



CHALMERS
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Trade Secrets as a Resource for Value Creation

A study investigating the impact of the EU directive
(2016/943) on companies' value creation

Master's thesis in Entrepreneurship and Business Design

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SUMMARY

Businesses have in the recent years been experiencing an increased dependency on knowledge, which is becoming the most important and valuable asset in companies, who are in need of protecting it in order to exploit it successfully. The EU directive (2016/943) was proposed in 2016 with an implementation deadline in 2018, and aimed to harmonize the trade secret laws across Europe, which varied greatly among countries and created obstacles for companies. This study aims to investigate how the new EU directive (2016/943) on trade secrets has affected European companies and their trade secret management and the value creation thereof. The focus is on companies operating within the EU, but in regards of court cases, the study is primarily focused on Denmark, Sweden, Ireland, and the UK due to language barriers. The UK is included despite Brexit since the trade secret legislation is the same. The study uses an inductive and qualitative approach with few quantitative elements where interviews and court cases represent a primary source of data and literature a secondary source of data. The interviews are semi-structured and are conducted with companies, lawyers and professors in order to get insights from different perspectives. Court cases are analysed in a comparative manner where different quantitative variables are explored in regards to different points in time, e.i. before and after the implementation of the EU directive (2016/943). The results show that the EU directive has had an impact on companies and their trade secret management in terms of strengthened trade secret protection, improved measures to enforce trade secrets, making it easier to obtain damages, improved possibilities for collaborations across borders for example. The improved trade secret management has made companies more successful in legal disputes as well as the proactive work prevents them from getting into disputes. There is a higher awareness of trade secrets and companies are more willing to have trade secret protection prior to other IPR. The increased awareness and motivation to use trade secrets as a result of the EU directive (2016/943) however, can be discussed. To conclude, the EU directive (2016/943) has had a positive impact on companies and their trade secret management and prompted them to manage trade secrets correctly, which results in a better ability to create value. The results are valuable insights for companies, lawyers, researchers and other professionals.

Keywords: Trade Secrets, Trade Secret management, Value creation, The EU directive (2016/943) on trade secrets.

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Abbreviations

Abbreviation	Description
DTSA	Defend Trade Secrets Act
EU	European Union
EU directive	EU directive (2016/943) on Trade Secrets
NDA	Non-disclosure agreement
IA	Intellectual Asset
IAM framework	Intellectual Asset management framework
IP	Intellectual Property
IPR	Intellectual Property rights
Trade Secret directive	EU directive (2016/943) on Trade Secrets
TRIPS	Trade-related Aspects of Intellectual Property Rights
UCPA	Unfair Competition Prevention Act
UK	United Kingdom
US	United States
WIPO	World Intellectual Property Organization

1 Introduction

This chapter will provide an introduction to the background of the study, together with the aim and research questions. Additionally, delimitations and the thesis outline will be presented.

1.1 Background

The world is becoming more and more knowledge-intense, and companies' competitive advantage become affected by protection of trade secrets to a larger extent as a result of this (Castellaneta, Conti & Kacperczyk, 2017; Abd Jalil & Hassan, 2020; Hannah, 2005). The value of trade secrets can easily be shown by a court case, where DuPont Co. got paid 6.3 million US dollars in average per trade secret stolen from them (Abd Jalil & Hassan, 2020). Trade secrets' value is also stressed in a case where a company got their source code stolen, and as a result of this lost over 1 billion USD in shareholder equity (Abd Jalil & Hassan, 2020). Additionally, trade secret theft has increased over 200 percent from 1988-2014, and is estimated to be doubled again, making good management around trade secrets crucial for business success (Castellaneta et al., 2017). Castellaneta et al. (2017) have in their study found that better trade secret protection increases the company value if the company acts within an industry with high knowledge-worker mobility. On the same topic, Abd Jalil and Hassan (2020) discuss a company that as a result of theft, got their company value decreased with over 1 million USD. The lack of clearly defined trade secret legislations has, however, made it difficult for companies to claim and enforce trade secrets, which in most cases are the primary contribution to competitive advantage and value creation (Maurer & Zugelder, 2000; Sousa e Silva, 2014). Many companies are highly dependent on their trade secrets and without them they would not achieve successful business and a strong position on the market (Maurer & Zugelder, 2000; Sousa e Silva, 2014). Abd Jalil and Hassan express that "in short protecting trade secret is protecting the business" (2020, p. 208).

One of the latest additions of intellectual property to be harmonized in the EU are trade secrets (Cook, 2014). Over the recent years trade secrets have been shown to have high value on their own and are no longer seen as an addition to patent law (Torremans, 2015). The EU directive 2016/943 came into force because there was a need for harmonization of trade secret law among the member states in the EU due to a lot of variety in national laws regarding trade secrets (Torremans, 2015; Desai, 2018). The lack of a harmonized definition and law around trade secrets made it more difficult for companies to manage their trade secrets and potential legal disputes where it is difficult to prove in court that another party has violated their trade secrets (Sousa e Silva, 2014). Similarly, the courts faced difficulties in handling such disputes since there is no clear definition of trade secrets (Sousa e Silva, 2014). Most countries relied on unfair competition law, contract law and sometimes criminal law (Torremans, 2015). Another agreement covering intellectual property is the Trade-related Aspects of Intellectual Property Rights (TRIPS) agreement that came into force January 1

1995, and is the most comprehensive universal agreement regarding intellectual property (WTO, n.d.). The EU directive has been influenced by the TRIPS agreement and the directive was proposed because of the scattered and variegated national laws trying to adopt what is stated in the TRIPS agreement. Which could create obstacles in the internal market (Sousa e Silva, 2014). Some countries, such as Italy and Portugal have basically copied the content of TRIPS into their legislations, but most European countries did not cover trade secrets in their legislations (Sousa e Silva, 2014). However, there seem to be uncertainties about the definitions in the TRIPS agreements, which has made it difficult for countries to adopt (Sousa e Silva, 2014).

The reason why the EU directive came into force is clear, both according to authors, people with expertise in the area and the fact that there is a directive in place. However, not much investigation has been done after the EU directive came into force regarding if there has been a change in trade secret management and the value creation within companies as a result thereof. In other words, did the new directive have the effect it was aimed for, or are there still uncertainties? The proposal of the EU directive came on July 8, 2016 (European Commission, n.d.), where the deadline for implementing the directive was June 9, 2018, however, as of October 31, same year the majority of the EU members had implemented the directive into their national legislations (Fox, 2020). Studying how trade secret management has changed within companies is therefore of importance due to the sometimes lacking clarification within the EU directive on some matters (Gutfleisch, 2018). For example, the EU directive states that reasonable steps need to be taken within trade secret management. What these are, however, are not addressed (Gutfleisch, 2018). Additionally, it is also stated in the EU directive that the scope of these requirements on reasonable steps varies with the circumstances, without stating these circumstances (Gutfleisch, 2018). Making analysing court cases before and after the EU directive came into force, and interviewing people from companies, academia, and law firms of great importance. Previous studies have been made investigating court cases for this purpose to some extent, however, these are analysing a smaller number of court cases between 2016-2018 (Fox, 2020, van der Velden & Duijm, 2019). Whincup (2016) also stresses that the difference between knowledge gained as a result of the regular employment and trade secrets are not clarified in the EU directive, even if the directive stresses that normal skills and knowledge gained in the employment will not be considered as trade secrets. Gutfleisch even states that “it will remain in the competence of the national laws of the EU member states as well as the courts to further clarify these issues” (2018, p. 6). Therefore, it is of great relevance to investigate how the value creation by trade secret management within companies have been affected by the EU directive in order to justify its relevance and functionality as well as investigate the companies’ efforts in complying with the directive, and if it has made a positive impact. The study will contribute with further knowledge into the area of value creation in relation to trade secret management and its impact by the EU directive, which is useful knowledge for most people in the industry such as professionals, lawyers, companies and researchers.

1.2 Aim

The purpose of the study is to understand how the EU directive (2016/943) on trade secrets has affected trade secret management and the value creation thereof, for companies acting within the EU, and if there have been any changes as a result of the directive. To create an understanding of this purpose, the following questions will be addressed:

1.3 Research questions

MRQ: What impacts has the trade secret directive (EU 2016/943) had on the value creation of trade secrets within organizations?

SRQ1: What is a trade secret, and in which aspects has it changed as a result of the trade secret directive (EU 2016/943)?

SRQ2: What is considered a trade secret breach and in which aspects has it changed as a result of the trade secret directive (EU 2016/943)?

SRQ3: Which types of intellectual assets are typically controlled through trade secrets, and what are the challenges?

SRQ4: What is the effect on companies' trade secret management as a result of the trade secrets directive (EU 2016/943)?

SRQ5: What is the difference between companies' value creation in relation to trade secrets before and after the trade secret directive (EU 2016/943) came into force?

1.4 Delimitations

The study investigates European companies and court cases because they are mostly affected by the directive. In some EU member states, the courts have started to use the EU directive in court as early as 2016, after the implementation of the EU directive (Fox, 2020). Due to this, the scope of the earlier court cases are limited to before the EU directive was created, July 8, 2016 (European Commission, n.d.). In order to keep the investigation up to date, the scope is also limited to trade secret cases dating back to 1999.

Additionally, even if the EU directive came into force June 9, 2018, the majority of the EU members had implemented the directive into their national legislations as of October 31 same year (Fox, 2020). Therefore, the court cases after October 31, 2018, are the earliest date for the court cases analysed in this study.

The study is focused primarily on Denmark, Sweden, Ireland, and the UK due to language barriers. Court cases from the UK are included even though the UK now has left the EU. The reason why the UK is included is due to that the UK trade secret legislation has not changed after Brexit.

1.5 Thesis outline

This thesis consists of nine chapters. The first chapter is the introduction. The introduction aims to introduce the reader to the field of study and the motivation behind the chosen thesis focus. In addition, the aim and research questions are presented in the introduction. The second chapter is the method, which includes the research strategy, design, method, and quality together with risks and ethical considerations. In chapter three, there is the literature review. In the literature review previous research in the field is presented. The fourth and fifth chapter are the legal and theoretical frameworks. The frameworks are used as a basis for the data to be discussed in relation to. The frameworks have also impacted the data gathering, which are discussed in the method part i chapter two. In chapter six, the analysis of the data is made and presented, which are discussed in chapter seven. The discussion in chapter seven, proceeds from the analysis and the legal and theoretical frameworks. In the eighth chapter the conclusions originating from the study are presented and elaborated upon. Lastly, in chapter nine, suggestions for future research are presented.

2 Method

In this chapter the method used in this study is presented and elaborated upon. The sections covered are; Research Strategy, Research Design, Research Method, Research Quality, and Risks and Ethical considerations.

2.1 Research Strategy

The research strategy sets the foundation for the general orientation to perform business research (Bryman & Bell, 2011), and the following section describes the research strategy adopted in this study including relevant considerations.

2.1.1 Ontological and epistemological considerations

The phenomena the study aims to investigate is trade secret management and how it has been affected by an external factor, that is the EU directive (2016/943). The trade secret management can then be further investigated to understand its effect on companies' value creation. The phenomena is relevant to study in order to understand if the EU directive has had the effect it was aimed for, and how it has impacted companies and their value creation based on trade secret management. There are several factors within trade secret management that may have been affected by the new EU directive, hence an ontological approach will be used because the study aims to define those factors constructively. Such factors will be, what is a trade secret and a trade secret breach, and in which aspects has the definition of it as well as what is held as trade secrets changed as a result of the directive (related to SRQ 1-2). Similarly with intellectual assets, which types of these are controlled by trade secrets and if there has been a change. Additionally, the study aims to define the challenges in relation to intellectual assets as trade secrets (related to SRQ3). Moreover, the study will try to define the effect on companies' trade secret management as a result of the directive, as well as define the differences in companies' value creation before and after the directive (related to SRQ 4-5). The study will also have an epistemological approach because the study aims to interpretively understand how these factors defined constructively are affecting the value creation by trade secret management within companies, and how they have been affected by the EU directive. Regarding the statistical data gathered from the court case analysis, the study will have positivistic elements in terms of data points from the court cases. Such data points can be types of trade secrets, and number of winning parties (i.e. appellants or respondents) for example. The statistical data will provide an overall picture which will be helpful when drawing conclusions.

Bryman and Bell (2011) describe that epistemological considerations cover what is considered as acceptable knowledge in a discipline and is characterized by two positions; interpretivism and positivism. Interpretivism entails the subjective meaning of social action and respects the differences between the objects of natural sciences and the people, while positivism entails the application of natural scientific methods (Bryman & Bell, 2011). An

interpretivist approach is therefore used in the study to understand the phenomena and the affected factors within it as a result of human action, and the implementation of the EU directive. Additionally, understanding the meaning for companies' in relation to value creation. Bryman and Bell (2011) further describes that ontological considerations concern the nature of social entities and whether these are social constructions or objects in themselves. The two ontological positions are constructivism and objectivism where constructivism entails that social entities are continually dependent on social actors (Bryman & Bell, 2011). Objectivism entails that the existence of social entities and their meanings are independent of social actors (Bryman & Bell, 2011). The reason why the study aims to define factors constructively is because those factors are dependent on human action. The phenomena including trade secret management and the law, as well as the affected factors within it are made of social actors and will continually be dependent on those.

2.1.2 Inductive and deductive considerations

The nature of the relationship between research and theory are generally characterized as inductive or deductive (Bryman & Bell, 2011). Inductive theory is characterized by the outcome of a new theory based on observations and findings, which include defining generalizable inferences from those observations. Deductive theory is characterized by hypothesis deduction based on known theory which is then subject to empirical scrutiny (Bryman & Bell, 2011). The study will have an inductive approach because the aim is to investigate and understand the concepts around the EU directive and its impact on companies and their value creation, without testing hypotheses. The aim is to define new theory based on the observations and findings. However, deductive elements will be incorporated because data will be gathered in the court cases analysis which will be used as statistics to prove or discard minor hypotheses that may arise during the process. For example, the literature or previous studies may say companies failed to keep information secret because of a specific reason, but the court cases analysis may say something else. In that way hypotheses can be confirmed or rejected.

2.1.3 Qualitative and quantitative considerations

There are two types of research strategies according to Bryman and Bell (2011); qualitative and quantitative, that set the foundation for the general orientation to perform business research. This study will be a qualitative study with a few quantitative elements incorporated. The study aims to collect and deeply analyse non-numerical data such as documents (court cases and literature) and interviews. The quantitative elements will be statistical data from the compilation of the court cases such as types of trade secrets, and number of winning parties (e.i. appellants or respondents). These quantitative elements will then be analysed using an univariate analysis (see more in section 2.3.2). Additionally, the study will be characterized by induction, constructivism and interpretivism which are typical characteristics for qualitative research according to Bryman and Bell (2011). A constructivist approach is used to define social constructions such as law and trade secret management, and an interpretivist approach is adopted since the study aims to investigate and deeply understand the

phenomena, the social constructions, made by human action. Therefore, an overall qualitative strategy is used. According to Bryman and Bell (2011), quantitative studies are characterized by objectivism, positivism and deduction. The quantitative elements in the study will be characterized by a positivistic approach since statistical methods will be used to analyse numerical data, hence a quantitative strategy to some degree will be used as well.

2.2 Research Design

According to Bryman and Bell (2011), the research design functions as a framework for the data collection and the analysis thereof. This study will be characterized by two types of research designs, longitudinal and comparative. Longitudinal design is used to map changes over time, while comparative design entails the logic of comparison and by studying two or more contrasting cases, an enhanced understanding of social phenomena can be obtained (Bryman & Bell, 2011). The study will investigate the phenomena trade secret management and how it has been affected by external factors such as the EU directive 2016/943. Data will be gathered from many different sources such as court cases, interviews and literature in order to detect patterns and draw conclusions. But since the study is not focusing only on one point in time, a longitudinal dimension is adopted where one phenomenon will be studied and analysed over a certain period of time where a certain influential event has taken place, e.i. the EU directive in 2016. To understand the changes over time, historical data such as court cases will be used and analysed over a time period from 1999-2021. Since comparisons will be made both in regards of time, before and after the EU directive came into force, and between industries and companies, a comparative research design will be used in the study. Court cases before the EU directive came into force will be analysed and compared to court cases that took place after the directive came to enable an understanding of any changes in relation to the studies phenomena. A comparative approach applies to literature as well since the content and the results will differ depending on what point in time they were conducted. Regarding interviews, the interviewees approached in the study should have experience of trade secret management from before the directive and after. Which makes it possible for them to provide data that can be used for comparative purposes. The interviewees will be professionals from companies, lawyers and professors, but the aim is not to make a comparison between them, but to get insights from different perspectives depending on profession.

The research methods are appropriate for the study since the study aims to understand how the EU directive has impacted trade secret management within companies. To gain this understanding, a qualitative approach is more suitable since it enables capturing more parameters compared to a more limited quantitative scope. Additionally, when analysing documents and interviews a qualitative approach is beneficial if the aim is to analyse and understand the content. However, to answer some of the research questions, a quantitative approach is used (Bryman & Bell, 2011).

2.2.1 Answering of research questions

The research questions will be investigated in parallel, since the data gathering and method applies to all of the research questions addressed. However, in the discussion and partly in the analysis, the research questions will be answered and analysed separately.

2.3 Research Method

According to Bryman and Bell (2011), research method center around how the data is collected. The data collection can be made through, i.e., questionnaires, interviews, and observations. (Bryman & Bell, 2011). In this study, the data are primarily collected through interviews and documents (court cases and literature). The data sources are described and elaborated upon in section 2.3.1. In addition to these data sources, information is gathered through a literature review, and through a legal and theoretical framework. The literature review and the legal and theoretical framework are described in section 2.3.1. The connection between the study phenomena and the data sources are illustrated in figure 2.1. As the illustration shows, the phenomenon will be explained using two types of data sources, being documents and interviews. The interviews with lawyers and professors will primarily be used to understand the EU directive. Hence, documents in the form of literature and court cases, together with interviews with companies will be used to understand the effect on companies' trade secret management and their value creation. However, the later data sources are also used to understand the EU directive.

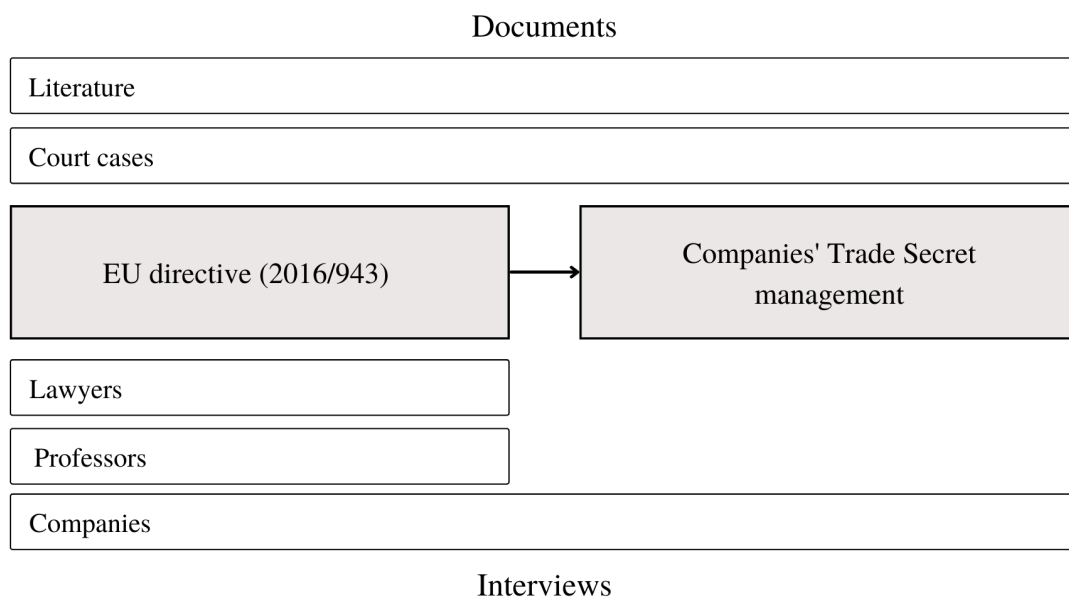


Figure 2.1. Connection study phenomena and data sources.

Additionally, the relation between the sub-research questions is illustrated in figure 2.2. The interviews with the lawyers and professors will be used to answer sub-research questions 1-3. Hence, the court cases, literature and the interviews with companies are used to understand and answer all sub-research questions.

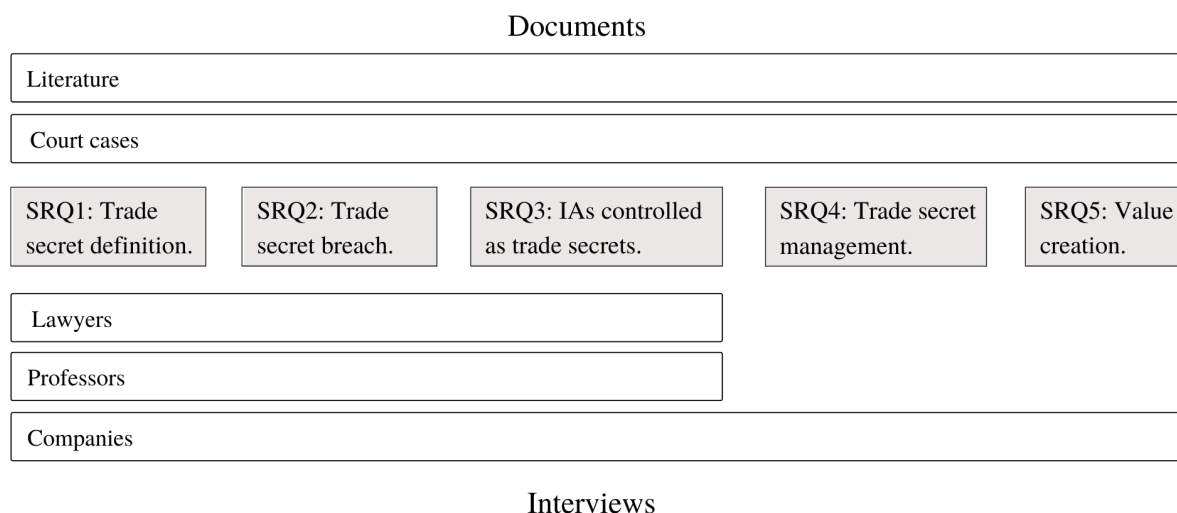


Figure 2.2. Connection sub-research questions and data sources.

2.3.1 Data Collection

Primary data sources are data that are produced specifically for the research purpose (Bryman & Bell, 2011). In the current study the primary data sources are interviews and court cases. The interview guides are developed from the research questions, to make the interviews able to give insights relevant for the research purpose. Besides court cases and interviews, literature will be used to support the understanding of how trade secrets are managed and how the EU directive is supposed to function. By having literature as a supporting function and foundation, biases can be reduced (Bryman & Bell, 2011). The literature is in the form of documents published by others. Which according to Bryman and Bell (2011) is a secondary data source. All types of data used are presented together with the data sources in table 2.1.

Table 2.1. Summary of the data used in the study.

Type of data	Data source	Data gathering specified
Primary	Interviews	Companies; Lawyers; People from academia/professors.
	Court cases	From several countries, before and after the implementation of the EU directive.
Secondary	Literature	Focused on trade secret management; the EU directive (2016/943); value creation.

Interviews

In this study a semi-structured interview approach is used. The reasoning behind this choice is that it is of importance to be able to compare the answers gathered from the interviews with one another. A quantitative study is not used, due to the value of being able to direct the interviews to some extent as the interviews proceed. Additionally, a qualitative approach to the interviews is chosen to open up for more detailed answers.

In a qualitative interview what the interviewee sees and experiences are what is important to capture, according to Bryman and Bell (2011). Additionally, qualitative interviews are more flexible. For example, new questions can be addressed as well as wording can change within

the standardized questions. Qualitative questions also tend to be more open, and opening-up for more detailed answers (Bryman & Bell, 2011).

Qualitative interviews can be either unstructured or semi-structured (Bryman & Bell, 2011). In an unstructured interview, the interview is quite open. The interviewer usually only has one or few questions, and relies on topics that the interview will proceed from. In a semi-structured interview, an interview guide is usually used. The interview guide includes a set of questions related to specific topics. In a semi-structured interview, the interview guide is used as a base that is the same in all interviews. Follow up questions as the interview proceeds, are possible to include and are usually used. However, the wording in the standardized questions tends to be coherent in all interviews (Bryman & Bell, 2011).

The questions in the interview guide are divided into topics that are chosen from without the research topic and research questions. In the interview guide for companies, professors, and lawyers (see appendix A) have the same topics. These topics are (1) *General about the EU trade secret directive*, (2) *Trade secret management*, (3) *Trade secret definition*, (4) *Types of trade secrets*, (5) *Value creation*, and (4) *Intellectual assets*. In these topics, a set of questions are determined. The questions are formulated in an open and not leading way, i.e. “How has the EU directive affected the trade secret management within your organization?”. The specific questions are quite coherent in all interview guides, but vary to some extent on the wording. For example, “How has the EU directive affected the trade secret management within your organization?” which is a question for companies, is in the interview guides for professors changed to “How has the EU directive affected the trade secret management within organizations?”.

The interviews will be recorded, with consent from the interviewees, and then transcribed. This way of working is recommended by Bryman and Bell (2011). Additionally, Bryman and Bell (2011) recommend the interview to be conducted at a private and quiet place. The private place is of importance to get answers that are less affected by the risk of being overheard (Bryman & Bell, 2011). The interviews in this study will be conducted either through phone or Zoom, due to the ongoing pandemic. This makes the interviewees decide themselves where they want to be located. In the information document that will be sent out before the interview it will, however, be included that the interviewee is recommended to sit somewhere quiet and private (see appendix B). Conducting interviews through phone instead of in person can affect the results of the interviews (Bryman & Bell, 2011). A major drawback with phone interviews is the lack of engagement in observation, which in person would enable the interviewer to read signs, face and reactions to questions. However, one advantage with phone interviews is the reduction of biases that may arise by the impact of the characteristics of the interviewer on the interviewee, which may encourage the interviewee to answer in ways that seem desirable by the interviewer. The interviewee will during the phone interview not be affected by the interviewers’ characteristics (Bryman & Bell, 2011). In this study, online communication channels such as Zoom or Skype where the cameras can be used would be preferable since it allows for some observation. If interviews take place in person, it is difficult to fully avoid the chance of biases due to the presence of the interviewer, but the prepared design of the interview and its questions will reduce biases as much as possible.

Furthermore, recording the interviews will open up for additional analyses where biases can be identified and taken into account (Bryman & Bell, 2011).

