Trading Personal Data:

Issues concerning privacy in the digital economy

Lars Berg

Master thesis at the Centre for Technology, Innovation and Culture
Faculty of Social Sciences

University of Oslo

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Supervisor: Susanne Bauer

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Summary

Today a large portion of the world's population are connected online. Since its launch, the internet has impacted the way we work, communicate, gather information and consume entertainment. Parallel to this many industries have been forced to make changes and adapt. Currently, the prevailing business model used by many is to offer services to consumers free of monetary charge, but at the expense of personal data. As a result, questions have been raised concerning individual privacy by both consumers, governments and private firms. This is put into a Norwegian perspective and the functionality of the marked where consumer data is traded is described through Innovation Theory.

Based on the knowledge of the market, the reader is presented with the ongoing public debate concerning individual privacy. By putting key findings from the public debate into context with data gathered through interviews, this thesis analyses how issues emerge and what impact their formulation have on their progression. Actor-Network Theory is applied as an analytical framework to demonstrate the differences between how Norwegian private firms and interest organizations frame their argumentation. Through this, an understanding of the different actors and networks are who are relevant to the suggested solutions is extracted. In this paper it is uncovered that the actions of both private firms and the consumers, in response to upcoming regulatory change on a EU level, is key to determining if issues forwarded by the two categories of organizations will be resolved.

Qualitative method is the chosen methodology in this thesis and is mainly applied through textual analysis and semi-structured interviews. The reader is guided through the process of answering three research questions based on the subject above. The key findings, potential weaknesses of the study and suggestion for further research will be summarized in the conclusive chapter.

Abbreviations:

ANFO: Annonsørforening (Advertisers Organization).

ANT: Actor-Network Theory

CERN: European Organization for Nuclear Research (Translated from french).

COPPA: Children's Online Privacy Protection Act.

EEA: European Economic Area.

EU: European Union.

FACTA: Fair and Accurate Credit Transaction Act.

HIPAA: Health Insurance Portability and Accountability Act.

IS: Innovation Systems.

IT: Information Technology.

NIS: National Innovation Systems

OECD: Organization for Economic Co-operation and Development.

SSB: Statistisk Sentralbyrå (Statistics Norway).

STS: Science and Technology Studies.

TIS: Technology Innovation Systems.

US: United States.

Figures

(All figures were created by the author for the purpose of this thesis)

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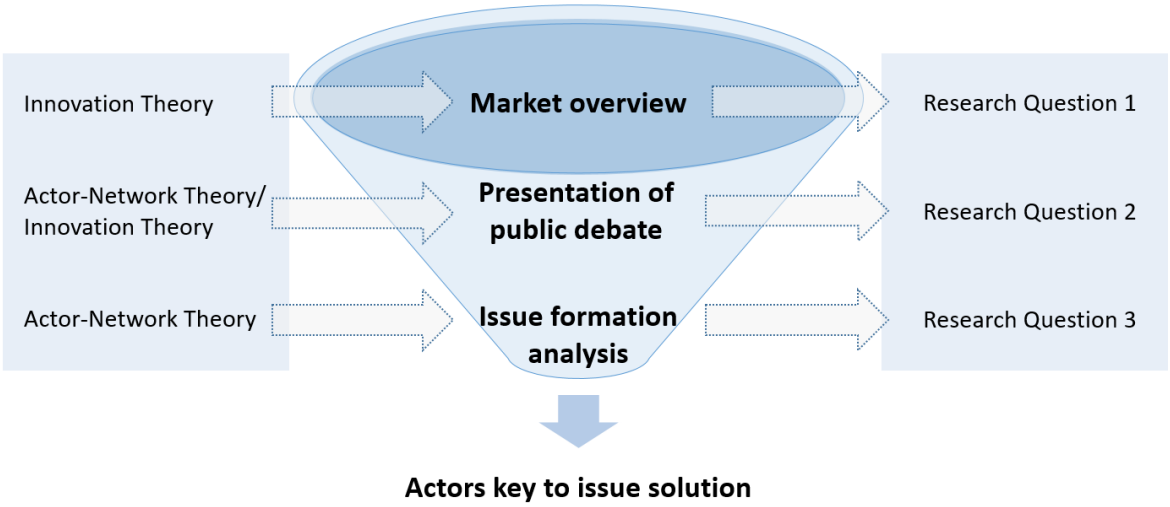
All the positive qualities of this paper comes as the result of the help of these people and the coffee. The shortcomings are due to my love for the snooze button and Fifa.

Peace.

1 Introduction

The aim of this thesis is to use selected academic theory, collected data and analytical method to demonstrate how issues concerning individual privacy arise as a result of the functionality of the market for trading consumer data online in Norway. The process of doing so will be guided by the utilization of both Innovation Theory and Science and Technology Studies. By outlining a general description of the market and illustrating the vastness of actors, networks and institutions involved, its complexity will be discussed in relation to issue formation. Based on the overview of the market, the relevant public debate will be presented. Through the study of this debate, the actors who does and does not participate will be defined and their argumentations and general viewpoints will be presented. This, along with data collected through interviews, will be used to create an understanding of the issues promoted by the organizational groups which are the most vocal participants in the public debate. In the final part of this thesis an analytical framework will be used to study how issue formulation occurs, how this determines what actors and networks are relevant and what this implies towards a suggested solution. In order to achieve this the reader will be guided through a process where the system as a whole, described through an Innovation Theory framework, will be gradually narrowed down through the study of issue formation in an Actor-Network Theory perspective (See figure 1). The goal will be to uncover which actors who actively work to influence the market of trading consumer data online in Norway, what role individual privacy plays in issue formation and who the key actors are that needs to be convinced in order for their argumentation to succeed. To do this I will try to answer the following research questions:

- How does the market for buying and selling consumer data in Norway function?
- Does there exist an ongoing public debate concerning individual privacy relevant to this market?
- How does issue formation concerning privacy occur in the context of this debate and what actors are relevant to the solution of these issues?



(Figure 1)

1.1 Choosing Subject, Methodology and Theory

The subject of consumer data and privacy online was introduced during a field trip our class had to the Board of Technology in the autumn of 2015, where we were presented with an ongoing project they had on the matter. By reading up on some of the available theory and also realizing that this was a heavily debated topic in Norwegian media, the relevance and potential was made clear. Choosing to conduct my research through a qualitative methodology came as a decision based on the advice obtained through the writing seminars part of my master's program. This methodology made sense based on the subject I had chosen, as well as on how the initial research questions of this thesis was formulated. The reasoning behind my choice of methodology will be further elaborated in chapter 5. Finally, my intention was from an early stage to write an interdisciplinary thesis. My master program offers an introduction to both Innovation Theory and Science and Technology Studies, before one has to choose a specialization of the two. This made the choice to combine these theoretical perspectives an attractive option. I choose Innovation as my specialization, but was still lucky enough to have a supervisor with an academic career focusing on Science and Technology Studies. My hope is that this interdisciplinary combination will help make this thesis both useful and interesting to read.

1.2 Structure

To begin with, chapter 2 gives the reader the background and knowledge foundation necessary through a brief introduction to the evolution of the concept of privacy. This is put into context with how the digital sphere of being online has changed in a historical perspective. The history of the internet and the World Wide Web will be covered, as well as the evolution into the dominant business models online and the concept of "big data". Chapter 3 will introduce the Innovation Theory framework that will be used to understand the market of buying and selling consumer data and attempt to answer the first research question. This will offer the reader a basic understanding that will be transferable to the following chapters. In order to narrow down the market into actors relevant to issue formation chapter 4 will introduce the Science and Technology Studies perspective of Actor-Network Theory. This chapter will introduce the analytical framework that will be used to answer the second and third research question. Following the introduction to the theoretical perspectives, chapter 5 will present the methodology used and reasoning behind this choice. In this chapter the process of data collection and potential methodical weaknesses will also be discussed. Chapter 6 will contain the actual analysis and discussion particularly related to the third research question. Finally, chapter 7 will be the conclusion to this thesis. Here the reader will find a summary of the answers to the research questions and general finding. This chapter will also contain a brief discussion on potential weaknesses of the study as well as some suggestions on possible continuous work based on this paper.

2 Privacy

The concept of privacy is key to this thesis. This paper will not discuss what the right amount of privacy is or in any way indicate whether the action of any organization or consumer is either good nor bad. However, the judicial and cultural aspects of individual privacy will be relevant to understand how privacy becomes an issue in the context of the market of buying and selling consumer data online. To form an overview of the concept of privacy we will look at how it has been presented through theory in a historical context, before briefly discussing what implications the so called "digital economy" has had on the privacy of the individual.

2.1 Early Days

What is credited as the earliest academic work on the matter of privacy is Warren and Brandeis 1890 article "The Right to Privacy" and it, as is also the case of this thesis, discusses the implications innovation had on the matter of privacy (Solove 2002, 1099-1100). Warren and Brandeis were both lawyers and were concerned with how common law could protect the individual's privacy in the future. Their article sparked a debate at the time and arguably spawned four common law tort actions concerning privacy (Solove 2002, 1100). Their original definition of privacy was "The right to be left alone" (Warren and Brandeis 1890, 195). Since then there has been research and academic work done on the subject continuously. Today the definition of what the concepts should mean and what privacy is and is not, is still not clearly defined (Smith, Dinev and Xu 2011, 992). The reason for this is that privacy as a concept can be studied through many different theoretical perspectives. Over the year's privacy has been a key subject in studies within law, management, Information Systems, psychology, economics and marketing (Pavlou 2011, 977). For this thesis the focus is privacy in the context of digital consumer data trade, which means that we will be discussing subjects related to both law, marketing and information systems.

The conservation of individual privacy is one of the founding principals in Norwegian society and is even included as part of the constitution. In addition, it is considered a human right as defined through the European Convention of Human Rights (Datatilsynet 2015, 7). In this paper the reader will be presented with privacy concerns expressed by both consumers, public- and

private organizations. As previously stated the goal is not to determine who is right or wrong, but to demonstrate how such a fundamental right as privacy become part of a manifold debate when it is discussed in the context of such a complex system as the market of buying and selling consumer data online. For the purpose of this paper the concept of privacy will be discussed as part of the evolution of IT and information systems[1]. Within this context privacy will be defined as "*The ability to control how one's personal data is acquired and used*" (Stone et.al. 1983, 460).

2.2 World Online

Before we move on, a general introduction to how the market of buying and selling consumer data has been created will be useful to the purpose of this thesis. Firstly, however, this paper will attempt to put the issues concerning privacy in the digital economy into a historical perspective. An understanding of how the matter has co-evolved with innovation in IT demonstrates their interconnection. The concept of privacy as part of the evolution made in IT can arguably be divided into four eras (Smith, Dinev and XU 2011, 991). From 1945-1960 IT was not common public property and there was a general trust in both public and private information collection. In 1961-1979, issues surrounding privacy and IT arise to the general public debate. The US implements specific regulation through the Privacy Act of 1974. From 1980-1989 IT becomes a more common work tool and countries in Europe also start implementing data protection laws to safeguard privacy. From 1990 and until today, the way we exchange information online has changed rapidly. Arguably due to the rise of modern internet and also increased government surveillance. Today privacy concern on both an individual and national level is growing (Smith, Dinev and XU 2011, 991).

As my informant Catharina Nes pointed out, organizations have been buying and selling consumer data for decades (Nes 2016). However, to understand why today there is so much focus on how this market functions online we need to understand what implications moving from the analog to the digital has had. We need to briefly look at the history of the internet. As of 2015 more than 3 billion people around the world were connected online (Davidson 2015). Most of these people are the providers of the vast amount of consumer data that is being traded globally

[1] An information system is any system is part of a network of organizations and people which creates, filter, process collect and distribute data (Wikipedia[2]).

today. However, the technological infrastructure that enables this goes back the cold war, when the US wanted to develop a decentralized communication that could withstand a nuclear attack (LeSieur 2012, 96). The idea of the internet was to create a "network of networks" which would be connected yet still remain independent of each other (Leiner et.al. 2009, 23). A British scientist at CERN named Tim Berners-Lee was made aware of this technology and developed the idea of a globally hyperlinked information system. The result of this is the World Wide Web, launched in 1989, which is the platform on which all the content available on the internet is accessible (Bing 2009, 38-40).

