we will do this together with our insured and with risk consulting but also with our legal expertise. Expertise that we have ourselves in the claims department and at some point if we come to the conclusion that there is a potential risk that it could become a potential claim then the claim must be settled at a point in time or we might face a risk of obtaining verdicts versus our insured with high awards to the claimants.” (Interview 7 – Claims)

While, there were some interesting points raised for the risk monitoring, it is not the phase that is studied so it was not questioned in great detail. That being said, seeing as RM is an iterative process, the risk monitoring is none the less an important step for the risk mitigation as here, when there is a new risk identified, then the treatments starts again and as such, the mitigation comes into play again.

“What we none the less are doing, is to keep track of the development of substances and which is part of the background for the cooperation with Praedicat. We want to have a better understanding of future developments and if we get the feeling that from all analysis that it is going into the wrong direction, we might need to rethink some positions.” (Interview 3 – UW)

This being said, there is also a certain responsibility that the clients have. This would be to report on new arising risks or changes in risks, be it positive or negative.

“The insured has certain duties to inform the insurer about claims scenarios, about circumstances he is aware of and if he does not comply with those, that could become a discussion...” (Interview 8 – Claims).

“We try to get a good understanding for any client how they are involved with critical substances. We want to understand about the substances that
are included in our critical substance list if the use by the client is a current one or an older one which we might not pick up in a policy...” (Interview 3 – UW).

This once again shows the faith that is put towards the insured and that this is a vital relationship to maintain throughout all the phases of the RM process.

4.5. Macro Forces as a driver of Product Liability Insurance Policy Wording

Another important aspect are the macro forces around the insurance product that have an impact on the product liability insurance and the insurer itself. These forces were identified as the market regulation, market perception, and customer strength. This is a factor that had to some degree been established earlier on when looking at regulations and exclusions. Like it was explained earlier that in case of a substance or product being illegal in that country, then there is a high possibility of the insurance not covering and excluding that risk from their portfolio. While this is a rather logical process, there are more forces out there. For once it would be the perception on the substance on the market.

“If the industry is against certain products, Triclosan in particular, and they all agree on that, you will find exclusions in your contract and it wouldn’t be insured. That’s a good path. That bad path is a more difficult one, if the industry in general is not against Triclosan, but we as AGCS would have a problem with that. Usually that means excluding it in the contract will bring you out of the game.” (Interview 2 – ARC).

“So far you can explicitly name it that you make up a section in your wording where you say that losses stemming from ... are excluded and any material or goods where Triclosan is existent, you mention it explicitly as part of the contract. Then all of that is excluded, but the question is would the client buy that?” (Interview 2 – ARC).

The previous parts showed the perception that can drive the wording possibilities of the insurer and also the second excerpt shows that the customer has a certain demand which in some cases might not be covered when certain exclusions or policy wordings are included in contracts from AGCS when another insurer would not have these exclusions in the same contract.

“The issue with Triclosan and other endocrine disruptors is that they are so widely spread and used in such a variety of products that we cannot say that we won’t touch a company that makes products that contain Triclosan or other endocrine disruptors. This would not be a criterion but if we have a chemical company, or manufacturer for the medical use then we would look at that and then try to find a solution for that. But it would not be a reason for us to decline the risk, because otherwise we would not have any clients and after all in insurance, we do take on the risk of others.” (Interview 6 – UW).

The simple theory around supply and demand, applies in the policy wording of product liability just as well as it does on the general market. Further, there is also a kind of dependency on the regulators to do their job right. When saying this, their job is implied to
having regulations and testing on the possibly hazardous substances and materials that are used on the market.

“Up to a point, besides the assessment of our ARC colleagues, we need to rely on the authorities that they regulate it appropriately and otherwise what we are doing is to get an understanding on the issues together with ARC.” (Interview 3 – UW).

“If the authorities approve those applications and there is scientific evidence, like clinical studies, that these applications are effective and are safe, this gives us protection. If you know that well known companies like colgate or procter & gamble use triclosan successfully for applications like toothpaste, that tells me that these companies are not frivolous, they want to protect their good name in the marketplace…” (Interview 5 – ARC).

“Toothpaste is regarded as a medical application where in the US you have to have FDA approval, so there is a very high hurdle for entering this kind of applications into the market. You have to have the pre-clinical or toxicological studies approved. Then you have the clinical studies to prove that the substance is effective. Another fact is that triclosan has been on the market and in toothpaste for decades. So there is a very large epidemic evidence about effect and side effects.” (Interview 5 – ARC)

“And the burden of prove lies with the claimant and I don’t know how much weight the scientific prove has in the US or what it really takes to make a mass litigation succesful, but we have to know that the scientific proof that something has happened due to triclosan is very hard to establish, if next to impossible actually.” (Interview 5 – ARC).