The interviews will be conducted by two interviewers. According to Bryman and Bell (2011) it is recommended to be more than one interviewer. In accordance with Bryman and Bell (2011), the interviewers will have two different roles. Hence, one will lead the interview, and one will be more passive. The passive role will have the responsibility to keep track of that the research topics are covered, taking small notes, and interrupt with questions if needed.

To ensure that the interviews are made in an ethical way, the interviewees will be informed what the research is about and its purpose. The interviewee will be informed both in the information document (see appendix B) and in the interview (see appendix A) that the answers will be treated confidentiality and that participation is voluntary. This is of importance according to Bryman and Bell (2011).

The interview topics and their connection to the research questions are presented in table 2.2.

Table 2.2. *The interview topics connection to the research questions.*

Interview topic	Connection to research question(s)
General about the EU directive	No direct connection to a specific research question. The topic is included to get an idea about the interviewee's knowledge around and the interpretations of the EU directive.
Trade Secret management	SRQ4: What is the effect on companies' trade secret management as a result of the trade secrets directive (EU 2016/943)?
Trade Secret definition and breach	SRQ1: What is a trade secret, and in which aspects has it changed as a result of the trade secret directive (EU 2016/943)? SRQ2: What is considered a trade secret breach and in which aspects has it changed as a result of the trade secret directive (EU 2016/943)?
Types of trade secrets	SRQ3: Which types of intellectual assets are typically controlled through trade secrets, and what are the challenges?
Value creation	SRQ5: What is the difference between companies' value creation in relation to trade secrets before and after the new directive (EU 2016/943) came into force?
Intellectual assets	SRQ3: Which types of intellectual assets are typically controlled through trade secrets, and what are the challenges?

The interviewees are academic professors who have many years of experience in this area and will contribute with valuable insights. Other interviewees are representatives from companies, of all sizes and from any European country, where the representative will be someone who is working with IP, desirably an IP manager. Anyone with a higher position in the company works as well, such as a CEO for example. When it comes to interviews with companies, the aim is to interview representatives from technology-based companies. The reasoning behind this is that these types of companies probably are managing both technological knowledge and commercial data, which is of interest for this study. These interviewees will be able to provide information about their trade secret management, its effect on value creation and efforts they have done to comply with the EU directive. Companies will be contacted through email, phone or LinkedIn. Other interviewees will be lawyers, since they have great knowledge about the legal dimension in the trade secret

management and are working with this on a daily basis where they help companies comply with the directive as well as help them in legal disputes. Lawyers can be anyone from a European country and they will be contacted through email, phone or LinkedIn. All interviews will be semi-structured where there will be a list of prepared questions, but still some room for additional questions. Regarding all interviewees, it would be beneficial to have representatives from different European countries in order to get different perspectives, and to reduce biases. The plan is to interview 2-4 professors, 5-8 companies and 3-6 lawyers. They will all need to give consent regarding what is to be published in the report. In table 2.3 the numbers of interviews are presented together with their type of interview (company, professor, or lawyer). In total 34 persons were asked to participate in the study.

Table 2.3. *Conducted interviews.*

Type of interview	Number of interviews
Company	7
Lawyer	3
Professor	1
TOTAL	12

The persons interviewed are presented below divided upon type of interview.

Companies

The interviewees representing companies had on average 15 years of experience within the IP field. Out of these, three interviewees had 20+ years of experience. The interviewees roles are either as managers within IP or consultants within IP. The interviewees work for companies primarily based in Sweden, Norway and UK, however, four of the companies are global firms operating globally. Two companies operate on an European level, while one company operates primarily on the Swedish market. Three of the companies are IP consultancy firms, where one focuses primarily on life sciences. The other firms operate within chemistry, digital solutions, hygiene and health, and industrial solutions. The company sizes range between 10 to 40 000 employees, where four of the companies have more than 5 000 employees.

Lawyers

The interviewees representing lawyers have on average 13 years of experience within IP. The longest experience is 22 years. The titles held by the interviewees are senior associate, attorney-at-law, and lawyer within IP. The interviewees work for law firms based in Sweden, Denmark and Belgium. Three of the firms are, however, operating on a global level, while one operates primarily on the Swedish market.

Professors

Interviews with professors turned out to be difficult to access, which is why we broadened the scope to include more people from academia. In total two people from the academia were interviewed, one associate professor and one PhD-student. Both these persons were doing or

had been doing research on trade secret management. Due to the professors' great knowledge also within the industry, this interview was, however, categorized as a company interview.

Court cases

The court cases will be read and analysed in order to find patterns or factors that can contribute to the understanding of how the EU directive has impacted trade secret management and value creation. Additionally, court cases are great sources since they show what has gone wrong regarding trade secrets as well as they disclose information about the objects and management, and by comparing cases before the EU directive and after, it will be possible to draw conclusions from how the directive has affected the companies. Moreover, the court cases are public and easily accessible, which facilitates the data gathering. Additionally, since trade secrets are confidential and companies may be restrictive about sharing information on how they handle them, court cases are a great initial source.

In order to gain as much data and understanding as possible, the study aims to investigate court cases from as many European countries as possible. However, due to language barriers, certain countries were prioritized. The court cases can be found on the public websites and databases. The initial plan was to read 30 court cases, however, due to language barriers 22 court cases were read and analysed. In table 2.4 a compilation of the accessed court cases are made.

Table 2.4. *Accessed court cases, national origin and year.*

Country	Total number of court cases	Court cases before June 2016	Court cases after July 2018
Sweden	14	11	3
Denmark	3	1	2
Ireland	2	1	1
UK	3	2	1
<i>Total</i>	<i>22</i>	<i>15</i>	<i>7</i>

Conceptual and Theoretical work

The following section will describe the selected literature review, legal framework and theoretical frameworks that are used in this study. The legal framework is chosen to be separated from the theoretical framework. The reasoning behind distinguishing these is to clarify what is based on a more legal approach and what is not. A literature review is according to Bryman and Bell (2011) usually put in its own chapter. In this study, the literature review constitutes like Bryman and Bell (2011) are discussing an own chapter. The literature review in this study is in line with what Bryman and Bell (2011) refer to as narrative review. A narrative review aims to create an understanding of the research topic, and is less strict than a systematic review. In inductive research it is more common to use a narrative review, compared to if the study is primarily deductive. The reason behind this is that inductive research tends to need a greater flexibility, i.e. by changing view on the literature or theory (Bryman & Bell, 2011). Both the legal framework and the theoretical

framework are included in the study in order to compare the data findings with something (Bryman & Bell, 2011). In figure 2.3 the connection between the sub-research questions and the legal and theoretical framework are shown.

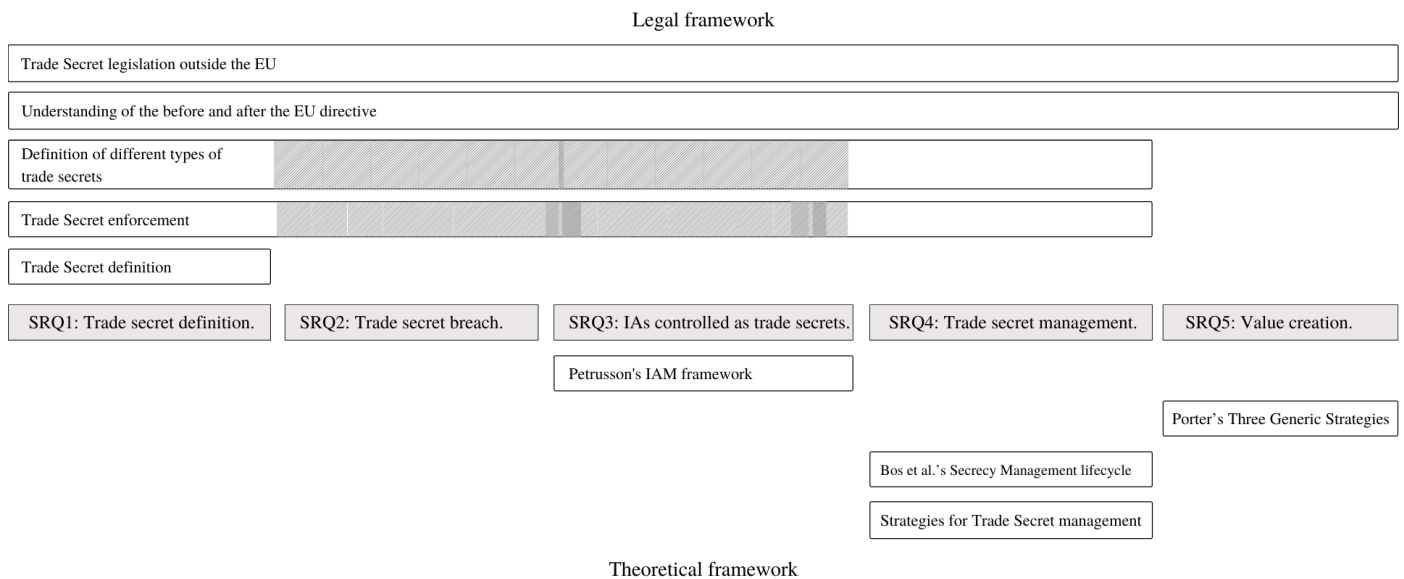


Figure 2.3. Connection sub-research questions and legal and theoretical framework.

The literature review, and the legal and theoretical framework are all developed simultaneously as the data are compiled and briefly analysed. This way of working is common for qualitative research (Bryman & Bell, 2011).

The most central part in this study is the EU directive 2016/943 because it is the influential factor that the study aims to investigate, how it has influenced trade secret management and value creation within companies. The EU directive is chosen because it is supposed to guide member states how trade secrets should be managed, and what they are legally obliged to do, which makes it crucial in this study. The EU directive will be used as comparative measure and guidance of how trade secrets should lawfully be managed in companies and will be treated as a major influential factor on trade secret management where comparisons can be made before and after the directive came into force. Additionally, an investigation of companies compliance with the directive as well as its contribution as a legal basis why certain decisions are made in court for example, are made. The study can contribute with knowledge about the effectiveness of the directive and the potential improvements that need to be made. Other national legislations outside the EU, can gain insights how the directive will, or have, influenced trade secret management within companies acting within the EU. These insights can be gained by understanding how other countries have understood and/or formulated their legislations. Additionally, articles about trade secret management are discussed to understand how companies are managing their trade secrets, and which strategies are used for trade secret protection.

Literature Review

The literature review has been focused on both trade secret management, value creation and previous research made on the EU directive (2016/943) and other national trade secret

legislations. These fields of study are chosen as the understanding for the research area and topic has increased. This way of working is a more narrative review, than a systematic one according to Bryman and Bell (2011). The literature review is used to understand the field of study and to investigate which research has been done previously. This is done to understand in which way and where this study can contribute with new insights and knowledge.

Legal Framework

The legal framework is aiming to capture what a trade secret is (its definition) and its enforcements. Different types of trade secrets are also covered as part of the legal framework. In addition to these, a comparison between trade secret legislations within the EU before and after the directive came into force are included. Additionally, trade secrets legislation outside the EU is included to open up for comparisons. In table 2.5, the parts belonging to the legal framework are presented and discussed.

Table 2.5. Motivation behind the legal framework.

Framework part	Motivation
The Trade Secret Directive (EU 2016/943)	Needed in order to create a comparison before the EU directive and after.
Trade Secret definition within the EU before June 2018	Needed in order to create a comparison before the EU directive and after.
Comparison of Trade Secret Legislation before and after the EU Directive	Important to be able to analyse the gathered data, and to understand if the trade secret breach definition has changed.
Trade Secret legislations outside EU	Interesting for comparing both the EU directive (2016/943) as such, and the findings from this study.
Enforcement of Trade Secrets	Used to understand what a trade secret holder legally must do to enforce the trade secret protection.
Type of Trade Secrets	Important to answer especially SRQ3, however, it is also of importance to draw conclusions regarding the analysed data.

Theoretical Framework

The theories discussed in the theoretical framework are Petrusson's (2015) Intellectual Asset management (IAM) framework; Strategies for Trade Secret management influenced by Abd Jalil and Hassan (2020) and Robertson et al. (2015); Bos et al.'s (2015) Secrecy Management lifecycle; and Porter's (Porter 1985, in Tanwar, 2013) Three Generic Strategies.

These four theories are what Bryman and Bell (2011) refer to as middle-range theories. Middle-range theories are theories that act in a limited domain (Bryman & Bell, 2011). Bos et al.'s (2015) Secrecy Management lifecycle, is focused on secrecy management in an organizational context. Porter's (Porter 1985, in Tanwar, 2013) Three Generic Strategies, and Strategies for Trade Secret management (Abd Jalil & Hassan, 2020; Robertson et al., 2015) are like Bos et al.'s (2015) theory based in an organizational context. Petrusson's (2015) IAM framework is primarily focused on a research setting but is applicable in organizational settings as well. Below the theories are discussed individually.

Petrusson's Intellectual Assets management framework

The theoretical framework developed by Petrusson (2015), with focus on the claiming part, serves as a guideline for how to identify intellectual assets and potential related IPR, and especially assets subject to trade secrets. This theory is highly relevant for the answering of SRQ3.

Strategies for Trade Secret management

The strategies for trade secret management-part are based on legal and administrative measures discussed by Abd Jalil and Hassan (2020), and the secrecy climate by Robertson et al. (2015). This framework is included to understand how successful trade secret management can be arranged from different points of view.

Bos et al.'s Secrecy Management lifecycle

The Secrecy Management lifecycle, by Bos et al. (2015), will serve as a foundation that findings in the study can be put in relation to how trade secrets should be managed in different stages of the lifecycle.

Porter's Three Generic Strategies

Porter's Three Generic Strategies theory discussed by Tanwar (2013), and Akan, Allen, Helms, Spralls (2006) serves as a foundation for how competitive advantage is related to the firms' ability to create value, and what general strategies can be adopted to enable competitive advantage. Trade secrets can be seen as a differentiating factor that enables a successful differentiation strategy which fosters a stronger position on the market. Most companies use IPR such as trade secrets in order to differentiate from its competitors which makes trade secrets extremely valuable, which indicates that beneficial management of those will lead to a successful business. If the trade secret is disclosed and lost, this will have a major negative impact on the differentiation strategy and the firm will most likely lose its competitive advantage. The theory will be used in the study as a framework for what are profitable strategies to foster competitive advantage and the study will further investigate what impacts management of trade secrets has on those strategies, but also how the EU directive affected such management of trade secrets and the value creation within the firms.

2.3.2 Analysis of the data

The analysis of the data will be made in two ways; through grounded theory and univariate analysis. Both the analysis methods will be done in parallel, where they might impact one another as well as the theory. For example, a finding from the grounded theory might be possible to apply in the univariate analysis and vice versa. This finding in its turn might have an impact on the theory part, since it probably is of interest to understand the theme more through theory. In figure 2.4 the relation between the primarily data sources and the different analysis methods are illustrated.

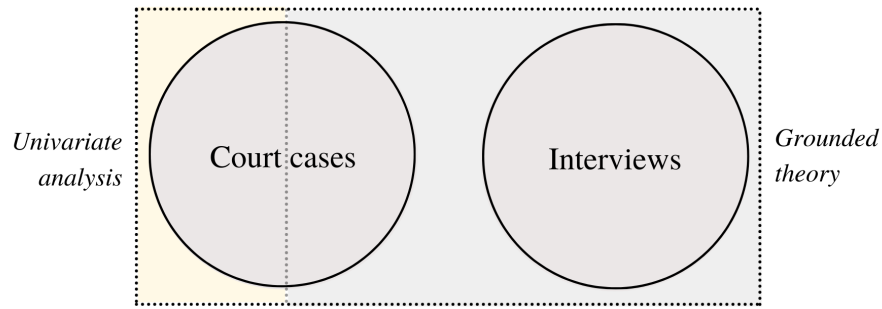


Figure 2.4. Relation between data sources and analysis method.

One strategy to analyse qualitative data is through grounded theory. Grounded theory is the most common framework for analysis of qualitative data such as interviews (Bryman & Bell, 2011). Grounded theory implies that the data and analysis thereof are performed in an iterative way. Also the theory is to some extent iterative, and stands in close connection to the data and the analysis. Coding is one of the most central parts in grounded theory. The coding process exists in two parts, and is usually made at different levels. These two parts are, coding of the data, and collection of the data. The coding and the collection are made in an iterative way, where the data are collected until determination of the coding are done. The coding is considered as done when there is no need to re-analyse the data (Bryman & Bell, 2011).

The main data analysed in this study are transcripts from interviews and court case documents. The majority of the data are gathered in a qualitative way, where a limited version of a grounded theory approach is used when analysing the data. All five sub-research questions are aiming at being answered in whole or partly by the grounded theory approach:

SRQ1: What is a trade secret, and in which aspects has it changed as a result of the trade secret directive (EU 2016/943)?

SRQ2: What is considered a trade secret breach and in which aspects has it changed as a result of the trade secret directive (EU 2016/943)?

SRQ3: Which types of intellectual assets are typically controlled through trade secrets, and what are the challenges?

SRQ4: What is the effect on companies' trade secret management as a result of the trade secrets directive (EU 2016/943)?

SRQ5: What is the difference between companies' value creation in relation to trade secrets before and after the new directive (EU 2016/943) came into force?

Examples of themes found in the grounded theory analysis of the court cases are *Use of trade secrets*, *Acquisition of trade secrets* and *Economic value*. Examples of themes occurring in the grounded theory of the interviews are *Increasing awareness of IP in general* and *Harmonized view*. Some parts of the research questions do, however, require a bit more quantitative approach when analysing the data. Hence, a quantitative analysing method will be used in addition to the content analysis. The quantitative analysis will be applied on the court cases and are aiming at answering parts of all four sub-research questions. The quantitative variables that aim to be explored through this analysis are; *who is the winning party in the*

legal cases, who is the respondent, and which type of trade secrets it is. These are focused on two time periods - before 2016 and after 2018. The variables are presented in table 2.6.

Table 2.6. Quantitative variables.

Winning party before 2016	Appellant
	Respondent
Winning party after 2018	Appellant
	Respondent
Type of respondent before 2016	Person(s)
	Company/companies
Type of respondent after 2018	Person(s)
	Company/companies
Type of trade secret before 2016	Technical
	Commercial
Type of trade secret after 2018	Technical
	Commercial

To analyse the variables in this first step an univariate analysis will be made. According to Bryman and Bell (2011) the variables are analysed separately, making one variable analysed at a time. Univariate analysis is often presented through frequency tables, diagrams, measures of central tendency, or measures of dispersion. In this study frequency tables will be used. Examples of two frequency tables used in this study are shown in table 2.7 and 2.8.

Table 2.7. Frequency table showing winning party before 2016.

Frequency table showing winning party before 2016		
<i>Party</i>	<i>n</i>	<i>%</i>
Appellant	x	x
Respondent	x	x
TOTAL	x	x

Table 2.8. Frequency table showing winning party after 2018.

Frequency table showing winning party after 2018		
<i>Party</i>	<i>n</i>	<i>%</i>
Appellant	x	x
Respondent	x	x
TOTAL	x	x

The findings from the analyses made before and after the EU directive will in the second step be compared to each other. The reasoning behind doing this comparison between before 2016

and after 2018, is to get an understanding of how the EU directive potentially has influenced these different variables. The variables analysed are presented in table 2.9.

Table 2.9. Variables used for comparing variables from step 1.

Winning party	% Respondent winning before 2016
	% Appellant winning before 2016
	% Respondent winning after 2018
	% Appellant winning after 2018
Type of respondent	% Person(s) being respondents before 2016
	% Company/companies being respondent before 2016
	% Person(s) being respondents after 2018
	% Company/companies being respondent after 2018
Type of trade secret	% Cases with technical trade secrets before 2016
	% Cases with commercial trade secrets before 2016
	% Cases with technical trade secrets after 2018
	% Cases with commercial trade secrets after 2018

To get an overview of the variables, different types of diagrams will be used. According to Bryman and Bell (2011) diagrams are the most common way of presenting quantitative data. The diagrams used in this study are bar charts.

2.4 Research Quality

In order to evaluate research, four criterias are used that are suitable for qualitative research; confirmability, dependability, credibility and transferability (Bryman & Bell, 2011). Confirmability refers to ensuring objectivity and that the research is not affected by personal values that generate biases. Dependability refers to if the findings are likely to be applied at other times, and if it can be repeated and understood. Credibility simply refers to how believable the findings are while transferability refers to if the findings can be applied to other contexts (Bryman & Bell, 2011).

2.4.1 Confirmability

Since the study primarily studies court cases the confirmability is quite high since there are no individual opinions in these documents. The majority of the data collection will be from the court cases which makes it more focused on hard facts, hence making it less affected by biases. However, there is always a risk for biases in interviews, but the risk will be reduced by having semi-structured interviews with some standardized questions. Additionally, the additional data from the literature review will help reduce biases.

2.4.2 Dependability

Dependability in this study is affected by court cases and since court cases are an ongoing process the ruling might change over time, hence making the dependability moderate (Bryman & Bell, 2011). However, analysing court cases from several years should increase the possibility of quite high dependability. Also the data gathered from the interviews are moderate, since these are based on individuals' experiences and opinions, which might change over time. The fact that the EU directive is quite new might also lead to an increased risk that the opinions change over time.

2.4.3 Credibility

The credibility of the study depends on the number of court cases and interviews conducted and analysed in the study, since this affects the conclusions. 22 court cases and 12 interviews were conducted and analysed during the study which indicates a relatively high credibility. However, there were relatively few court cases after 2018, which made the comparison between before and after the directive more difficult, hence had a decreasing effect on the credibility.

2.4.4 Transferability

The transferability is affected by the number of court cases from various countries analysed in the study. If analysing only Swedish court cases, the findings might not be as transferable as if investigating several EU members. National laws might, however, vary between countries, and might not be directly transferable to one another. 22 court cases from four different countries were analysed in the study which results in a moderate transferability because there will always be differences in national laws.

2.5 Risks and Ethical considerations

Eventual problems that may occur during the study are difficulties to access court cases, language barriers and difficulties to access interviewees from companies. Regarding court cases, it may be difficult to access as many relevant court cases as aimed to. This goes in line with the language barriers where it will be difficult to access and analyse cases that are not in English or Swedish. The risk is that the number of court cases analysed will be few, which will restrict the ability to draw accurate conclusions. To solve this problem, translation services such as google translate can be used. Moreover, additional sources, besides court documents can be used to collect data such as articles and interviews. The other potential problem is to access interviewees from companies and law firms since they may not be interested in participating in the study. To avoid uncertainties regarding confidential information, questions will be structured in a way that makes this type of information not run a risk of being disclosed. In addition, consent will be needed by the interviewees. Furthermore, the data will primarily be based on court cases. Interviews will be the second data source which means that the study can be finalized despite a limited number of

interviews. Moreover, much information can be gathered from professors who may be more willing to participate.

Ethical problems that may be encountered in the study are firstly that experiences around trade secret management are usually not shared, which might make companies hesitant to participate. However, the study does not aim to investigate their trade secrets, but their view of trade secret management in relation to the EU directive. Another ethical problem is that when asking companies about interviews, they may choose an interviewee. This makes the company know who the person is even though we have anonymized the interview. This generates a risk of biased answers since the person might feel that he/she cannot share certain information. Or it can lead to bad consequences for the person if he/she shares too much or the wrong type of information. To decrease this risk potential interviewees will primarily be asked directly.

3 Literature review

This chapter includes a discussion on previous research and studies relevant for the field of study.

Several studies and research covering the EU directive (2016/943) on trade secrets, and trade secret management has been covered and read prior to and during the conduction of this study. Both in order to identify the missing gap in the research field as well as identifying relevant information that could contribute to the understanding of the study's research field. What is common in all research papers is that trade secrets are extremely valuable for companies which is why trade secret protection is of great importance. Companies' competitive advantage is highly dependent on trade secrets (Castellaneta et al., 2017; Abd Jalil & Hassan, 2020; Hannah, 2005), and protecting those secrets is crucial for achieving high company value (Castellaneta et al., 2017; Abd Jalil & Hassan, 2020). Abd Jalil and Hassan (2020) further express that you protect your business by protecting your trade secrets.

Torremans (2015), Desai (2018), and Sousa e Silva (2014) all discuss the background to the implementation of the EU directive. In these articles the aim of harmonizing the EU members' today disparate trade secrets legislations is central. Sousa e Silva (2014) also discusses previous trade secret legislations within different European countries. Fox (2020) has in her study instead explained how different European countries have implemented the EU directive into their national legislations and their take on it. Additionally, Fox (2020) discusses trade secret legislations also outside the EU to compare it with the EU directive. Also, Gutfleisch (2018) discusses the implementation of the EU directive, and claims together with Fox (2020) that especially the reasonable steps are unclear in the EU directive. Previous studies have been made investigating court cases for this purpose to some extent, however, these are analysing a smaller number of court cases between 2016-2018 (Fox, 2020, van der Velden & Duijm, 2019). Another debated area of the EU directive is the "experiences and skills gained by employees in their normal course of their employment" (chapter 1, 14 §, EU 2016/943). This matter is addressed by Whincup (2016), Neethu (2018) and Schovsbo, Minssen, and Riis (2020).

Trade secret legislations outside the EU are also investigated by researchers. For example, Richmond, Kelly and Covarrubias (2017), Desai (2018) and Richmond et al. (2017) discuss the US's Defend Trade Secrets Act (DTSA). The Chinese trade secret legislation is instead investigated by Bai and Da (2011). Fox (2020) is discussing both the US's and China's trade secret legislations, together with Canada's, Russia's and Japan's.

Previous studies have also addressed trade secret management from several points of view. Abd Jalil and Hassan (2020) have for example investigated how different trade secret management measures can help create value for companies by protection of their trade secrets. On the same topic Castellaneta et al. (2017) has investigated the relation between trade secret protection and value creation within certain industries. Robertson, Hannah and Lautsch (2015), Hannah (2005), Hannah (2006) and Hannah (2007) have made research on

why employees share trade secrets and how it can be avoided. Bos, Broekhuizen and Faria (2015) has in their turn created a trade secret management lifecycle that explains the development of a trade secret over time and through different stages.

Much research has been done in the research area of trade secrets, the EU directive and trade secret management, where few of the papers touch upon the research field of interest in this study. Companies have encountered obstacles with the variegated national trade secret legislations and the EU directive was implemented in order to harmonize the laws and make it easier for companies to manage their trade secrets. Therefore it is of great relevance to investigate the EU directive's impact on companies and their trade secret management as well as their value creation, in order to contribute with knowledge into the research area.

4 Legal Framework

This section provides the legal key concepts and frameworks relevant and used in this study. There will be definitions and content from the Trade Secret directive (2016/943), and information about Trade Secret legislations within the EU before June 2018. Additionally, there will be information about trade secret legislations outside the EU, and general definitions and information about trade secrets and their enforcements.