2.2.1 Bigger data

Since the invention of the internet the world wide web has evolved into a position in society were for most people being online is a commodity. 1995 is by many dated as the year when the internet achieved commercial success (Bing 2010, 33) and today most services and information can be found online. Moving from the internet being a niche interest to being a common work tool, communication platform and information resource, the amount of users, and thereby the amount of user data, has skyrocketed. It is worth noting that since the dawn of time and until 2003 we generated five Exabyte's[2] of information. This amount was by 2012 created every two days (Kitchin 2014). This mass generation of data could be categorized into five categories (Enjolras 2014, 83):

- Web and social media data - Consisting of updates and other activity gathered from social media.
- Machine to machine data (the internet of things) - Technologies that allow machines to communicate with each other and generate data which can be used for analysis.
- Transaction data - consists of big data sets like health journals and telecom logs. Within this category there is also a sizeable amount of metadata, which is data describing data like usernames or IP-addresses. Metadata is used to create context and form connections between different data concerning the same individual.
- Biometric data - Is data that can be used to identify individuals based on anatomical traits like fingerprints, face- and voice patterns.

[2] An Exabyte is 1000 bytes multiplied by the power of 6 (1000^6) - (Wikipedia[1])

- Human generated data - is data generated through the direct interactions with individuals. Examples would be surveys, taped conversations and e-mail.

All this data combined make up the concept of "big data", which can be defined as "*the capacity to search, aggregate and cross-reference large data sets*" (Lyon 2014, 2). Private firms have adapted to this enormous data generation by developing methods for distributed computing, which is the interconnection of large numbers of computers or servers that work together to solve computational and storage tasks (Enjolras 2014, 84). By creating these clusters of machines firms have been able to keep up and utilize the data generated without drastically having to increase the computing and storage capacity of individual machines. There is a vast range of applications for big data. Today analysis of large data sets is used for digital marketing, risk management and health care, only to name a few (Enjolras 2014, 84). For the purpose of this thesis the concept of big data is perceived to be neither good nor bad. However, going back to our definition of privacy, it is obvious that big data poses a few questions regarding whether the individual has the control over how data is collected and what it is used for. This will be discussed further through the framework of Technology Innovation Systems.

Lastly, the web as we know it today and the services offered online are mainly dominated by a business model related to big data that also affect privacy. Historically the internet and its content was offered to individuals for free. As private organizations started moving their services online they started off following this model enforcing the idea that the web should be "free of charge" (Teknologirådet 2016, 13). But money has to be made and the potential of the exchange of consumer data for services was realized. When this paper discusses the concept of a "digital economy", it is this business model that is implied, even though the definition by many are made much more broad[3]

The model is relevant to the Norwegian society and the Director of the Data Protection Authority has stated that he believes Norwegian consumers expect services online to be free. However, that

[3] The digital economy could in a broad sense be defined as all goods and services offered online, as well as the adaptation industries have had to make and the new industries that have emerged as a result of a digital market place.

they are also not aware that they are paying for these services by giving up personal information (Færaas 2016). The value of knowing as much as possible about what a consumer is interested in, their lifestyle, living situation, income, buying habits and even their feeling allows firms to increase the efficiency of marketing and advertising (Enjolras 2014, 85). Companies that have created algorithms for predicting how you spend your money and how to influence the purchasing process have moved their focus from payment through currency to payment through information (Enjolras 2014, 85). Companies who do not directly process and analyze big data could offer their collected data for sale and their online platforms to advertisers. This business model has spawned the now famous quote by Bruce Schneier "If something is free, you're not the customer, you are the product" (2015, 53). Even though there is an increasing consumer concern and awareness about the usage of big data and the issue of privacy there is no direct reflection in consumer action. Described as "the consumer personalization–privacy paradox", the phenomena of the expressed consumer concern towards this business model indicate that firms are going too far in their learning of their customer's preferences and habits. However, even though most people are skeptical about what happens to their personal data, few are backing up their concern by opting out of the market. Believed to be due to the comfortability and personalization of digital services offered, the perceived cost to individual privacy (or the lack of information) is outweighed (Sutanto et.al 2013, 1142-1143). The reader is asked to keep this paradox, as well as our definition of privacy and the background history of the internet and big data in mind throughout the remainder of this paper.

3 Innovation Systems

With a brief background in place we now move on to the introduction of the first theoretical framework. In this chapter of the thesis the actual market of buying and selling consumer data online will be described through a sub-branch of Innovation Theory named Innovation Systems. The purpose is to introduce a general understanding of the complexity of the market to the reader, as well as initiate the outlining of actors relevant to the chapter on issue formation. At the end of this chapter the reader will find an illustration of the described market in figure 2.

3.1 History

Innovation Systems theory was arguably first introduced by Freeman (1987), Lundvall (1992) and Nelson (1993). In its early days Innovation Systems theory (from now on abbreviated into IS), was used as an analytical framework on a national level (Markard and Truffer. 2008a. P. 598). Rooted in Evolutionary Economic theory, IS on a national level has been much used as complementary tool for policy makers and as an analytical tool in academic contexts (Sharif, 2006). At its core IS concerns the understanding of the interaction between the processes that generate innovation and the surrounding framework conditions and infrastructure that these processes operate in (Guan and Chen. 2011, 102-103).

Put into a national context this would mean analyzing the interactions between universities, governments and industries that make out the national innovation production framework in order to understand what policy adjustments could be made to influence innovation in a desired way (Guan and Chen. 2011, 102-103). Since it was first introduced, the National IS (NIS) concept has been applied in both a broader and narrower sense. The narrower sense includes innovative firms and those research infrastructures they interact with (Nelson, 1993). The broader sense however includes all innovation and learning activities within a nation, wherever they take place (Fagerberg, Mowery and Verspagen. 2009, 431)

3.1.1 Technology Innovation Systems

Over time the concept of NIS was developed into applicable frameworks for other levels of society. In different cases it was more suitable to analyze innovation systems on the level of sectors, regions and technologies (Markard and Truffer. 2008a. P. 598). For the purpose of this thesis the focus will be on innovation systems understanding through the perspective of a certain technology (TIS). The reasoning for this will follow below.

As with NIS, the focus of a TIS is on understanding the dynamics and interactions between different actors influenced by an environment constituting the delineated system where innovation occur. Where an NIS has geographical limitations to help understand what is part of the innovation system one wishes to study, a TIS is limited in a different way. The actors, organizations and agent that could be included in a TIS often span across national borders and these entities might be subject to various regulatory environments depending on the different location they operate. This results in researchers having to make decisions on how narrowly defined participation in the TIS should be determined not based on territorial location, but rather on a specific technologies' connection to a product, knowledge field or market (Markard and Truffer. 2008a. P. 599-600). Markard and Truffer's definition of a TIS is fitting for how this perspective will be used in this paper:

> "*A set of networks of actors and institutions that jointly interact in a specific technological field and contribute to the generation, diffusion and utilization of variants of a new technology and/or a new product" (2008b, 445).*

How this delineation of the system is made will most likely have a great impact on the researchers finding as the policy implications derived from how actors cooperate, compete, perform transactions and how this is influenced by their current environment will vary depending on how narrowly or broadly the TIS is defined (Markard and Truffer. 2008a. P. 599).

Before moving on to the argumentation of why the TIS concept is useful to understand how the market of buying and selling consumer data through ad exchanges works, some general terms

needs to be defined. What constitutes a system will for the purpose of this thesis simply be defined as a group of objects, devices and actors that serve a common purpose resulting in some function or objective (Bergek, Jacobsson and Sanden. 2008, 576). A "Technological System" can be understood as either the particular output that comes as a result of a specific technology that has some function in society, i.e. the production of fossil fuel (Bergek, Jacobsson and Sanden. 2008, 576). It could also be understood as the dynamics that make out the development, diffusion and use of a new technology (Bergek, Jacobsson and Sanden. 2008, 576). The first of these perspectives concerns the functional purpose of a technology and the latter focuses on the innovative activities that happen as part of the technology and how this influences society (Bergek, Jacobsson and Sanden. 2008, 576). What constitutes a technology will for the purpose of this thesis include both artefacts and knowledge (Bergek, Jacobsson and Sanden. 2008, 577). Keeping in mind the international nature of the digital economy as described earlier it is evident that a geographically based perspective of the market for buying and selling consumer data in Norway will not suffice. Even though one of the purposes of this thesis is to outline how this market functions on a national level, it is clear that foreign actors, like US corporations and European regulation, play a large part in the development of this market. Also, it is clear there is no single industry or sector that dominate this market, but that it does influence a large variety of businesses in Norway, making the sectoral approach less applicable. Based on the purpose of describing a market that has no national or sectoral boundaries, but still make the following text relevant to understand how Norwegian public and private organizations adapt within this market, it makes sense to base the following description on the TIS approach presented above.

3.2 What is an Innovation?

Having defined "Technological Systems" and its relevance to this particular thesis, we are left with one unexplored factor of the TIS concept. The term innovation also needs to be defined. As with Innovation Systems theory, the general study of innovations effect on society has a long running history. The earliest works that states a focus on innovation and defines the term is usually credited to the Austrian economist Joseph Alois Schumpeter (Lazzarotti, Dalfovo and Hoffmann. 2011, 123). In his book "The Theory of Economic Development" Schumpeter defines innovation as:

"An introduction of new goods - a new product or service or a new quality of both that no one has launched yet. The novelty is characterized in such a way that can lead the company to implement rehabilitation activities for consumers to familiarize themselves with the new good" (1934, 66)

This definition has since it was first introduced been adapted and conceptualized in different ways by researchers studying innovation. Through time the application of Innovation Theory has been used to study different societal phenomenon often as complementary theory resulting in a variety of definitions dependent on the relevant to the case at hand (Lazzarotti, Dalfovo and Hoffmann. 2011, 124). Today one of the most used definitions of innovation is from the Organization of Economic Cooperation and Development (OECD). The OECD has published a report called the Oslo Manual which focuses on creating a more uniform understanding of the terminology, as well as offering framework and guidelines on how to understand the impact of innovation on an international level (OECD 2005, 10-12). In the 2005 edition of the Oslo Manual, innovation is defined as:

"An innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations." (OECD 2005, 46)

This definition, as well as the one credited to Schumpeter in 1934, is rather broad. In spite of this, it is the Oslo Manual's definition of innovation I wish to use as the basic understanding of the concept in this thesis. However, some clarifications need to be made.

Firstly, the fact that the definition states that an innovation is something new as well as something improved is of relevance. When studying the market of buying and selling consumer data it is clear that most of the processes and technologies involved are not themselves new, but rather that the usage and benefits they provide have been drastically improved in recent years. As is also highlighted by my informant in The Norwegian Data Protection Authority, the buying and selling of consumer data is not new either. It is the fact that it happens online in such a great

scale through new entities and systems regulated by new laws that is new (Nes 2016). As elaborated in the background history of consumer data on how it is collected, used and profited from is rapidly changing and is now very different from how the utilization of data online was intended.

Secondly, the understanding of the market studied in this paper entails an inclusion of several of the factors that are part of the definition. How consumer data is bought and sold in Norway is a relatively new market that has been created through the existence of both improved technologies that offer consumers new products and services, new ways of marketing, new ways firms are organized as a response to the growth of the market as well as changes to how Norwegian firms relate to each other. Based on this the broad definition of innovation is relevant, as well as necessary, to this study.

3.3 The Usual Suspects

Having explained what a TIS is through its theoretical history, as well as having defined the relevant terms, we now move on, using the TIS perspective to understand how the market for buying and selling consumer data in Norway functions. One could argue that at the heart of any market is the physical space where goods are bought and sold. If one wanted to understand who the actors are, how they compete, cooperate and network in the market for buying fresh fish at the docks early mornings in Oslo, you would probably come a long way by getting up early and observing what happens on a daily basis. Even though there probably is a lot more to a local fish market then we would think, it is safe to argue that the online trade of consumer data is a far more complex system. Based on the idea that the physical space where goods are bought and sold is a good starting point to understand how a market functions, I want to base the following description on ad exchanges in a TIS perspective. The idea is that this general understanding and overview of the market will help form the background of the issues that will be presented later in this paper.

Ad exchanges are online markets where different actors interact in order to decide what kind of advertising consumers are exposed to when they are online. In the following sections I will try to explain how this market functions in Norway, who the actors are, what networks exist and what

relevant institutions have an impact. Before beginning to outline the system a brief definition of the terms used will follow.

A TIS is often mapped out by delineating what actors, networks and institutions the researcher believe to be relevant. In order to do this, different methods can be used and of course a thorough general study is necessary. To begin with the term "actors" in the context of TIS, these include the firms and organizations dealing with the technology. These are not only the organizations who directly depend on the technology for the purpose of profits, but generally all those who influence the functionality and environment the technology operates in (Bergek, Jacobsson and Sanden 2008, 577). This means that for example universities, interest organizations, suppliers and government bodies could be relevant to include in any TIS. There are different methods one could use to identify relevant actors. Two methods that will be relevant to this paper will be understanding industry associations and interviewing experts within different organizations and firms.