The dependency on the authorities such as the European Union’s Commission and the FDA to do their job when it comes to safety regulation on the market is important. It is a big part of Insurance. While this does not mean that the insurers believe that this is a way for them to relax, it is certainly something that gives them a hint on the current status of hazardous substances and materials, but still, insurers have to possibly be ahead of these regulations as a change in these might have a big impact on their policies written. As it was seen in the Asbestos case, while after the scientific evidence was found that Asbestos is highly hazardous, policies that covered such instances, were triggered and as such indemnification was triggered as well. At the same time again, as the scientific proof to show correlation between certain hazardous materials and one injury is very difficult, it can become hard to be proven. None the less, if there is an indication that that is the case, the insurer assumes the responsibility it has taken upon itself and will indemnify.

4.6. Validity and Reliability of Processes in AGCS

For a validity test and reliability test of the research topic and to investigate further applicability of policy wording as a product liability risk mitigation method, the interviewees were asked whether the application and processes that were discussed could be applied for other substances with other or similar risks. Here it was found that, yes, the departments would go through the same processes to analyze the risk, analyze possible mitigation, make a decision on what measures are best to be included and then the claim process would also go through the same process. Thus, this is certainly applicable to further substances.
5. Analysis & Discussion
The following chapter will provide the analysis on the empirical findings that have been presented in a structured manner in the previous chapter. This chapter will then present the relationships detected within and present the adjusted categorical view of the empirical findings.

5.1. Discussion of Analytical Methods
While the time constraint of the study immediately posed some difficulties when adhering to the grounded theory framework, the first step of the Open Coding process was followed and resulted in a number of categories and even more sub-categories. The adhering text under the categories can be seen in the extended text which will be made available if wanted.

The second part of the Open Coding process included the re-categorization of main categories and sub-categories. Here it was found that there were some subcategories that seemed to show a certain relationship. Such as the Macro Forces relationship which was shared in many main categories, and thus it was included as one main category itself. Here the important variables were the Customer / Client Relationship and also the Regulation & Authorities. This is the way that the findings in the interview were structured and presented in the previous chapter.

This led into the later phase of Axial Coding. Here the relationship throughout these variables were tested through the existing knowledge out of the Interviews. While this is a step that could require further interviews to get an even deeper knowledge on the interrelationship of the categories and variables. It was found that in this study, much of the information needed for the question at hand in this study, was found in the Interviews and thus there were no further interviews conducted. This also has to do with the time constraint.
This graph shows how the relationship was studied on the information provided throughout the interviews. During the interviews, questions regarding all categories were asked to understand their background and interrelationship but the most important relationship to answer the question at hand was that of the relationship to policy wording. Here it was found that there are many interrelationships that have an influence on the policy wording. One with the greatest impact is that of the customer force, but also that of regulations that have the greatest impact.

The last part, the establishment of the grounded theory itself is presented in a following chapter. For this chapter, the grounded theory chosen as a framework did pose the optimal choice for the research question. While for this study the information provided through the interviews is sufficient for the answer of the question, further interviews could provide an even deeper insight into the relationships of the variables and provide more background and maybe study the perspectives of the customer and, or, the perspectives of the authorities.

5.2. Analysis of Empirical Findings and Grounded Theory

The Following part of this chapter will further analyze the findings in the empirical findings chapter and present the categorical interrelationships detected that were of importance for the research question. Starting with an update on the workflow and how it was assumed earlier on in the participant selection phase. Going into the scope of the risk appetite on the studied substance, and then lastly going into the grounded theory that has been established through this research.
5.2.1. Workflow & Risk Management Process in AGCS

The empirical findings chapter, quickly showed that there had been one aspect that had been left out when thinking about the workflow in AGCS. That of the customer who is incorporated in many processes in the RM in AGCS. Thus, the model was adjusted with the customer added into the workflow.

This is also in accordance with one of the beliefs and programs that is followed throughout the Allianz group which is that of True Costumer Centricity (TCC).

The Costumer has been found to be both relied upon in the Risk Analysis phase, as a source to find out the detailed exposure that not only the insured, but also AGCS would be exposed to if they provide certain coverage.