This section is relevant for this study since it provides a framework regarding what a trade secret is, trade secrets' enforcements, and different types of trade secrets, which is crucial to answer the research questions. Additionally, the understanding of trade secrets legislations before and after the EU directive are important to answering the various research questions. The trade secret legislations outside the EU are also interesting when later on discussing the research questions. The trade secret legislations are focused primarily on what is seen as a trade secret, and what is seen as unlawful acquisition, use or disclosure of such.

4.1 The Trade Secret Directive (EU 2016/943)

In the EU, only Sweden had its own act for protection of trade secrets before the EU directive came into force (Schovsbo, 2019). Thus, assuming that the EU directive will have an impact on the ruling within the member countries is easy to assume. Hence, investigating what is central to the EU directive, is crucial.

This section is focused on *trade secret definitions* and *unlawful acquisition, use or disclosure* according to the EU directive, compared to legislations before 2016.

4.1.1 Trade Secret definition according to the EU Directive

According to the EU directive chapter 1, 2 § (EU 2016/943) trade secrets are divided into two groups; technological knowledge and commercial data. Examples on commercial data are information about customers, suppliers, strategies, and business plans. The definition of a trade secret is according to the EU directive 2016/943:

- (1) 'trade secret' means information which meets all of the following requirements:
 - (a) "it is secret in the sense that it is not, as a body or in the precise configuration and assembly of its components, generally known among or readily accessible to persons within the circles that normally deal with the kind of information in question;
 - (b) it has commercial value because it is a secret;
 - (c) it has been subject to reasonable steps under the circumstances, by the person lawfully in control of the

information, to keep it secret. (EU 2016/943, Chapter I, Article 2)

Information and experiences and skills gained by employees in the normal course of their employment are, however, not considered as trade secrets (chapter 1, 14 §, EU 2016/943).

“Experience and skills gained by employees...”

A debated area of the EU directive is chapter 1, 14 § (EU 2016/943) regarding that “experiences and skills gained by employees in their normal course of their employment” should not be considered as trade secrets (Whincup, 2016; Neethu, 2018). Where no definition nor clarification on the matter is provided within the EU directive. The motivation behind including this limitation is to secure and enhance the free movement of labour within the EU, however, by doing so this might be at the cost of organizational control over crucial information (Schovsbo, Minssen, & Riis, 2020; Neethu, 2018).

Neethu (2018) discusses that opening up for employees to bring with them knowledge and skills gained through employment might be a bigger issue for some industries than others. Hence, she mentions the fashion industry where knowledge gained through employment usually is what is considered as trade secret in the first place.

4.1.2 Unlawful acquisition, use or disclosure according to the EU Directive

An acquisition of a trade secret is considered illegal when it has been acquired without consent from the trade secret holder, for example through unauthorised access (chapter 4, 2 § a-b, EU 2016/943). Additionally, according to chapter 4, 3 § a-c (EU 2016/943) use or disclosure of a trade secret should be considered illegal when it is made without consent from the trade secret holder, and by a person fulfilling any of the following three conditions:

- a) The trade secret is acquired illegally,
- b) It is in breach with confidentiality agreement or other comparable duty not to disclose the trade secret, and/or
- c) It is in breach with a contractual or comparable duty to limit the use of the trade secret.

The EU directive also states that the liability of illegally acquired trade secrets are not only put on the person acquiring the trade secret, but also on the third party if they know or ought that the trade secret has been illegally acquired either indirectly or directly, if the third party acquires, uses or disclose the trade secret (Gutfleish, 2018; Chapter 4, 4 § EU 2016/943). This indicates that when an employee is moving on to a new employer, the new employer has a greater responsibility to make sure that the new employee does not use trade secrets from their previous employers in their new position, in the directive.

Exceptions

The “whistle-blower” exception is one of the exceptions when a trade secret is not covered by the trade secret protection. The whistle-blower exception applies to cases where, i.e. the

disclosure of the secret serves the public interest, and illegal activities are revealed (Chapter 1, 20 §, EU 2016/943; Gutfleish, 2018).

Another exception, when the acquisition of information should be considered legally acquired, is in case of reverse engineering (Chapter 1, 16 §, EU 2016/943). However, some industries are exempt from this exception (Chapter 1, 17 §, EU 2016/943).

4.2 Trade Secret Legislations within EU before June 2018

In this section national trade secret legislations before June 9, 2018 are presented. The national legislation included, corresponds to the origin of the court cases analysed, and are therefore *Sweden's, Denmark's, Ireland's, and UK's Trade Secret legislation before June 2018*.

4.2.1 Sweden's Trade Secret Legislation before June 2018

The Swedish Trade Secret legislation changed as a result of the new directive, where law from 1990 (SFS 1990:409) was replaced with law (SFS 2018:558) on trade secrets, from 2018. In the trade secret law from 1990 (SFS 1990:409), a trade secret is defined as:

- Information about business or operating conditions,
- That the trade secret holder keep secret, and
- Where disclosure is aimed to harm the trade secret holder in terms of competition.

Excluded from unlawful attacks is situations where someone acquires, exploits or discloses a trade secret in order to disclose the information regarding something that can reasonably be suspected of constituting a crime, or something that can be considered to constitute another serious misconduct in the trade secret holder's business (SFS 1990:409).

4.2.2 Denmark's Trade Secret Legislation before June 2018

Before the Danish Act on Trade Secrets was implemented in June 2018, trade secrets were included in the Danish Marketing Act, paragraph 23 (International Lawyers Network, 2018). Any definition on trade secrets, however, was not included in the Danish Marketing Act (International Lawyers Network, 2018). What paragraph 23, in the Danish Marketing Act, states, however, is that (LOV nr af 03/05/2017):

- Someone working for a company, may not improperly acquire knowledge related to trade secrets or access such trade secrets,
- If the trade secrets have been gained in a legal way, the person is not allowed to pass on or use the information without consent. This applies up to three years after the employment, co-operation, or the position has ended.

4.2.3 Ireland's Trade Secret Legislation before June 2018

Before June 2018, trade secret protection in Ireland was made through the law of confidence. The law of confidence protects confidential information that is disclosed in a way that

implicates “obligation of confidence” (Bolger p 197, 2019). In addition to the law of confidence, trade secret protection-praxis have been determined through court law, and are now including different types of information and view upon disclosure under different circumstances (Bolger, 2019).

4.2.4 UK’s Trade Secret Legislation before June 2018

The UK law on trade secrets, is as Ireland’s legislation, based in the law of confidence, which is created through common law to a large extent (Bolger, 2019; Williams & Smith, 2020; Pierce, 2019). According to the case law, information can be protected if (William & Smith, 2020):

- It fulfills the quality for confidentiality, and
- “[...] it is disclosed in a situation importing an obligation of confidence” (William & Smith, 2020).

If the mentioned requirements are fulfilled, the information is seen as confidential and unauthorized disclosure of the information is seen as a breach of confidence (William & Smith, 2020).

Before June 2018, the term trade secret was included in the UK legislation, however, only in relation to employment law (William & Smith, 2020). The court has, however, made a difference between confidential information and trade secrets, implying that some information gained through employment are only considered as confidential and not as a trade secret. In one case called *Faccenda Chicken*, the court ruled that only information considered as trade secrets are information that an employer can restrict an employee from disclosing after the employment has ended. Additionally, the court in the *Faccenda Chicken*-case identified circumstances that should be taken into consideration to decide whether something is a trade secret or not, being:

- The employment nature,
- The information nature,
- If the employer shared the confidential information with the employee, and
- If the information can be separated from other information that the employee is free to use or disclose (William & Smith, 2020).

4.2.5 Summary Trade Secret Legislations before June 2018

To understand the similarities and differences that existed before the implementation of the EU directive in EU members’ national legislations, a table is created. As both Ireland and the UK's protection of trade secrets are based in common law, difficulties arise finding the legal definition of a trade secret and its disclosure. Therefore, only Sweden and Denmark are included in the compilation of the national legislations (see table 4.1).

Table 4.1. Summary of the trade secret legislations.

Country	Name and type of legislation	Trade secret definition	Definition of disclosure	Exception of disclosure
Sweden	<i>The trade secret law</i> , legislation covering only trade secrets.	- Information about business or operating conditions, - That the trade secret holder keeps secret.	Disclosure is aimed to harm the trade secret holder in terms of competition.	Whistleblower exception.
Denmark	<i>The Danish marketing act</i> , trade secrets included in one paragraph (§23).	No definition.	- Improper acquire of knowledge related to trade secrets or access such trade secrets, - Passing on or using trade secrets, legally gained, without consent. Applies up to three years after the employment etc. has ended. Applies for someone working for the company.	None.

4.3 Comparison of Trade Secret Legislation before and after the EU Directive

This part focuses on the difference before and after the EU directive came into force June 9, 2018. The ‘before’ definitions are based on the national legislation as they were before June 9, 2018. The national legislations used are from the countries from which the court cases used in this study originated from. The national legislations are described more in detail in section 4.2.

4.3.1 Trade Secret definition before and after the EU Directive

Before the EU directive came into force June 9, 2018, trade secrets were according to the Swedish law (Act on the Protection of Trade Secrets, SFS 1990:409) seen as:

- Information about business or operating conditions,
- That the trade secret holder keeps secret.

No clear trade secret definition was found in the national legislations in the UK, Ireland or Denmark. Due to lacking definitions in other national legislations, the definition that will be used in this part is the Swedish one.

In the EU directive (chapter 2, 1 § a-c, EU 2016/943) a trade secret is:

- Not generally known or readily accessible for people that generally deal with the specific information,
- Is of commercial value due to it being a secret, and
- Where reasonable steps have been taken by the trade secret holder in accordance to the circumstances, in order to keep the information secret.

In addition to these definitions the EU directive (chapter 1, 2 §) divides trade secrets into two groups; technological knowledge and commercial data. The EU directive has also made some limitations when something is not considered as a trade secret. Information and experiences and skills gained by employees in the normal course of their employment are not considered as trade secrets (chapter 1, 14 §, EU 2016/943). The “whistle-blower” exception (Chapter 1, 20 §, EU 2016/943) is not included due to the fact that it existed in the Swedish Act on the Protection of Trade Secrets (SFS 1990:409) before June 9, 2018.

The differences before and after the EU directive regarding what is seen as a trade secret, are illustrated in figure 4.1.

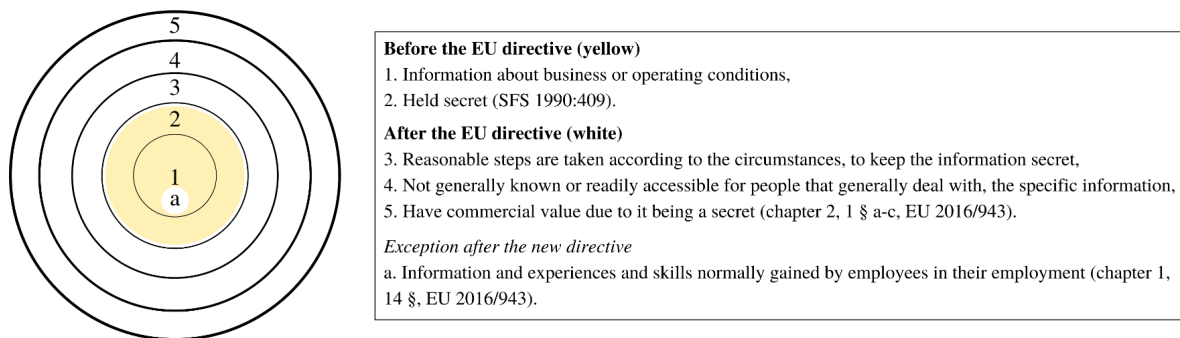


Figure 4.1. Differences before and after the EU directive regarding what is seen as trade secret.

4.3.2 Unlawful acquisition, use or disclosure-definition before and after the EU Directive

What is defined as a disclosure of a trade secret varies to some extent between the national legislations. Ireland and the UK, however, do not have any clear definition on disclosure (Bolger, 2019; William & Smith, 2020). The national legislations, taken into consideration in this part are therefore the Swedish and Danish ones. Summarized the disclosure-definitions are:

- Disclosure is aimed to harm the trade secret holder in terms of competition (SFS 1990:409),
- Improper acquire of knowledge related to trade secrets or access such trade secrets (LOV nr af 03/05/2017),
- Passing on or using trade secrets, legally gained, without consent. Applies up to three years after the employment or collaboration has ended (LOV nr af 03/05/2017).

According to the EU directive an unlawful acquisition is seen as:

- An acquisition of a trade secret acquired without consent from the trade secret holder, for example through unauthorised access (chapter 4, 2 § a-b, EU 2016/943).

Unlawful use or disclosure are according to chapter 4, 3 § a-c (EU 2016/943) seen as:

- Use or disclosure of a trade secret made without consent from the trade secret holder, and by a person fulfilling any of the following three conditions:
 - a. The trade secret is acquired illegally,

- b. It is in breach with confidentiality agreement or other comparable duty not to disclose the trade secret, and/or
- c. It is in breach with a contractual or comparable duty to limit the use of the trade secret.

Both the person acquiring the trade secret, and the third party using the trade secret are liable for the illegally acquired trade secret. However, the third party needs to know or ought that the trade secret has been illegally acquired either indirectly or directly. In addition, the third party needs to have acquired, used or disclosed the trade secret (Gutfleish, 2018; Chapter 4, 4 § EU 2016/943).

The differences before and after the EU directive regarding what is seen as unlawful acquisition, use or disclosure of a trade secret, are illustrated in figure 4.2.



Figure 4.2. Differences before and after the EU directive regarding what is seen as unlawful acquisition, use or disclosure of a trade secret.

The difference between before and after the EU directive is not that clear through just taking the legislation into consideration. Important to note, however, is that the national legislations fulfil the requirements from the EU directive only combined. In this case the Danish and the Swedish legislations together constituted for the regulations in the EU directive. Even if the definitions are similar before and after, the definitions are more specified in the EU directive, compared to before.

4.4 Trade Secret legislations outside EU

The trend protecting trade secrets is not only a trend within the EU, but also on an international law level (Schovsbo, 2020). What the legislation includes, however, differs between some countries (Fox, 2020). The EU directive, together with the US, Canadian and Chinese trade secret legislations are more nuanced, and provide circumstances to influence the ruling (Fox, 2020). Russian and Japanese trade secret legislations, however, are more set and provide clear measures on what organizations have to do to keep their trade secrets secret (Fox, 2020). Important to stress is that the DTSA in the US, is not only applicable to activities within the US. Rather, the DTSA is applicable for activities also outside the US. This means that the DTSA can affect companies that operate within the EU (Desai, 2018), resulting in that companies must be aware of legislations also outside the EU.

Thus, the following part will be focused on *the US legal framework of the Defend Trade Secret Act*, and *China's, Canada's, Japan's, and Russia's Trade Secret Legislations*.

4.4.1 US legal framework of the Defend Trade Secrets Act (DTSA)

The trade secret directive (EU 2016/943) is influenced by the US legal framework of the Defend Trade Secrets Act (DTSA). Richmond, Kelly and Covarrubias (2017) discuss the requirements on trade secrets within the DTSA. According to the DTSA, trade secrets are limited to being of financial, business, scientific, technical, economical or engineering nature (Richmond et al, 2017). Additionally, reasonable steps must be taken also according to the DTSA, which in the current legislation requires the trade secrets to be protected from disclosure. The protection from disclosure applies both internally and externally, as well as on purpose or not on purpose, which makes it important to inform employees about what is being a trade secret to avoid accidental disclosure. If the trade secret is not shared illegally, the other party has the right to use the information, and the trade secret is not seen as a trade secret anymore. However, if the company can prove that reasonable steps were made to avoid disclosure the company can get compensation as result of the disclosure (Richmond et al, 2017). To understand the reasonable steps under the DTSA, US court cases have been investigated by Fox (2020). This investigation has shown that there are several factors influencing the reasonable steps-parameter. Fox (2020) presents in her article *Tripping over the EU Trade Secret Directive: "Reasonable Steps" to Get Back on Track* that the US courts have looked into physical security when ruling on reasonable steps. For example, have the files been marked as confidential, and/or do they have restricted access, as well as are agreements signed by employees and third parties. However, the US ruling is decided to be based on specific circumstances in each individual court case (Fox, 2020).

A difference between the EU directive and the DTSA is, however, that the DTSA allows for criminal liability if an illegal acquisition, use or disclosure of a trade secret has taken place. The EU directive in its turn does not provide any criminal liabilities (Desai, 2018).

4.4.2 China's Trade Secret Legislations

In China, trade secret protection is covered primarily in the Anti-Unfair Competition Law (Fox, 2020; Hogan Lovells, 2020). The legislation consists of an analysis with two parts where the first one analyses if there is a trade secret and whether that deserves legal protection. The second part analyses whether the acquisition, disclosure or use of such trade secrets constitutes misappropriation and is prohibited (Fox, 2020). The definition of a trade secret is covered in The Anti-Unfair Competition Law and highlights that the information must be of technical or business character and not be publicly known (Bai & Da, 2011; Hogan Lovells, 2020). Additionally, it has to have practical utility and economic value, and the owner must take measures to uphold its confidentiality. This means reasonable steps are crucial for maintaining the secrecy (Fox, 2020; Hogan Lovells, 2020). However, there is no clear definition of what are the reasonable steps. It depends on the circumstances including the conduct of the parties involved as well as the nature of the information. Additionally, different factors are used to determine whether the steps were reasonable (Fox, 2020). Such

factors are the difficulty for others to obtain the secret, desire for confidentiality, features of the relevant information carrier, identifiability of the confidentiality measures for example (Fox, 2020; Bai & Da, 2011). Fox (2020) mentions that the courts have a non-exhaustive list clarifying what are sufficient reasonable steps, or confidentiality measures, but there is still no clear rule of such reasonable measures.

4.4.3 Canada's Trade Secret Legislations

Canada's interpretation of secrecy measures is similar to the one in the US. But a formal definition of a trade secret does not exist (Fox, 2020). Trade secrets are protected by tort and there is a duty of contractual obligations and of confidence. Employers must protect their trade secrets by measures such as access control, but there is no need however to have the trade secret in writing (Fox, 2020). In relation to measures, Canada focuses on the degree of confidence a person applies to keep it secret. Additionally, the particular circumstances in each case are of great importance when determining if sufficient measures have been taken. Another focus area is good faith and fidelity demonstrated by the employees to their employers and whether this was sufficient for maintaining confidentiality both during and after the employment (Fox, 2020).

4.4.4 Japan's Trade Secret Legislation

Trade secrets have been covered by the UCPA in Japan (Chambers & Partners, 2020; Hogan Lovells, 2020) since 1990, where the UCPA are influenced by the Trade-Related-Aspects of Intellectual Property Rights (TRIPS) (Chambers & Partners, 2020). In 2015, the UCPA was updated to better protect trade secrets. This update was a result of technical development and leaks of high-profile trade secrets (Hogan Lovells, 2020). In comparison with the EU, Canada, and US, Japan has more strict requirements on what must have been done to protect the trade secret for it to gain trade secret protection (Fox, 2020), called secrecy management (Chambers & Partners, 2020). The UCPA also includes a clear definition on how something should be managed to be seen as a trade secret and other characteristics, where the secrecy management is one of these requirements. In addition to the management, the information must be seen as important for business activities, and not be out in the public-domain (Chambers & Partners, 2020).

To live up to the secrecy management requirement the trade secret owner must inform the employees about the intention behind protecting the trade secret (Chambers & Partners, 2020). Hence, the employees need to be informed about steps taken to protect the specific trade secret, and by that be transparent regarding why the trade secrets are protected. The specific steps required for something to be seen as a trade secret according to UCPA are, however, not specified and are left for the circumstances to decide. For something to be protected through the UCPA, there are no requirements on the trade secret owner to show that reasonable steps were taken in order to protect the secret. Instead, the information is seen as protected if the secrecy management steps are fulfilled. The steps needed are decided from without business size and style, employee responsibilities, and nature of the information,

among others (Chambers & Partners, 2020). Fox (2020) also stresses that a specific design and implementation of secrecy measures are requirements put on the trade secret owner.

One of the situations when a trade secret can be considered as not protected is when a secret only accessible for one employee, is shared to others inside the organization (Chambers & Partners, 2020). In addition to this, the Japanese courts have decided that:

- Physical and electronic access restrictions must be implemented and installed,
- There must be a limitation of people able to access the information, and
- It must be clear that the information is a secret.

All this for the secret to be seen as kept secret (Fox, 2020).

4.4.5 Russia's Trade Secret Legislation

Like Japan, Russia is also said to have more strict requirements on how the trade secret management should be executed within companies (Fox, 2020). In Russia, five requirements must be fulfilled in order to gain trade secret protection. These requirements are (1) listing the information that together constitutes a secret, (2) create routines for the trade secret management to limit the access to the secret, (3) listing of the persons having access to the information, (4) regulate use of information through contracts, both labour and civil law ones, and (5) mark the information with a commercial stamp, that includes information about who holds the information (Fox, 2020; Hogan Lovells, 2020). In addition to this, the Russian Federal Law on Commercial Secrecy (no. 98-FZ of July 29, 2004), states two situations where information is seen as confidential, and by that covered by the Federal Law. The first stating that the information needs to be of business value in the sense that it is considered to increase revenues, lower costs or similar. The second one, specifies the character of the information, where production, organizational, technical, and economic are examples of characters. Additionally, in order to fulfil the trade secret criteria, the information should not be known for third persons (no. 98-FZ of July 29, 2004).

4.4.6 Summary of Trade Secret Legislations outside EU

The harmonization of trade secret legislations is not something that is just taking place within the EU, rather it is something central also on an international level (Patel, Pade, Cundiff & Newman, 2016), however, differences still exist (Fox, 2020). In table 4.2, a comparison between US's, China's, Canada's, Japan's, and Russia's trade secret legislations are made. The EU directive is also included to understand how it is designed relative to other national legislations outside the EU.

Table 4.2. A comparison of trade secret legislations between the US, China, Canada, Japan and Russia.

Country	Clear Trade Secret definition	What definition	Clear reasonable steps	Which reasonable steps
US	Yes	- Specific character (financial, business, scientific, technical, economical or engineering nature), - Reasonable steps taken.	No	-
China	Yes	- Not public (technical and business information) - Practical utility, economic value - Measures to maintain secrecy	No	-
Canada	No	-	No	-
Japan	Yes	- Secrecy management, - Business value, - Not-public.	Yes	- Inform the employees about the intention behind protecting the trade secret and how it is being protected, - Follow the secrecy management (decided from without business size and style, employee responsibilities, and nature of the information etc.).
Russia	Yes	- Business value, - Specific character, - Not-public, - Managed in the correct way.	Yes	1) Listing information constituting a secret, 2) Routines for trade secret management, 3) Listing persons having access to the information, 4) Regulate use of information (contracts), 5) Mark information with "commercial", and information about information- holder.
EU directive	Yes	- Not generally known or readily accessible, - Commercial value, - Reasonable steps taken.	No	-

The legislations in five out of six countries (all except Canada) include in their trade secret definition that the trade secret should be managed in a specific way. However, only two of them define what is seen as reasonable steps to fulfill the management criteria, being Russia and Japan. Out of the reasonable steps addressed, one step was common in the two legislations being specified routines for trade secret management. In the US, China, and Russia a trade secret needs to have a specific character, where technical and business information is recurring in two of the legislations. Additionally, China, Japan, Russia, and the

EU all have two additional requirements in common, being that the information should (1) not be public, and (2) have a commercial value. These findings are presented in table 3.4.

Interesting to stress is also that no legislation investigated in this part has all requirements in common.

Table 4.3. *Compilation of comparison of trade secret legislations between the EU, the US, China, Canada, Japan and Russia, including requirements found in at least two legislations.*

Requirements	Number of countries (out of number of countries)	Countries
Managed in a specific way	5 (6)	US, China, Japan, Russia, the EU.
Specific character	3 (6)	US, China, Russia.
Not public (generally known)	4 (6)	China, Japan, Russia, the EU.
Business/commercial value	4 (6)	China, Japan, Russia, the EU.
Specified routines for trade secret management	2 (2*)	Russia, Japan.

*Indicating the two countries that have reasonable steps clarified.

4.5 Enforcement of Trade Secrets

Enforcement of trade secrets builds upon the definition and the measures or reasonable steps taken to protect the secret, which is stated in the law (Fox 2020). However, trade secret law and protection varies among countries, which makes the enforcement of trade secrets more difficult in comparison to patents for example. Benefits with trade secrets are that they do not require any registration, have immediate effect, have eternal protection and are cost free (Fox 2020). Additionally, trade secrets do not need to be unique or new, unlike patents. Trade secrets can eventually be subject to patent protection if they fulfill the requirements. Upholding secrecy is crucial in order to maintain trade secret protection, which is why the reasonable steps are of great importance (Fox 2020). Such reasonable steps can be to store in restricted places, marking information as confidential, limiting employee access, using passwords, and non-disclosure agreements for example (Fox, 2020; Determann et al, 2017; Hoeren, 2020). Trade secrets merely protects against unauthorized use and disclosure, and not against reverse engineering or independent discovery or creation which is seen as lawful (Fox, 2020; EU 2016/943). Furthermore, since trade secrets cannot cover publicly known information, they lose protection if becoming disclosed and publicly known, regardless if it was an authorized or unauthorized disclosure (Fox, 2020).

4.6 Types of Trade Secrets

Trade secrets can cover a variety of information, as long as it is not generally known, has commercial value, and is treated as confidential (EU 2016/943; European Commission, n.d.). Such information can be recipes, manufacturing processes, formulas, customer lists, chemical compounds, techniques, software codes, results of marketing study and prices for example

(European Commission, n.d; Fox, 2020). According to the EU directive (EU 2016/943) trade secrets are divided into two groups; technological knowledge and commercial data. Examples on commercial data are information about customers, suppliers, strategies, and business plans (EU directive 2016/943).

5 Theoretical Framework

This section provides the key concepts, theoretical backgrounds and frameworks relevant and used in this study. The frameworks outlined in this section are the 'Intellectual Asset management (IAM) framework' by Petrusson (2015); Strategies for Trade Secret management; 'The Secrecy Management Lifecycle' provided by Bos, Broekhuizen and Faria (2015); and Porters' 'Three Generic Strategies' developed by Porter (1985).

This combination of frameworks is used to understand trade secret management from a broader perspective. To understand the relation between trade secret management and companies value creation, the theory on Three Generic Strategies (Porter, 1985, in Tanwar, 2013) are included. Additionally, the IAM framework (Petrusson, 2015) is used to gain understanding about different intellectual assets and the trade secret management of these.