Networks is the interaction that occur between the actors in the TIS. The researcher needs to understand what kind of different networks exist. Generally, all networks could be described as formal and informal. Formal networks are usually clearly arranged and easier to uncover. Examples of formal networks could be producer-supplier cooperation and industry-university research projects. Informal networks are generally more difficult to uncover and are usually not as clearly organized. Examples of informal networks could be political lobby groups and community engagement. When evaluating a TIS, it might also be useful to consider what networks that do not exist and how this affects performance (Bergek et.al 2008, 413). As when uncovering actors, interviewing experts could be a useful method to uncover relevant networks.

The institutional base is the way the networks of actors is regulated. Relevant institutional regulation does not only include judicial rules, but also norms, culture and social systems (Bergek, Jacobsson and Sanden 2008, 577). Institutions could thereby be anything from EU regulations to societal norms based on public opinion. In most cases institutions need to be aligned through an adaptive process when new technologies emerge (Bergek et.al. 2008, 413). This process of alignment is key to the adoption and success of new technology. When

evaluating institutions that might be part of a TIS it is useful to keep in mind that the different actors often have competing interest in defining what the institutional boundaries are. This often makes institutions dynamic and the stability of their acceptance affect the stability of the TIS. More on this will follow as part of the Actor Network Theory analysis in the following chapter. As with networks, the absence of institutions could be crucial to understand the performance and functionality of a IS (Bergek et.al. 2008, 414).

3.4 The Ad Exchange's TIS

With the introductory and relevant theoretical parts out of the way, we can turn our attention to the ad exchanges and the TIS they operate in. Beginning with mapping out the actors that are relevant, a good place to start would be the ad exchanges themselves. Building on this I will link in the demand and supply side of the ad exchanges before finally discussing other relevant actors who do not trade through the exchanges, but nevertheless affect how the market functions.

3.4.1 Supply and Demand

Ad exchanges are companies that bring together multiple ad networks with the attempt to balance the supply and demand side of internet advertisement (Yuan et.al 3, 2012). When internet advertisement was first invented in around 1998, it was offering companies sponsored search words through search engines that marked the beginning. Later algorithms were developed to allow for webpage owners to display parts of their page as advertisement to make money (Yuan et.al 3, 2012). Today when you visit a webpage, by a split second, you are connected to an ad server telling your browser to fill the page with advertisement. In the same time, a request is sent to an ad exchange that invites advertisers to pay for this ad space to be filled. Based on the information available about you, like location, age, interests, etc., different advertisers put in bids and the one with the highest bid wins. This is then the advertisement you are exposed to. This process takes place without you noticing and most likely involve hundreds of companies. This is all made possible by the ad exchanges ability to link all these actors together (Teknologirådet 2016, 24). Unlike traditional marketing where you would target segments of potential customers, companies today target individuals based on the information available about them. All the big international IT companies, like Google, Facebook, Yahoo, Microsoft, etc., own their own ad exchanges and so does Schibsted in Norway.

This indicates that there are, like in most cases, two sides to the market activities that occur through the ad exchanges. A supply and demand side. On the supply side we wind what we can generally describe as *publishers*. These are companies that own web pages and who offer others companies to advertise on their pages. By nature, a publicist is a company that through a web page offer consumers some form of content. In Norway the largest content providers online are in general media companies (Dagbladet, Aftenposten, VG) that offer news and lifestyle/hobby material and social media companies (Facebook, LinkedIn, Twitter). If these companies want to offer some parts of their web pages to advertisers, they need to register to a supply-side platform. This is a software platform where publishers can manage their inventory of available ad space (The Economist 2014). Most publishers use open platforms offered by international IT companies, but Schibsted for example has developed their own platform that they encourage other Norwegian companies to join (Jerijervi 2015).

On the demand side, we find the buyers of the ad space offered through ad exchanges. These buyers could generally be described as *advertisers*. An advertiser part of this TIS could really be any type of business in Norway that offers some form of products or service and communicates to potential customers through marketing and advertising. What they know about their customers, what they want to achieve and who they want to reach out to determines the criteria they set for their online advertising. It is worth noticing that since this is a fairly complicated system and since the largest advertisers in Norway usually collaborates with a media agency to reach their marketing goals, their advertising through ad exchanges are often also guided by media agencies (Datatilsynet 2015, 13). The media agencies use the feedback from their customers (the advertiser) and the customer data available to plan and strategize what consumers should be targeted, what the willingness to pay should be, how the advertisement should look, where it should be exposed, and so on. The result is the targeted content provided through the ad exchanges, making media agencies an integral part of this TIS. When the media agencies act on behalf of the advertisers with the ad exchanges, this usually happens through a demand-side platform. Through the demand-side platforms, the advertisers get a greater nuance of available external data to make sure that the algorithm, along with their own data, increases their chance of reaching the right consumer and winning the bid (Yuan, Wang and Zhao 2013, 2). Some media

companies have developed their own demand-side platforms, however there are also many that are open and offered through international IT companies.

3.4.2 The Outsiders

In this supply and demand market, information is key to success. Because of this there are also companies that are part of this TIS, but still do not advertise nor offer publishing place. These companies are third party actors that interact with both publishers and advertisers. Data Brokers are companies that make money from selling consumer data to companies involved with marketing. They originally gathered information from public records and cooperative information sharing with customers. However, today there is vast amounts more available online. These companies now create individual profiles based on information they track through consumers' online activity (Anthes 2014, 1). In the US one of the largest data brokers, Acxiom, claimed in 2014 that they had 3000 pieces of information for nearly every adult in the US and insight into around 700 million people worldwide (Crain 2016, 3). These companies, like Acxiom, are mostly large US based companies, but some of them have offices in Norway. Therefore, it is natural to assume that companies like these also gather information about Norwegian consumers and in turn sell this to publishers and advertisers abroad or even in Norway.

Another outsider that none the less interact with the other actors trading with ad exchanges are Data Management Platforms. This is a software platform offered by companies that aim to further enhance the results of online advertising. By using the data available, they develop algorithms that attempt to predict consumer behavior (Teknologirådet 2016, 15). There are companies both from Norway, like Cxense, that offer this type of software, as well as many international ones. It is also common for large media agencies to develop their own Data Management Platforms.

In addition, there are the traditional market research companies. They have adapted their business model to keep up with the development in the digital economy. This means that instead of making predictions and analysis of marketing activities before and after they take place, many now have developed tools to analyze advertising in real time (Teknologirådet 2016, 15)

3.4.3 The Consumer

The actual users of online services are the source of the data that is traded through ad exchanges. For the purpose of this paper, the consumers part of the TIS will be Norwegians from the age 16 and above. The consumers of digital products and services leave behind traces of their activities in many ways. The most commonly ways of tracking a consumer are cookies, IP addresses and "digital fingerprints". Cookies are small files downloaded to your computer when you visit a web page. What cookies are stored on your computer helps advertisers form a picture of your interests to be used for marketing purposes (Datatilsynet 2015, 18). An IP address identifies what kind of device you are using, how long you have been browsing in a single session and where in the world you are located (Datatilsynet 2015, 18). Digital fingerprints are algorithms developed to counter the weaknesses of cookies and IP addresses in a marketing perspective. Cookies do not track users across different platforms and the user has to approve for them to be downloaded. IP-addresses are only valid for a single session, so they are not good for tracking individuals over longer periods of time. Digital fingerprints combine the two, as well as information of what browser you are using, your language setting and what device you are on, to increase the chance of advertisers to know who the individual is.

On the subject of Norwegian consumers being part of this TIS it is relevant with a brief introduction to what we know about their usage of digital technologies, their impression of online marketing and their concerns about privacy. There have been several studies on these matters. First of all, what we know is that Norwegians are very tech savvy and there is a high rate of users online in the Norwegian population. According to a study by Statistics Norway (SSB), 96 % of Norwegians from the age 16-79 have been online at least once every three months in 2015 (Statistics Norway 2015). Concerning online marketing a study done by Opinion AS for Teknologirådet in 2015 showed that 79 % of Norwegian were uncomfortable with their personal data being used for targeted marketing purposes and shared amongst companies. 73 % of Norwegians would prefer non-personalized commercials (Teknologirådet 2016, 34-38). These findings are echoed in a survey done by Telenor in 2014 where only 3/10 Norwegians are willing to share their data in order to get more personalized services. In comparison the rate is 7/10 in Asia (Telenor).

This brings us back to the previously mentioned personalization–privacy paradox, which is that most Norwegians still use online services that go against their preferences when it comes to privacy. Most likely this is because these services simplify our daily lives and have become so embedded in our society that there is hard to find alternatives that one can use without pushing the boundaries of the privacy space. One could most definitely write an entire thesis about this paradox, but for the purpose of my paper it is important to keep in mind that there is a disparity in user preference and the market functions as they are today. This creates some pressure from the consumers in the TIS that want change to occur.

3.4.4 Interest Organizations

There are organizations that do not trade through ad exchanges, but are nonetheless relevant to this TIS. An example of this the interest organizations described below. In Norway we have organizations that have overall objectives to work for the best interest of both the consumers, society and the advertisers in relation to the TIS. The Norwegian Consumer Council (Norwegian: Forbrukerrådet) work to empower consumer choice. In relation to online marketing and privacy my informant, Finn Myrstad, states that they do this by influencing legislation, public debate and industry cooperation. The Advertisers Association (ANFO) work to strengthen industry reliability and to be their members voice in both industry matters as well as in the public debate. My informants, Håvard Bakken and Tommy Torjesen, say ANFO do this by arranging seminars, networking events and cooperating with their members if issues emerge. The Norwegian Data Protection Authority (Norwegian: Datatilsynet) work to ensure laws and regulations regarding privacy are upheld across both public and private sector. According to my informant Catharina Nes, they do this by supervising organizations that come into question, by part taking in the public debate and by studying trends internationally. There is also The Norwegian Board of Technology (Norwegian: Teknologirådet). They advise the Norwegian Parliament and Government regarding possibilities and challenges that exist related to new technology. When it comes to privacy online they have done extensive work on the topic and this work is aimed at advising politicians as well as stimulating the public debate according to my informant Marianne Barland. This makes these interest organizations vital parts of this TIS, as well as making their relevant employees valuable informants to my thesis.

3.4.5 Legislators

It is also relevant to include the organizations that regulate this market. They directly influence how the market function set the formal boundaries for what is allowed and not. In the case of this TIS there are three different legislators that will be included. This the Norwegian government, which decides what Norwegian companies are allowed to do in regards to the market within Norway; the US government, which does the same in the US; and the EU, which has already passed laws that aim to greatly influence the market both in Norway, the US and Europe in general. More on this later.

3.4.6 Institutions

Having presented the reader with all the actors I wish to include in the TIS we move on to the institutions. As mentioned in the theoretical introduction of a TIS, an institution can be both government regulation as well as norms, culture and social system. For the purpose of this TIS I will include three different sets of juridical laws as well as a brief description of relevant cultural norms in Norway.

Firstly, you have Norwegian law and by this two sets of laws in particular. The Personal Information Law (Personopplysningsloven) and The Electronic Communications Law (Ekomloven). The Personal Information Law has as its main purpose to protect Norwegian citizens from violation to their right to privacy as described by the law (Personopplysningsloven 1978 § 1). For the law to be applicable in the context of privacy online, the information that is gathered needs to be traceable back to an individual level (Datatilsynet 2015, 28). The law is not limited to Norway, but is generally void if for example long as the individual approves of their information being transferred abroad or the international transfer of data is crucial to the interest of the individual (Personopplysningsloven 1978 § 30). Some of the key aspects of the law are the degree of necessity of data collection, need for approval, the right to be forgotten and the right to be informed (Datatilsynet 2015, 30-33). The Electronic Communication Law is concerned with ensuring the quality and security of electronic communication services in general (Ekomloven 2003 §1-1). This law is relevant as it regulates how personal data is gathered and stored (Datatilsynet 2015, 36).

In the US, where many of the firms that are part of this TIS have their origin and headquarters, other rules apply. Where there in most European countries exist national laws on privacy, the US does not have a general law on this matter. Privacy is rather broken down to a state level, meaning that within the US there are differences from state to state. The only main national privacy laws in the US are the Health Insurance Portability and Accountability Act (HIPAA), the Children's Online Privacy Protection Act (COPPA) and the Fair and Accurate Credit Transaction Act (FACTA) (Dimov 2013, 1).

Any member nation that is part of the EU and EEA is bound by some regulation that apply on European level. An example of this is the Privacy Shield Directive that offers a framework on online privacy for organizations operating in Europe. In addition, this framework will also be adopted by US business operating in Europe by no later than 2018. There are already several large US enterprises, Like Google, Microsoft and Salesforce, that have applied for compliance with the framework (Novet 2016).

The goal of the EU is to create stricter rules that are possible to enforce internationally. The key elements of the directive are:

- Your right to be informed.