Later, the Risk Treatment phase, which was especially important in this study, with the policy wording being assumed as a possible risk mitigation method when looking into the risk of mass litigation. In this phase the costumer does have certain duties to follow regulations, but also it is in the company’s best interest to mitigate for these risks as early on as possible. This phase will be investigated further in a grounded theory chapter.

Also, in the last phase, the Risk Monitoring, the costumer or insured, has the responsibility to report back in case it was to be found that either it has, purposefully or not purposefully, been operating illegally or including some illegal substance. Even though this frivolous behavior is very uncommon it might occur. The more common aspect would be to report back if they find that there is new scientific knowledge and that out of these there might be a risk toward litigation or to them and therefore claims towards the company. It is then the Claims department that is in touch with the insured to figure out how to tackle this possible risk together.

As the costumer assumes a great deal of attention in all these phases, it would be ignorant to not have them included in the workflow. This is a new aspect that shows how important the actual relationship between the customer and insurer is in the case of AGCS.

5.2.2. Mitigation of Mass Litigation in Product Liability Insurance and Macro Forces.

As discussed in the previous chapter, the costumer is a vital part in many processes not only of RM in AGCS. This being said, the costumer poses as a macro force on the policy wording and risk mitigation phase. As the costumers assume such a strong position they are able to steer the wording towards their liking. This is also due to another force that was
identified, the market, in which if the perception of a substance or product is positive, but only AGCS sees it as something possibly negative and was to exclude it, AGCS would not be able to compete against other insurers offering products with the wording wished by the client or market.

For instance, “in many cases in the US, the customers prefer occurrence triggers so that something to consider” (Interview 5 – ARC), it has to be considered as the question is, “would the client buy that?” (Interview 2 – ARC). It is thus likely that these risks are taken as “otherwise [AGCS] would not have any clients” (Interview 6 – UW).

The second Macro Force that was identified, which had been introduced in the introductory chapter, is that of authorities like the FDA or European Commision and their regulations on the matter. It was found that there is a need for regulation as it is depended upon when talking about the risk mitigation. The regulation poses as a factor which gives an indication of the current status of products and substances and their harm, but also it provides somewhat of a levy for the insurers. Also it is “know[n] that the scientific proof that something has happened due to triclosan is very hard to establish, if next to impossible actually.” (Interview 5 – ARC). Thus as long as there is no proof and the regulations are upholding that there is no proof, then this is a levy for insurers. On the other hand, if the scientific evidence shows that the previous beliefs were wrong, then the financial impact on the insurer is ever greater.

Even further into the regulation and its influence on the policy wording, there are states in the U.S. where wordings like ‘claims-made’ is prohibited, and on the other side, in France ‘claims-made’ is the only trigger (Interview 4 – UW). This shows the impact that regulations have on the product liability insurance and the wording within. To further specify, this means that regulations are a driver on how the wording will be applicable in certain products, in certain markets with certain chemicals.

Another force is a little more general and has to do with the perception of the risk on the market. In this case, how the market views the risk on endocrine disruption and its possibility of causation by the substance Triclosan. In this case “that bad path is a more difficult one, if the industry in general is not against Triclosan, but we as AGCS would have a problem with that. Usually that means excluding it in the contract will bring you out of the game.” (Interview 2 – ARC). Showing that the simple perception in the industry can have its effect in the product liability insurance as to a corporate insurer taking on the perceptions of the clients and market to compete against its rivals.

5.2.3. Scope of Risk Appetite regarding Triclosan
While empirical findings revealed that the threat of mass litigation is possible, all agreed that the Substance as it is, would fall within the Risk Appetite of AGCS and be covered and that “Triclosan hopefully is on [AGCS’s] radar but it still is in [AGCS’s] general risk appetite” (Interview 4 – UW). Taking away from these kinds of statements is that, there
should not be an exclusion on the matter as it is today, but it certainly needs to be closely watched and the trend followed.

While Triclosan certainly seems to fit within AGCS’s Risk Appetite and thus the first analyzed possible risk appetite where the risk is not accepted at all, leaves two more alternatives. The third alternative of fully accepting the risk without any precautions is anyways unlikely. Thus, the second alternative of partly accepting the risk that Triclosan poses is the path to follow. The tools to ensure and define the risk to cover have been identified as the underwriting tools. These underwriting tools encompass all that is related to the policy wording. Thus, clauses such as the serial-loss clause, back-clause, retroactive date and also the trigger clauses, such as claims-made and occurrence. For AGCS the best would be to draw up contracts with a claims-made trigger clause, as this would mean that the insurer is closer to the incident, the insurer will quicker establish how big the loss is, the tail will be shortened meaning that the policies will not be dragged along in future. The claims-made trigger seems like the trigger when talking about risks facing a corporate insurer and has been identified as the most advantageous for the insurer. Further, the claims-made trigger allows the insurer to act on claims with requesting a higher premium for further coverage or acting upon the limits and reducing those for future incidents.