5.1 Intellectual Asset management framework

Intellectual assets (IA), or intangible assets, are all the non-physical assets in a company that often have great value (PRV, 2020). These assets can be legally protected with the different types of IPR; patents, copyrights, design rights and trademark. Additionally, different legislations such as trade secrets, marketing law, non-disclosure agreements and competition law can promote the protection of IA's. IA's can be a variety of things such as company name, logo, text, design, photo, computer program, games, films, apps, methods, manuals, business models, specialists knowledge, databases, technologies etc. (PRV, 2020).

The IAM framework developed by Petrusson (2015) contains a model of how to identify and objectify knowledge assets, e.i. make them concrete, by categorizing them, which will make the assets manageable and provide a better understanding of them. The model, e.i. the claiming process, which is one of four main processes in the framework; claim, position, decide and organize, will in turn enable better utilization strategies. In the claiming process, there are five characteristics knowledge assets should have and serves as the foundation for the categories. The characteristics are; they should be easily reviewable, communicable, transferable, manageable, and able to be defined narrowly as valuable assets (Petrusson 2015). In order to claim research results, or any type of information as knowledge assets, based on its nature and value, 10 categories have been identified that should be applicable in a wide range of environments. The categorization functions as a tool and enables the user to get an overview of the assets, which will promote indication of what type of IPR can protect them as well as how they should be managed. Moreover, the process contributes to the understanding of how intangible assets such as knowledge can be transferred to the firm and contribute to value creation (Petrusson 2015). The 10 categories can be seen in table 5.1.

Table 5.1. *Categorization of research results to define knowledge assets (Petrusson, 2015).*

Category	
Data	Solution
Database	Visualization
Observation	Instruction
Theoretical framework	Software
Narrativ	Creation

5.2 Trade Secret management

Proper trade secret management has been in the spotlight for over 30 years (Friedman, Landes & Posner, 1991) and has become even more important during the recent years as the world has become more and more knowledge-intense (Castellaneta et al., 2017). Both pharmaceutical and biotechnology companies have started to choose or consider trade secret protection of their inventions before patent protection (Gervais, 2018; Smith, 2017). The pharmaceutical and biotechnology industries are traditionally patent-heavy industries (Gervais, 2018; Smith, 2017). The turn of choosing trade secret protection before patenting, together with companies' competitive advantage becoming more and more affected by protection of trade secrets (Castellaneta et al., 2017), makes proper trade secret management crucial. In addition, trade secret theft has become more common during the last decades (Castellaneta et al., 2017). In order to analyse how trade secret protection can be arranged and how it appears two theories are used. These theories are strategies for trade secret management, and the secrecy management lifecycle by Bos, Broekhuizen and Faria (2015).

5.2.1 Strategies for trade secret management

Abd Jalil and Hassan (2020) argue that trade secrets are facing not only internal threat in forms of employees stealing the information, but also corporate and cyber espionage. Making the threat come from inside and outside the organization (Abd Jalil & Hassan, 2020). Trade secret thefts are often performed by present or previous employees (Robertson, Hannah & Lautsch, 2015; Hannah, 2006). Today, digital trade secrets have become more and more common. This digital trend aggravates the complexity of trade secret protection, since it is easier to access and to misappropriate digital trade secrets (Abd Jalil & Hassan, 2020).

In terms of protection Abd Jalil and Hassan (2020) highlight two types of protection measures, namely legal, and administrative. Legal protection is in the form legal measures that the company can use, i.e., contracts, whereas administrative protection is other measures taken by an organization. A combination of legal and administrative measures are crucial for proper trade secret protection, since they create a positive trade secret protection culture (Abd Jalil & Hassan, 2020). The relevance of both legal and administrative measures is also

stressed by Hannah (2007). Hannah (2007) found that employees that know what is a trade secret and not are less likely to share trade secrets with their new employer. The willingness not to share, however, needs to be supported by legal measures to result in sanctions if the trade secrets are shared. Robertson et al. (2015) also argue that a positive secrecy climate is vital for effective trade secret protection.

Legal measures

The perhaps most common legal measures for companies to use are employment contracts and non-disclosure agreements (NDA) (Abd Jalil & Hassan, 2020; Hannah, 2007). For NDAs with a third party, it has been recommended to have mutual NDAs. Moreover, avoid standard confidentiality agreements and instead draft them correctly for each unique relationship (Determann, Schmaus & Tam, 2017). Additionally, NDAs help maintain the confidentiality of the trade secrets, even when shared with a third party (Abd Jalil & Hassan, 2020; Hannah, 2007). For employment contracts the clause of most importance is the confidentiality one, which legally binds the employee to not disclose confidential information. Usually the confidential clause is regulated so that it is effective both during and after the employment. Applied for both NDAs and employment agreements are the requirements on specifying what the confidential information and trade secrets are (Abd Jalil & Hassan, 2020). Legal measures are possible to relate to sanctions (Hannah, 2007). These sanctions might be being fired or sued, depending on if the employees are a current or former employee (Hannah, 2007).

Administrative measures

Administrative measures are often used to protect trade secrets from within, by different activities (Abd Jalil & Hassan, 2020). In the best case, trade secrets should be included in the organization's corporate governance strategy, and a trade secret protection plan should be established. The corporate governance strategy should make sure that reasonable protection steps are taken. Examples of steps are to create a code of conduct and a business practice. Including the management around trade secrets in the code of conduct are common among large companies, such as Samsung electronics, and Apple. Lastly, companies should identify their trade secrets (Abd Jalil & Hassan, 2020). Hannah (2005) is discussing two types of trade secret protection procedures that companies tend to use. The first protection procedure is activities aiming to restrict access to the trade secrets. Examples of such activities are activities that "restrict employees' right of entry to certain areas of an organization's physical facilities" (Hannah, 2005 p 73). The second one is activities aiming to control the handling of trade secrets. These are activities that decide what an employee is allowed to do and not to do with accessed information (Hannah, 2005).

Abd Jalil and Hassan (2020) describe six measures that the World Intellectual Property Organization (WIPO) recommend for organizations to institute, namely:

- 1) Raise awareness among the employees why trade secrets are of importance, and how they should be managed.
- 2) Evaluate regularly who needs to use and know about the trade secrets among the employees. Hence, provide access to those employees only.

- 3) Implement technical and physical constraints regarding access to the trade secrets,
- 4) Constrain access to and oversee places where the trade secrets are kept,
- 5) Put “confidential” or “secret” on material including trade secrets,
- 6) Make employees and third parties sign confidentiality agreements or NDAs.

To inform employees about these measures can also be related to Robertson et al. (2015) who argue that employees tend to share confidential information by mistake. The shared confidential information is usually a result of lacking knowledge about what the trade secrets are in the organization. Hence, it is of great importance to inform employees about the trade secrets and how they should be managed (Robertson et al., 2015; Hannah, 2007; Hannah, 2005). Hannah (2007) also found in his study that former employees that knew what was a trade secret from their former employer, are less likely to share that specific information. Additionally, when employees are considering whether to share some piece of information, one parameter that tends to be taken into consideration is if the information is public or not (Hannah, 2007). This is of great importance for organizations to be aware of, if they are managing for example chemical formulas. Hannah (2007) found in his study on employees' behaviours when it comes to sharing trade secrets, that employees tend to share information if some part of the information is public. Hence, it is important for organizations to stress what is actually a trade secret (Hannah, 2007). It is also common that companies, for example Petronas and Samsung, internally stress the importance of not using IP or confidential information from other parties (Abd Jalil & Hassan, 2020).

Different types of policies can be used to further protect trade secrets. Abd Jalil and Hassan, (2020) mention two types of policies, the first being a technology use policy, regulating how employees are allowed to use external computers etc. when managing confidential information. The second one, is an exit policy, regulating how employees when leaving the company should manage information gathered during the employment. Hannah (2006) also stresses the importance of managing departing employees. He stresses that the leaving employee should be informed to hand back all company relevant information that the employee possesses (2006).

Positive Secrecy climate

The secrecy climate stressed by Robertson et al. (2015) focuses on how the employees understand the measures and policies around trade secrets. Central for creating this desired climate is to create a climate where keeping trade secrets are highly valued and integrated in employees' roles. Apple constitutes a good example when it comes to the secrecy climate. For example, the text “Loose lips sink ships” was placed as a sign in Apple's office (Robertson et al., 2015). Robertson et al. (2015), and Bos, Broekhuizen and Faria (2015) argue that loyal employees do not share secrets. Additionally, Bos et al. (2015) stress that formal measures are more effective when supported by an organizational culture in line with the measures. Hannah (2007) also highlights that people depending on if they see themselves as members of their former employer, tend to share or not share trade secrets to different extent. If former employees still see themselves as members of the former organization, they tend to share trade secrets less frequently (Hannah, 2007). Loyalty toward the organization is,

however, not enough for a positive secrecy climate according to Robertson et al. (2015). In addition, loyalty for the leaders are important as well. The trust in the leaders is central to get employees to follow internal measures and policies. The leaders themselves must, however, follow the measures and policies (Robertson et al., 2015; Hannah, 2006).

Even if fostering a positive secrecy climate within the whole organization, different behaviours might be found within different groups (Robertson et al., 2015). For example, researchers originating from academia tend to have a more sharing-culture, compared to the IT and legal departments. Hence, different activities stressing the secrecy climate might be needed within different groups (Robertson et al., 2015).

To foster a positive secrecy climate following actions should be used:

(1) Managers should pass on information to the employees about the trade secret measures, and comply with them on a regular basis (Robertson et al., 2015; Hannah, 2006). Also Hannah (2006) argues that information about trade secret management should be an ongoing process.

(2) Managers should enforce the measures and policies (Robertson et al., 2015; Hannah, 2006), also when it comes to punishment of those not following the measures and/or policies (Robertson et al., 2015). Hannah (2006) argues, however, that threat of punishment before an employee has done anything can result in the employee not feeling trusted. The lack of trust can in some cases be even counterproductive when it comes to keeping trade secrets, secret (Hannah, 2006). This goes in line with what Hannah and Robertson (2015) discuss regarding the need for companies to control employees' behaviour in order to succeed. Learning about how to deal with trade secrets is important, but also to clarify what happens if you do not follow the company rules for example, which can be a factor why employees break rules. They may not be aware of the consequences or that the punishments are vague (Hannah & Robertson, 2015).

Hannah (2007) also argues that one parameter that influences employees' tendency to share or not to share trade secrets are psychological contracts. For example, employees tend to feel that certain contributions should be rewarded by certain incentives. If the employee feels that this expected or promised incentives has not happened, the employee can feel that it has been a breach of the psychological contract. When employees feel that the psychological contract is not fulfilled or breached, they are more likely to share trade secrets. This makes it crucial for employers to understand their employees' expectations, to make sure not to breach the psychological contract (Hannah, 2007). Hannah (2006) also stresses in his study *Keeping Trade Secrets Secret*, that employees that feel that they are paid to produce ideas as part of their employment, feel less ownership over the ideas produced. The ownership is highly relevant when it comes to keeping trade secrets secret since an experienced ownership over something often results in feeling of having the legal right to share the information. Employees tend more often to not feel ownership about ideas in line with the employer's business. Hence, it is shown successful to communicate a wide business scope (Hannah, 2006).

5.2.2 The Secrecy management lifecycle

Bos, Broekhuizen and Faria (2015) have developed a model called the ‘secrecy management lifecycle’ which aims to explain the cycle from an identified need to protect information, to the end of the secret. This process is described by the authors as an ongoing process, where the need to move back to an earlier phase of the lifecycle probably will arise. This need to move back and forth in the lifecycle is affected by changes that occur that affect the organization. Need for stepping back or skipping one stage can also occur as a result of bad execution in earlier stages (Bos et al., 2015).

Changes that affect the secrecy management are intraorganizational, interorganizational and in the external environment (Bos et al., 2015). Examples of intraorganizational changes are when employees end their employment and move on to another employer. Interorganizational examples are changes in eventual cooperatives or in partners, and changes in external environments might be if competitors patenting similar technologies etc. (Bos et al., 2015).

The different stages have different purposes and activities connected to them (Bos et al., 2015).

Stage 1: Creation of secret and choice of protection strategy.

Takes place after deciding that some information should be protected. In this stage the creation of the secret takes place and a secrecy strategy should be decided upon. Different strategies can be applied, usually referred to as formal or informal activities. Here, it is crucial to weigh the effectiveness of the protection strategy and the value of the secret, to find a suitable protection strategy. That the protection cost should not overrun the secret’s value is usually a good golden rule (Bos et al., 2015).

Stage 2: Installation of preventive mechanisms to protect the secret.

Centered around prohibiting valuable information from leaking, by implementing organizational activities and designing of products. When designing products to prevent information leakage, the goal is to create more complex products that, i.e., are harder to reverse engineer. An example of organizational activity in its turn is to introduce employees on how they should prevent leakage. Introducing employees to this is crucial since employees handle a lot of valuable knowledge, and are often the leakage source (Bos et al., 2015).

The situation when risk of leakage is highest is when employees move on to a new employer. Usually, the former employee's individual assessments are what guides if the information is seen as secret or not. The risk of leakage increases, with the number of persons knowing the secret. Hence, it is of great importance for managers to control who has access to the information, and to specify what information is secret, and implement mechanisms that are aimed to make sure that the secret does not leave the company. Additionally, flow of secrets to people in the organization that needs to take part of the information should be developed. At the same time, access to the secret information should be restricted to those that do not need to take part of the information as part of their employment (Bos et al., 2015).

Examples of formal activities are nondisclosure- and noncompetition agreements, and protecting the secrets as trade secrets. Informal ones are instead fair compensation to

encourage employees to stay in the company, dividing the secret into several parts so that no one has the whole picture, and other types of operational and administrative protection activities. Both formal and informal activities to protect the secret are shown effective, especially when strengthened by support of organizational actions, however, informal ones are shown most effective. Additionally, it is shown that prohibitions made through formal communication are more effective when supported by an organizational culture that goes in line with these prohibitions. The prohibitions should, however, be kept by the employees to be seen as fair, legal, and motivated (Bos et al., 2015).

Stage 3a. Protection and exploitation of the secret.

Companies usually meet challenges and opportunities during the phases which requires an agile approach to the protection strategies, being open for adjustments. This agility is important to keep the secret within the organization and prevent it from losing its value. One of the challenges that a company is facing is when employees move on to new employers. Even if the formal activities, such as NDAs, prevent leakage of secrets to the new employer, since it risks consequences such as lawsuits, loyalty towards the old and new employers is what really determines if the secret is kept or not (Bos et al., 2015).

Stage 3b. Minimization of negative effects of leakage.

It happens that the secret gets leaked in an unwanted way, instead of ending in a wanted way. When this happens, it is crucial to stop any further leakages, take actions against the leaker(s), and find strategies to limit beneficial usage of the secret among competitors. These actions can be either formal or informal. A common formal action is a lawsuit, where an informal one is to spread disinformation by spreading false or not accurate information to confuse competitors (Bos et al., 2015).

5.3 Value Creation in Business

Creating value is key for businesses and lately, intellectual capital is of growing importance for a successful and value creating business (Beattie & Smith, 2013). Intellectual capital is intangible resources that contribute to the firm's competitive advantage by creating company value (Beattie & Smith, 2013). Knowledge that can be captured in trade secrets is intellectual capital which is one of the most important resources in a company, hence having a major impact on the business' performance. By choosing the right strategy to perform your business, competitive advantage can be obtained where trade secrets can have a crucial role. The following section describes a well-known theory that will be used in the study.

5.3.1 Porter's Three Generic Strategies

A crucial factor for companies is competitive advantage, which grows out of the value the firms create for their customers (Porter 1985, in Tanwar, 2013). In order to achieve a long lasting position on the market as a result of competitive advantage, firms can utilize competitive strategies developed by Michael Porter (Porter 1985, in Tanwar, 2013; Akan et al. 2006). Porter refers to them as generic competitive strategies. There are three strategies

that give rise to sustainable competitive advantage; Cost leadership, Differentiation and Focus strategy (Porter 1985, in Tanwar, 2013).

The cost leadership strategy builds upon the idea to offer products, produced at low cost, to a large customer base. (Porter 1985, in Tanwar, 2013). Efficiency is key where the aim is to from relatively low production cost, produce high volumes of standardized products. The strategy requires extensive market share and continuous searchers for cost reduction in order to be successful (Porter 1985, in Tanwar, 2013).

The differentiation strategy builds upon the idea to have a unique product or service and differentiate among its competitors (Porter 1985, in Tanwar, 2013). The strategy focuses on special technology, features, brand image or customer service for example, and does not focus greatly on price. The differentiation often results in brand loyalty which enables companies to charge more for their products. Therefore, companies can capture market share by setting premium prices (Akan et al. 2006). Moreover, in order to compete on the market, it is important for the firms to develop their own distinctive competence to generate unique products. (Porter 1985, in Tanwar, 2013). The differentiation strategy tends to create better entry barriers which generates higher profits in comparison to the cost strategy, which on the other hand is more likely to generate larger market share (Porter 1985, in Tanwar, 2013).

The focus strategy builds upon the idea to better meet the customer needs in fewer segments, hence the focus is on a more niche segment (Porter 1985, in Tanwar, 2013). The strategy works for any firm, but is most suitable for smaller companies. The focus strategy comes in two versions; cost focused and differentiation focused. Special needs of customers can be exploited by a differentiation focus, while differences in cost behaviour in segments can be exploited by the cost focus (Porter 1985, in Tanwar, 2013). The aim of the focus strategy is to operate in a niche segment more effectively than larger competitors where they can grow market share (Akan et al. 2006). The industry segment should ideally be small enough not to be important to major competitors, but big enough to have good growth potential (Akan et al. 2006).

Two of these strategies can be successfully combined, namely the focus strategy together with the differentiation strategy (Tanwar, 2013). The success is described by the ability for the firm to match the supply side with the demand side and create high quality products matching the specific customer needs (Tanwar, 2013).

The cost leadership strategy and the differentiation strategy involve certain risks that are important to take into consideration (Tanwar, 2013). Risks in relation to the cost leadership strategy are lack of understanding of the customer needs, late market entrants can benefit from previous low cost learning and difficulties to adapt to technological changes due to lack of knowledge, and changes will erase previous learnings and investments (Tanwar, 2013). Risks associated with the differentiation strategy are that a low cost company may take over the market in case a differentiating firm lags behind, and that loyal customers of a differentiating firm can be lost to a low cost firm due to increased differentiation between prices (Tanwar, 2013).

6 Analysis

In this section a presentation of the analysis of the data is made. The data included in this section are interviews and documents in the form of court cases. A grounded theory inspired approach is used for analysing the interviews and court cases, while an univariate analysis is also used for analysing the court cases.

To answer the research questions a grounded theory approach together with an univariate analysis are made. The data are primarily gathered through interviews and documents in form of court cases, however, also other types of documents in form of literature are used. The data from the interviews and court cases are presented and analysed in this section. The literature is discussed in the literature review in section 3.

The analysis of the data is presented and divided upon type of data and analysis method, starting with a summary of the findings from the analyses.

6.1 Summary of the analysis

In this section a summary of the analysis from the court cases and interviews are presented.

6.1.1 Court cases

The themes found from the court cases through the grounded theory approach were able to be divided into three categories, namely trade secret breach, trade secret management and view on trade secrets. The total number of themes found when analysing the 15 court cases before 2016 and seven after 2018, were 14 themes. The themes are presented in the figures below divided in categories, together with an illustration regarding if they appear both before 2016 and after 2018, or only before 2016 or after 2018.

The themes related to the *trade secret breach*-category are presented in figure 6.1.

Contract matters. The employment contract was central for most cases where contracts were discussed. The secrecy and competition clause was discussed during both periods, with no distinct difference. Before 2016, there was also one case where the appellant did not fulfill their part of the employment contract, and one case where a lack of NDAs was brought up.

Use of trade secrets. Use of trade secrets appear in cases during both periods. The difference between the periods is related to how often use of trade secrets are discussed. Before 2016, use of trade secrets occurred in six cases, compared to one after 2018. Another difference is how often use of trade secrets is proven. Before 2016, the appellant failed at showing usage in the majority of the cases, and succeeded in one of one case after 2018. The proof of usage is often related to proof of internal development from the respondents side. Thus, internal development is used as an argument to show unusage. While in opposition, a lack of internal development has helped prove usage.

Acquisition of trade secrets. Acquisition of trade secrets were discussed in similar ways during both periods. The differences found were in regards to if the acquisition was proven, and if it was authorized or unauthorized. Both before 2016 and after 2018, the appellant did only win the case if they could prove that an unauthorized acquisition had been made.

Variation depending on competing company or not. Common both before 2016 and after 2018, was the consideration whether the respondent, or in other way involved company, was a competitor to the appellant or not. Thus, whether the company was a competitor or not affected the ruling during both periods.

Damages. Damages were discussed in cases during both periods, however, it occurred in more cases after 2018. For both periods, the appellant needed to show the damages of a trade secret breach and what it would cost. The difference between the two periods was, however, that after 2018 appellants succeeded in showing damages, which was not made before 2016.

Transfer of trade secrets. In all cases where a transfer of trade secrets were discussed the appellant succeeded showing that a transfer had taken place. The difference between the periods was the importance of showing the transfer. Before 2016, the appellant failed proving that trade secrets had been disclosed or used, which made the case closed. While in the cases after 2018, the proof of the transfer was contributory to making the appellants win the cases.

Disclosure of trade secrets. Disclosure only took place in a court case before 2016, where the appellant failed showing that a disclosure had taken place. Hence, the case was closed.

Bad intentions. Bad intentions appeared only after 2018. Cases that showed bad intention were when it was shown probable that the respondent intended to acquire trade secrets, and when the respondent aimed to use acquired trade secrets.

Trade secret breach themes

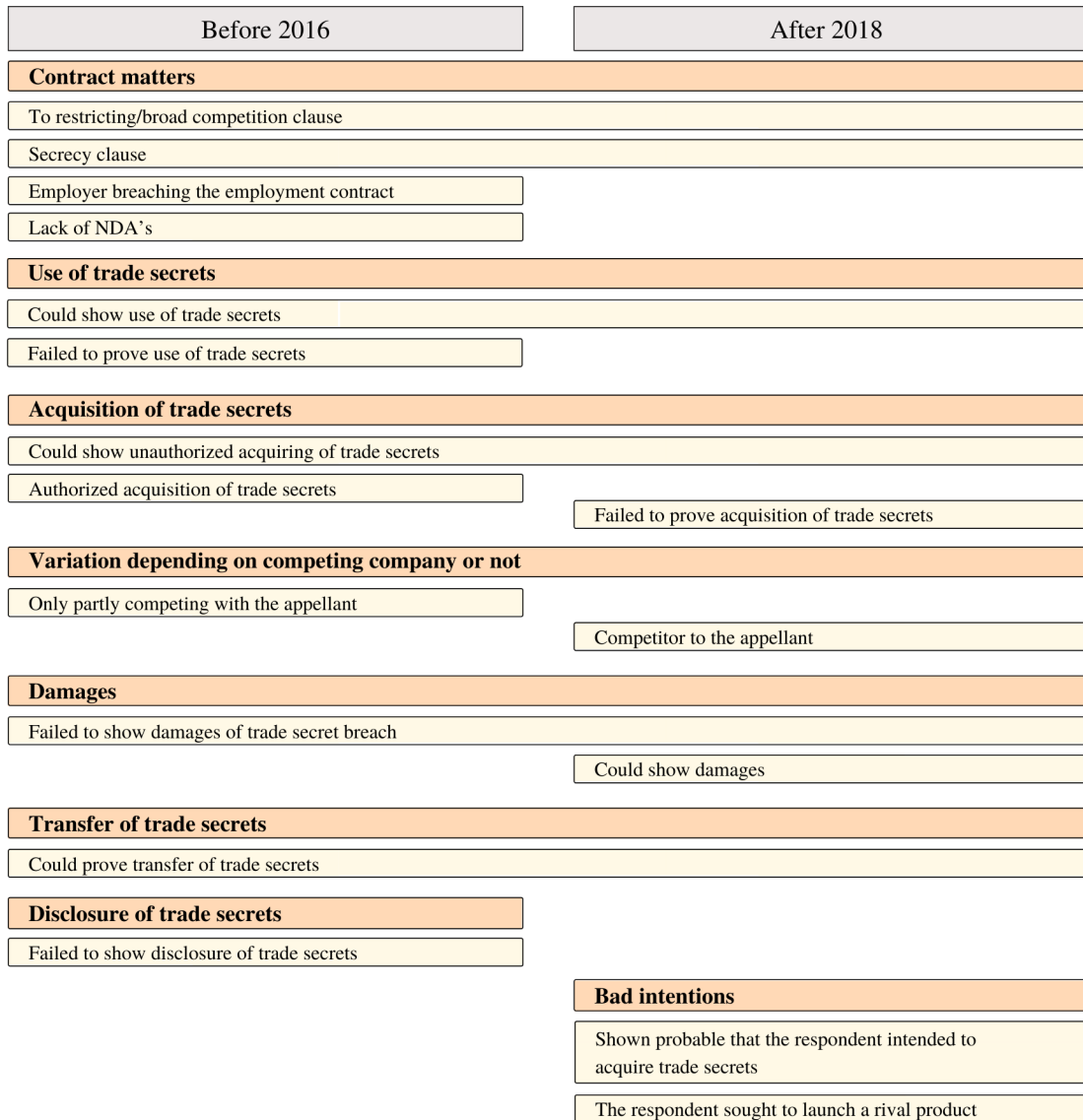


Figure 6.1. Trade secret breach themes found in the court cases.

In figure 6.2, the themes related to the *trade secret management*-category are presented.

Documentation. Lack of documentation of trade secrets was found in court cases during both periods, but was more common before 2016. The nature of the trade secrets and their damaging effects should have been specified. The respondent won all these cases. The lack of documentation was, however, not the main reasoning behind the rulings. After 2018, an appellant lost one case due to lack of claiming the information as sensitive and confidential.

Informing employees. A lack of informing employees appeared in cases during both periods, where parameters such as if the respondent could be expected to understand that the information should be kept secret where discussed. The difference between the periods was, however, that before 2016 only a lack of informing employees was found, compared to after 2018 where the information was considered as clear. After 2018, however, a case also discussed a lack of IT policies.

Internal development. Internal development was brought up only before 2016, where the respondent succeeded proving internal development in one case, and failed in the other. The internal development should have been proven by development time, proof of applying internal general knowledge and expertise, and/or through test or development reports.

Effort. Effort was brought up only before 2016, where a lack of effort to keep the trade secret secret, was one discussed perspective. The other perspective that was brought up was restriction of access. In one case the appellant had succeeded with the restrictions, while they had not made enough efforts in the other case.