Meaning that any company bound by Privacy Shield has to tell you what data they collect and why. Whether or not this data could be transferred to other organizations, know how to find out what data a company have about you and how to complain about any privacy related matter to this company (European Commission 2016, 9).

- Use should be limited.

Meaning that your personal data should not be used for anything else then its original intention and what the individual agreed to (European Commission 2016, 10).

- Data minimization.

Meaning that no company should gather more data then needed to deliver the service or product offered. It is also not legal to store data longer then needed for the same purpose (European Commission 2016, 10).

- Data must be secure.

Meaning that all organizations must store personal data in a manner that minimizes the possible risk of loss, disclosure, misuse and unauthorized access (European Commission 2016, 11).

- Obligation to protection upon transfer.

Meaning that if a company needs to transfer your personal data to another organization, the company needs to make sure that the recipient also follows the framework rules of the Privacy Shield (European Commission 2016, 11).

- Right to access and correct.

Meaning that any individual has the right to ask for the data any company has about them and why they have it. An individual can at any time ask for, correct or delete data collected about themselves (European Commission 2016, 11).

- Right to complain.

Meaning that if a company under Privacy Shield do not follow this framework the individual has the right to form a complaint to be handled either by the company, an objective organization or a legal entity (European Commission 2016, 12).

- Right in relation to foreign states.

Meaning that your data should only be obtained by any nation, including the US, for matters of national security and law enforcement (European Commission 2016, 13).

3.4.7 Consumer-industry relations

The final institution I would like to include is the relationship between the consumer and the industry in Norway. It was pointed out to me by several of my informants that there are instances where a company could gather more data on an individual, but chose not to in order to maintain a trusted relationship. Catharina Nes in the Norwegian Data Protection Authorities for example pointed out that companies probably do not want to get to close either. The fact that there is a limit to what is acceptable in the Norwegian society does create limitations to what companies can do and are willing to do. It is safe to assume that cultural aspects like this create some boundaries in market along with the different legislative factors mentioned above. Such boundaries are also apparent to US firms, however where to draw the line might differ between Norwegian and US firms. The CEO of Google, Eric Schmidt, has famously stated that Googles general policy on privacy and data collection is to get right up to the "creepy line" and not cross it (Saint 2010).

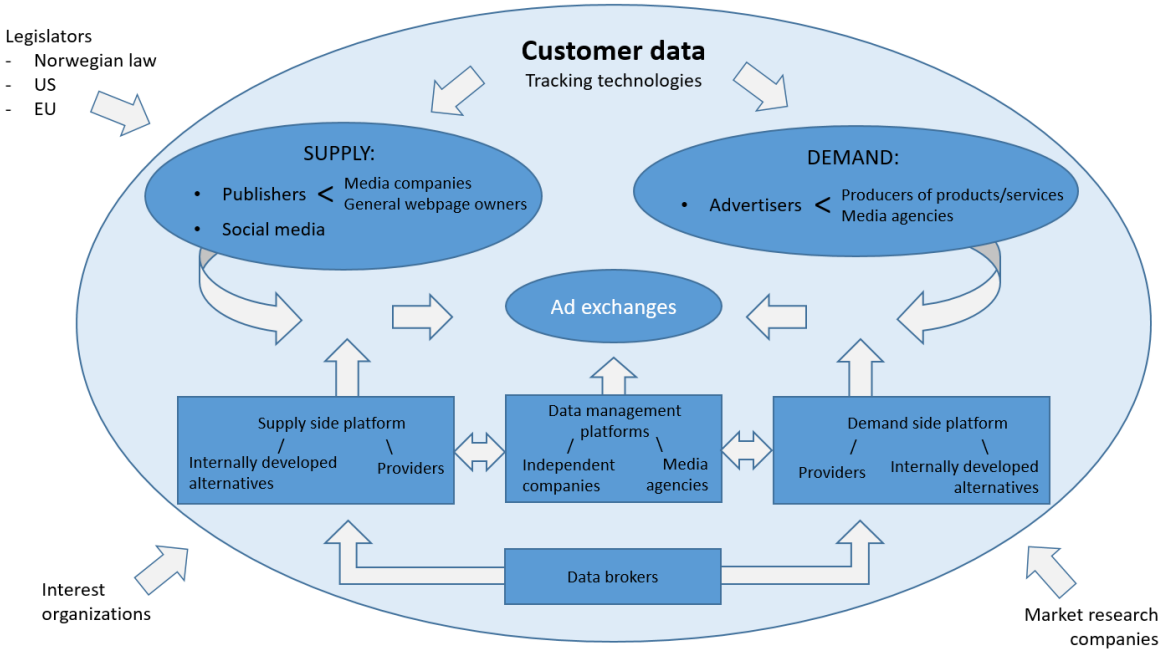
3.4.8 Networks

This brings us to the part where we attempt to understand how these different actors interact. In Norway there are clear sign of relevant industry networks in for example the media industry. As previously mentioned, Schibsted has offered their competitors to join in on their technology solutions (Jerijervi 2015), indicating that there are connections being made between these firms. Also, all of my informants stated that they host and part take in networking events and conferences where they interact with each other. Finn Myrstad in the Norwegian Consumer Council points out that they have regularly scheduled meetings with relevant companies in order to discuss current matters or issues that come up. His example was biyearly meetings with Google Norway. Marianne Barland from the Board of Technology explained that they also include both academia, CSOs and businesses in the projects they work on in order to increase the competence available.

The consumers interact with the interest organizations as well. The Data Protection Authorities and The Consumer Council both offer direct guidance in matters concerning privacy and the Board of Technology arrange consumer workshops. Another relevant network is the one the interest organizations have internationally. The Data Protection Authorities cooperate with

similar organizations on a European level as well with EU legislators. So does The Board of Technology and Consumer Council. Finn Myrstad was scheduled to travel to the US the week I interviewed him to discuss enforcement of privacy regulations with their US counterparts.

Of course some networks also exist between the consumer and the private companies. As mentioned earlier Telenor does surveys on consumers to get a deeper insight into their preferences and there is in general a legislative cultural understanding between the consumer and companies that control the market.



(Figure 2)

4 Actor-Network Theory

We now move on to form the framework which will be used to analyze the issues extracted from the public debate. Through this framework, the actors, networks and institutions we know from our TIS description of the market will be further refined for the purpose of studying issue formation. This framework will be based on a sub-branch of Science and Technology Studies (STS) named Actor-Network Theory.

4.1 History of the ANT

To describe and define Actor-Network Theory (ANT) is by nature a challenging, if not impossible task. The researcher can point to certain traits and general methodology, but ANT has all through its existence been an ever changing phenomena (Law and Hassard 1999, 10-11). There is a reason for this. When studying something through an ANT perspective you acknowledge that there are no certainties to what terms and realizations might be relevant. Because of this ANT has by some been described as a theory that is not a theory (Latour 1999, 19). The earliest work using ANT is found in France in the 1980's, most notably in works published by Michel Callon studying the development of electric vehicles in France (1987) and scallop farming in St. Brieuc (1986). The reader will get thoroughly acquainted with the latter of these two articles through the remainder of this paper.

In its early years ANT was developed by a small group of researchers working in a few number of European universities. Muniesa (2015, 81) argues that it is this group of interdisciplinary researchers that shaped the basis of ANT's still existing hybrid style not permanently connected to any theoretical framework. However, ANT is firmly established as part of Society and Technology Studies. ANT studies generally attempt to tackle problems that have a social-scientific nature (Muniesa 2015, 82). Central to this is the idea that "non-human" actors also are of great importance to the societal consequences science and technology produce. When studying a social-scientific problem through an ANT perspective you go beyond describing physical actors that are relevant and attempt to include all possible functions that impact the outcome of the problem at hand. This could be anything from legislation and ideology to gravity, only to name a few (Muniesa 2015, 82). This means that through ANT we are mainly concerned

not with what happens or is being done, but by understanding what is causing the actions resulting in changes in society. The fact that ANT includes so called "non-human" actors into understanding society is partly why this perspective is relevant to this paper.

To put this into the context of the analysis of any market in general, Callon argues that ANT is well suited for the task of generating an understanding one would not be able to achieve through for example economic theory (2007, 273-274). This paper is not only concerned with presenting a descriptive text on the functionality of the market, but also with understanding the dynamics behind issue formation and its implications. Because of this, an analytical tool that helps put both functionality, system complexity and actor networks into context will be helpful. To further strengthen the relevance of ANT in the study of issues relating to markets it can be argued there exist a general disagreement in any market on the issue of price. Meaning that in even the most basic market there exist sellers who supply and buyers who demand the commodity that is being traded. These two parties work in the own best interest and their agreement can be observed through the exchange of goods at the cost of a certain price (Callon 2007, 274-275). This implies that the actors involved make calculated decisions where they try to maximize their perceived benefit. Based on this general understanding, what would cause an emergence of friction and issues would be when the involved actors were not all granted the same quality or amount of information. What could be the worst case scenario is when actors are forced to make decisions in spite of being misinformed which leads to ignorance (Callon 2007, 276), or arguably in the case of this thesis, apathy. As part of this text, the reader will be presented with argumentation on how the question of price is certainly not being decided on among actors with the same information and that the actual currency of which the price is paid in this market is not even clearly defined.

Keeping in mind that the term actor through ANT is considered to be both human as well as nonhuman we are well on our way to understanding this "theory that is not theory". There are however a few more terms that need to be explained that are central to ANT as it will be used later in this thesis. Firstly, there is degree of semiotic understanding that take part in shaping the ANT perspective. The idea that in order for an actor to be relevant, it has to somehow interact with other relevant actors to the phenomena one is studying. This interaction that shape what

actors are relevant and how they relate to each other is what has been called being and "actant". In other words, relevant actors/actants are those who act in a way that impacts what we are studying. Meaning that no matter what kind of actor we are observing, if they/it interacts with relevant actors it should also be included in our study, thereby considering both human and nonhuman actors as equally important.

This interaction of actants is what constitute the network that we are interested in understanding. In the case of ANT, there is no fixed and stable understanding of any certain network, rather an idea that the actors that interact make out the network which is ever changing, depending on who act and has an impact. By effect the two terms "actor" and "network" are interconnected and define each other. As with ANT in general, who the actors are and what constitutes the network is therefore also ever changing. The heterogeneous understanding of networks is arguably something that complicates ANT as well as strengthens its scientific utility. Callon argues in one of his articles that this complexity of ANT and its added nonhuman factor is what enables this perspective to offer deeper insight into reasons behind societal change that you could not get with for example traditional sociology (1993, 96-97). In summary so far, it is useful to highlight that ANT aim to go beyond system border by dealing with a broad specter of heterogeneous actants to understand how change occur.

For the purpose of this paper, what will be studied is a snapshot of the market surrounding ad exchanges. The authors decisions regarding delineation of the market and its description greatly affects the actor-network and its issues that will be addressed. This, and the fact that new actors can enter at any point, as well as described actors could disappear at any moment due to shifting market forces, is a methodical weakness - but in my opinion also adds to the relevance of this paper. Having formed the basic understanding of this current market through the clear framework of an Innovation Systems Perspective, we utilize the more fluid and extensive ANT perspective to discuss how the issues discovered through data collection might evolve and maybe even be settled through the "translative" effect of new legislation.

Before we move on to a more concrete usage of ANT, another relevant term needs to be described that is key to this perspective as well as my research questions. This being the recently

mentioned idea of "translation". This term in the context of ANT should be understood as how problems or issues drive change by actors pulling in either the same or different directions. Imagine any problem that involves numerous actors that argue about the possible solution to this given problem. Ideally they all would agree to how this problem could be solved, but in reality this is rarely the case. It might be that the only unifying factor between these actors is the fact that they acknowledge the problem, which in the case of an ANT study would help us outline who are the relevant actors in this particular network. As the issue progress, the different actors might try to persuade each other to follow their viewpoint or something might happen that would indicate one solution being superior to the others. Either way, the number of actors agreeing on a certain solution improves that solution strategy's chances of being adopted as the preferred way to proceed. Realistically, in the real world and in order to further complicate things, any problem is often not articulated in the same way by the different actors affected.

4.2 ANT and Issues

Let us return to the previously mentioned article written by Callon about scallop fishing in France (1986). In this case the fishermen were worried about how their livelihood would disappear if the bay where they fished was not restocked somehow. There were also Economist who would worry about the effects the disappearance of the expensive good that is scallops would have on the economy. In addition, biologist would worry about the declining biodiversity and of course the scallops, even though they never clearly stated so, worried about the fact that they were becoming extinct from this area. The underlying problem was the same, but the different actors perceived its consequence differently. The fact that they all acted to solve this problem even though they initially differ is what best exemplified the dualistic nature of ANT. There is no need to separate the external and internal, the human and nonhuman in any situation. The "act" is what creates the network as well as the actors. The way that this actor-network interact in order to form issues and drive these towards a stalemate, or alternatively, a solution, is the translation that stands central to ANT (Muniesa 2015, 83). How this translation of issues occurs and how actors potentially could reach a state of agreement is presented in the following text. This is based on work done by Callon (1986), but is also elaborated through the works of others. This attempt to create somewhat of a framework for issue translation through ANT will then be applied to the case of issues concerning ad exchanges and consumer privacy in Norway.