The claims made trigger clause in combination with other clauses such as the retroactive dates to minimize the uncertainty towards the insurer as these dates would bar any claims that would occur after a certain date. Together with the serial loss clause which would limit the coverage paid under claims that are all regarding one series of damages resulting out of the same trigger to one limit and thus reduce uncertainty for the insurer. These are the clauses that were found to be mentioned the most during the interviews on policy wording. While there certainly are plenty of other clauses and wordings out there to mitigate for such a mass litigation scenario, the empirical evidence shows that it is not as easy for an insurer to just choose the wording as there are certain forces that have an impact on the policy wording. These forces were named the macro forces and deal with the liability product competitiveness and the strength the costumer or insured has because of it. While all of this that drives the product liability insurance and its policy wording there have also been found new aspects that certainly drive the policy wording and the risk mitigation and will drive it in future.

5.2.4. Standardization of Policy Wording on certain Risks
The possibility of standardizing policy wording for certain risks would be a step to further ease up the process in UW. However, it was quickly realized that this is impossible due to the differing demands of the market and costumers but also due to the different exposures that each and every company has on each and every risk.

“I do not see it as a general market standard.” (Interview 4 – UW).

Therefore, as found here, the tailor-made solution for every company is the only way to go and finding those solutions in cooperation with the costumer or insured, is the best solution.

5.2.5. Future Mitigation of AGCS Risks like Mass Litigation – Grounded Theory.
While policy wording, is an important aspect in the risk mitigation in product liability insurance, there was found that there is a unanimous view towards the way that long-tail exposures with a potential for mass litigations should be handled in future. This is the incorporation of the costumer. Evident from the empirical findings is that the costumer is already incorporated throughout all of the processes, there seems to be one step more that would lead to further cooperation on that level. Here it was found that AGCS is already
talking to the customer on all levels of the RM processes but there seems to be one field where the insurer is especially interested. This would be related to the control through design strategy.

“You have talked about the mitigation of the risk at our end, which we do with the again, partly traditional tools like risk consultancy, trigger wording, amendments, but also re-insurance etc. and less traditional tools like Praedicat, or our other service providers right now. However, even more important for the future will be to mitigate the risk where it actually starts. Those tools available should be used more to actually talk to the client. Triclosan is a disinfectant, so the question for me is: is there any other substance that does not have the reputation or potential risk of being an endocrine disrupter which could replace it? Then go back to the industry and to our clients and say; okay hey listen, you might be running into a risk here, let’s think about how you can replace that substance in the future and we would like to partner with you and give you the resources to work on this situation. Then further, we as a corporate insurer would provide the coverage for the residual risk of Triclosan. This would lead to a situation where the insured takes the effort to actually improve their risk. Yes, that for me, is the future rather than just sitting at our desks and providing coverage limits at a certain price.” (Interview 4 – UW).

As previously mentioned, this would be a sort of control through design as mentioned in the previously studied literature by Carroll et al. (2016) to find the safest substances to create the safest products for the consumers. Another aspect that is brought forward by the above statement and the statement below is that it is very much about the customer relationship and not as much about risk mitigation nowadays. While risk mitigation and in general risk itself are certainly of utmost importance to a corporate insurer it is about more than the wording within.

“It is not all about the risk mitigation. You need to have the right policy, the right people, you need to have knowledgeable claims handlers and the right engineers. If you don’t prepare the organizations for new trends, be it on products or changes in legislation or whatever then you will ultimately always have a problem. I think you need to have the right people, who’s responsibility is to look into that, to challenge the wordings and push back as our insured always want to have very broad wordings...” (Interview 8 – Claims).

While the policy wording was found to be important in the risk mitigation phase, there are a lot of aspects that are just as important and have to be thought about for delivering the right product to the market and to the insured.