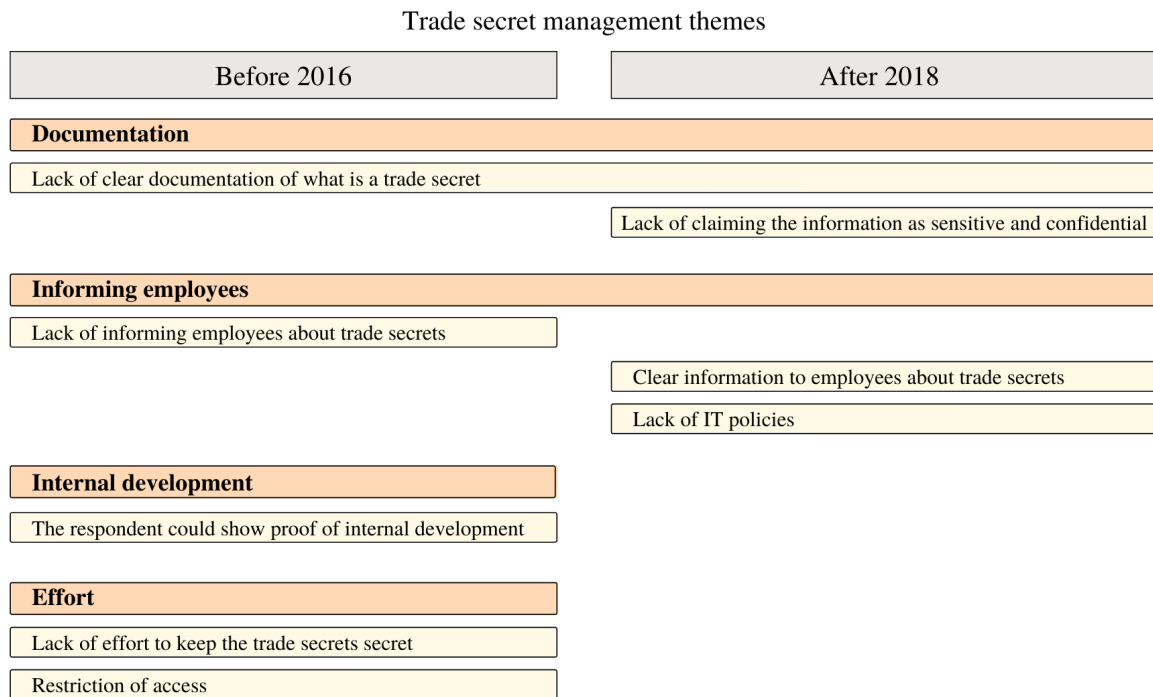


Figure 6.2. Trade secret management themes found in the court cases.

The themes related to the view on trade secrets-category are presented in figure 6.3.

Economic value. Discussion about the trade secrets economic value appeared in cases during both periods. In three of the cases, taking place during both periods, the appellant could prove that the trade secret had an economic value, which contributed to them winning the case. The difference between the two periods was that before 2016, the information lacked economic value in one case. One of the arguments to show economic value was that an attack on the appellant’s trade secrets would diminish their value.

Publicly known information. Discussion regarding if the trade secret was in the form of publicly known information appeared in several cases before 2016. The trade secret was viewed as public on two occasions. The first, was if crucial information about the trade secret had been made public, and the second one was if the information was considered to be generally known.

Sufficiently established information. In one case after 2018, the trade secrets were seen as sufficiently established to be seen as trade secrets, even though the respondent was not

informed that the specific information was considered as a trade secret. The appellant won the case.

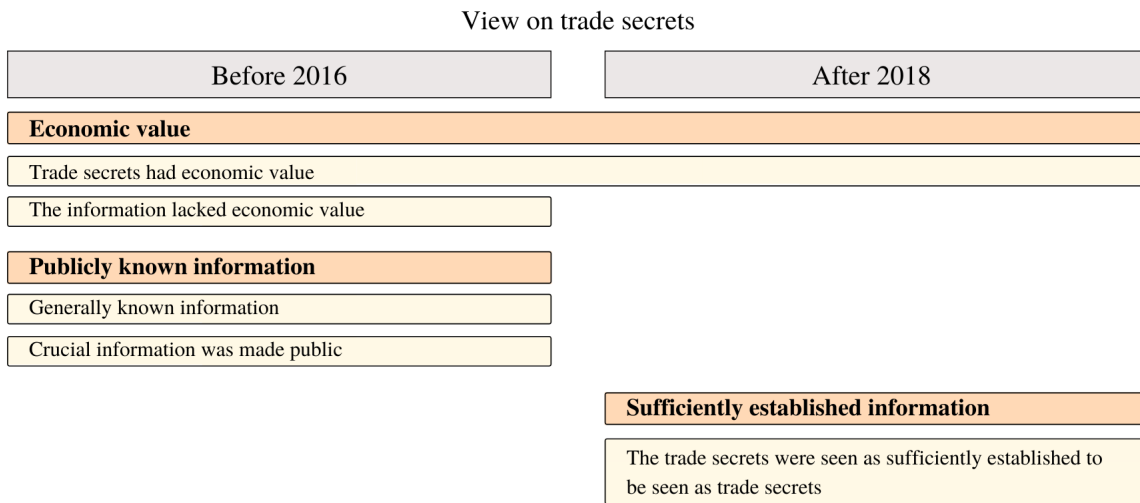


Figure 6.3. *View on trade secrets themes found in the court cases.*

In the univariate analysis the biggest difference between before 2016 and after 2018 was who was the winning party. Before 2016, the appellant won 27% of the cases, compared to 57% after 2018. A small change has also occurred in regards to type of respondent. Before 2016 companies were respondents in 43% of the cases, compared to 60% after 2018. In the rest of the cases one or several individual(s) were respondents. In regards to types of trade secrets occurring in the court cases the difference between the periods is not that big.

6.1.2 Interviews

In total 18 main themes were found divided in six categories, from the twelve analysed interviews. In this section a summary of the main themes are presented, together with an illustration of the relation to the categories.

The main themes related to the *EU directive 2016/943* are presented in figure 6.4 and described below.

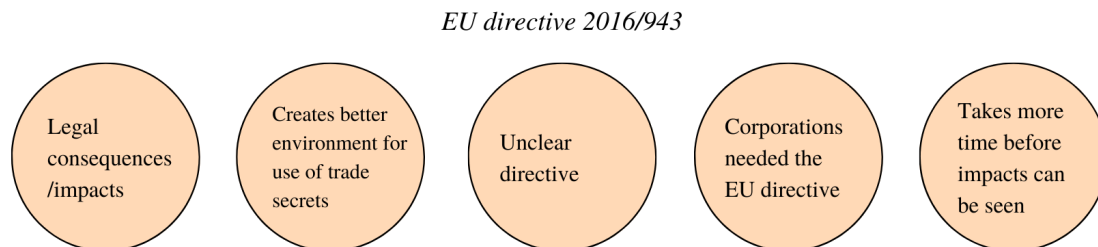


Figure 6.4. Main themes related to the category *EU directive 2016/943*.

Legal consequences/impacts. *Legal consequences/impacts* was the second most recurring theme in the study where discussions were about the directive's impact on legal disputes, and that it is now easier to prove violation of trade secrets and obtain damages for example. However, people tend to avoid going to court when trade secrets disputes occur due to the risk of disclosing information and difficulties in proving your case. Additionally, the trade secret definition was experienced to not have changed significantly.

Creates better environment for use of trade secrets. *Creates better environment for use of trade secrets* was a highly recurring theme that was characterized by discussions about the increased focus on trade secrets and the push to take it more seriously as well as the directive has created a better environment for collaborations.

Unclear directive. *Unclear directive* was a relatively high recurring theme where there were many discussions about the unclarity in the reasonable steps, the unclear definition of trade secrets and the lack of education about the directive as well as the lack of attention the directive got.

Corporations needed the EU directive. *Corporations needed the EU directive* was a relatively low recurring theme where the interviewees discussed that the directive has had a small impact on SMEs and a larger impact on larger corporations who were the ones that needed the directive the most.

Takes more time before impacts can be seen. *Takes more time before impacts can be seen* was a relatively low recurring theme where the interviewees argued that more time is needed in order to see any major changes, and the directive has not yet given rise to many court cases.

The main themes related to the *Trade secret management* are presented in figure 6.5 and described below.

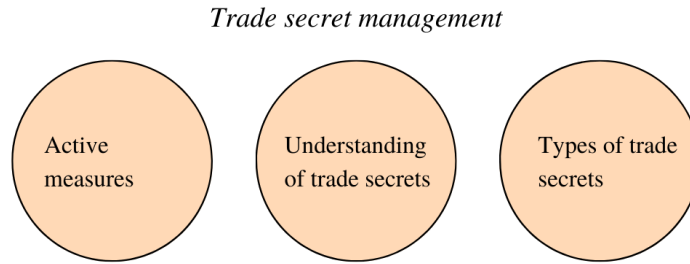


Figure 6.5. Main themes related to the category *Trade secret management*.

Active measures. *Active measures* was the most recurring theme in the study where there were a lot of discussions about the measures and the active work companies need to do to comply with the directive, and how this has contributed to a change in companies' trade secret management. The measures should be characterized as legal, administrative and technical. Moreover, challenges such as the workforce mobility and challenges in collaborations were discussed.

Understanding of trade secrets. *Understanding of trade secrets* was a moderate recurring theme where interviewees discussed that there is a poor understanding of trade secrets in many companies and that trade secrets is the fuzzy type of IP. But the increased focus on IP may contribute to a better understanding.

Types of trade secrets. *Types of trade secrets* was a moderate recurring theme where the discussion was about the relation between technical and commercial data and that they can now successfully be managed together. Furthermore, some interviewees argued that technical trade secrets may be easier to manage since commercial data are more often shared. But it is easier to prove violation of commercial data because it is easier to track human relations.

The main themes related to the *Trade secrets' relation to other IP* are presented in figure 6.6 and described below.

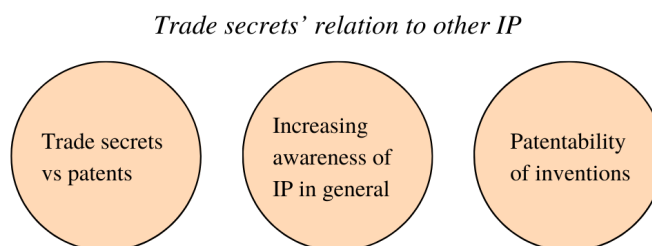


Figure 6.6. Main themes related to the category *Trade secrets' relation to other IP*.

Trade secrets vs patents. *Trade secrets vs patents* was a highly recurring theme where the discussions were about that trade secrets and patents are closely related and that trade secrets have often been treated as something companies have until they patent it. Moreover, there is always a tough decision to decide whether to patent or keep secret.

Increasing awareness of IP in general. *Increasing awareness of IP in general* was a moderate recurring theme where there simply has been an increased awareness of IP, including trade secrets, and what is subject to IP protection among firms.

Patentability of inventions. *Patentability of inventions* was a low recurring theme where interviewees discussed the difficulty in patenting certain inventions such as software, and that the IT infrastructure has made prior art more available.

The main themes related to the *Industry differences* are presented in figure 6.7 and described below.

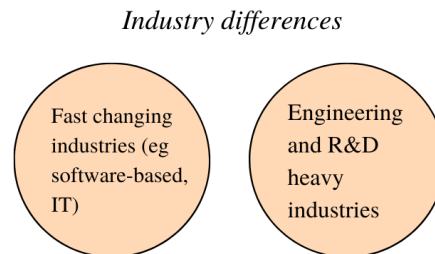


Figure 6.7. Main themes related to the category *Industry differences*.

Fast changing industries. *Fast changing industries* was a moderate recurring theme where there were discussions about companies being less patent dependent and that they may down-prioritise trade secret management work since they need to keep up the high speed.

Engineering and R&D heavy industries. *Engineering and R&D heavy industries* was a relatively low recurring theme where the interviewees discussed that trade secret management is very important and much work is put into this because there are very long development times.

The main themes related to the *Other impacting factors* are presented in figure 6.8 and described below.

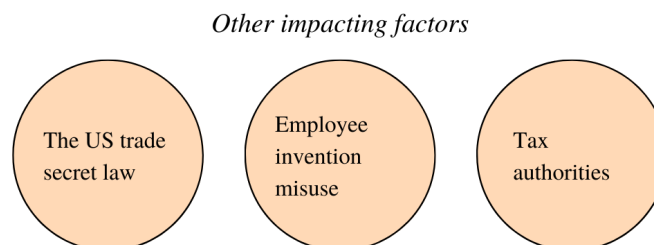


Figure 6.8. Main themes related to the category *Other impacting factors*.

The US trade secret law. *The US trade secret law* was a moderate recurring theme where the interviewees discussed that companies tend to follow the US law because it is much more powerful than the directive.

Employee invention misuse. *Employee invention misuse* was a very low recurring theme where the discussion was about that there has been a slight rise in employee invention misuse cases.

Tax authorities. *Tax authorities* was a very low recurring theme where the discussion was about the increased pressure tax authorities are putting on companies to manage their IP, including trade secrets.

The main themes related to the *National legislations* are presented in figure 6.9 and described below.

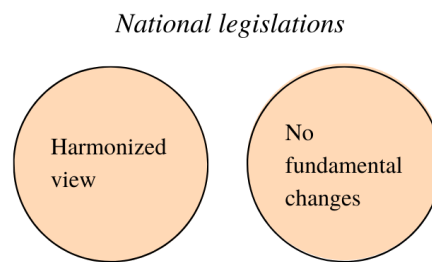


Figure 6.9. Main themes related to the category *National legislations*.

Harmonized view. *Harmonized view* was a relatively low recurring theme where the interviewees discussed that there has been a harmonized view on trade secrets both on an European level and a global level.

No fundamental changes. *No fundamental changes* was a very low recurring theme where the discussion was about that there were no fundamental changes experienced in the Swedish law or UK law.

6.2 Analysis of court cases

When analysing the court cases a grounded theory approach is used together with an univariate analysis. These analysis methods are presented in section 6.2.1-6.2.6.

When using grounded theory to understand the content of the court cases analysed. Three main categories were found, recurring both before and after the EU directive came into force. These three categories are; *Trade Secret breach*, *Trade Secret management*, and *View on Trade Secrets*. Some themes found in the different categories are the same both before and after the EU directive. Some are, however, only recurring before the directive, and some only after. The different themes are presented in the section 6.2.1-6.2.3. The total number of court cases analysed in this section are 15 before 2016, and seven after 2018. In the following section the themes found before 2016 and after 2018, are analysed in relation to each other. To see only the themes found before 2016, see appendix C, and for those after 2018, see appendix D.

In addition to the grounded theory approach an univariate analysis is used when analysing the court cases. The univariate analysis has focused on three different variables, namely *Type of Trade Secrets*, *Winning Party*, and *Type of Respondent*. All these variables are presented in section 6.2.4-6.2.6.

6.2.1 Themes from court cases recurring both before 2016 and after 2018

As mentioned some of the themes found are recurring both before 2016 and after 2018, these themes are presented in table 6.1.

Table 6.1. Themes recurring both before 2016 and after 2018, divided in categories.

Category	Main themes	Sub-themes
Trade secret breach	Contract matters	To restricting/broad competition clause
		Secrecy clause
	Use of trade secrets	Could show use of trade secrets
	Acquisition of trade secrets	Could show unauthorized acquiring of trade secrets
	Damages	Failed to show damages of trade secret breach
	Transfer of trade secrets	Could prove transfer of trade secrets
	Variation depending on competing company or not	-
Trade secret management	Documentation	Lack of clear documentation of what is a trade secret
	Informing employees	-
View on trade secrets	Economic value	Trade secrets had economic value

Trade secret breach

The themes found occurring both before 2016 and after 2018, in the trade secret breach category, are presented in this section.

Contract matters

Contract matters were brought up in six cases before 2016 (B-7-2010; B-143-2014; B-7-2008; P223/9/98; B-7-2008; B-73-2019), and two cases ([2019] IEHC 907; BS-22486/2020-SHR) after 2018. All cases both before 2016 and after 2018, centered around the employment contract, however, the discussions around it varied to some extent. The secrecy clause was discussed in three cases (B-7-2010; B-143-2014; B-73-2019) before 2016, and one case (BS-22486/2020-SHR) after 2018. In the cases before 2016, it was used to show breach of the employment contract. In one of the cases (B-73-2019) before 2016 it was, however, not clarified what was considered as confidential information. But due to the nature of the information relating to a patent application, it should be understood that it should be kept secret. In the case (BS-22486/2020-SHR) after 2018, the appellant succeeded showing breach of contract, since it was clarified that information gained from work should be considered as internal information.

In two cases before 2016 (P223/9/98; B-7-2008), and one case after 2018 ([2019] IEHC 907) the competition clause was considered too broad and restricting.

Use of trade secrets

Use of trade secrets was brought up in seven cases in total. Six before 2016 ([2010] IEHC 350; B-73-2019; B-7-2008; B-126-2014; A-155-2014; B-90-2011, and one after 2018 (B 42/20). The biggest difference between the use of trade secret theme occurring before 2016 and after 2018 is in regards to how often use of trade secrets is proven. In two (B-90-2011; B-73-2019) of six cases before 2016, the appellant won the case due to the fact that the appellant could show that the respondent had used one of the trade secrets belonging to the appellant. After 2018, the appellant succeeded showing usage of trade secrets in the one case (B 42/20) where it occurred. The appellant won this case due to the proof of usage.

Acquisition of trade secrets

In two cases before 2016 (B-126-2014; B 9256-18), and one case after 2018 (BS-22486/2020-SHR) the appellant could show that the respondent had acquired trade secrets belonging to the appellant in an authorized way. In two of the cases, one before 2016 (B-126-2014) and one after 2018 (BS-22486/2020-SHR), it was not enough to prove unauthorized acquisition of the trade secrets. The respondent won both the cases since the appellant could not prove that the trade secret had been disclosed or used.

Damages

Damages were discussed more frequently after 2018, where it occurred in two court cases (BS-20874/2020-HJR; B-29-2020), compared to one before 2016 (B-7-2010). Common for the case before 2016, and one after 2018 (BS-20874/2020-HJR) was that the appellant failed to show damages of the trade secret breach and what it would cost.

Transfer of trade secrets

In one case before 2016 (B-126-2014) and two cases after 2018 (B 42/20; B-29-2020) the appellant could prove that a transfer of trade secrets had taken place. The difference between the case before 2016 and the cases after 2018 was the importance of showing the transfer. In the case before 2016, the appellant failed to prove that the trade secrets had been disclosed or used which made the case closed. While in the cases after 2018, the proof of the transfer was contributory to making the appellants win the cases.

Variation depending on competing company or not

Variation depending on competing company or not occurred both before 2016 (P223/9/98) and after 2018 ([2019] IEHC 907), however, not with any similar sub-themes.

Trade secret management

The themes found occurring both before 2016 and after 2018, in the trade secret management category, are presented in this section.

Documentation

Lack of documentation was found in four cases in total. Two before 2016 ([2010] IEHC 350; B-7-2010), and two after 2018 (BS-20874/2020-HJR; [2019] IEHC 907). Common between three of the cases, both of the two cases before 2016 and one (BS-20874/2020-HJR) after 2018, were a lack of clear documentation of what a trade secret is. In the case after 2018, it was specified that the appellant should have specified the nature of the trade secrets and their damaging effects. The respondent won all three cases where a lack of clear documentation of what a trade secret is had taken place. The lack of documentation, however, was not the main reason behind the respondents winning the cases, but it is brought up in the cases.

Informing employees

Informing employees were brought up in four cases in total. Two before 2016, ([2013] UKSC 31; B-73-2019), and two after 2018 (B 42/20; PMÖ 9865-20). The sub-themes related to the theme are, however, not recurring.

View on trade secrets

The themes found occurring both before 2016 and after 2018, in the view on trade secrets category, are presented in this section.

Economic value

Economic value occurred in three cases in total. Out of these, two took place before 2016 (T435-01; B-90-2011), and one after 2018 (B-29-2020). In two of the three cases, one case before 2016 (T435-01) and one after 2018 (B-29-2020), the appellant could prove that the trade secrets had economic value. In these two cases, the proof of economic value contributed to the appellant winning the case. One of the arguments to show economic value was that an attack on the appellant's trade secrets would diminish their value.

6.2.2 Themes from court cases occurring only before 2016

Some themes were, however, only occurring before 2016, these are presented in table 6.2.

Table 6.2. Themes/sub-themes found only before 2016.

Category	Main themes	Sub-themes
Trade secret breach	Use of trade secrets*	Failed to prove use of trade secrets
	Contract matters*	Employer breaching the employment contract
		Lack of NDA
	Acquisition of trade secrets*	Authorized acquisition of trade secrets
	Disclosure of trade secrets	Failed to show disclosure of trade secrets
Variation depending on competing company or not*	Only partly competing with the appellant	
Trade secret management	Effort	Lack of effort to keep the trade secrets secret
		Restriction of access
	Internal development	The respondent could show proof of internal development
Informing employees*	Lack of informing employees about trade secrets	
View on trade secrets	Publicly known information	Generally known information
		Crucial information was made public
	Economic value*	The information lacked economic value

*not new, but sub-theme(s) is new.

Trade secret breach

The themes found occurring only before 2016, in the trade secret breach category, are presented in this section.

Use of trade secrets - Failed to prove use of trade secrets

Before 2016, the appellant failed to prove use of trade secrets in five ([2010] IEHC 350; B-7-2008; B-126-2014; A-155-2014; B-90-2011) of six cases before 2016. Hence, the respondent won four out of six cases based on a failure to show usage of the secrets. The fifth case (B-90-2011) where the appellant failed to show usage, the appellant won the case since it was only one part of the information where usage was not proven. The most common proof, occurring in two (B-7-2008; [2010] IEHC 350) of the cases, of non-use of trade secrets, were proof of internal development.

Contract matters - Employer breaching the employment contract & Lack of NDA

In one of the cases before 2016 (B-7-2008), the appellant had not fulfilled their part of the employment contract, contributing to the respondent winning the case. In another case (B-73-2019) a lack of having an audience signing NDA's was discussed.

Acquisition of trade secrets - Authorized acquisition of trade secrets

In one of the cases (B 9256-18) the respondent's position in the company made the acquisition of the trade secret in question, seen as authorized.

Disclosure of trade secrets

In one case (B-126-2014) before 2016, the appellant could not show that the respondent had disclosed the trade secrets belonging to the appellants. This made the case closed, and the respondents won.

Variation depending on competing company or not - Only partly competing with the appellant

In one case before 2016 (P223/9/98) it was discussed that the respondent was only partly competing with the appellant. One of the evidence to support this was that the respondent's market strategy differed from the appellant's strategy.

Trade secret management

The themes found occurring only before 2016, in the trade secret management category, are presented in this section.

Effort

The effort-theme occurred in four court cases (B-90-2011; T435-01; B-34-2019; B-73-2019), in two separate ways. In two of these cases (B-90-2011; B-34-2019), effort was lacking to keep the trade secrets secret. In one case (B-90-2011) some of the information in the court case were not considered as trade secrets partly because the appellant had not made efforts to keep the information secret. In the other one (B-34-2019) the appellant had not made enough efforts to keep the information secret, making the respondent win the case. Examples of arguments brought up in the case were that parts of the information in question had already been made public, and that a restriction of access was not made.

In two cases (T435-01; B-73-2019) a restriction of access was discussed. In one of these cases (T435-01), the restriction of access helped the appellant show that the respondent had asked other employees about the trade secrets. The restriction of access in this case was to let only a few people take part of certain trade secrets. In the other case (B-73-2019) efforts were also seen as made to keep the information as trade secrets. The arguments were based on that only general information of the trade secret in question was revealed, for commercial purposes. The appellant won this case.

Internal development

In two cases before 2016, the respondents won the case partly due to the fact that they could show proof of internal development. In one of the cases (B-7-2008), the internal development was proven by the development time, which was considered not remarkably short. While in the other case (IEHC 350) the respondents were shown to have applied their own general knowledge and expertise.

Informing employees - Lack of informing employees about trade secrets

A lack of information about trade secrets were found in two cases before 2016 ([2013] UKSC 31; B-73-2019). The difference between these cases, however, was that the respondent won one of the cases ([2013] UKSC 31), while the appellant won the other one (B-73-2019). The motivation behind these rulings was that in the first case the respondent could not be accused

of trade secret theft since the respondent did not know that the information was a trade secret. In the second case, the information was in the form of information related to a patent application, making the court consider that it should be understood that the information in question should be kept confidential.

View on trade secrets

The themes found occurring only before 2016, in the view on trade secrets category, are presented in this section.

Publicly known information

Publicly known information was discussed in five cases (HFD 2016 ref. 17; B-143-2014; 189/2013; B-34-2019; B-73-2019) in total before 2016. In all these cases the trade secrets, or parts of them, were seen as publicly known information. In two of the cases (HFD 2016 ref. 17; B-34-2019) the information that already were made public, for example information on webpages, were not seen as trade secrets, making the respondents winning the cases. In two of the other cases (B-143-2014; 189/2013) the respondents also won the cases since the disclosed information was seen as generally known information, which made it not considered as a trade secret. In the last case (B-73-2019) the appellant won the case since it was only general information that was made public.

Economic value - The information lacked economic value

In one case (B-90-2011) before 2016, some of the trade secrets brought up in the case were seen to lack economic value, which made them not considered as trade secrets.

6.2.3 Themes from court cases occurring only after 2018

The themes that are new after 2018 are presented in table 6.3.

Table 6.3. Themes/sub-themes found only after 2018.

Category	Main themes	Sub-themes
Trade secret breach	Bad intentions	Shown probable that the respondent intended to acquire trade secrets
		The respondent sought to launch a rival product
	Damages*	Could show damages
	Acquisition of trade secrets*	Failed to prove acquisition of trade secrets
	Variation depending on competing company or not*	Competitor to the appellant
Trade secret management	Informing employees*	Clear information to employees about trade secrets
		Lack of IT policies
	Documentation*	Lack of claiming the information as sensitive and confidential
View on trade secrets	Sufficiently established information	The trade secrets were seen as sufficiently established to be seen as trade secrets

*not new, but sub-theme(s) is new.

Trade secret breach

The themes found occurring only after 2018, in the trade secret breach category, are presented in this section.

Bad intentions

In two different court cases (B-29-2020; [2020] EWHC 2072 (Ch)) bad intentions were discussed in relation to trade secret acquisition. In all these cases the appellant won the case. In one of these cases (B-29-2020) it was shown probable that the respondent intended to acquire trade secrets from the appellant. In the second case ([2020] EWHC 2072 (Ch)) trade secrets were shown transferred to the respondent, who aimed at using the trade secrets by launching a rival product.