4.2.1 Scallops and Modern IT

As promised, the reader would get well acquainted with the 1986 article by Callon studying scallop fishing of the coast of France. Hopefully, at this point you have been convinced by the purpose of extending the TIS description of the market and its issues through a discussion based on the ANT perspective. However, it is understandable if the connection between scallop fishing and privacy online seems somewhat farfetched. The following text will argue why the framework for issue translation in the case described by Callon (1986) is highly relevant and useful to the issues presented concerning consumer privacy in Norway.

As described in the introduction of ANT, this perspective starts out seeking to progress towards a new goal that does not yet have the institutionalized systems in place that are necessary and do so by actants attempting to enroll each other in favor of their desired strategy (Young, Borland and Coghill 2012, 260). Translation is key to this process. This new goal is formulated through problem statements by the involved actors and in the case of online privacy in Norway these are uncovered by the analysis of the public debate as well as the collected qualitative data. Previous work applying ANT to indicate policy change as a mediator for issue settlement highlight three resources necessary to solve such problems. These are: Knowledge about the problem (mainly scientific evidence and/or regulatory weakness), Frameworks (theory and ideas) and Technologies or process that could potentially assess or solve the problem (Young, Borland and Coghill 2012, 261). How these resources are utilized by the different actors could be analyzed through Callon's suggested framework for issue translation.

4.2.2 The Four Moments of Translation

There are four stages of translation that should be considered and analyzed according to Callon (1986). These stages could potentially overlap, but are nonetheless useful tools to understand how and why issues evolve, what actors exist, how they interact and what negotiation and delineation is done to attempt to solve the problem (Callon 1986, 6).

The first of the four stages is called *Problematization*. In this stage, the different actors seek to become indispensable to the other actors in the network by formulating the problem at hand in a certain way. In the case of study of scallop fishing in Callon's article, there are three researchers

who seek to make themselves indispensable by formulating the problem of a declining scallop population through a potential solution they have observed abroad. The researchers had witnessed Japanese fishermen using a new technology that protected the scallop in their early stages of life. This method was unknown to the French fishermen and scientist and because of this it was not certain that the method would work depending on whether or not the French scallops behaved the same way as the Japanese in their first months alive. The question was whether or not the infant French scallops would anchor themselves to the protective nets or not. Potentially offering a solution, the problem was reformulated by the scientist, from "How can profitable and sustainable scallop fishing be ensured for the future?" to "Will the infant scallops anchor themselves?" (Callon 1986, 7). Not only does the determining of the actual problem happen in the Problematization stage, the indication of relevant actors does also begin. To use the example from the Callon article again, the reformulation of the problem clearly includes some human and nonhuman actors. These are of course the scientists, but also the fishermen, the scallops, the new technology and relevant researchers who could help answer the question (1986, 7). When we later move on to the analysis of issue formation and its implications towards suggested possible solutions (research question 3), it is important to keep in mind that the we initiate process by studying how the issues are formulated.

The second stage is called *Interessement*. At this point we start to uncover the creation of alliances. The different actors involved will try to convince other actors to follow their solution strategy in order to increase their degree of recognition. How this is done is according to Callon based on a large number of alternatives ranging from pure force to seduction. This depending on to what degree the different viewpoints coincide (Callon 1986, 9). The fact that this persuasion is a process is highlighted through the semantic evaluation of the word interest by Callon. To be "inter-ested" indicate that you are between different alternatives and that you are open to maneuver between these. Therefore, the researcher needs to try to understand how and why different actors push a certain Problematization and what actor-networks they create (Callon 1986, 9).

Our third stage is called *Enrolment*. This stage could be understood as the evaluation of Interessement success. The negotiations that occur between actors determine what interest are

perceived as more "true" than others. If an actor is successful in convincing other actors that their Problematization is valid the Interessement forms alliances that enroll actors into the network. Enrolment is never predetermined and the degree to which an actor is convinced will influence the stability of the network (Callon 1986, 11-12). What we hope to understand at this point is who needs to convince who, how they do it and how this affects who are excluded from the network.

The fourth and last stage is called *Mobilization of Allies*. Here we attempt to understand who the different spokespeople are, who they represent and if their statements actually represent the desired actions of their representees. In most situation there are a wide range of actors that could be involved in the actor-network. However, usually only a few of these end up acting as spokespeople for larger groups that are part of the network. In the spirit of ANT, these groups could of course be both human and nonhuman. Going back to the Callon article, there was a study using a sample of French shrimp to see if they would anchor themselves in their larval state. These few shrimps would then act as a spokesperson for the entire population of French shrimp. Whether or not their action was transferable to all the other shrimp would be crucial in the determination of the success of the researchers Problematization (Callon 1986, 13-14). Mobilization therefore, could be understood as the degree of which a spokesperson is able to predict the actions of their peers through their own actions and statements. Of course this stage, like the three previous ones, will be important when we analyze the issues related to the market of buying and selling consumer data in Norway and how this affects privacy. In the section following the chapter on methodology the paper will attempt to use this framework to analyze the issues uncovered, before moving on to a brief discussing on how future regulation could help act as a translator for settling these issues.

5 Methodology

Before diving into the analysis of the issue formation, the reasoning behind the choice of methodology needs to be elaborated. This will be presented in this chapter, as well as an account of the process of data collection through both textual analysis and interviews in addition to a discussion on potential methodical weaknesses relevant. The aim is to underline formalities followed concerning methodological accuracy and verifiability, which hopefully strengthen the academic quality of this paper.

5.1 Qualitative Method

For this thesis I have chosen a qualitative research approach. This methodology is the study of processes and meanings of societal phenomenon's that cannot be measured in quantity or frequency (Thagaard 2013, 17). Qualitative method is also a flexible approach to research, where the research questions and design can be adapted as the collection of data provides additional insight (Thagaard 2013, 31). This was indeed the case with this thesis. The process of writing this paper started out with a set of ideas, that after studying the literature and especially after my initial interviews, were reshaped into the final text as it is today. The ability to begin studying a matter that is relevant to such a large part of society using methodology that allowed for adaptation and flexibility along the way was very helpful throughout this process. However, quantitative method is not completely left out. The quantitative works of others will be used to corroborate certain points and trends relevant to the text.

When studying through a qualitative approach you have a variety of methods that are commonly used. In the case of this thesis most of the research will be based on textual analysis and interviews.

5.2 Interviews

Conducting interviews with relevant groups or individual informants is one of the most commonly used methods for collecting qualitative data (Punch 2005, 168). The general purpose of an interview is to gather insight into an individual's perspective on a topic, their circumstances

and opinions (Thagaard 2013, 95). The way to perform an interview vary and can be classified as either structured-, semi-structured and unstructured (Punch 2005, 169). In an unstructured interview, the researcher outlines the interview more as a conversation where only the general topic is defined. This grants the informant room to freely bring up whatever they find relevant. This approach could for example be useful in the early stage of a research project, where the researcher's aim is to generate general knowledge and form indications on how to progress the project (Thagaard 2005, 97). A structured interview on the other hand usually has clearly defined questions in a strict order. This approach is often useful when the researcher has a specifically determined topic and find the possibility to compare answers between informants to the same questions useful (Thagaard 2005, 97-98). In the case of this thesis I have chosen a semi-structured approach. This method combines a mix of the unstructured and structured interviews. Before performing the interviews, the topic was outlined and a list of questions which was formulated in an open-ended manner. This was intended to allow the informant to be able to reflect and bring up other aspects they found relevant. Several of my interviews jumped back and forth between questions and on occasions the answers overlapped. In some cases, the informants also brought up topics and examples that were relevant, but not defined in advance through the research design.

5.2.1 The Informants

From the early stages of writing this paper, one of the objectives was to do an analysis of the public debate surrounding the market for buying and selling consumer data in Norway. As a result of this work, an impression of what organizations would be relevant informants started to form. Based on this I started looking into these organizations to find out who would be the employees most likely to provide the insight necessary to continue the writing process. When preparing the interviews, the questions were divided into three parts. One determining informant background and general knowledge and impression of the market. The second part focused on the public debate and the third part aims at uncovering the expectations the informants had concerning market development (Appendix III). It became clear from studying the public debate that the paper should focus its efforts on informants working in Norwegian interest organizations and in a few private firms. These were the most vocal participants in the debate and had clear opinions relevant to my research questions. All the potential informants were initially contacted

by email. There were four different interest organizations which were determined to be relevant, as well as Schibsted, Telenor and The Advertisers Association. Amongst the interest organizations I received only positive responses and scheduled interviews. Unfortunately, getting in touch with the right people and setting a date proved to be difficult when communicating with Telenor and Schibsted. During the summer people were mostly unreachable due to vacation and in August many had busy schedules. In the end nothing could be planned within a timeline that would allow me to process the interview data and hand in my thesis on time. This is a definite weakness of this paper. Fortunately, the Advertisers Association, who represent a wide range of private firms who advertise online and make out a large part of the market, had time to meet. So the private firms are in the end also represented through the collected qualitative data.

The interviews all took place in the offices where the informants worked and lasted from 40-60 minutes. The interviews were recorded and then transcribed shortly after. When conducting an interview, it is important to have the informed consent of the informants as the data collected often reflect personal opinion (Thagaard 2013, 26). Before every interview started the participants were informed that the conversion would be taped, what it would be used for and that they could retract anything they say and even have the entire interviewed deleted upon request. The complete consent forms for all the informants is found in appendix II. When writing a paper where individual privacy is a key topic one of course want to make sure that the privacy of my informants is maintained. Therefore, they were all offered to remain anonymous, which they all declined. For this reason, this thesis and its qualitative research has been reported to the Norwegian Center for Research Data and an application was sent in order to ensure the formalities of handling personal data as part of research was in order. This application was granted and can be found in appendix I.

My informants are 5 individuals who have all actively taken part in the public debate and who work in an organization relevant to this paper. Catharina Nes is the Director of Analysis and Report in the Data Protection Authority. She focuses her current work on issues related to digital markets. Marianne Barland is a Project Manager in the Board of Technology and works on projects related to privacy, surveillance and digitalization. She is the responsible contact person for the organization's project on the state of privacy in Norway today. Finn Myrstad is the

Director of Digital Policy in the Norwegian Consumer Council. He works to influence politicians to empower consumer choice in the market. He is also Co-Chairman in a European interest organization working to improve consumer rights internationally, focusing on the coordination of US and EU privacy law. Håvard Bakken is the Project Director and Tommy Torjusen is a Project Manager in the Advertisers Association. They work as knowledge resources for their members and also aim to be their spokesperson in the public debate. Currently many of the projects and issues they are working on are related to digital marketing and the usage of consumer data as a knowledge foundation to improve effect.

Lastly, on the topic of interviews, some concern needs to be raised about the methodology. The fact that an interview is an interpersonal dialog means that the relationship between parties, their impression of each other and the atmosphere could influence the results. What effects the representation of the interviewer has on the informant is a matter of discussion within qualitative methodology and its significance is in most cases important to determine (Thagaard 2013, 113). As an example, in the case of my interviews, the fact that that the interviewer is a student, a male, a certain age or wore certain clothes could have affected the impression the informants had of me and their ideas of what answers I was expecting. Also, a conversation that flows well, has a good tone and where trust exist between the participants usually leads to a more productive dialog (Thagaard 2013, 113). Because of this efforts were made to provide the informants with as much information as possible in advance and express gratitude for them taking the time. I also tried to keep the conversation as light as possible and create a good rapport.

5.3 Textual Analysis

To analyze texts has a long running history as part of qualitative methodology (Thagaard 2013, 59). This method usually involves working with texts that are not originally intended for the purpose the researcher used them for, but also includes the analysis of texts written for the purpose of the actual research project (Thagaard 2013, 59). In this thesis both categories of texts will be useful. The writing process has from the beginning been dependent on the understanding of academic theoretical work. These texts have helped form the historic background as well as supplied the necessary theoretical frameworks to process the data gathered. A lot of information was found through reports and strategic documents created by different organizations that have

been publically available. Particularly in the case of the private firms, which I needed to gather more insight about indirectly as I was not able to plan interviews with more than one representative organization. In addition, the transcripts that have been written as a results of the actual interviews have needed to be analyzed, as well as the many news articles relevant to understanding the public debate. Through these different documents, the necessary insight needed to write this thesis was found.