The grounded theory to be drawn from this study is;

To manage liability insurance coverage for long-tail risks, product liability policy wording language needs to reflect main pillars as being used for comparable base materials. This includes but is not limited to claims made trigger, retro-active dates and other coverage elements. Macro forces and drivers of the policy wording, include but are not limited to, customer strength, market demand, risk perception and market regulations. To ensure a successful risk management on an enterprise level for coverage of long-tail risks, the above factors have to be accounted for when offering product liability coverage.
5.3. Analysis of Theoretical & Practical Contribution

The aspect of the Drivers of Macro Forces in product liability insurance, while maybe not a new or innovative, perspective but it certainly highlights those aspects that can now be used for further research. To specify, those forces were here identified as the costumer strength that the insured has, the market demand, and also the regulation on the market done by the authorities. Here the individual forces have been identified as drivers of the product liability insurance. This is in those terms a theoretical contribution as it adheres to the findings in the previous study by Carroll et al. (2016) who found that the regulation is a major force on insurance and Risk Management.

The aspect of customer inclusion in the RM process of the corporate insurer is an aspect that as such has not been included in much of the RM theory that exists and here it proposes some new input into the theory. It might not propose a framework for the inclusion of the insured, but it certainly shows that such a framework might be possible and a future aspect to be studied. Practically speaking, here it is proposed for the corporate insurers to look into their ERM and see how the insurer is actually included in their ERM to ensure the optimal RM.

Also, a practical aspect here would be the answer to the research question. Which for a corporate insurer might not come as a novel finding, but this study does put the previous thoughts on paper and explains some of the reasons behind the answer to the research question. Here it was found that it is certainly possible to establish a certain standardized product liability contract, with a claims-made trigger, serial-loss clause, and a retroactive date, and even some exclusions, but it would not be competitive. Therefore, due to the macro forces mentioned throughout the thesis, it is the tailor-made solution for every client, as all the interviews concluded, that is AGCS’s optimal way to stay competitive and deliver value to the insured and shareholders.

On the other hand, new perspective and future vision for risk mitigation to start at its actual starting point, at the insured, is one of the most interesting aspects found in the study. This goes in relationship with the previous point and shows the customer relationship as being a major part of the RM process and the risk treatment phase. This is somewhat a solution that tends to go towards the risk mitigation and reduction through design which has been discussed by Carroll et al (2016). The finding of optimal substances to create a possibly risk-free product in cooperation with the insured is one of the goals in cooperation with this aspect. It is the next step and here there is a contribution to the first findings that can be used to research this factor further.

5.4. Ethical & Societal Implications

Ethical and societal implications that can occur due to a study need to be considered carefully when conducting the research. The most basic concept in this case is the referencing and making sure that no information from any sources were presented as the own findings which in this case was done by referencing in accordance with the rules stated in the thesis manual and the Harvard referencing system.

As this study was written in collaboration, it was of great importance to not include any possibly sensitive data that is not allowed to exit the company. This has been adhered to by working in close collaboration with the employees at AGCS who would provide an agreement for publication on any data that has been provided.

Further the aspects of ethical interviewing have been considered by not including any names but department names, which had been agreed upon with the interviewees, who got
to read the transcribed data who in turn sent their approval for publication. During the interviews, it was important to make sure that the interviewees did not feel like it is an interrogation but simply that the researcher is trying to figure out their aspects on the studied matter and not to make any assumptions on the quality of their work.

Any third parties, have been asked for the agreement to publish intellectual property that has been used and extracted from non-public sites.

From a societal aspect, there have not been any negative aspects that this study has had an implication on, apart from the negative influence on an environmental aspect due to printing it. It could however be argued that such a publication will promote a negative perception on the studied substance Triclosan. This study does not take a stance on the characteristics of the substance but simply uses the substance as an example to study risks in risk management with a corporate insurer. Thus to clarify, this study does not take a stance on the Substance Triclosan or any of its characteristics.
6. Conclusions

This chapter presents the general conclusion of the study and later how the research question has been answered. Further, it will conclude the contribution that is posed by this study and lastly the limitation for this study and suggestion for further research will be stated. Finally, the researchers conclusion on the overall study is presented.