Damages - Could show damages

In one case (B-29-2020) after 2018, it was shown that disclosure of the information could have resulted in significant losses for the appellant, making the appellant win the case.

Acquisition of trade secrets - Failed to prove acquisition of trade secrets

In one case (B 42/20), the appellant failed at proving that one of the respondents had acquired the trade secrets, which made the respondent free of charge.

Variation depending on competing company or not - Competitor to the appellant

In one case (IEHC 907), the appellant won the case partly based on the fact that the respondent had tried to transfer the trade trade secrets to a competitor to the appellant.

Trade secret management

The themes found occurring only after 2018, in the trade secret management category, are presented in this section.

Informing employees - Clear information to employees about trade secrets & Lack of IT policies

In one case (B 42/20) where the theme ‘informing employees’ was found it was made clear for the employee that the information in question should be kept secret. The appellant won the same case. In another case (PMÖ 9865-20), a lack of IT-policies was found.

Documentation - Lack of claiming the information as sensitive and confidential

In one ([2019] IEHC 907) case after 2018, the appellant failed in claiming the information as sensitive and confidential. The respondent won the case.

View on trade secrets

The themes found occurring only after 2018, in the view on trade secrets category, are presented in this section.

Sufficiently established information

In one case (B-29-2020) the trade secrets were seen as sufficiently established to be seen as trade secrets, even though the respondent was not informed that the specific information was considered as a trade secret. The appellant won the case.

6.2.4 Type of Trade Secrets

A comparison between types of trade secrets occurring in court cases before 2016, and after 2018, are shown in the frequency tables below (table 6.4 and table 6.5). Commercial trade secrets are most common both before 2016 and after 2018, however, the occurrence of technical trade secrets in court cases has decreased since 2018.

Table 6.4. Frequency table showing type of trade secret before 2016.

Type of trade secret	n	%
Technical	5	38
Commercial	8	62
TOTAL	13	100

Table 6.5. Frequency table showing type of trade secret after 2018.

Type of trade secret	n	%
Technical	1	14
Commercial	6	86
TOTAL	7	100

In figure 6.6 an overview of the occurrence of commercial trade secrets and technical trade secrets divided after year, are shown.

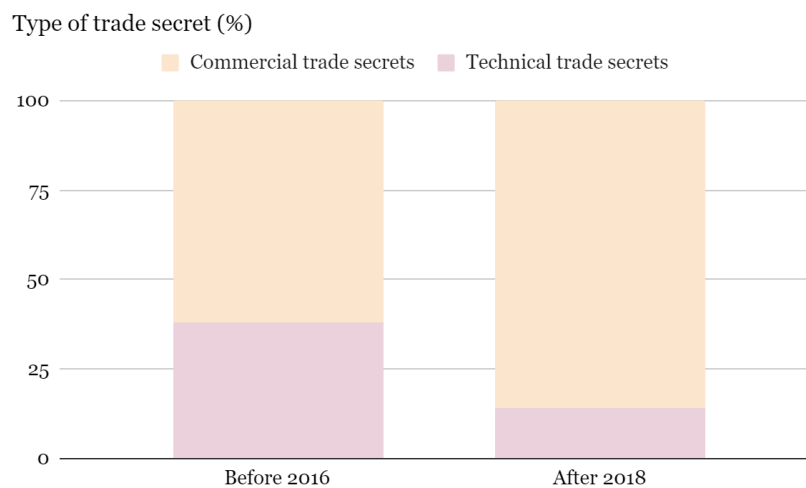


Figure 6.6. Comparison of types of trade secrets involved in court cases before 2016 and after 2018.

6.2.5 Winning Party

A comparison between who is the winning party in the cases are shown in the frequency tables below (table 6.6 and table 6.7). The frequency tables show both the winning parties in numbers before 2016, and after 2018. The comparison shows that it has been an alteration in who is winning the cases. Before 2016, the respondent won the majority of the cases, being

73% of all cases. After 2018, the appellant is instead winning 57% of the cases, and are thereby winning the majority of the cases.

Table 6.6. Frequency table showing winning party before 2016.

Party	n	%
Appellant	4	27
Respondent	11	73
TOTAL	15	100

Table 6.7. Frequency table showing winning party after 2018.

Party	n	%
Appellant	4	57
Respondent	3	43
TOTAL	10	100

In figure 6.10, the winning parties from the court cases are shown, divided upon when the case took place. As both figure 6.10, and the frequency tables 6.6 and 6.7 show, the appellants are winning more cases today compared to before 2016. Hence, the respondents are losing more cases now, than before 2016.

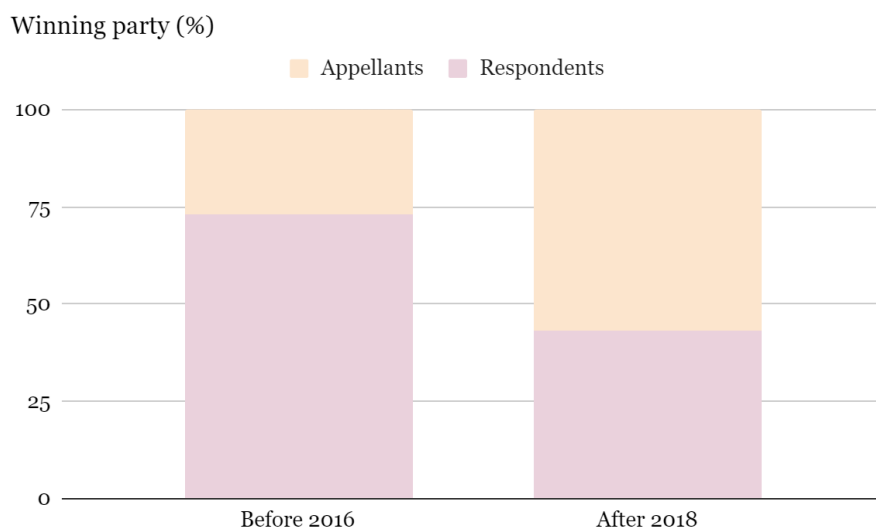


Figure 6.10. Comparison of winning parties in court cases before 2016 and after 2018.

6.2.6 Type of Respondent

In regards to who is the respondent in the cases, being either companies and/or individuals, it has not been a big change between before 2016 and after 2018. As the frequency tables below show (table 6.8 and table 6.9), individuals were more often respondents compared to companies before 2016. Today after 2018, companies are respondents more often than individuals.

Table 6.8. Frequency table showing type of respondent before 2016.

Respondent	n	%
Company	10	43
Person(s)	13	57
TOTAL	23	100

Table 6.9. Frequency table showing type of respondent after 2018.

Party	n	%
Company	6	60
Person(s)	4	40
TOTAL	14	100

As shown in the frequency tables, figure 6.12 aims to illustrate the type of respondent before 2016 and after 2018. As described in relation to the frequency tables, the diagram also shows that an alteration has taken place between before 2016 and today, where companies are respondents more often than persons after 2018.

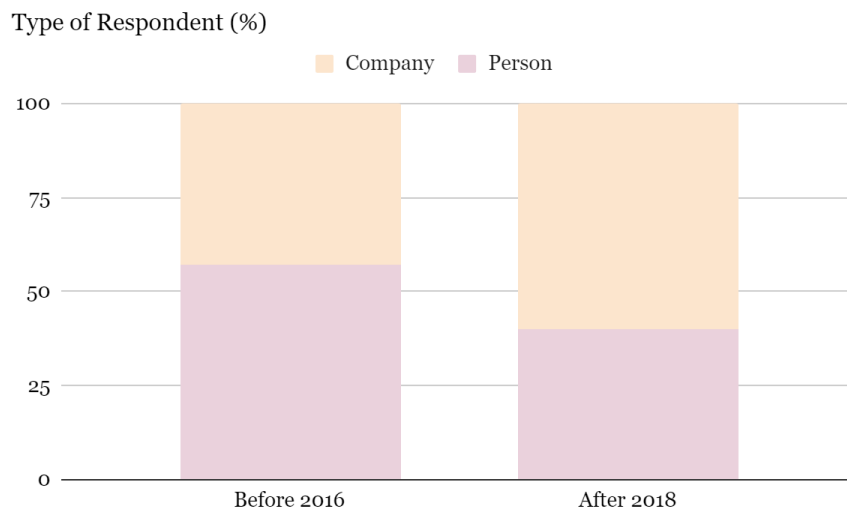


Figure 6.12. Comparison of types of respondents in court cases before 2016 and after 2018.

6.3 Analysis of interviews

The findings from the interviews are presented in this section. In total eleven interviews were conducted with both IP managers/consultants and lawyers focusing on IP. The data is analysed using a grounded theory inspired approach, where a number of categories were identified. Within these categories, main themes and sub-themes were then found relating to the different categories. The categories are *The EU directive (2016/943)*, *Trade secret management*, *Other impacting factors*, *National legislations*, *Trade secrets' relation to other IP*, and *Industry differences*.

This section is divided into categories and themes connected to it, and starts with the category that was most frequently recurring. In table 6.10, the categories and main-themes are presented together with their frequency. All findings, regardless what type of interviewee are merged together in the analysis because no major differences between them were found.

As shown in table 6.10, frequently recurring subjects during the interviews were legal impacts and consequences as a result of the directive, but also the unclarity with it as well as the new better environment for trade secrets. Many interviewees also touched upon the differences between patents and trade secrets. But the most frequent recurring subject was the active measures companies need to do to enforce trade secrets.

Table 6.10. Categories and main-themes found through interviews.

Category	Main-theme	Frequency (n)
EU directive 2016/943	Legal consequences/impacts	22
	Creates better environment for use of trade secrets	20
	Unclear directive	15
	Corporations needed the EU directive	5
	Takes more time before impacts can be seen	4
Trade secret management	Active measures	29
	Understanding of trade secrets	9
	Types of trade secrets	7
Trade secrets' relation to other IP	Trade secrets vs patents	18
	Increasing awareness of IP in general	10
	Patentability of inventions	3
Industry differences	Fast changing industries (eg software-based, IT)	8
	Engineering and R&D heavy industries	4
Other impacting factors	The US trade secret law	11
	Employee invention misuse	1
	Tax authorities	1
National legislations	Harmonized view	6
	No fundamental changes	1

6.3.1 The EU directive (2016/943)

The EU directive (2016/943) was brought up most frequently of the six categories. Five main themes were found in relation to this category. These main themes are presented together with their sub-themes in this section. Three of the themes were significantly more frequently occurring than the other two. The most frequently recurring themes are *Legal consequences/impact*, *Creates better environment for use of trade secrets*, and *Unclear directive*. The themes *Corporations needed the EU directive*, and *Takes more time before impacts can be seen*, occurred not as frequently.

Legal consequences/impact

A legal consequence or impact of the EU directive occurred in several ways and the sub-themes, frequency and explanation can be seen in table 6.11. The most frequently recurring sub-themes were *trade secret breach*, *trade secret definition* and *other ways to settle trade secret disputes*. Many interviewees mentioned that in most cases people avoid going to court since they do not want to risk disclosing their trade secrets, and it is hard to determine the value of a trade secret and prove what you have lost. However, several interviewees mentioned that the directive has resulted in facilitated legal processes including that you can show breach in an earlier stage, that it is easier to obtain damages and that it is easier to prove violation of trade secrets. Regarding the trade secret definition, the majority experienced that the definition of trade secrets has not changed that much.

Table 6.11. Sub-themes under the main theme *Legal consequences/impact*.

Sub-theme	n	Explanation	n
Trade secret breach	5	Easier to obtain damages	1
		Easier to get a preliminary injunction	1
		Possible to show breach in earlier stage	1
		Easier to prove violation of trade secrets	1
		6 month implementation deadline (Denmark)	1
Trade secret definition	5	No change	3
		Uncertainty	2
Other ways to settle trade secret disputes	4	Avoidance of going to court	4
Other	3	Need of a preservation of evidence	1
		Provides opportunity to sue someone	1
		Before it was a question of competitiveness, not IPR	1
Consequences of trade secret breach	3	No criminal aspects mentioned	2
		More remedies	1
Need of a central court	2	A central court would decrease the jurisdictions' variations	2

Creates better environment for use of trade secrets

The sub-themes under the main theme *Creates better environment for use of trade secrets*, the frequency and the explanation can be seen in table 6.12. The most frequently recurring sub-themes were *increased focus on trade secrets* and *better possibilities for collaboration*. The directive has resulted in a strengthened protection of trade secrets as well as it has gotten more attention, which have also resulted in what most interviewees discussed, a push to take trade secrets more seriously. This has in turn, as many interviewees mentioned, made it easier to collaborate because it is easier to legally manage trade secrets and there is a unified language. The increased possibility for collaboration was experienced both within the EU and with the US.

Table 6.12. Sub-themes under the main theme *Creates better environment for use of trade secrets*.

Sub-theme	n	Explanation	n
Increased focus on trade secrets	10	Push to take trade secrets more seriously	3
		Easier to understand	3
		More focus on the law	1
		Harmonization	1
		Strengthened protection	1
		More attention put on trade secrets	1
Better possibilities for collaborations	6	Easier to collaborate across borders	5
		Increased use of trade secrets in licensing	1
		Better knowledge exchange	1
Crucial for investments	2	Companies can clearly define their IP and show lists for investors	2
Increased protection for journalists and whistleblowers	1	Better protection for journalists and whistleblowers	1

Unclear directive

The sub-themes under the main theme *Unclear directive*, the frequency and the explanation can be seen in table 6.13. The most frequently recurring sub-theme were that interviewees experienced that companies and people do not understand what is meant by reasonable steps because it is not defined in the directive. However, many interviewees experienced that there is a poor understanding of trade secrets in general in comparison to other IP, and this can be as some interviewees mentioned, a result of poor education or that they simply are not familiar with the directive.

Table 6.13. *Sub-themes under the main theme Unclear directive.*

Sub-theme	n	Explanation	n
Unclear reasonable steps	6	Uncertainty among countries	3
		Uncertainty among people	2
		Not defined measures	1
Unclear trade secret definition	3	The definition of trade secrets and the understanding of them is not clear among firms	3
Lack of education about the directive	2	Most countries did not educate about trade secrets	1
		Companies do not know how to implement the law	1
Lack of attention put on the directive	2	Not as much active work with trade secrets as it is with other IP	1
		GDPR got a lot of attention, therefore trade secret law was missed	1
Lack of information about the directive	1	Many are not familiar with the directive	1
Lack of explanation about trade secret breach	1	No explanation of when an acquisition should be considered unlawful	1

Corporations needed the EU directive

The sub-themes under the main theme *Unclear directive*, the frequency and the explanation can be seen in table 6.14. The most frequently recurring sub-theme was *Small impact on small and medium sized enterprises (SMEs)* where interviewees mentioned that smaller companies are more dependent on trade secrets since patents are very costly, and have therefore already been enforcing trade secrets in a strategic way.

Table 6.14. *Sub-themes under the main theme Corporations needed the EU directive.*

Sub-theme	n	Explanation	n
Small impact on small and medium sized enterprises (SMEs)	3	SMEs were used to enforce trade secrets (cheaper than patents)	1
		Did not result in a major effect on SMEs	1
		Smaller companies are very dependent on trade secrets	1
Big impact on larger corporations	1	Larger corporation was in big need for this	1
The EU directive seen as mainly a political process	1	Political process	1

Takes more time before results can be seen

The sub-themes of the main theme *Takes more time before results can be seen*, including frequency and explanation can be seen in table 6.15. The sub-themes describe that the directive has not yet given rise to many court cases concerning trade secrets, and one interviewee also mentioned that no major changes has been seen as a result of the directive.

Table 6.15. Sub-themes under the main theme *Takes more time before results can be seen.*

Sub-theme	n	Explanation	n
Lack of court cases	3	The EU directive have not given rise to many cases yet	3
No major changes seen	1	No major changes seen yet	1

6.3.2 Trade Secret management

Trade Secret management was the second most brought up category during the interviews. In relation to trade secret management, three main themes were found. *Active measures*, was the by far most recurring main theme, and was followed by *Understanding of trade secrets*, and *Type of trade secrets*. These main themes are presented together with their sub-themes in this section.

Active measures

The sub-themes under the main theme *Active measures*, the frequency and the explanation can be seen in table 6.16. The most frequently recurring sub-themes were *Management of measures* and *Administrative measures* where interviewees discussed that the directive has had an effect on companies' trade secret management and also stated what those administrative measures could be such as having procedures, keeping information internally, access restriction, and policies which can be part of the proactive measures that is important. Challenges were also discussed by the interviewees where some of them mentioned that the challenges often lie in collaborations, but also workforce mobility which is the reason why a lot of trade secrets are lost.

Table 6.16. Sub-themes under the main theme *Active measures.*

Sub-theme	n	Explanation	n
Management of measures	12	Effects shown on companies' trade secret management	6
		Importance of right measures	3
		Require active work	2
		Combination of different measures	1
Administrative measures	9	Proactive measures	3
		Trade secret procedures	3
		Keep information internally	2
		Restriction of access	2
		Policies	1
Challenges	5	Challenges with collaborations, eg open innovation and joint collaboration	3
		Challenges with workforce mobility	2
Legal measures	2	Issues with NDAs	1
		Regulate which measures collaborator/partner need to take	1

Understanding of trade secrets

The sub-themes under the main theme *Understanding of trade secrets*, the frequency and the explanation can be seen in table 6.17. The most frequently recurring sub-theme was *poor understanding*. But as shown, there are many sub-themes regarding this matter that both give rise to poor understanding such as “*Fuzzy*”, but also provide a better understanding such as *Interdisciplinary* and *Increased focus*. The fact that trade secrets are unregistrable is both an advantage and disadvantage. As one interviewee mentioned, advantages are that companies do not need to involve another party, such as a patent office for example in terms of patents. Companies do not need to pay any fees, and they do not need to disclose anything. The disadvantage is however that companies are on their own and need to manage everything themselves.

Table 6.17. Sub-themes under the main theme *Understanding of trade secrets*.

Sub-theme	n	Explanation	n
Poor understanding	2	Poor understanding among employees	1
		Poor understanding among companies	1
Three parts	1	Administrative, legal and technical part	1
“Fuzzy”	1	The "fuzzy" type of IP	1
Temporary	1	Not lasting forever	1
Unregistered	1	Trade secrets are unregistered	1
Interdisciplinary	1	When drafting agreements, legal persons and technical persons have discussions regarding what to share and not	1
Increased focus	1	Increased focus during the recent year	1
In need of clarity	1	Clarity is valuable, unclarity creates anxiety/concerns and creates extra workload to get on the right track	1

Types of trade secrets

The sub-themes under the main theme *Types of trade secrets*, the frequency and the explanation can be seen in table 6.18. The most frequently recurring sub-theme was *Relation between commercial and technical data* where interviewees argued that they can now be managed together and create a competitive advantage. Customer data was said to be easier to prove violation of because you can track human relations such as emails for example. But technical trade secrets were easier to manage because it is easier to keep them within the organization, while commercial trade secrets are often shared to third parties. Regarding what can be subject to trade secrets, some interviewees mentioned that basically any information can be a trade secret as long it meets the requirements.

Table 6.18. Sub-themes under the main theme *Types of trade secrets*.

Sub-theme	n	Explanation	n
Relation between commercial and technical data	4	Managed together	2
		Easier to prove violation of customer data	1
		Easier to manage technical trade secrets	1
Commercial trade secrets	2	Financial data	1
		Customer data	1
Everything that is not shared externally	1	Everything not shared externally are considered a trade secret	1

6.3.3 Trade Secrets' relation to other IP

The third most discussed category during the interviews was Trade Secrets' relation to other IP. In this category the main themes *Trade Secrets vs Patents*, and *Increasing awareness of IP in general* were most frequently recurring. Least occurring of the main themes was *Patentability of inventions*. All three main themes are presented with their sub-themes in this section.

Trade Secrets vs Patents

The sub-themes under the main theme *Trade secrets vs patents*, the frequency and the explanation can be seen in table 6.19. The most frequently recurring sub-theme was *Closely connected to patents* where interviewees argued that trade secrets are often managed in relation to patents, and is understood in that setting. Technical information is kept secret to later be patented. But many also mentioned that it is a difficult decision to take whether to keep something as secret or patent it. The reason why trade secrets were more difficult to manage is that the patent law is more clear, and it is also harder to keep track of how others are using your trade secrets.

Table 6.19. Sub-themes under the main theme *Trade secrets vs patents*.

Sub-theme	n	Explanation	n
Closely connected to patents	14	Trade secrets not treated as an own asset	7
		Cheaper to keep as trade secrets	2
		More difficult to manage trade secrets	2
		Increased willingness to keep secret	2
		Trade secrets lasts longer than patents	1
Close connected to other IP	4	Difficult to evaluate IP	2
		Trade secrets managed to strengthen other IP	2

Increasing awareness of IP in general

The sub-themes under the main theme *Increasing awareness of IP in general*, the frequency and the explanation can be seen in table 6.20. The most frequently recurring sub-theme was *Increased awareness of IP among companies* where many argued that companies have

become more aware of that they need to protect their know-how and other matters subject to IP protection, which have had an effect on the management.

Table 6.20. Sub-themes under the main theme *Increasing awareness of IP in general*.

Sub-theme	n	Explanation	n
Increased awareness of IP among companies	7	Awareness impacting the management	5
		Awareness in relation to other IP	2
Increased awareness of IP among countries	3	Increased focus on protecting IP	2
		Increased awareness of IP	1

Patentability of inventions

The sub-themes under the main theme *Patentability of inventions*, the frequency and the explanation can be seen in table 6.21. The most frequently recurring sub-theme was *Difficulties experienced in relation to patenting* where certain inventions such as software are difficult to patent. Additionally, people have experienced that they have disclosed too much information during external presentations which hinders the patentability.

Table 6.21. Sub-themes under the main theme *Patentability of inventions*.

Sub-theme	n	Explanation	n
Difficulties experienced in relation to patenting	2	Certain inventions (eg software) is difficult to patent	1
		Information disclosed during external presentations	1
IT infrastructure makes prior art more available	1	The IT infrastructure makes prior art more available	1

6.3.4 Industry differences

The fourth most commonly discussed category was Industry differences. In relation to this category, two main themes were found. The most often recurring main theme was *Fast changing industries* and the least *Engineering and R&D heavy industries*. These main themes and their sub-themes are presented in this section.

Fast changing industries (eg software-based, IT)

The sub-themes under the main theme *Fast changing industries (e.g. software-based, IT)*, the frequency and the explanation can be seen in table 6.22. The most frequently recurring sub-themes were *Less patent-dependent*, *Restriction of access* and *Down-prioritizing trade secret management*. The software industry is a very fast changing industry which is why they are less patent-dependent because patenting takes time, and software can be difficult to patent. Similarly, to keep up the fast speed, many people have access to most information within the organization. Moreover, trade secret management requires work which may not be the priority which is why organizations think it is worth the risk of leakage.

Table 6.22. Sub-themes under the main theme *Fast changing industries (eg software-based, IT)*.

Sub-theme	n	Explanation	n
Less patent-dependent	2	Patent takes time	2
Restriction of access	2	No restriction of access internally	1
		Restriction of access externally	1
Down-prioritizing trade secret management	2	Worth the risk of leakage	1
		Proper trade secret management require much work	1
Transparency	1	Transparent regarding trade secrets	1
Need of attracting future employees	1	Need of sharing trade secrets to attract future employees	1

Engineering and R&D heavy industries

The sub-themes under the main theme *Engineering and R&D heavy industries*, the frequency and the explanation can be seen in table 6.23. The most frequently recurring sub-theme was *Better trade secret management* where interviewees argued that proper management is required to maintain the value of trade secrets and especially in collaborations. Organizations who license IP are generally very good at managing their IP including trade secrets.

Table 6.23. Sub-themes under the main theme *Engineering and R&D heavy industries*.

Sub-theme	n	Explanation	n
Better trade secret management	2	Much collaboration	1
		Need of proper management	1
Effort put into secrecy	1	Long development times	1
Less active work	1	Awareness but lack of active work	1

6.3.5 Other impacting factors

The second least recurring category was *Other impacting factors*. Within this category *The US trade secret law* was most frequently discussed, compared to *Employee invention misuse*, and *Tax authorities* that were not as frequently discussed. These three main themes are presented with their sub-themes in this section.

The US trade secret law

The sub-theme under the main theme *The US trade secret law*, the frequency and the explanation can be seen in table 6.24. The sub-theme *Companies tend to follow the US law* was explained by the power the US law possesses and that it is more to lose when getting involved in a US lawsuit. The second sub-theme found in relation to *The US trade secret law* was *The directive is inspired by the US law*. What appeared in relation to this sub-theme was that the trade secret definitions are almost the same in the EU, US and China, and that the EU directive is more or less a copy of the US defend trade secrets act.

Table 6.24. Sub-themes under the main theme *The US trade secret law*.

Sub-theme	n	Explanation	n
Companies tend to follow the US law	9	More powerful than the directive	6
		Focusing on the US law	3
The directive is inspired by the US law	2	The directive is highly inspired by the US law	2

Employee invention misuse

The sub-theme under the main theme *Employee invention misuse*, the frequency and the explanation can be seen in table 6.25. The sub-theme *Misuse of employee invention* was explained by that there has been a slight rise in the employee invention misuse cases, meaning who belongs the invention to when an employee invents something new.

Table 6.25. Sub-themes under the main theme *Employee invention misuse*.

Sub-theme	n	Explanation	n
Misuse of employee inventions	1	Slight rise in employee invention misuse cases	1

Tax authorities

The sub-theme under the main theme *Tax authorities*, the frequency and the explanation can be seen in table 6.26. The sub-theme *Pressure from tax authorities* was explained by the pressure tax authorities put on companies to manage their IP, including trade secrets, which had not been managed properly before.

Table 6.26. Sub-themes under the main theme *Tax authorities*.

Sub-theme	n	Explanation	n
Pressure from tax authorities	1	Pressure on companies to manage their IP	1

6.3.6 National legislations

‘National legislations’ was the category that did not occur as often as the other five categories. Related to this category were two main themes being *Harmonized view*, and *No fundamental changes*. These two main themes are presented together with their sub-themes in this section.

Harmonized view

The sub-themes under the main theme *Harmonized view*, the frequency and the explanation can be seen in table 6.27. Three sub-themes were found all explaining that the view of trade secrets have been harmonized on an European level, but also on a global level, which was very much needed since it promotes better management of IP across the borders.

Table 6.27. Sub-themes under the main theme *Harmonized view*.