As with all qualitative data, textual analysis also demands some critical concern and skepticism from the researcher. As most texts are written for a purpose other than the research project at hand, it is important to keep in mind the objective of the author. In the case of this thesis a good example is the strategic documents written by employees or on behalf of private firms. These documents provide great insight into the inner workings of an organization, but the researcher should keep in mind that this document is probably also written to portray the firm in a positive light, which might result in certain facts being left out. (Thagaard 2013, 59).

My approach to the collection and analysis of the articles relevant to the public debate also deserves some elaboration under the point of textual analysis. The database named Atekst was used, which is Norway's largest company providing media monitoring (Atekst). Through their search engine one is able to access all Norwegian newspapers and magazines. The search was restricted to only the Norwegian national newspapers and a limited time span from August 2014 - August 2016. A search where all results had to contain the Norwegian word for privacy (personvern) in addition to at least one word from a list of 53 relevant words was applied. This list of words contained terminology, names, technologies and companies believed to be relevant. The list of search words can be found in appendix IIII. The result was a list of 2 951 articles that needed to be further refined. Many of the articles could be excluded as irrelevant and as duplicates as a result of different newspapers covering the same press releases. I was left with around 800 articles relevant to the debate on the market of buying and selling consumer data in Norway. The argumentation from these articles were divided into categories and relevant quotes were written down in a document. The findings and reference to the articles used in this thesis will be found in the analysis part of this paper.

5.4 Validity and Reliability

When spending so much time on a project my goal has of course been to make the final paper enjoyable and informative to the reader. But, more importantly when writing a paper like this is the question of its validity and reliability. Validity concerns the interpretation of data (Thagaard 2013, 204). Through qualitative method we study societal phenomenon and therefore it is important that the interpretations we make represent the reality of the phenomena we are studying (Thagaard 2013, 204-205). Ways to strengthen the validity of any research is to be as transparent as possible about the reasoning behind my interpretations and to critically review the analytical process (Thagaard 2013, 205). Reliability is the extent to which the research is perceived as credible (Corbin and Strauss 2008, 302). When a research project is reliable, the ideal situation would be that a researcher who applied the same method to the same project as the original researcher, would uncover the same findings and results (Thagaard 2013, 202). Meaning that reliable research is highly replicable. As with Validity, it is important to strengthen Reliability through transparency. Being open about how data has been gathered, processed and used to draw conclusions increases the reliability of any research (Thagaard 2013, 202). Hopefully the reader will find this paper both valid and reliable.

5.4.1 Ethical Concerns

On the topic of validity and reliability there are also some ethical concerns that should be discussed. The fact that through my analysis of the public debate there are individuals who are named and quoted for the purpose of this thesis offer concern regarding whether or not their statements are accurately presented. The statements themselves are publically available and I have tried to reproduce them as accurately as possible, even as they were translated from Norwegian to English. In addition, there is the reproduction of the data gathered through interviews and its accuracy. This data has also been translated and presented in what I believe is the most accurate way possible. The informants will all receive a transcript of the quotes used from the interviews for approval and the taped recording of our conversations will be kept until after this thesis has been evaluated. After this they will be deleted as agreed in the signed consent forms. I would also like to state that I have no affiliation with any of the organizations that are part of any analysis in this thesis. However, being employed as an analytical assistant in a media

agency that delivers digital analysis of consumer behavior for marketing purposes. This could possibly have influenced my basic knowledge of the market and my initial attitude.

6 Issue Formation

We have now outlined this great and complex system and presented the reader with the methodological process of the thesis. However, we have not gone into detail in order to describe the technical functions and processes that exist as this would be a too great an endeavor considering the time available. We will now move on to discussing issue formation and how the different actors vary their approaches and solutions. In such a complicated matter that is discussed on an international level there are of course a wide range issues to choose from. However, this paper will argue that there is a fundamental agreement on a certain issue that is re-formulated differently depending on what actor you ask. This will be analyzed looking at the re-formulation and issue disparity through the previously described ANT framework in order to highlight how the different actors in this TIS include and exclude each other from the way they suggest the issue should be resolved. This framework will also be used to analyze the collected qualitative data in order to be able to discuss to what extent upcoming regulatory change could help solve some of these issues.

Through the collection of qualitative data done in order to write this thesis a wide range of issues were uncovered through the analysis of the public debate. The search focused on private firms located in Norway and relevant interest organizations as they were the most vocal participants of the debate. The initial analysis highlighted what the main issues have been during the last two years as well as indicating who would be relevant informants. After extracting the key points from the commentators from the private- and interest organizations I was left with 23 interconnected issues presented. These were divided into two categories, interest organizations and private organizations, and then weighed according to their relevance to the debate depending on the variety of commentators referring to the issue as well as the amount of times the issue would occur in the public debate. Based on this, supplemented by the interviews, it was possible to form a general outline of how the different actors intended to formalize the debate surrounding the market of buying and selling consumer data in Norway.

Before moving on to the analysis of the issue formation based in the public debate and the interviews, the paper will take a step back to the underlying concern that is shared by all actors

relevant to the upcoming text. Based on the amount of articles, the organizational focus on digital privacy across both public and private sector as well as the increasing consumer awareness, we are able to claim that there definitely is an ongoing debate concerning privacy online in Norway. This general fact was also confirmed by all of my informants when asked the question "Do you have the impression that there has been an ongoing debate the past few years concerning consumer privacy online in Norway?" (See appendix II). What we can delineate from this is that all actors involved in the debate agree on the fact that:

"The market for buying and selling consumer data does not function in the best interest of the Norwegian society"

With this general agreement in mind we move on to analyze how interest organizations and private firms attempt to drive the debate using the ANT framework described above. By doing this, my goal is to show how different actors have different approaches on how to work in society's best interest and how this translates into creating different scenarios, issues and suggested solutions.

6.1 The Issues at Hand

Beginning with the first step in the Callon framework we turn our attention to *Problematization*. At this stage, where actors try to make themselves indispensable to the other actors though problem formulation. Firstly, we will attempt to uncover this by looking at the role the interest organizations play in the public debate.

6.1.1 Interest Organizations

What is worth noting at this stage is their focus on consumer rights and behavior. The most frequent issue brought up by the interest organizations is the complexity of firms' privacy policies and that these in general are not good enough at protecting individual privacy. It is pointed out that the system itself is so complex that when you present consumers with an equally confusing document asking you to consent to their policies, many will feel apathetic towards trying to look into what it is their agreeing to. Finn Myrstad from the Consumer Council urges Norwegian firms to develop privacy policies that are easier to understand and better at protecting

consumer privacy (Amundsen 2016). The Director of the Data Protection Authority, Bjørn Thon, raises similar concern in VG and points to the business model that has evolved from this complex system. He states that his organization will work to create a clearer understanding of how the market functions and how consumer data is bought and sold nationally and internationally (Nes and Thon 2015). Director of Technology, Atle Årnes, in the Data Protection Authority echoes this view, stating that privacy policies needs to be made better and easier to understand. He wonders if there are firms that today make these policies complex on purpose in order to confuse the consumers (Hanad 2015). My informant from the same organization, Catharina Nes, also brings up this issue in our interview. Stating that the complexity of privacy policies results in consumers losing control of what is happening to their data. She also points out that this leads to less consumer awareness, making it difficult for people to take part in the public debate and stay informed (Nes 2016) The Board of Technology also bring up this issue on several occasions. The Director of the organizations, Tore Tennøe, claims there is an asymmetry between what the consumers knows about the data that is being collected, who collects it and what it is used for and the what the companies that collect the data knows. He says that today the consumer is not fully able to make decisions that affect their own privacy online (Sylte 2016).

Based on this we begin to form a picture of how the interest organizations work in the stage of Problematization. They focus on the vulnerability of the consumer and the lack of openness of the private firms. What is interesting about the different interest organizations presented above is that they all focus on industry action in order for this issue to be resolved, even though my informants state that they have legislative target groups as their preferred method of creating change. The Board of Technology's main mission is to influence politicians based on the result of their projects (Barland 2016), The Consumer Council work to improve consumer rights by influencing regulatory change (Myrstad 2016) and the Data Protection Authority main purpose is to ensure that relevant laws are upheld through supervision (Nes 2015). Yet their key factor within the issue presented is the action, or lack of action, from private organizations. For the purpose of this paper we could in summary formulate the issue on behalf of the interest organizations as follows:

How can we make the market more transparent and ensure that private firms respect individual privacy?

6.1.2 Private Firms

When it comes to Problematization among the private firms there are other issues that dominate. For these organizations, their argumentation in the public debate focuses on ethics amongst Norwegian companies and the dangers of regulating the market in a way that would give their US competitors a monopoly on consumer data. In their opinion what will benefit the Norwegian society and the consumer is not focusing legislative efforts on supervising and controlling Norwegian firms, but rather to focus on regulating the market in a way that creates a level playing field for Norwegian and US companies. There is an expressed concern that US firms governed by less strict US law drive the market in as direction which favors unreasonable data collection, which forces Norwegian firms to keep up through this business model. Norwegian firms that are part of the public debate often highlight that in their case, data will be used for more limited purposes and users will only be tracked across a company's own services, not external sites. The reason for this is that these firms believe that this what the Norwegian consumer wants and that they by nature are more in line with the Norwegian culture that exist when it comes to acceptable levels of consumer data collection.

To give a few examples, Schibsted, Norway's largest media company, has on several occasions stated that they consider it their societal duty to create platforms that are able to compete with US firms like Google and Facebook. They believe that as US firms are offering an increasing amount of services, they lock Norwegians in to their platforms where we do not know what happens to our data and what it is used for. According to the Chairman of Schibsted, their strategy is to create a platform where all Norwegian media companies can sign up and publish their content, ensuring their revenue and the consumer safety (Aldridge 2016). The CEO Didrik Munch and Privacy Officer Ingvild Næss also point out that Schibsted consider privacy to be a competitive advantage in the Norwegian market and that they want to protect their industry by developing services that are better than what is offered by US firms. They welcome a debate concerning privacy online where attention is put not only on protecting the Norwegian consumer,

but also how to create a market within Norway that ensures the competitiveness of Norwegian firms (Munch and Næss 2016). The Technology Director in Schibsted's competitor, Aller, has also pointed out that Norwegian industry take privacy seriously and that they believe privacy protection to be a competitive advantage in the near future (Barambah 1016).

Furthermore, Norway's largest telecom company, Telenor, believe that they in the near future will provide services that are competitive towards what foreign firms offer. However, their aim is to do this while at the same time provide the level of privacy protection Norwegian consumers expect. They are working on services that use consumer location data to provide relevant news or advertisement, but say they will not launch anything before they are certain consumer privacy can be protected and trust is maintained (Eckblad 2015). Even a spokesperson from one of Norway's largest consultancy firms, Affecto, that specialize in big data management has stated that consumer trust is important to the extent that in the case of Norway, regulators should make sure that privacy laws do not develop in the direction of what exist in the US (Bjørdal 2015). This general viewpoint was also brought up during my interview with The Advertisers Association who pointed out that they encourage their members to limit the amount of data collected to what is relevant to their services. They also stated that they had the impression that Norwegian firms take privacy seriously and value a trusted relationship with consumers. Therefore, in most cases, a business model based on aggressive data collection would not coincide with company ethics (Torjesen and Bakken 2016). Based on this we are able to, like we did for the interest organizations, to formulate a summarized main issue on behalf of the private firms.

How can we ensure the protection of consumer privacy through the viability of Norwegian firms?

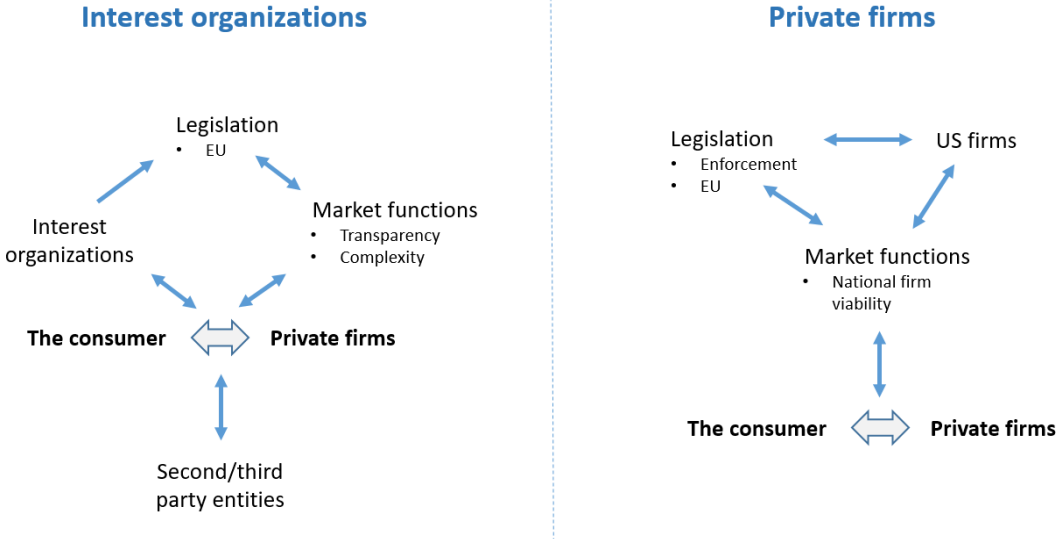
6.2 Interested?