6.1. Introducing Proposed Risk Appetite into Product Liability Policy Wordings

The findings of the study that are based on expert knowledge provided in single interviews in regard to Triclosan do not necessarily pose any novel knowledge on the risk appetite that AGCS should have regarding the substance. It has been found that in general there is no opposition regarding the coverage of Triclosan as long as this is not the only risk that a company is exposed to. As such, as proposed by ARC, a Triclosan producer, more specifically a producer that specializes on Triclosan and has no other operations than the production thereof, on the current state of the scientific research, should not be covered entirely. Meaning that certain limitations should apply on a stricter basis which includes the exclusion of certain risks such as the risk of endocrine disruption, and possibly that of developmental injury that thus would not be covered under any liability insurance for the client. This establishes a negative or non-existing appetite towards Triclosan producers. Whether this is an option for the client or not, is set aside for now. However, these would be a few producers that exist and thus not a big clientele for a corporate insurer. The more interesting aspect is that of the coverage on a company with the size of Colgate. Here, the company should be covered but on the basis of a ‘claims-made’ trigger and a serial loss clause to minimize the uncertainty and risks that are posed. These would help as to reducing the time continuum where claims are to be indemnified by the corporate insurer and thus the possible incidents with their root cause from before the applying insurance period, will be cut off. Thus, companies utilizing Triclosan certainly fall within the appetite of corporate insurers like AGCS. The interesting aspects here are then, to what extent will it be possible to introduce a certain wording and exclusion clauses due to the found macro forces that have an influence on the contractual policy wording that will have to be agreed upon.

6.2. Research Question and Study Purpose in Conclusion

The Research question initially sought to be answered was: How can AGCS make best use of risk mitigation measures for drafting product liability policy wordings?

Sub questions surrounding the policy wording to be answered were; What are the influences and drivers of policy wording? Would there be a possible standard to be drafted for such a risk?

While the research question has been answered on the basis on the empirical findings and shown that there are certain wordings that an underwriter can use to provide the best coverage for a long-tail product liability exposure when looking into the policy wording concerning risks related to the chemical substance Triclosan. This would indicate as previously mentioned, the policy wording based on the claims-made trigger, a serial-loss clause and a retroactive date and possible exclusions on some risks that are associated to endocrine disruption, if these were to emerge. The benefits of including these policy wording clauses would be beneficial for AGCS as these would limit the amount to be indemnified to a certain period of time which is specified by the insurance period, for certain risks with certain causations specified by exclusions and clauses that would further specify the limits that are paid under a series of incidents. Thus, allowing the insurer to mitigate for the future concerns in Triclosan by limiting certain events such as mass
litigation. With this in mind, this would ultimately establish the quantifiable aspects and thus remove the uncertainty around such chemical substances and answer the research question.

A part which the research question ignores, is that of the business model of an insurer like AGCS, which has the focus of creating optimal contracts not only from an insurer’s perspective but keeping the costumers demand in mind. These exclusions and policy wording clauses are possibly not in favor of the markets demand. Thus, it can be said that a standardization of policy wording would be impossible due to these macro forces. This is a finding that answers the sub question on possible forces surrounding and driving the product liability insurance and the policy wording within. With the sub question, the missing part of the main research question has been included in the sub question and been answered by looking into the macro forces.

The macro forces that have been described earlier on are posed by the costumer- or insured-strength, the market demand, the market regulations, and the risk perception. The regulations were detected early on and poses an early barrier for companies to use an extensive amount of Triclosan and thus limiting the risk of endocrine disruption which has an implication on the exposure to mass litigation. The risk perception has been found to be a driver of the product policy wording, where products like Triclosan containing products that seem inherently safe and perceived as safe might not be as regulated and thus the policy wording might not be as limited as in case of substances like Asbestos. A strong force was detected with the costumer relationship and insured strength which has the potential of forming the contract and policy wording to the insured needs and wants, following the simple supply and demand factor. While these have been found and their impact on the policy wording have to some extent been established, described, and shown to be existent throughout the study, there is no scientific saturation reached in regard to their implication on the product liability policy wording that a corporate insurer offers.

The next sub question that was asked, was on the possibility of a company standardization in terms of policy wording on specific risks which was studied on the risk of possible endocrine disruption leading to possible mass litigation in the case of Triclosan. Here, with regard to the identified macro forces, the answer was a clear no. This is due to the influence that these forces have and the forces differing from client to client, market to market, and country to country. This refers to the different regulations and demands that exist throughout the product liability insurance market. These have not been investigated in detail but have been established as variables that would not make such a standardization possible. This also connects the previous literature on market regulation as a framework for the liability insurance by Carroll et al. (2016) to this contemporary study.