Sub-theme	n	Explanation	n
Harmonization within the EU	3	The view on trade secrets has been harmonized within the EU	3
Need of harmonization	2	Crucial with NDAs and non-compete requirements are similar among countries	1
		Harmonization of IP enables increased trade, cross border collaborations, and development	1
Harmonization on a global level	2	The trade secret definition is quite harmonized among US, China and the EU	2

No fundamental changes

The sub-theme under the main theme *No fundamental changes*, the frequency and the explanation can be seen in table 6.28. The sub-theme *No big changes experienced* was explained by that the interviewee had not experienced any major changes in the Swedish law or the UK law.

Table 6.28. Sub-themes under the main theme *No fundamental changes*.

Sub-theme	n	Explanation	n
No big changes experienced	1	No fundamental changes experienced in Swedish or UK law	1

6.3.7 Additional findings

One additional finding during the interviews was that 4 out of 12 interviewees knew very little about the directive, some of them barely knew it existed. These interviewees were both companies and lawyers working both globally and nationally.

Furthermore, countries such as Germany and Italy got the best implementation of the directive because they really thought about the law. Germany thought about the reasonable steps and understood that you need to wrap the trade secrets in administrative, legal and technical measures. Most other European countries did not think about these things.

Another interesting finding that was mentioned by several interviewees is that it may not be the directive itself that has affected companies trade secret management, rather the increased awareness of IP in general, including trade secrets. Additionally, other impacting factors mentioned in the themes have had an affect. One factor is the US trade secret law that many companies tend to look at because it is more powerful, extraterritorial and has more serious consequences involved. Another factor is the tax authorities who have put more pressure on companies to manage their IP, including trade secrets, because before this was often not managed correctly among companies.

6.3.8 Findings in relation to value creation

Several findings regarding companies' value creation in relation to trade secrets as a result of the directive (EU 2016/943) were found during the interviews. The findings, including representation of interviewee and frequency can be seen in table 6.29.

Table 6.29. Findings regarding companies value creation as a result of the EU directive 2016/943.

Finding	Company/Lawyer	Frequency
Easier to get investors when companies can clearly define their IP including trade secrets and show those.	Company	2
Knowledge and value are defined in collaborations, which brings an understanding of what parties are contributing and what they will get out of it.	Company	1
The fact that the EU directive came in, prompted the European companies to protect trade secrets more seriously.	Company	1
European companies have been more successful in legal disputes in the US.	Company	1
European companies pass/survive tax audits because they can manage their trade secrets.	Company	1
The management is more willing to listen and do something when it's written in the law.	Company	1
There's simply more motivation to manage trade secrets.	Company	1
There are generally more access limitations now, which contributes to the protection of trade secrets.	Company	1
All harmonization can be seen as an advantage and strength.	Company	1
The clarity facilitates the work.	Company	1
The value a trade secret brings to an organization is dependent on the business need.	Company	1
Trade secrets can provide value for a very long time, compared to patents that expire after 20 years.	Company	1
The establishment of procedures around trade secrets are valuable for companies.	Lawyer	2
The step to strengthen trade secret protection was valuable itself.	Lawyer	1
The opportunity to prove loss and obtain damages is valuable.	Lawyer	1
It will definitely be a loss of value if companies don't treat trade secrets properly.	Lawyer	1
Having supporting legislation makes you more willing to believe in the value of the know-how and trade secrets and invest in it.	Lawyer	1

As shown in table 6.29, the EU trade secret directive has been valuable for companies in several ways, and in turn facilitates their value creation of their trade secret management. An additional finding was also that two interviewees could not see any concrete value or increased value as a result of the directive, but no negative or decreased effect could be seen. However, overall, all interviewees could see a positive impact of the directive, including the interviewees who discussed that no effect was seen on the value.

The harmonization of the law seems to have been a step in the right direction, however there are still many differences in the courts among the countries. To obtain a more valuable effect, a central court would have been great as quoted by one interviewee.

“It's good with a central law, but would be even better with a central court”.

7 Discussion

In this part a discussion about the findings in the analysis and their connection to the legal and theoretical framework are presented.

The discussion is divided into the sub-research questions. The main research question aims to be answered by sub-research questions 1-5, and is summarized as the conclusion of the thesis (see chapter 8).

SRQ1: What is a trade secret, and in which aspects has it changed as a result of the trade secret directive (EU 2016/943)?

In regards to what is considered a trade secret, some traits are common both before the trade secret directive came into place and after. The traits that have not changed are that in order for something to be considered a trade secret the information must have economic value for the trade secret holder. That the information should have economic value is also mentioned as one of the three requirements for something to be considered a trade secret in the EU directive (2016/943) on trade secrets. Also in the Japanese, Chinese, and Russian legislations on trade secrets, economic value is included in the trade secret definition. In the national legislations before June 2018, however, economic value is not mentioned as a requirement in the legislations analysed. In addition to economic value, the trade secret holder must have some secrecy measures in place, namely well-defined secrecy clauses in the employment agreements and clear trade secret documentation. These measures are in line with Abd Jalil and Hassan's (2020) administrative and legal measures for trade secret management, and Bos et al's (2015) formal and informal activities. Secrecy clauses are brought up as a legal measure that also Abd Jalil and Hassan (2020) argue must be specified. Trade secret documentation is brought up as an administrative measure by Abd Jalil and Hassan (2020). In relation to documentation they stress the importance of identifying the trade secrets. Except having the clear secrecy clauses and documentation in place due to the need of administrative and legal measures, these activities might also foster a good secrecy climate. Secrecy climate is according to Robertson et al. (2015) about making the employees understand the measures and policies around trade secrets. Which is also in line with stage two in Bos et al's (2015) trade secret management lifecycle. Hence, well-defined secrecy clauses and documentation can influence the employees' understanding of trade secrets in a positive way. A positive secrecy climate is crucial for keeping the trade secrets in the company. If relating these measures to the reasonable steps criteria in the EU directive (2016/943) on trade secrets, these activities can also be seen as requirements to fulfill the criteria.

After the trade secret directive was implemented into national legislations some requirements on trade secrets were added to the trade secret court cases. The three new requirements were that the information needs to be claimed as sensitive and confidential, IT policies must be in place to avoid leakage, and that it is enough that it is sufficiently established that the information should be kept secret. The first two are in line with the administrative measures discussed by Abd Jalil and Hassan (2020), and can be seen as some of the reasonable steps

criteria defined in the EU directive (2016/943) on trade secrets. Requirements of a specific management of trade secrets are brought up also in US, China, Japan, and Russia's national legislations. The later addition, about sufficiently established information, is not included in the EU directive (2016/943).

It also occurred that publicly known information was not seen as a trade secret in the court cases before 2016. That trade secrets shall be secret is stated in legislations before 2018 and in the EU directive, indicating that it is only a coincidence that it occurred only in court cases before 2016.

According to the interviews the trade secret definition was not experienced to have changed that much. If comparing the national legislations analysed, with the EU directive (2016/943), the differences found are that reasonable steps need to be taken, and that the information should have commercial value. Commercial value was, however, found in court cases before the EU directive (2016/943) was implemented into national legislations as well.

When comparing how often companies are respondents compared to persons before and after the directive was implemented, one change occurred. After the directive was implemented there were less cases where a person was respondent. Persons were respondents in 57% of the cases before 2016, and 40% after 2018. This change might come from an increased pressure on companies today to inform their employees about trade secrets, and make sure trade secrets belonging to someone else are not used in the company. The EU directive (Chapter 4, 4 § EU 2016/943) and Gutfleish (2018) states that both the person acquiring the trade secret, and the third party using the trade secret are liable for the illegally acquired trade secret.

SRQ2: What is considered a trade secret breach and in which aspects has it changed as a result of the trade secret directive (EU 2016/943)?

Even though the trade secret definition was not seen as changed according to the interviews, the protection of the trade secrets was experienced as strengthened. Examples of strengthened protection were that it was easier to prove violation, to obtain damages, and to show breach in an earlier stage. A potential explanation to the experienced strengthened protection could be that companies tend to have better trade secret management due to the reasonable steps requirement, or that what is seen as a trade secret breach has changed and/or the remedies connected to such breach. The remedies were in the interviews seen as increased. In regards to what is considered a trade secret breach one change occurred when analysing the court cases. The difference was that before implementing the EU directive (2016/943) into the national legislations, a disclosure of trade secrets needed to have been made. In both the danish (LOV nr af 03/05/2017) and Swedish (SFS 1990:409) trade secret legislation, disclosure is included in the law text. Disclosure is, however, also included in the EU directive (2016/943). This might indicate that the court cases analysed after 2018, by chance did not include any cases where disclosure was discussed. After the EU directive was implemented, one new occasion occurred. What occurred was that bad intentions, where the respondent ought to acquire or use trade secrets from the appellant, was enough to show a trade secret breach. Bad intentions or similar definition is, however, not mentioned in the EU directive (2016/943).

Some definitions are common both before implementing the EU directive (2016/943) and after. The common traits are that something is considered a trade secret breach when an acquisition of the trade secrets is shown. Acquisition of trade secrets was mentioned as unlawful in the Danish trade secret law effective before 2018 (LOV nr af 03/05/2017). In the Swedish, English (UK) and Irish trade secrets legislation acquisition is, however, not mentioned before 2018. In the EU directive (2016/943) acquisition is included, and seen as unlawful if trade secrets are acquired without consent. In addition to acquisition it is considered a breach when a use and/or transfer of the trade secrets are proven. To pass on or use trade secrets acquired in an unlawful way is also mentioned in the Danish trade secret law (LOV nr af 03/05/2017). However, not in the Swedish, English (UK) and Irelandish trade secrets legislation. In the Swedish trade secret legislation (SFS 1990:409) it is, however, stressed that disclosing trade secrets is not allowed. In the EU directive (2016/943) it is stated that use or disclosure of unlawfully acquired trade secrets is not allowed. To show the damages of the breach is also needed. Damages can be seen as included in the Swedish trade secret law (SFS 1990:409), effective before 2018, however, only if the harm is a result of a disclosure. The Danish, English (UK) and Irelandish legislation do, however, not mention damages. A need to prove damages are not mentioned in the EU directive (2016/943), however, in the trade secret definition it is stressed that the trade secrets need to have commercial value. A need to show damages, might be related to the criteria of commercial value in the EU directive (2016/943). Lastly, it was also shown that whether the respondent was a competitor to the appellant or not affected the ruling. The term competitor is stated in the Swedish trade secret law before 2018 (SFS 1990:409), however, not in the Danish, English (UK) and Irelandish legislation. Competition is also not mentioned in the EU directive (2016/943).

SRQ3: Which types of intellectual assets are typically controlled through trade secrets, and what are the challenges?

Typical assets that are controlled through trade secrets are valuable information that companies want to keep within the organization, and keep away from competitors. Such trade secrets can be recipes, manufacturing processes, customer lists, software codes and chemical compounds for example (European Commission, n.d.; Fox 2020). According to some interviewees, almost any information can be subject to trade secrets as long as it meets the requirements written in the applicable legal text. The requirements in the EU directive (2016/943) are that the information cannot be generally known, have commercial value and are subject to reasonable steps. The EU directive (2016/943) does however distinguish between technical trade secret and commercial trade secret and the results of the study show that there are differences between them in terms of the probability to have them stolen, but also the ability to prove that they have been violated. The court case analysis shows that commercial trade secrets occur more often in court cases regardless of the implementation of the EU directive (2016/943). The occurrence of commercial trade secrets in courts goes in line with some of the speculations discussed by the interviewees. Interviewees said that it is easier to prove that someone has violated customer data than technical information. This may be, as the interviewee mentioned, because commercial data is often about human

relationships and it is often possible to track emails or other communication channels for example. The reasoning goes in line with another finding saying that technical trade secrets are easier to keep within the organization since it is often commercial data such as business information that you share with third parties.

The identification of intellectual assets and trade secrets can be facilitated through the IAM framework developed by Petrusson (2015) that will, besides simplify identification of assets, provide an overview of what the company has. Once assets have been identified it is possible to evaluate what are subjects to the different types of IPR. In order to claim trade secret protection, the information found must meet the requirements stated in the EU directive (2016/943). It is important to make a strategic decision on which IP protection to go for when assets have been identified, and comply with the measures needed to enforce protection which is very important when it comes to trade secrets. As many interviewees said, any type of information can be subject to trade secrets as long as it meets the requirements. Therefore, it is important to do the inventory of assets where a lot of information may be found that can be subject to the different types of IPR, which will contribute to the company's value creation.

The difficulty to prove violation of technical information and the leakage of commercial data are some of the challenges related to trade secrets. The reason why commercial data is often violated may be because of poor education within the companies which makes the employees not aware that such type of information is a trade secret. Therefore, it is important to educate the employees about trade secrets as Robertson et al. (2015), Hannah (2007) and Hannah (2005) discusses. It may be easier to educate but also use common sense to understand that a technical invention should be kept secret since it is often related to patents and is often what distinguishes the company from its competitors, which is why commercial trade secrets are more poorly understood. The education within companies should cover all types of trade secrets and the management around them. However, the interview analysis shows that there are many challenges in relation to trade secrets. One major challenge is the workforce mobility which is difficult to hinder since in most cases the employees should be able to move freely on the market. Competition clauses are sometimes implemented to hinder employees from bringing information to rival companies, but it is questionable how effective they are, since knowledge can be carried for a long time. It is probably better to ensure confidentiality obligations are in place and make sure the employees are aware of those. Remind them about the obligations and make sure they return all company belongings, as discussed by Hannah (2006). These measures are sometimes not enough since some people decide to intentionally violate trade secrets, therefore it is relevant to clarify what happens if the employee does not comply with the rules or the contractual obligations as discussed by Hannah and Robertson (2015).

Another challenge is the difficulty to manage trade secrets in collaborations since there is a risk to share secrets with another party. It is difficult to keep track of what others are doing with your trade secrets and what is important before sharing anything is to ensure the other party has proper secrecy measures in place. A challenge in relation to this is the issues with NDA's that are often used but are poorly understood and not always followed. One activity

that could prevent this is as Determann et al. (2017) discuss, to not have a standard confidentiality agreement for every relationship, but to draft them in an appropriate way for each relationship.

One major challenge that was discussed by many interviewees is that trade secrets are poorly understood in comparison to other IP because of many reasons. First of all, there is no clear definition of what a trade secret is which obviously creates uncertainties. Moreover, trade secrets are unregistrable which creates challenges but can also be an advantage. The advantage is that companies do not need to involve any administrative parties such as a patent office for example in terms of patents, there is no need to pay any fees, and there is no need to disclose anything. However, because they are unregistrable there is no specific process to follow or a specific office to turn to which means that companies need to do everything themselves. Another challenge is that many are not familiar with the EU directive (2016/943) which some of the interviewees admitted but it was also mentioned among many that there is a poor awareness of the directive in general, partly because it came around the same time as GDPR which got a lot of attention. Another reason why some people are unaware of the directive can be because in larger companies, there is normally a legal department who takes care of the legal work which an IP strategist for example, does not consider too much. Furthermore, the reason can be as some interviewees said, they tend to follow the US trade secret law because the companies may be global and the US law is very powerful. Similarly, companies operating mainly nationally may be more aware of the national law which may not have been much affected by the EU directive, hence poor awareness of it. However, it is an interesting finding since it shows that the directive may not have gotten much attention. All interviewees did however already had an active and structured work around trade secrets. Moreover, the EU directive (2016/943) itself is not very clear when it comes to the reasonable steps since it is not defined in the directive which creates many uncertainties among companies. Some countries have however defined reasonable steps such as Russia for example (Fox, 2020; Hogan Lovells, 2020). Defining the reasonable steps would obviously facilitate the management of trade secrets and make it easier for companies to comply with the law. In relation to the different national legislations and the fact that the directive has contributed to a more harmonized view on trade secrets, there are still differences in the national courts which will remain a problem until a central court is implemented. Court cases and the judging varies a lot which will create challenges for companies operating in different countries, since there are many different legislations to comply with. But a central court would facilitate and prevent such challenges.

Another challenge in relation to the fact that trade secrets are seen as something “fuzzy” and are not registrable is that it is down-prioritized in companies. Especially companies that operate in fast changing industries such as the IT industry. Proper trade secret work requires a lot of work which may not be the priority which is why companies take the risk of having trade secret leakage. Those leakages may not harm the company that needs to keep up the high speed compared to a more R&D heavy company such as a pharmaceutical company who has long development times and it is crucial to get a patent to get long lasting exploitation of the product. But on the other hand many companies are dependent on trade secrets because for smaller companies, patents are too expensive, and for fast changing industries they do not

have time to wait for a patent. One tough decision that many companies face is however whether they should patent an invention or keep it secret. Before trade secrets were seen as something you had before a patent but now, according to many of the interviewees in the study, trade secrets are now seen as an asset on its own, which the EU directive (2016/943) has contributed to. More companies are seeing the value and potential in trade secrets and having supporting legislation is very beneficial. Moreover, there are many inventions that are more difficult to patent such as software for example, and these can be successfully protected by trade secrets. Additionally, certain inventions or information can be protected by both trade secrets and copyright. The new IT infrastructure has also made prior art more available today which makes it more difficult to get a patent, hence trade secrets are a good alternative. However, trade secrets can still be seen and used as something companies have which enables them to invest in registrable IP in a later stage.

SRQ4: What is the effect on companies' trade secret management as a result of the trade secrets directive (EU 2016/943)?

An increased focus on trade secret management within companies occurred both in the interviews and in the court cases. In the court cases it was brought up that companies focus more on trade secrets and trade secret measures today and are more motivated to do so, compared with before the EU directive (2016/943) was implemented. If the change has occurred as a result of the EU directive it was, however, differences of opinions about. The increased focus and motivation might be explained through a combination of several factors. Firstly, the EU directive (2016/943) is only one part of a larger international movement on trade secret protection. Secondly, the requirements on reasonable steps or specific measures are central in not only the EU directive (2016/943), but also in the US, China, Japan, and Russia. Hence, companies might be motivated to improve their trade secret management in order for their trade secrets to keep the status as a trade secret. Thirdly, a potential explanation on the increased focus was brought up during the interviews, namely an increased pressure from tax authorities on companies to account for intellectual assets, including trade secrets. Also indicating an increased and better trade secret management among companies are that the appellants' won the majority (57%) of the court cases analysed after the EU directive (2016/943) was implemented. Compared to 27% before. Occurring also in the interviews was the experience that the international focus on trade secrets, including the EU directive (2016/943), had helped motivate an increased effort to be put on trade secrets within companies.

The increased focus on trade secret measures might also be a result of the measures importance when it comes to keeping trade secrets within the company, and to not risk leaking them in the first place. The focus on working in a proactive way to avoid and minimize the risk of leakage above preparing for actions when a leakage has taken place was also central in the interviews. Hence, the secrecy measures would be used to keep the information within the company, which is also stressed by Abd Jalil and Hassan (2020). A measure brought up in the interviews was to restrict access to the trade secrets. Restriction and control of access is also part of the administrative measures recommended by Abd Jalil and Hassan (2020), and of the second stage in the secrecy management lifecycle by Bos et al

(2015). Restriction of access appeared, however, only in court cases before the EU directive (2016/943) was implemented, where the appellants both succeeded and failed in the restriction. Compared to before the EU directive (2016/943) was implemented, it occurred in the court cases that companies seem to be better at showing damages, and having clear information about trade secrets to the employees today. Both these measures can be seen as administrative measures discussed by Abd Jalil and Hassan (2020), and the clear information to employees also increases a positive secrecy climate according to Robertson et al. (2015) and part of the second stage of the secrecy management lifecycle by Bos et al. (2015). Before the directive was implemented it was found in the court cases that companies lacked in several measures around trade secrets. The measures that were brought up were lack of NDAs, effort, restriction of sharing information externally, and informing employees about trade secrets. The lack of NDAs are both part of Abd Jalil and Hassan's (2020) legal measures and Bos et al.'s (2015) formal activities included in stage two of the secrecy management lifecycle. Restriction of sharing information externally and informing employees are instead part of the administrative measures (Abd Jalil & Hassan, 2020) and the informal activities (Bos et al., 2015). In contrast, respondents were better before the directive to show proof of internal development. The proof of internal development helped the respondents to prove that trade secrets were not acquired from the appellant. The explanation for it not occurring after the implementation of the directive, however, is probably due to the small number of technical trade secrets brought up in the cases, where the proof of internal development is central. Even though both Abd Jalil and Hassan (2020), and Bos et al. (2015) argues that the measures/activities are of importance for working proactively with trade secrets, both Bos et al. (2015) and Robertson et al. (2015) argues that it is the culture/secrecy climate that really determines whether something is kept within the organization.

A difference in trade secret management was also found if comparing different industries. Engineering and R&D heavy industries were experienced as having a better trade secret management, compared to more fast changing industries. Some of the backgrounds to this difference were a greater need for transparency within more fast changing industries, and longer development times within engineering and R&D heavy industries. Active work on trade secret management was, however, lacking in the engineering and R&D heavy industries. If putting this difference in relation to theory it can be related to Bos et al.'s (2015) secrecy management lifecycle. According to Bos et al. (2015) the first decision an organization needs to make is to decide whether to keep something secret. The decision whether to keep secret, together with the stages in the lifecycle, are affected by changes both inside and outside the organization. The need of being fast-moving and attracting future employees described in the interviews might be changes occurring outside the organization. Impacting the need of being transparent inside the fast changing organization. The transparency might then affect the choice of not keeping "everything" secret, which makes the need of a well-defined trade secret management strategy less needed.

SRQ5: What is the difference between companies' value creation in relation to trade secrets before and after the trade secrets directive (EU 2016/943) came into force?

The EU directive (2016/943) has definitely had an effect on companies value creation in relation to trade secrets. The result of the court cases analysis shows that the appellants are winning the majority of the court cases today (57%) compared to 27% before 2016. The reason may be because companies have better trade secret management and better measures in place which have an effect on their ability to prove in court that certain information was a trade secret and that someone has violated it. Moreover, interviewees mentioned it is easier to obtain damages today, which has an effect on the outcome in court, and the court case analysis also shows that people involved in cases after 2018 were able to show damages. In the interviews it was also brought up that the remedies were seen as increased as a result of the EU directive (2016/943).

The EU directive (2016/943) was as some interviewees mentioned, a push to take trade secrets more seriously, and it has facilitated collaborations across borders since there is a more unified language and relatively similar legal terms. There are still some differences among countries since each country implemented the directive in their national legislation in their own way. The interviewees discussed many different positive outcomes as a result of the EU directive (2016/943). One major benefit is that it is now easier to get investors since companies can clearly define their IP, including trade secrets. The increased awareness of trade secrets and its potential has made investors more willing to invest. This goes in line with, as one interviewee discussed, that it is easier to make the management in a company listen and convince them that proper work around trade secrets need to be done. They are more willing to listen because it is now written in the law. The pushing effect the directive had on companies to manage trade secrets more seriously has also resulted in more motivation. Seeing trade secrets as an asset on its own that has value by itself, as well as it can provide value for other IP such as patents, and having supporting trade secret laws which strengthen the protection, contributes to more motivation to manage them properly. It makes companies believe in the value of their know-how and invest in it. Moreover, since companies are now able to better manage and administer their trade secrets, more companies pass tax audits. Furthermore, European companies have not only been more successful in legal disputes within Europe, they have become successful in legal disputes in the US. Having a more harmonized trade secret law globally will in this case make the European companies be able to also comply to some degree with the US trade secret law, which will impact the outcome in American court cases. The harmonization itself can be seen as an advantage and strength and the clarity the EU directive (2016/943) brings, with some exceptions mentioned before, facilitates the work within organizations. Uncertainty creates concerns and extra workload. Moreover, since trade secrets define knowledge, that knowledge and value can be defined in collaborations to get an understanding of what parties are contributing with and what they will get out of it. Additionally, one major advantage with trade secrets compared to patents, is that trade secrets provide protection for a long time. There is no expiry date as it is with patents which means that trade secrets can provide value

for an organization for a long time. The fact that trade secrets are secret and not disclosed, brings value to the organization since they have something that the competitors most likely do not have. Some of the advantages mentioned above are general benefits in relation to trade secrets and have not occurred as a result of the EU directive (2016/943) or may not have been affected by it. However, the increased use of trade secrets and proper management of it will give rise to benefits and value mentioned above. IP, including trade secrets are however hard to evaluate, which also some of the interviewees mentioned, that makes it difficult to determine exactly how much value a trade secret brings to an organization. However, it is clear that if handled properly, trade secrets provide a lot of value and many organizations are dependent on them, and without them it would be a great loss of value. Hence, trade secrets are a great contributing factor to companies ability to create value. As Beattie and Smith (2013) discuss, intellectual capital which can be captured in trade secrets is one of the most important resources in a company and has a major impact on the company's performance.

Since intellectual capital is such an important resource, it has a great impact on the companies' value creation and contributes to the firm's competitive advantage. Hence, trade secrets and its value is strongly connected to Porter's generic competitive strategies, that describes how companies can through certain strategies achieve competitive advantage (Porter, 1985, in Tanwar, 2013; Akan et al. 2016). Most companies who possess and manage trade secrets are adopting a differentiation strategy, since trade secrets enable differentiation among competitors with unique competence and unique products. However, differentiation focus strategy can also be used when managing trade secrets to meet a niche customer segment special needs. Tanwar (2013) discusses that firms need to create their own distinctive competence in order to compete on the market. It is this distinctive competence that can be captured in trade secrets which is a resource for the companies' value creation, hence the competitive advantage. As one interviewee said, without trade secrets there will be a loss of value for the company, hence a lower, or lost, competitive advantage according to Porters' differentiation strategy. One conclusion that can be drawn from the study is that trade secrets contribute to companies' value creation, and can do that for a very long time. This has been strengthened by the EU directive (2016/943) that enables better trade secret protection, and has had a positive effect on trade secret management, which results in better ability to create value, hence a better ability to get a competitive advantage, which gives rise to a successful differentiation strategy.

8 Conclusion

The study did successfully investigate the research area of interest and discovered interesting and valuable findings. The effect of the EU directive (2016/943) on companies and their trade secret management and value creation has been evaluated and changes, drawbacks and benefits have been identified. The study has generated valuable insights for companies, lawyers, researchers and other professionals.

From the research it was clear that the protection of trade secrets was considered as strengthened. Which made it easier to for example obtain damages. A potential explanation to this experience might be the requirement on reasonable steps to protect the trade secrets, defined in the EU directive (2016/943). Making the trade secret holders manage their trade secrets in a better way. Potentially, an explanation might be that it is easier to show a trade secret breach today compared to before the EU directive was implemented. Which is also in line with the finding that the appellants are winning 57% of the cases today, compared to 27% before the directive was implemented. Occurring in court cases after 2018, was that it was enough to show that the respondent intended to acquire or use trade secrets belonging to the appellant. This might have had an impact on the appellants' increased winning rate. The possibility of choosing to keep especially technical information secret, as a result of the strengthened protection, instead of patenting was also brought up during the interviews. The positive results of this would be that trade secrets, compared to patents, are free of charge and can last for eternity (Fox, 2020).