Having formulated how the two actors, private- and interest organizations, angle their Problematization of the general issue differently, we can now move on to the *Interessement* stage. Here we look at what kind actor-networks are formed based on the different formulations and what kinds of alliances this entails.

Beginning with the interest organizations there are a few actors that become apparent even from the formulation itself. Emphasis is put on the improvement of business practice amongst Norwegian firms, making them a key actor to the solution presented by the interest organizations. Furthermore, there is a call for a more transparent market in general. Based on this there were several mentions of the anonymity of intermediaries being problematic to the information given to the consumers. Companies that are second or third party users of data, through for example marketing analysis, needs to be more open to the public concerning what happens to the data they process. This call for transparency also originates from the complexity of the market itself. To the interest organizations, the functionality of the market is a relevant actor as their suggested solution includes an increased degree of openness. The interest organizations naturally also include themselves as an actor. They are often presented as experts and drivers of public debate around the issue. The way their solution is angled suggests that keeping a consumer oriented approach in mind is what will benefit society the most. This then includes the individual consumer as an actor. Finally, the way the argumentation is presented, there is a lot of focus on regulatory force. The interest organizations, both in my interviews and the public debate, consider government regulators on a European level to be crucial to success. It is highlighted that for any regulation to be successful on this issue, it needs to be internationally applicable and enforced. Finn Myrstad states that he has great belief in the upcoming EU regulations on digital privacy and that it hopefully will help level the playing field for Norwegian and US firms competing in the Norwegian market (Myrstad 2015). The same goes for Catharina Nes, who believes it will advantageous for Norwegian firms that new privacy laws will be applied (Nes 2015). The Consumer Council, the Data Protection Authority as well as The Board of Technology all cooperate and network with similar organizations on a European level. They also host conferences where the industry is invited and conduct surveys and studies to understand consumer preference and knowledge.

The private firms do also form the foundation of their Problematization on a firm and consumer basis. However, where the two side agree on the protection of consumer data being important, private firms believe that the establishment of regulation as a restricting factor in general is not the way to go. Regulation should rather be implemented in a way that reinforces the

competitiveness of Norwegian industry. The interest organizations emphasize the effects European legislation can have, in order to create best practice privacy standards that will be adopted outside Europe as well. Finn Myrstad of the Consumer Council points out during our interview that there are several instances where standards within the EU have been adopted globally and he hopes this will be the case for the upcoming regulatory change to consumer privacy (Myrstad 2016). Industry however, also welcome regulatory change, but believe it is the extent to which the new regulations can be enforced in the US that will be key to success. Where the interest organizations in general view privacy protection as a competitive advantage, private firms believe that their position in the market needs to be strengthened before the current business models can be changed. The Chairman of Schibsted is positive towards regulatory change and hopes it will be enforced to the extent that it will create a changed attitude towards privacy amongst US firms that operate in Norway (Eckblad 2015). Therefore, the private firms include the consumer, EU regulators, industry and foreign competitors as relevant actors. Their relationship with their customers is key. They highlight the need for industry cooperation on a national level and work to influence decision makers in politics. For an illustrated overview of the actor-networks created by each Problematization see figure 3 below.



(Figure 3)

6.3 Time to Enroll

Having outlined the different issue formulations and how this affect the relevant actor-networks we briefly evaluate what indications exist to demonstrate actor *Enrolment.* At this stage of the framework the extent to which the two "sides" are able to convince the others actors that their Problematization and suggested solution is the right way to go. Unfortunately, in a thesis with a limited time budget we can only scratch the surface of the persuasions, disagreements and lobbying that occur both formally and informally in such a matter. There are however two actors that, based on our analysis so far, we can assume to be critical to both the interest- and private organizations. Both put the consumer at the center of their formalization. Norwegian private firms highlight their ethics towards their customers and point to their dependence on mutual trust. Interest organizations in general believe that the way the market works today does not favor consumer choice and information and work to shift the market in a way in what they believe will be a more consumer friendly direction. Also, both the private- and the interest organizations are aware that the market for buying and selling consumer data is under heavy scrutiny in the EU and therefore they expect upcoming legislative change to have an impact in market functions.

The question then is whether or not the consumers and the EU legislators are convinced by these formulations. What we know about the consumers is that there has been a decreasing trust in what private firms do with individual data for the purpose of marketing. Going back to 1997 a survey by Statistics Norway show that around 25 % of Norwegians believe that personal data is misused for marketing purposes (Gulløy 1997). In 2016 however 79 % of the respondent in a similar survey done by Opinion AS for the Board of Technology state that they are uncomfortable or somewhat uncomfortable with how their data is used for marketing purposes online (Teknologirådet 2016). In 2013 a survey also showed that Norwegian consumers had little or no trust in how private firms handle their personal data (Datatilsynet 2014). Based on this we can argue that the value Norwegian private firms put on consumer trust is not reflected in the way general opinion towards private firms amongst consumers have evolved. Even though foreign companies probably play a part in this development, it is in my opinion uncertain if the general consumer would agree that empowering private firms in Norway is the way to go to

optimize the way the market for buying and selling consumer data function in Norway. In the case of the interest organizations we could use this knowledge to argue in favor of their formulation. Pushing for transparency and stricter, more clear regulations in Norway makes sense when looking at these numbers indicating growing consumer concern. However, there is the duality demonstrated through user action. When weighing convenience versus ease of living, consumer choice in Norway shows that the growing concerns towards privacy is not generally reflected into action. Norwegians still download apps that are proven to have poor privacy terms, use social media and agree to privacy policies without reading them. The informants working for the Advertisers Association gives the recent example of Pokémon Go (Torjesen and Bakken 2016), the world's most popular mobile game ever launched (Fortune 2016), was notoriously known for bad privacy terms, but was none the less downloaded by hundreds of thousands of Norwegians after its launch (Mortensen 2016). Perhaps stricter regulations are not what the Norwegian consumer want, but rather to have services that increase quality of life somehow with the option to maintain a reasonable level of privacy protection at the cost of monetary expense or something completely different.

When it comes to the EU legislators it is most likely limited to what extent Norwegian interest- and private organizations influence their decision making. However as pointed out earlier, all of the interest organizations that were interviewed claim they work in networks connecting similar organizations that aim to influence decision makers on a European level. So their opinion is undoubtedly being heard. Finn Myrstad of the Norwegian Consumer Council is even the Co-Chairman of the Transatlantic Consumer Dialogue (TACD), working directly to influence legislators in the EU and the US (Myrstad 2015). Private firms on the other hand and their direct influence on EU legislators is unknown to the author. As mentioned earlier private firms in Norway take part in networking groups arranged through industry connections and interest organizations, but to what extent this transfers to influence on EU level will unfortunately not be uncovered as part of this thesis. In addition, there is the possibility that large Norwegian international organizations like Schibsted and Telenor have lobbyists in the EU, but this is not public information I have found and could probably be the topic of a thesis of its own.

What we do know is how the content of the upcoming regulations from the EU and its basic principles. Firstly, it can be said that the perspective of controlling how US firms operate in Europe is key to the directive. The directive itself comes as a result of how US firms and the US government handled European consumer data disclosed through what is famously known as the "Snowden leaks" (Weiss and Archick 2016, 9). The directive known as "Safe Harbor" was declared invalid and EU legislators started working on stricter regulations which know will be implemented under the name "Privacy Shield" (Weiss and Archick 2016, 6-7). This directive will be valid for all firms operating within the EU and will also be included in the EEA agreement (Datatilsynet). Its focus on creating equal terms for European and US firms when it comes to data collection and trade indicate an agreement with the Norwegians firms Problematization. Amongst its principals we also find transparency and information to be key, indicating that the interest organizations will find some reassurance in this directive.

6.4 Mobilize

Through briefly looking at the consumers and legislators as actors who needs convincing, we find positives and negatives for both Problematizations. In the final stage of this framework we discuss how Problematization, its Interessement and enrolment translate into action. We started out by defining the market through a TIS perspective, demonstrating its vastness and complexity. We then limited our analysis of issue formation through an ANT perspective drawing out relevant actors from the study of the public debate and the qualitative data gathered through interviews. As a result of this process we are left with two key actors who know stand center stage. Their actions could arguably determine the success and validity of the issues forwarded by the interest- and private organizations. Being key to both issue formulations, the Norwegian consumers and the upcoming EU regulatory change will act as spokespeople, demonstrating the relevance of the different argumentations.

Starting with the consumer who, in the Problematization of the interest organizations, has to make decisions regarding their privacy in a market that does not favor open information and choice. The interest organization believe that in order for the market to function in the best possible way, firms needs to be forced to inform consumers in a better way what happens to their data. Through the interviews it was uncovered that even with better information there is in many

cases a lack of options. Finn Myrstad states that today most digital services offer a “take it or leave it” model, where you either agree to their terms and degree of data collection usage or you don’t use their services. He is positive towards the idea that if people are given a choice to use a similar service that offers better privacy protection in exchange for something else then your personal data, people will use it (Myrstad 2016). The question then is if this theory is correct. If Norwegian firms through regulation are forced to inform consumers in a better way and this leads to an increased degree of consumer awareness, will this result in people opting out due to privacy concern? And if there were options where you did not pay by offering personal data, but rather with something else, would people choose this option? Marianne Barland from the Board of Technology points out that in many cases where consumers have indicated they would pay for an online service; they rarely do when a premium model is launched. She says people expect most online services to be free of monetary charge and believes that is the market is going to change in a way where we do not pay with data, it is going to be a market where payment made with something we do not know of or use today (Barland 2016). A similar argument can be made when turning to the issue presented by the Norwegian private firms. If their position in the market is strengthened and they compete on completely level terms with their international competition, it is still not certain that consumers will choose their services. Perhaps the quality of the services differs to much or US firms would maintain a dominant position through effective marketing. In the end it is the consumer's choice that determines who profits in most markets.

There is also a non-human actor of importance. The EU regulation itself and its effect on the market. Aiming to implement change favorable to both of the issue formulations presented above, its actual validity and enforcement is key. If the regulation is not formulated in a way where its violation can be prosecuted and stopped, the directive will not act as a favorable spokesperson for either the private- or interest organizations. Imagine that US firms do not follow the principles they are bound by through the directive and that the EU is unable to fine or enforce other penalties. This would affect both the argumentation of the private- and interest organizations as they point to regulatory force as part of their solutions.

6.5 Who's Missing?

Before moving on to the final part of this paper this analysis should also cover the actors who are not part of the two Problematization. The fact that some organizations, people or non-human actors are left out also gives context to why and how issues are formulated the way they are. Beginning with the previously example mentioned briefly, the Norwegian politicians. The interest organizations who actively participate in the public debate and in most cases have Norwegian politicians as their main target influencers, focus their efforts on a EU level. During my interviews they all pointed out the absence of opinionated Norwegian politicians in the debate. Catharina Nes of the Data Protection Authority believe that most politicians are skeptical about taking a clear standpoint as this is such a complicated matter (Nes 2016). Finn Myrstad raises a similar point, stating that Norwegian politicians might feel overwhelmed and that this is a matter where major change can only be made on an international level (Myrstad 2016). With this in mind it makes sense why interest organization focus their argumentation on a EU level. My informants also bring up their impression of academics not being vocal enough, indicating that they might feel there is not enough objective knowledge presented to the consumer.

Private firms who are very concerned about the business models of their foreign competitors, do not focus on the technological systems enabling the market functions or the third party firms that facilitate the buying and selling of consumer data across borders. Perhaps this is because they themselves are partly embedded with these firms, or because they have ambitions of developing similar technology of their own.

Either way much of this reasoning is speculation and would require more research to be confirmed. The point to be made is that we know from our TIS overview how extensive this market is and that there are many different actors involved. What we have begun to uncover as part of the ANT framework, is that as issues surrounding this market surface, there are actors who participate and actors who do not. We have also seen how the participants formulate issues in different ways and that this affects whom of the silent actors are considered relevant to their solution and not. Having focused on two parties who are active in the public debate we have

demonstrated how the actions of two actors, one human and one non-human, will be crucial to the determination of the desired outcomes.