Rather, here a proposal would be to further study the costumer relationship and to bring it to the state of the future vision where the costumer and the insurer work together with resources provided from both sides to reduce the risk where it starts, which is the products and the product’s materials used by the company. As such the theory that this study concludes in, is that;

*To manage liability insurance coverage for long-tail risks, product liability policy wording language needs to reflect main pillars as being used for comparable base materials. This includes but is not limited to claims made trigger, retro-active dates and other coverage elements. Macro forces and drivers of the policy wording, include but are not limited to, costumer strength, market demand, risk perception and market regulations.*
To ensure a successful risk management on an enterprise level for coverage of long-tail risks, the above factors have to be accounted for when offering product liability coverage.

As such, while the products themselves usually have to go through heavy testing to be admitted into the market, the insurer should investigate the possibility of being included in that process. This would mean that the insurer actually almost eliminates the uncertainty variable. This is a rather ambitious goal, but certainly a step that would further develop the risk mitigation from a corporate insurers perspective.

The purpose has been adhered to and new and more research is presented on to the insurance market and the product liability insurance thereof. While the mitigation of mass litigation through policy wording might not be the optimal way to go but certainly an option to mitigate for these long-tail risks and uncertainty, there have been findings that show that, there are forces that the insurer has to include while drawing up a contract for the product liability insurance. These aspects follow the purpose as to having studied the inherent forces on the product liability insurance and its applicability as a risk mitigation tool for reducing risk on mass litigation.

The more important aspect of the customer inclusion in the RM process shows a variable in the RM process that has not been studied in detail before and thus poses as another indicator for further studies that can be based on the findings on this study. Further, the inclusions of costumer in said processes has been found to be the way to go in the future, both in terms of risk handling and in terms of bringing customer relationship to the next level.

**6.3. Knowledge Contribution: Practical & Social**

The specific knowledge gained from this study is that, there are certain UW wordings and clauses in policy wording that an insurer can use to draw up a risk-free contract for the insurer. These are no new wordings and clauses and include the policy wording preferably on a claims-made basis, with a certain retro-active date, and a serial loss clause to limit the risk and uncertainty to the best possible level.

It has also been found that such a contract possibly would not be competitive in the product liability insurance market where there are certain forces that drive the product liability wording. Thus, there is no standardized policy wording for product liability insurance to mitigate against risk and uncertainty as it would not be competitive. Together with the previous findings on there being no other possible ethical actuarial mitigation methods for long-tail risks (Thisletwaite & Wood, 2018), there need to be other components that need to be studied.

There are some macro forces that need to be studied as they have a large impact on the product liability insurance. This also goes in accordance with the previous literature studied by Carroll et al. (2016) who have studied the product liability insurance and found that it is dependent on the authorities and regulations to mitigate against risk and that such regulations just as it was found in this study, pose as leverage for an insurer.

The customer relationship that should be included in the RM framework of a corporate insurer to create the best possible risk management process that would assume a direction towards the future vision of mitigation through design through direct relationship with the customers, to find the best materials to create the best products for the consumers. This finding is similar to the literature studied on risk embracement, where Kerr (2016) also found that the relationship between customer and insured has contributed to the risk
management in the insured company by providing expert knowledge on the risk that the
global art industry is facing, as such, here the insurer and insured work together on the
insured risk management by providing the best possible knowledge and possibly even
financial leverage to help the insured to establish it.

This study has contributed with new research in the insurance and risk management area.
Whereas previously mentioned there more research on the product liability insurance
through the case study on a global corporate insurer. Also, it is a further confirmation to
the previous studies that have been mentioned above. This knowledge can be used for the
insurer or other researchers to further study these variables to at some point reach
saturation of research.

6.4. Limitations and Suggestions for Future Research
In terms of time, the goal of conducting a grounded theory approach for the analysis of
empirical findings has thus been done on a smaller scale. Meaning that while the needed
iterative process of data collection both with primary and secondary data has been
conducted but due to time limits it has been done on a smaller scale meaning that only the
main categories identified have been questioned and analyzed. These main categories
were made up of the policy wording, Triclosan, mass litigation, risk appetite. The possible
remaining categories found that includes the main and subcategories of external forces,
have been dealt with but have not been questioned as thoroughly. Still, these findings
have led to previous elaborated conclusion on the studied research question and just as
importantly, it has created some new variables to be studied. These are;

- the identified macro forces (Customer, Market, and Authorities) that seem to be of
great importance when forming product liability policies.
- The establishment of a RM process and ERM with inclusion of the customer /
  insured.
- The further investigation into the risk mitigation through design and the
  establishment of a framework to include this into the RM process of a corporate
  insurer.

With the further studies in these points the scientific saturation could be reached on these
points of study.