The unified definition inside the EU in regards to trade secrets and trade secret breach was also experienced as improving the possibilities for collaboration across borders. Additionally, the trade secret legislations are not seen as harmonized only within the EU. Rather it is expressed both in literature and through interviews that the EU directive is similar to DTSA in the US and Anti-Unfair Competition Law in China (Fox, 2020). Increasing the possibilities for companies to collaborate and operate also on a more global level. Which potentially is positive for companies' value creation.

Although the EU directive (2016/943) has contributed to some beneficial changes or improvements in companies' trade secret management, some challenges still remain. One challenge is that the directive does not define the reasonable steps which leave many companies unaware of what needs to be done, which causes confusions. One change that has appeared as a result of the implementation of the EU directive is that today it is required that companies manage their trade secrets in a certain way for it to be considered a trade secret. Making it difficult for companies, since the reasonable steps, and by that the measures are not clearly defined in the EU directive. What appeared in the analysis was, however, that companies have become better and more motivated at managing their trade secrets. If the change is a result only of the EU directive's implementation is, however, discussed. But that the EU directive has had a positive impact on companies acting within the EU stands clear. That the reasonable steps do not stand clear does not seem to be experienced as a problem.

This is due to the fact that companies tend to focus on the proactive management around trade secrets, not the management after a trade secret breach has taken place. In this proactive work, the EU directive has affected the possibilities of improving the internal trade secret measures and management. For example through usage of the EU directive to stress the need of a good trade secret management within the organization. Basically, it seems like companies are using the EU directive as a push to implement better trade secret management measures internally to avoid the need of going to court due to trade secret breaches. The value creation from a proactive work with good trade secret management measures and climate is stressed by several authors (Bos et al, 2015; Robertson et al, 2015; Abd Jalil, 2020; Castellaneta et al., 2017). Since it tends to be the leakage that becomes expensive for companies (Maurer & Zugelder, 2000; Sousa e Silva, 2014). It should, however, be stressed that differences occurred between industries in regards to how actively companies were working with their management around trade secrets. The EU directive might as a result of this difference have a different impact on different industries.

Another challenge is the workforce mobility which is difficult to tackle. Companies need to have policies in place and educate employees about their obligations. An additional challenge for companies related to workforce mobility is the increased pressure on companies to make sure that employees are not using trade secrets acquired from previous employers. According to the EU directive (Chapter 4, 4 § EU 2016/943) both the person acquiring the trade secret, and the third party using the trade secret are liable for the illegally acquired trade secret. That the percentage of companies involved as respondents has increased, and the number of persons involved has decreased might show a trend of the increased responsibility put on companies. Also related to workforce mobility is a potential challenge that might arise from the statement in the EU directive (2016/943) saying that “experiences and skills gained by employees in their normal course of their employment” (chapter 1, § 14) are not considered as trade secrets. This issue was, however, not mentioned in the interviews nor the court cases.

Intellectual capital, including knowledge, which can be captured in trade secrets is an important resource for companies and contributes to their ability to create value. Many organizations are dependent on trade secrets and trade secrets help distinguish them from the competitors. The protection of trade secrets has been strengthened by the new EU directive (2016/943) which has raised the awareness of trade secrets and prompted European companies to manage their trade secrets correctly, and this results in a better ability to create value. Hence, the EU directive has had a positive impact on companies’ value creation of trade secrets.

9 Suggestion for future research

The aim of this study was not to dig deep into national legislations, but an interesting area for further research would be to investigate how different national legislations within the EU have been affected by the EU directive (2016/943). Since the national laws to a large extent determine what companies' in the particular country need to do, this research topic would give additional insights beyond the scope of this thesis.

Another interesting area for further research would be to conduct a similar study on companies operating on the American market and investigate how they have been affected by the new US trade secret law (DTSA). Many companies around the globe have a connection to the US, which is why DTSA's has a major effect on both the US market and the global market. Additionally, since the EU directive was to a large extent inspired by the DTSA, it has had a great impact already. Hence, a study of the DTSA's effect on American companies and their trade secret management would be a research area with great potential and provide valuable insights.

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Appendices

Appendix A. Interview guide.

Introduction

Present ourselves: Names, master's programme, at Chalmers University of Technology.

The thesis: We are doing a master's thesis focused on trade secret management, with a starting point in the EU directive on trade secrets. The data that we are gathering to understand the EU directive are primarily from court cases in different countries. Both before and after the EU directive. In addition to the court cases, we are conducting interviews with companies, lawyers, and professors to understand how they are managing trade secrets, and if there has been a change as a result of the directive.

Time: The interview will take about 45 minutes.

Confidentiality: The answers, and other types of information, will of course be kept confidential. Additionally, you will not be identified as the data will be anonymized when entered into the computer, and the analysis will be conducted at a general level with data from all interviews gathered. Eventual recordings will be deleted when the thesis is done.

Is it okay that we record the interview? This will only be used for analysing purposes, and are to be deleted when the study is done.

Initial questions

- Which title do you have?
- In which country are you working today?
- How are you working with IP today?
- For how long have you been working with IP?

General about the EU trade secret directive

- What do you know about the EU directive on trade secrets?
- **Companies:** How has it affected your organization?
- **Professors/lawyers:** How do you think it has affected companies?
- **Lawyers:** How has it affected your work regarding trade secrets (i.e supporting/helping companies)?

Trade secret management

- **Companies:** (Before and after) How has the EU directive affected the trade secret management within your organization?

- **Professors/lawyers:** (Before and after) How has the EU directive affected the trade secret management within organizations?
- **Lawyers:** (Before and after) Have you noticed any changes regarding legal disputes around trade secrets in court? (e.g more/less disputes, winning parties, types of objects)
- (After) Have you noticed any advantages when it comes to trade secret management as a result of the EU directive?
 - Which/what?
 - Why do you think that is?
- (After) Have you noticed any challenges when it comes to trade secret management as a result of the EU directive?
 - Which/what?
 - Why do you think that is?

Trade secret definition

- (Before/after) Have you experienced that the scope of what a trade secret is has changed as a result of the EU directive?
 - Why/can you elaborate?
 - **Companies:** How has this affected your company?
 - **Professors/lawyers:** How has this affected companies?
- (Before/after) Have you experienced that the scope of what a trade secret breach is has changed as a result of the EU directive?
 - Why/can you elaborate?
 - **Companies:** How has this affected your company?
 - **Professors/lawyers:** How has this affected companies?

Types of trade secrets (technical/commercial data)

*According to the EU directive (EU 2016/943) trade secrets are divided into two groups; **technological knowledge** and **commercial data**. Examples on commercial data are information about customers, suppliers, strategies, and business plans. Examples of technical knowledge are prototypes, methods, techniques, processes, procedures, and codes.*

- (Before and after) Have you experienced that what is kept as a trade secret has changed as a result of the EU directive?
 - In which way?
 - **Companies:** How has this affected your company?
 - **Professors/lawyers:** How has this affected companies?
- **Companies:** (Before and after) Have you experienced that your management around the different types of trade secrets has changed as a result of the EU directive?
 - In which way/how?

- **Professors/lawyers:** (Before and after) Have you experienced that companies' management around the different types of trade secrets has changed as a result of the EU directive?
 - In which way/how?

Value creation

- (Before/after) Have you noticed any difference when it comes to keeping the trade secrets protected after the EU directive?
 - Which?
 - What do you think the reason for this is?
- **Companies:** (Before/after) Have you seen any concrete value for the organization as a result of the EU directive/your new management around trade secrets?
 - Which?
 - What do you think the reason for this is?
- **Professors/lawyers:** (Before/after) Have you seen any concrete value for organizations as a result of the EU directive/the new management around trade secrets?
 - Which?
 - What do you think the reason for this is?

Intellectual assets

Categories

Data	Database	Observation	Visualization
Instruction	Theoretical framework	Software	Creation
Solution		Narrative	

- (Before/after) Have you noticed any differences when it comes to management of different intellectual assets as a result of the EU directive?
 - Which/what?
 - Why do you think that is?

Concluding

- **Professors:** Do you think the new directive has had a positive or negative impact on companies and the market as a whole in terms of trade secret management and value creation?

Alternative: Is it possible to see now if the new directive has had a positive or negative impact on companies and the market as a whole in terms of trade secret management and value creation?

- How/why?

- **Lawyers:** From a legal point of view, do you think the new directive has had a positive or negative impact on companies and the market as a whole in terms of trade secret management and value creation?

Alternative: Is it possible to see now if the new directive has had a positive or negative impact on companies and the market as a whole in terms of trade secret management and value creation?

- How/why?

End

That was all the questions that we had. Thank you for participating in our study, and for taking your time.

- Do you have any questions?
- Is it anything you like to add?
- Do you want a copy of the thesis when it is done?

Appendix B. Information document.

Information document

Hi X,

Me (Andrea Eriksson/Cecilia Haldén) and (Andrea Eriksson/Cecilia Haldén), are writing our **master's thesis about trade secret management** and the impact the EU directive (EU 2016/943) on trade secrets have had on trade secret management. This as part of our last semester at the Master in Entrepreneurship and Business design at Chalmers University of Technology.

As part of this study, we want to interview *companies/professors/lawyers (depending on the person sent to)* experienced in the field, and wonder whether you could imagine answering some of our questions. The interview will primarily be about...

Companies: ...your experiences and thoughts about the new EU directive (EU 2016/943), and if and how it has affected the company where you are working.

Lawyers/professors: ...your experiences and thoughts about the new EU directive (EU 2016/943), and its impact on companies acting within the European Union.

The interview will be conducted either by **phone or zoom**, depending on what is most suitable for you, and will take **approximately 45 minutes**.

The answers, and other types of information, will of course be kept confidential. Additionally, you will not be identified as the data will be anaomized when entered into the computer, and the analysis will be conducted at a general level with data from all interviews gathered.

Please, respond whether you are interested in participating, and we will find a time that works with your schedule. Note that participation is voluntary.

If you have any questions, please contact us on:

Email: X or X.

Best regards,
Andrea Eriksson & Cecilia Haldén

Reply if interested in participating in the study

Hi,

Thanks for your interest in participating in our study. Would day (DD/MM) at 00:00 work for you?

We recommend you to sit somewhere quiet and private when participating in the interview.

Best regards,
Andrea and Cecilia

Appendix C. Themes found from court cases before 2016.

The most frequently recurring category before 2016 found in the 15 analysed court cases are (1) Trade Secret breach, followed by (2) Trade Secret management. Least recurring was (3) View on Trade Secrets. All categories found before 2016, and main-themes and sub-themes connected to them are presented in this appendix.

Trade Secret breach-themes

The most recurring category before 2016 was *Trade Secret breach*. These themes are shown in table 1.

Table 1. Trade secret breach-themes found from analysis of court cases before 2016, including frequency (n).

Category	n	Main themes	n	Sub-themes	n
Trade secret breach	20	Use of trade secrets	7	Could show use of trade secrets	2
				Failed to prove use of trade secrets	5
		Contract matters	7	To restricting/broad competition clause	2
				Secrecy clause	3
				Employer breaching the employment contract	1
				Lack of NDA	1
		Acquisition of trade secrets	2	Could show unauthorized acquiring of trade secrets	1
				Authorized acquisition of trade secrets	1
		Disclosure of trade secrets	1	Failed to show disclosure of trade secrets	1
		Variation depending on competing company or not	1	Only partly competing with the appellant	1
Damages	1	Failed to show damages of trade secret breach	1		
Transfer of trade secrets	1	Could prove transfer of trade secrets	1		

The most frequently recurring theme was *use of trade secrets*, and *contract matters*. The second most recurring theme was *acquisition of trade secrets*. The least occurring themes were *disclosure of trade secrets*, *variation depending on competing company or not*, *damages*, and *transfer of trade secrets*.

Use of trade secrets

In six cases *use of trade secrets* occurred as a theme. In two of these cases (B-90-2011; B-73-2019) the appellant won the case due to the fact that the appellant could show that the respondent had used one of the trade secrets belonging to the appellant. In the same case (B-90-2011), the appellant could not prove use of another trade secret, which made this not seen as a breach. In the other four court cases the appellant failed to show use of trade secrets, and by that also failed to show a breach ([2010] IEHC 350; B-7-2008; B-126-2014; A-155-2014). The most common proof, occurring in two (B-7-2008; [2010] IEHC 350) of the cases, of non-use of trade secrets, were proof of internal development.

Cases: [2010] IEHC 350 (Ireland); B-73-2019 (Sweden); B-7-2008 (Sweden); B-126-2014 (Sweden); A-155-2014 (Sweden); B-90-2011 (Sweden).

Contract matters

Breach of the employment contract was discussed in three cases, but in different ways. In two of the cases (B-7-2010; B-143-2014) the respondents were proved to have breached the employment contract, i.e. the secrecy clauses (B-143-2014). In the second case (B-7-2008) it was the appellant, being the employer, that had not fulfilled their part of the employment contract. The respondent won in all of these cases.

A too broad competition clause was used as an argument in two cases (P223/9/98; B-7-2008). In one of the cases (P223/9/98) the scope of the contract basically prevented the respondent from taking employment at any company. In this case, the respondent won partly because of this. In the second case (B-7-2008), the employment contract was also seen as unenforceable since it had a too restricting competition clause. In this last case, the appellant did, however, win.

In one of the cases (B-73-2019) it was also not clarified what was considered as confidential information. Due to the nature of the trade secrets, being related to a patent, it should be understood that it should be kept secret until published. In the same case, lack of having an audience signing NDA's were also discussed.

Cases: B-90-2011 (Sweden); B-7-2010 (Sweden); B-7-2008 (Sweden); P223/9/98 (UK); B-143-2014 (Sweden); B-73-2019 (Sweden).

Acquisition of trade secrets

In two cases (B-126-2014; B 9256-18) the appellant could show that the respondent had acquired trade secrets. In one of the cases (B-126-2014) the acquisition was made by copying trade secrets and downloading them to a private computer. The trade secrets were, however, not proved to be used, which made the case closed. In the other case (B 9256-18) the respondent's position made the acquisition of the trade secret in question, seen as authorized.

Case: B-126-2014 (Sweden); B 9256-18 (Sweden).

Disclosure of trade secrets

In one case (B-126-2014) the appellant could not show that the respondent had disclosed the trade secrets belonging to the appellants. This made the case closed, and the respondents won.

Case: B-126-2014 (Sweden).

Variation depending on competing company or not

In one case (P223/9/98) one of the arguments that made the respondent win the case, was that the respondent was only partly competing with the appellants. One of the evidence that was used to support this argument was that the respondent's market strategy was different from the appellant's.

Case: P223/9/98 (UK).

Damages

In one case (B-7-2010) the case was closed partly due to that the appellant could not show damages of the trade secret breach and what they would cost.

Case: B-7-2010 (Sweden).

Transfer of trade secrets

In one case (B-126-2014) the appellant could prove that the respondent had transferred trade secrets, by copying them to the respondent's own private computer. The appellant could, however, not prove that the respondent had been using the material or disclosed it to anyone, which made the case closed.

Cases: B-126-2014 (Sweden).

Trade Secret management-themes

The category that was secondly most recurring in the 15 analysed court cases before 2016 are shown in table 2.

Table 2. Trade secret management-themes found from analysis of court cases before 2016, including frequency (n).

Category	n	Main themes	n	Sub-themes	n
Trade secret management	9	Effort	4	Lack of effort to keep the trade secrets secret	2
				Restriction of access	2
		Documentation	2	Lack of clear documentation of what is a trade secret	2
		Internal development	2	The respondent could show proof of internal development	2
		Informing employees	2	Lack of informing employees about trade secrets	2

The themes that were most frequently recurring were *effort*, followed by *documentation*, *internal development*, and *informing employees*.

Effort

The effort-theme occurred in four court cases (B-90-2011; T435-01; B-34-2019; B-73-2019), in two separate ways. In two of these cases (B-90-2011; B-34-2019), effort was lacking to keep the trade secrets secret. In one case (B-90-2011) some of the information in the court case were not considered as trade secrets partly because the appellant had not made efforts to keep the information secret. In the other one (B-34-2019) the appellant had not made enough efforts to keep the information secret, making the respondent win the case. Examples of arguments brought up in the case were that parts of the information in question had already been made public, and that a restriction of access was not made.

In two cases (T435-01; B-73-2019) a restriction of access was discussed. In one of these cases (T435-01), the restriction of access helped the appellant show that the respondent had asked other employees about the trade secrets. The restriction of access in this case was to let

only a few people take part of certain trade secrets. In the other case (B-73-2019) efforts were also seen as made to keep the information as trade secrets. The arguments were based on that only general information of the trade secret in question was revealed, for commercial purposes. The appellant won this case.

Case: B-90-2011 (Sweden); T435-01 (Sweden); B-34-2019 (Sweden); B-73-2019 (Sweden).

Documentation

There were two cases ([2010] IEHC 350; B-7-2010) where the appellants had lacked in documenting what the trade secrets were within the organization. The lack of documentation, however, was not the main reason behind the respondents winning the cases, but it was brought up in both the cases.

Cases: [2010] IEHC 350 (Ireland); B-7-2010 (Sweden).

Internal development

In two cases the respondents won the case partly due to the fact that they could show proof of internal development. In one of the cases (B-7-2008), the internal development was proven by the development time, which was considered not remarkably short. While in the other case (IEHC 350) the respondents were shown to have applied their own general knowledge and expertise.

Case: B-7-2008 (Sweden); [2010] IEHC 350 (Ireland).

Informing employees

It was one case ([2013] UKSC 31) where the respondent won the case based on the fact that the respondent had not been informed about the trade secrets in the company. The respondent could thereby not be accused of trade secret theft, since the respondent was not aware that the information was a trade secret. Also in another case (B-73-2019), a lack of informing employees about trade secrets were found. In this case it was not clarified in the employment agreement what was considered as confidential information. The appellant did, however, win the case due to that it should be understood that the information in question should be kept secret.

Case: [2013] UKSC 31 (UK); B-73-2019 (Sweden).

View on Trade Secrets-themes

The least most recurring category before 2016, but still frequently recurring was *View on trade secrets*. The themes connected to this category are shown in table 3.

Table 3. *View on trade secrets-themes found from analysis of court cases before 2016, including frequency (n).*

Category	n	Main themes	n	Sub-themes	n
View on trade secrets	7	Publicly known information	5	Generally known information	3
				Crucial information was made public	2
		Economic value	2	Trade secrets had economic value	1
				The information lacked economic value	1

In this category two themes were equally frequently recurring, namely *economic value* and *publicly known information*.

Publicly known information

In five court cases (HFD 2016 ref. 17; B-143-2014; 189/2013; B-34-2019; B-73-2019) the trade secrets, or parts of them, were seen as publicly known information. In two of the cases (HFD 2016 ref. 17; B-34-2019) the information that already was made public. For example information on webpages, were not seen as trade secrets, making the respondents winning the cases. In two of the other cases (B-143-2014; 189/2013) the respondents also won the cases since the disclosed information was seen as generally known information, which made it not considered as a trade secret. In the last case (B-73-2019) the appellant won the case since it was only general information that was made public.

Cases: HFD 2016 ref. 17 (Sweden); B-143-2014 (Sweden); 189/2013 (Denmark); B-34-2019 (Sweden); B-73-2019 (Sweden).

Economic value

In two of the cases economic value of the trade secrets were discussed. In one of these cases (T435-01) the trade secrets were shown to have economic value since the appellant were to a large extent depending on the trade secret material. In this case the appellant won partly due to the proof of economic value of the trade secrets. In the other case (B-90-2011), some of the trade secrets brought up in the case were seen to lack economic value, which made them not considered as trade secrets.

Cases: T435-01 (Sweden); B-90-2011 (Sweden).

Appendix D. Themes found from court cases after 2018.

The most frequently found category in the seven analysed court cases after 2018 were (1) *Trade Secret breach*, followed by (2) *Trade Secret breach*. The least often recurring category in its turn was (3) *View on Trade Secrets*. All categories found after 2018, and main-themes and sub-themes connected to them are presented in this appendix.

Trade Secret breach-themes

The most frequently recurring category out of the seven analysed court cases after 2018 were *Trade Secret breach*. The themes connected to this category are shown in table 1.

Table 1. *Trade Secret breach-themes found from analysis of court cases after 2018, including frequency (n).*

Category	n	Main themes	n	Sub-themes	n
Trade secret breach	12	Contract matters	2	To restricting/broad competition clause	1
				Secrecy clause	1
		Bad intentions	2	Shown probable that the respondent intended to acquire trade secrets	1
				The respondent sought to launch a rival product	1
		Acquisition of trade secrets	2	Could show unauthorized acquiring of trade secrets	1
				Failed to prove acquisition of trade secrets	1
		Damages	2	Could show damages	1
				Failed to show damages of trade secret breach	1
		Transfer of trade secrets	2	Could prove transfer of trade secrets	2
		Use of trade secrets	1	Could show use of trade secrets	1
Variation depending on competing company or not	1	Competitor to the appellant	1		

The most often recurring theme out of the seven shown in table 1, is *contract matters*, *bad intentions*, *acquisition of trade secrets*, *damages*, and *transfer of trade secrets*. The second most frequently recurring themes were *use of trade secrets*, and *variation depending on competing company or not*.

Contract matters

In two cases contract matters were brought up in the case. In one case ([2019] IEHC 907) the competition clause and its restriction was considered too wide. In the second case (BS-22486/2020-SHR), it was clarified in the employment contract that information gained from work should be considered as internal information. Additionally, in the second case, the competition clause was only agreed upon during the employment not after.

Cases: [2019] IEHC 907 (Ireland); BS-22486/2020-SHR (Denmark).

Bad intentions

In two different court cases (B-29-2020; [2020] EWHC 2072 (Ch)) bad intentions were discussed in relation to trade secret acquisition. In all these cases the appellant won the case. In one of the cases (B-29-2020) it was shown probable that the respondent intended to acquire trade secrets from the appellant. In the second case ([2020] EWHC 2072 (Ch)) trade secrets were shown transferred to the respondent, who aimed at using the trade secrets by launching a rival product.

Cases: B-29-2020 (Sweden); [2020] EWHC 2072 (Ch) (UK).

Acquisition of trade secrets

Acquisition of trade secrets are discussed in two cases after 2018. In one of these cases (BS-22486/2020-SHR) the appellant could show unauthorized acquisition of trade secrets. In one of these cases (BS-22486/2020-SHR), the respondent won the case although an acquisition of trade secrets had been made, since the appellant could not prove that the trade secrets had been passed on to the respondent company. In the second case (B 42/20), the appellant failed at proving that one of the respondents had acquired the trade secrets, which made the respondent free of charge.

Cases: BS-22486/2020-SHR (Denmark); B 42/20 (Sweden).

Damages

Damages were discussed in two court cases (BS-20874/2020-HJR; B-29-2020) after 2018. In one of the cases (BS-20874/2020-HJR) the appellant failed to show potential damaging effects of trade secrets leakage, making the respondent win the case. In the other case (B-29-2020) it was shown that disclosure of the information could have resulted in significant losses for the appellant, making the appellant win the case.

Cases: BS-20874/2020-HJR (Denmark); B-29-2020 (Sweden).

Transfer of trade secrets

Transfer of trade secrets were discussed in two cases (B 42/20; B-29-2020). In both these cases the appellant could prove that transfer of the trade secrets had taken place, contributory to making the appellant win the case.

Cases: B 42/20 (Sweden); B-29-2020 (Sweden).

Use of trade secrets

In one case (B 42/20), use of trade secrets occurred as a theme. In this case the appellant succeeded showing that the respondent had used trade secrets belonging to the appellant, and by that won the case.

Cases: B 42/20 (Sweden).

Variation depending on competing company or not

In one case ([2019] IEHC 907), the theme ‘variation depending on competing company or not

not' were found. In this case the appellant won the case partly based on the fact that the respondent had tried to transfer the trade trade secrets to a competitor to the appellant.

Cases: [2019] IEHC 907 (Ireland).

Trade Secret management-themes

The category *Trade Secret management* was secondly most frequently recurring in the court cases after 2018. The themes found related to this category are presented in table 2.

Table 2. Trade Secret management-themes found from analysis of court cases after 2018 including frequency (n).

Category	n	Main themes	n	Sub-themes	n
Trade secret management	4	Informing employees	2	Clear information to employees about trade secrets	1
				Lack of IT policies	1
	Documentation	2	Lack of clear documentation of what is a trade secret	1	
			Lack of claiming the information as sensitive and confidential	1	

Out of the themes presented in table 2, *Informing employees* was the most often recurring theme, together with *Documentation*.

Informing employees

In two cases 'informing employees' was found as a recurring theme, occurring in three different ways. In one of the cases (B 42/20) where the theme 'informing employees' was found it was made clear for the employee that the information in question should be kept secret. The appellant won the same case. In the second case (PMÖ 9865-20), a lack of IT-policies was found.

Cases: PMÖ 9865-20 (Sweden); B 42/20 (Sweden).

Documentation

In two cases (BS-20874/2020-HJR; [2019] IEHC 907) lack of documentation was discussed. In one of these cases (BS-20874/2020-HJR) the appellant failed in specifying the nature of the trade secrets and their damaging effects. In the second one ([2019] IEHC 907) the appellant failed in claiming the information as sensitive and confidential. In both these cases the respondent won the case.

Cases: BS-20874/2020-HJR (Denmark); [2019] IEHC 907 (Ireland).

View on Trade Secrets-themes

The least often recurring category was *View on Trade Secrets*. The themes connected to these themes are presented in table 3.

Table 3. *View on Trade Secrets-themes found from analysis of court cases after 2018 including frequency (n).*

Category	n	Main themes	n	Sub-themes	n
View on trade secrets	2	Economic value	1	Trade secrets had economic value	1
		Sufficiently established information	1	The trade secrets were seen as sufficiently established to be seen as trade secrets	1

The theme that was most common within the category *View on trade secrets*, was *Economic value*, and *Sufficiently established information*.

Economic value

The theme ‘economic value’ was found as a theme in one case (B-29-2020). In this case the trade secrets were shown to have economic value, contributory to the appellant winning.

Cases: B-29-2020 (Sweden).

Sufficiently established information

In one case (B-29-2020) the trade secrets were seen as sufficiently established to be seen as trade secrets, even though the respondent was not informed that the specific information was considered as a trade secret. The appellant won the case.

Case: B-29-2020 (Sweden).

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