6.6 Translator, please

Going back to the reasoning behind choosing this framework we know that the idea of translation is central. How issues help drive change and the way the perspectives of different actors create either tension or cooperative networks is what we hope to uncover when doing analytical work like the one above. The discussion we are left with in our case is whether the issues that have emerged could develop into some kind of an agreement on how to reach desirable outcomes attractive to both parties. The four stages of the framework demonstrate the process of translation and in our case there is still room for speculation and plenty of opportunity to dive deeper into the matter in order to gain a greater understanding. However, even though only time can tell how the market for buying and selling consumer data through ad exchanges in Norway will evolve, I would like to end my analysis on somewhat of a positive note.

Through the qualitative research done for the purpose of this thesis, a general optimism regarding the EU regulatory change that will be implemented in Norway by 2018 has been uncovered. Despite the different perspectives fronted by the two sides this paper focuses on that still spark debate, regulatory change is coming and for now little can be changed about it. The fact that all my informants were positive towards the directive and its goals is probably due to the fact that its core principles match quite well with the desired change they hope to see. Urging both European and US firms to be more transparent, limit the amount of data collected and demanding a much greater room for consumer redress speaks to both implied solutions of both the private- and the interest organizations. Surely, there are other issues that could have been covered in this text and there will probably issues that arise after the legislation is implemented. However, with the time and resources available Hopefully this paper has demonstrated not only the complexity of the market, but also its ever changing nature and the myriad of actors attempting to influence this development.

7 Conclusions

This thesis has presented the reader with an interdisciplinary study of the market where consumer data is bought and sold through ad exchanges. The aim has been to present the reader with an understanding of the functionality of this market in the perspective of Norwegian society. Based on this, the paper has evaluated the existence of a public debate concerning this market, focusing on issues relating to individual privacy. The knowledge gained from understanding the market functions and the public debate was then used to analyze how issues concerning privacy emerge, how they are formulated and how this affects the different perspectives organizations have on relevant actors and solution alternatives. These objectives were formulated through three individual research questions.

Beginning with the presentation of the market for trading consumer data in Norway, the paper outlined the participating actors, relevant networks and institutions that influence its functionality. The theoretical framework of Technology Innovation Systems was used to achieve this. To delineate the scope of the study into something that was possible to complete within the given span of time, the study of market functionality was based on the industry associations of ad exchanges. By studying the actual marketplace, the paper uncovers a vast majority of actors participating, connected by various networks and who are governed by both Norwegian, EU and US law as well as cultural norms. In addition to industry associations the information gathered through interviews was used to create this overview. This descriptive overview aims to answer the first out of the three research questions.

Having outlined the market of trading consumer data through ad exchanges the paper introduces the reader to the history of Actor-Network Theory which is applied later to the analysis of issue formation. Before moving on to the analysis, the paper also presents the choice of methodology and the argumentations behind choosing a qualitative approach. The process of data collection through textual analysis and interviews is described as part of this chapter.

In the chapter analyzing issue formation, the paper attempts to answer the two final research questions. The fact that there is an ongoing public debate concerning privacy relevant to the

market is confirmed by both the amount of news articles generated and the informants that were interviewed. Through the study of the public debate it was uncovered that interest organizations and certain private firms are the most active participants. Therefore, the analysis of issue formation focuses on the perspectives of these groups of organizations. To uncover how issues emerge and what their formulation implies towards whom the relevant actors are and what suggested solution exist, the data gathered through interviews and the study of the public debate was put to use. It was made clear that both private- and interest organizations formulate issues concerning privacy in the market on firm action and consumer behavior. Through their Problematization we were also able to uncover what other actors were relevant to the issues presented. In summary, the analysis showed that issues emerge on the basis of the lack of alignment concerning legislative enforcement and market functionality. This paper argues that upcoming regulatory change might help solve issues presented by both groups of organizations, but that in the end it is the ability of the legislation to create change in addition to consumer action, that will determine if the desired change will occur.

There is no doubt that this paper could be extended into a greater study on both the matter of individual privacy in the digital economy and issue formation relating to the market for trading consumer data in Norway. Being a thesis written on complicated and nuanced subject and being given a limited time budget, it is clear that this text only scratches the surface. Ideally, a more extensive analysis of the public debate should have been conducted and a wider range of participating actors presented to the reader. This paper has had to make clear delineations regarding the extent of the relevant market, how to uncover data relevant to the public debate and what actors to focus on for the purpose of analyzing issue formation. Additionally, it would have been preferable to conduct interviews with several firms' part of the private sector to strengthen my argumentations on behalf of these organizations.

Given more time I would have liked to follow up this research by studying the effect the implementations of the EU directive might have on the public debate. It would also have been interesting to build on this paper by conducting a case study on a large Norwegian media company like Schibsted, to see how their strategy towards online advertising and general online business model might change as a result of regulatory implementation.

Seeing as this is my final work as a student, I would like to end this text by saying that I hope, if nothing else, that you the reader found this paper both interesting and enjoyable to read.

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Appendix I

Susanne Bauer
Senter for teknologi, innovasjon og kultur (TIK) Universitetet i Oslo
Postboks 1108 Blindern
0317 OSLO

Vår dato: 25.08.2016 Vår ref: 49354 / 3 / IJJ Deres dato: Deres ref:

TILBAKEMELDING PÅ MELDING OM BEHANDLING AV PERSONOPPLYSNINGER

Vi viser til melding om behandling av personopplysninger, mottatt 03.08.2016. Meldingen gjelder prosjektet:

49354	*Personvern i den digitale økonomien*
Behandlingsansvarlig	*Universitetet i Oslo, ved institusjonens øverste leder*
Daglig ansvarlig	*Susanne Bauer*
Student	*Lars Berg*

Personvernombudet har vurdert prosjektet og finner at behandlingen av personopplysninger er meldepliktig i henhold til personopplysningsloven § 31. Behandlingen tilfredsstiller kravene i personopplysningsloven.

Personvernombudets vurdering forutsetter at prosjektet gjennomføres i tråd med opplysningene gitt i meldeskjemaet, korrespondanse med ombudet, ombudets kommentarer samt personopplysningsloven og helseregisterloven med forskrifter. Behandlingen av personopplysninger kan settes i gang.

Det gjøres oppmerksom på at det skal gis ny melding dersom behandlingen endres i forhold til de opplysninger som ligger til grunn for personvernombudets vurdering. Endringsmeldinger gis via et eget skjema, http://www.nsd.uib.no/personvern/meldeplikt/skjema.html. Det skal også gis melding etter tre år dersom prosjektet fortsatt pågår. Meldinger skal skje skriftlig til ombudet.

Personvernombudet har lagt ut opplysninger om prosjektet i en offentlig database, http://pvo.nsd.no/prosjekt.

Personvernombudet vil ved prosjektets avslutning, 15.10.2016, rette en henvendelse angående status for behandlingen av personopplysninger.

Vennlig hilsen

Kjersti Haugstvedt

Ida Jansen Jondahl

Kontaktperson: Ida Jansen Jondahl tlf: 55 58 30 19
Vedlegg: Prosjektvurdering

Dokumentet er elektronisk produsert og godkjent ved NSDs rutiner for elektronisk godkjenning.

NSD – Norsk senter for forskningsdata AS Harald Hårfagres gate 29 Tel: +47-55 58 21 17 nsd@nsd.no Org.nr. 985 321 884
NSD – Norwegian Centre for Research Data NO-5007 Bergen, NORWAY Faks: +47-55 58 96 50 www.nsd.no

Appendix II

General Informations and Consent Form

Interviewer: Lars Berg, Center for Technology, Innovation and Culture

The information gathered through this interview will be used as data for a master's thesis written by Lars Berg - It will be handed in at the University of Oslo during autumn 2016. The subject of the thesis is "Privacy in the digital economy - Potential importance of data protection as part of future innovative effort by norwegian firms"

Usage of information:

- The participant must agree to audio recording of the interview in advance.
- Informants can request that the audio recorder be paused at any state during the interview.
- The data gathered will only be used for the purpose of the described master's thesis.
- Tapes and transcripts will be made available to informants who request them.
- Informants have the right to change their answers at any time - Also after the interview has ended.
- Informants can discontinue and/or withdraw from the interview at any stage.
- The person conducting this interview commits to the statements above by signing this document.
- The participant acknowledges their understanding of the statements above and agrees to contribute to the described master's thesis by signing this document.

Interviewer:

Interviewee:

Does the participant want her/his name to be excluded from the final thesis?

Yes ☐ *No* ☒

General Informations and Consent Form

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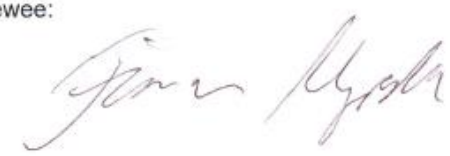
Interviewer:

Interviewee:



Does the participant want her/his name to be excluded from the final thesis?

Yes ☐ *No* ☑

General Informations and Consent Form

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- The participant acknowledges their understanding of the statements above and agrees to contribute to the described master's thesis by signing this document.

Interviewer:

Interviewee:  HÅVARD R. BAKKEN

Does the participant want her/his name to be excluded from the final thesis?

Yes ☐ *No* ☒

General Informations and Consent Form

Interviewer: Lars Berg, Center for Technology, Innovation and Culture

The information gathered through this interview will be used as data for a master's thesis written by Lars Berg - It will be handed in at the University of Oslo during autumn 2016. The subject of the thesis is "Privacy in the digital economy - Potential importance of data protection as part of future innovative effort by norwegian firms"

Usage of information:

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- Informants can discontinue and/or withdraw from the interview at any stage.
- The person conducting this interview commits to the statements above by signing this document.
- The participant acknowledges their understanding of the statements above and agrees to contribute to the described master's thesis by signing this document.

Interviewer:

Interviewee:

Marianne Bakard

Does the participant want her/his name to be excluded from the final thesis?

Yes ☐ *No* ☒

General Informations and Consent Form

Interviewer: Lars Berg, Center for Technology, Innovation and Culture

The information gathered through this interview will be used as data for a master's thesis written by Lars Berg - It will be handed in at the University of Oslo during autumn 2016. The subject of the thesis is "Privacy in the digital economy - Potential importance of data protection as part of future innovative effort by norwegian firms"

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- The participant acknowledges their understanding of the statements above and agrees to contribute to the described master's thesis by signing this document.

Interviewer:

Interviewee:

Tommy Torjesen

Does the participant want her/his name to be excluded from the final thesis?

Yes ☐ *No* ☑

Appendix III

Interview Guide
Short introduction

The functionality of the market:

1. Could you please state your name and occupation for the record?

2. What products/services does your organization offer consumers in Norway?

3. General question - What is your impression of the state of consumer privacy in Norway today?
a. Potential follow up - Do you worry about the security of your own privacy online?

4. In your opinion, to what degree does there exist a market of buying selling consumer data in Norway?
a. Potential follow up if so - Who do you consider the actors part of this market?

5. To what extent has the utilization and protection of consumer data changed the way you do business/offer your services?

Viewpoints on the public debate of the market:

a. "Do you have the impression that there has been an ongoing debate the past few years concerning consumer privacy online in Norway?"
b. Potential follow up if so - Where does this debate mainly take place? (popular media, industry media, internally between firms and organizations)
c. Additional follow up if so - Is the subject of a digital economy and big data issues related to this debate?

7. Who are the main actors in this debate?
a. Are there any actors who should be participating, but are not?
b. Potential follow up - Who do you consider the expert(s)?

8. What is your impression of key issues within this debate? (Are they related to legislation, international competition, consumer preferences, a specific technology, etc)
a. Potential follow up - Are there any issues you think should be part of the debate, but is not?
b. Potential follow up - Do you think upcoming regulatory change could help solve some of these issues?

9. Is your impression of the debate in Norway, that issues regarding consumer privacy online are driven mainly by public interest organizations that wish to protect consumer rights or by changing attitudes towards personal data protection amongst consumers? (Or by someone else?)

Privacy and the development of the market:

10. To what extent has the digitalization of services/products posed new opportunities and/or challenges for you organization?

11. Compared to international competition - Do you think norwegian firms are good at keeping up with or even excelling at innovating their digital services/products?

a. Potential follow up - Why/why not - What industry or firms?

12. Within companies that attempt to develop innovative digital products/services - How much emphasis do you believe is put on expressed consumer demand/preference?

(Note to potentially elaborate - There are examples where consumers were not aware of their need for a product before after its release to the market)

13. Do you think changes in consumer attitudes towards privacy will impact the way norwegian firms innovate?

14. What potential do you believe exist in offering services that protect individual privacy at the cost of lesser functionality or added monetary expense?

- *Do you have anything else you would like to add?*

Closing remarks.

Appendix IIII

Must contain the word:
Personvern

And at least one of the following words:
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