6.5. Quality Criteria
The quality criteria have been explained and included in the methodological research
framework that was presented in chapter 3.6. In case study research the generalization
should stem from an analytical approach (Yin, 2009). This is the use of previously
identified theory and comparing it to the collected data and drawing conclusions or theory
from the new data points in an analytical manner which in this case is the theory stemming
from risk management, risk appetite, mass litigation and the data collected from a
corporate liability insurer. This has here concluded in the grounded theory that was
developed through the research which was presented in 6.1.

The further criteria of validity and reliability that were presented in 3.6.2 were adhered to.
Here, construct validity was ensured through using multiple sources of evidence which in
this case study was done by using empirical findings from different department, using
both primary and secondary data. The chain of evidence was included in the empirical
findings sector and the review of draft case study reports was concluded through the
reading of the transcribed interviews and later the review of the findings by key
informants and their agreement for publication.
According to Yin (2009), this first test is especially important and problematic. It needs to be assured when collecting data that relevant and “subjective” judgements are used to collect the relevant data (Yin, 2009). In this study, the question focuses on How can AGCS make best use of risk mitigation measures for drafting product liability policy wordings? The data collected was of importance to answer to the research question and the sub-question on the possible influential forces.

As this is not an explanatory but exploratory case study, the internal validity and the error therein will not be explained further. What can be taken away from the internal validity to always think of, is any possible variable z that exists but has not been identified. Thus, every research needs to be sure of the variables studied and here finding such variables was part of the research.

This third test, the external validity is applicable when going into outside generalizability of the study. As previously mentioned, samples and statistical generalizations are an incorrect form for data analyzing in a case study (Yin, 2009). While there is a possibility to include this test in the study would be the replication logic, which would mean to test the study on further corporate liability insurers with a product liability insurance. If these then were to give the same results, a generalization could be drawn for a greater population and could thus be of interest when conducting further research.

Reliability of the study as a last test is a rather known procedure that would ensure reliability. This would be ensured through re-doing the same study over and over again and coming to the same result (Yin, 2009). Here, the steps of the study have been presented thoroughly and if the study were to be redone, it would lead to the same result but possibly in greater detail.

6.6. Researchers Conclusion
Below follows the researchers conclusion on the study on Triclosan as a base material with long-term characteristics that might potentially develop adverse effects on both, humans and the environment.

While there are currently no evident litigation activities surrounding the substance Triclosan, taking into account the literature in scope and the feedback given by expert interviews, Triclosan has been analyzed to have the potential for future mass litigation.

However, the probability for such a occurrence of a mass litigation is limited to further factors that include future scientific studies and their findings, future lawyer activities especially in regards of the active participation and follow up in class action lawsuits concerning bodily injury and Triclosan as the Trigger thereof and as such a proven correlation between the substance in the consumer product and the potential harmful aspect of a substance like Triclosan.

With the existing governmental restrictions that are posed in for example the USA where it is only allowed in toothpaste (FDA, 2016), in Europe where it is regulated to a certain percentage (European Parliament, 2016) in terms of market authorization on the usage of Triclosan in consumer products, there is a likelihood that further limitations and restriction will impact the use on the future use of Triclosan in consumer goods.

To provide Third Party Liability Coverage and more specific Product Liability Coverages for Triclosan containing consumer products, is a active decision making process followed
by corporate insurers. Those include, amongst others, the active decision to include Triclosan related exposures into the Risk Appetite, the following of a structured internal risk management process and the alignment on policy wordings that consider the threats and opportunities posed by Triclosans long-tail exposures. Thus, product liability policy wording language needs to reflect main pillars and structures used in policies used for comparable substances or base materials. This includes but is not limited to, a claims-made trigger, retro-active dates and other coverage elements.

It is vital, for corporate insurers that are involved in product liability coverage for risks regarding Triclosan exposures, to not just follow but adhere to a structured internal risk management process. This process involves the recommendations, opinions and evaluations of the included departments (e.g. ARC, Claims and Underwriting) to identify and align on the current and future risk taking approach on substances, like in this case for Triclosan. It is further important to include the customer in the mentioned process of risk identification, risk treatment and risk monitoring to mitigate the risks from its starting point, which is attached at the customer and its operations.

Based on the aforementioned analysis Triclosan is a manageable risk from a corporate liability insurers perspective, hence insurance coverage can be given under product liability policy wordings.
Reference List


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ANNEX

Structure of the Thesis

The logical pathway followed

Figure 17 (Structure Pathway of the Thesis)