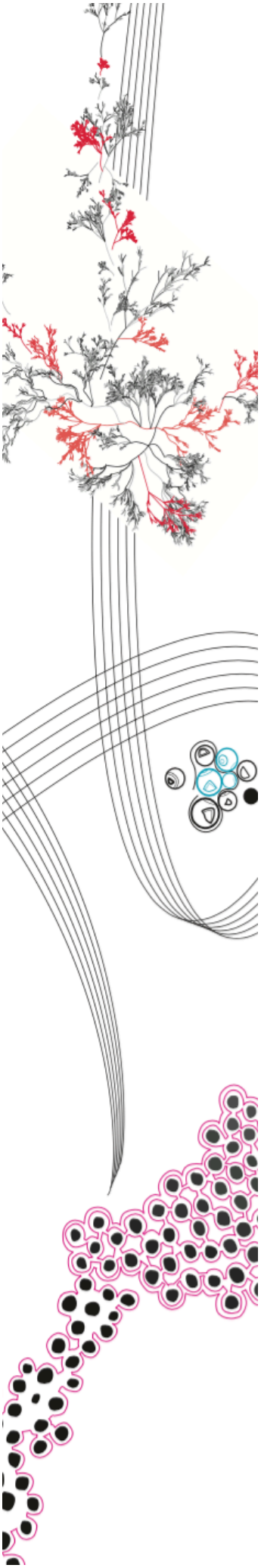

UNIVERSITY OF TWENTE

Shaping the Future Use of Big Data: Towards an Ethical Use of Big Data Technologies in Online Marketing

Master Thesis

By

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Abstract The world is living the Big Data revolution, in which increasingly large datasets are analysed to give predictions and new insights about people. Users are being targeted and their information online is stored and used and companies analyse these information to send individualized advertisements. This is transforming online marketing in new ways that we have not predicted before. This work examines the ethical use of Big Data as a technological phenomenon that currently drives online marketing activities of companies. To pursue this, literature on prevalent Big Data systems, relevant European legislations, and Big Data ethics were reviewed. Information was also obtained from in-depth interviews with experts in online marketing. This study proposes a suitable theory that explains the ethical use of Big Data by companies in online marketing. This work supports mediation theory, rather than traditional ethics, where technology has not been considered as an active element of change. It is argued that there is a necessity to study Big Data ethics from its technologies, where Mediation Theory is proposed as an applied framework to study the ethical use of Big Data technologies. Resulting from this analysis, values in Big Data technologies are re-examined to pursue an ethical use of Big Data in companies.

Keywords Big Data; ethics; responsibility; online marketing; postphenomenology; mediation theory

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"Being eco-friendly has become an investor demand, a legal requirement, a thriving market and a clear competitive advantage. Data ethics will develop similarly — just much faster"
[Hasselbalch G. Tranberg P., (2016) *Data Ethics, the new competitive advantage*]

INTRODUCTION

Eight years ago Google changed the patterns and execution of online marketing. In December 2009, they reported: "This week, we are pleased to bring you a number of great enhancements to the way you search" (Wright 2009). Since then, Google has been using individualized search that has transformed how people consume information. Based on people's previous activities and information online, such as place of residence or age; Google started to track what pages people are interested in, and started to show such relevant information to them. Subsequently, Google launched interest-based ads that allow advertisers to target consumers based on their web behaviour (Wojcicki 2009). Thus, since 2009, Google communicated that interest-based ads are used for every user and advertisement, to associate user browser with relevant interest categories (Krafcik 2011).

Technological change in online marketing has increased dramatically (Richards & King 2014), and today companies are interested in user's habits in order to place the right advertisement to the right customer. Thus, advertisements which at the beginning were placed on specific websites, such as cars on automobile websites, are now following people around the Internet, placing individual marketing messages, including advertisements in people's social networks (Angwin 2012). It has been a change from general communication to the masses, towards a targeted communication that is individualized for every single person.

Online advertising grows more sophisticated, and companies are constantly discovering new ways to access a significant amount of information about people that can influence users' online experience. Currently, Google do not only place ads on their own search engine, but it also sells to over 2.2 million other websites, and over 1 million apps (Englehardt & Narayanan 2016). Thus, Google stores the information every time a user visit one of these sites or apps, and uses these to target them in the future. Another example is shown by a Wall Street Journal study, which affirms that the top Internet websites install an average of 64 data cookies and trackers (Angwin 2010); based on this information companies can send thousands of personalised offers.

According to Duhigg (2002), consumers who are going through major life events such as getting married or the birth of a new baby; are more inclined to change their consumer behaviour. Based on this, the American company Target targets pregnant women with the purpose of increasing its sales. A statistician was hired by Target to find pregnant women by using Big Data, and he discovered that these women were buying larger quantities of lotion. Thus, by analysing data patterns, the pregnancy stage of a woman could be estimated within a small range of error:

> "If they [Target] could entice those women or their husbands to visit Target and buy baby-related products, the company's cue-routine-reward calculators could kick in and start pushing them to buy groceries, bathing suits, toys and clothing as well" (Duhigg 2012).

Thus, Google's example shows that information online (Big Data) is being process, but Target's example also illustrates how these practices can be very intrusive, as online marketing is becoming a tool for analysing people's behaviour, and finding new patterns online. This

model for the use of Big Data for personal targeting has been proven effective (Mayer-Schönberger & Cukier 2013) where the market sees Big Data as an opportunity to optimize their offerings and increase sales. However, this model is not exempt from criticism. Many studies have shown that there are certain problems with the use of Big Data; by following Target's example, problems such as privacy concerns appear when consumers realized that their information has been compromised:

> "If we send someone a catalogue and say 'Congratulations on your first child!' and they've never told us they're pregnant, that's going to make some people uncomfortable… We are very conservative about compliance with all privacy laws. But even if you're following the law, you can do things where people get queasy" (Duhigg 2012).

In addition, when Target noticed people's discomfort with these practices, the company still found a way to take advantage of it: by sending coupons instead of direct baby advertisements, and hidden between these coupons were a variety of pregnancy products. Thus, women would not feel that their privacy was infringed.

There are many examples that can be named here, where recent advancements are guiding marketing strategies including more data such as with CCTV cameras, even at Disney World:

> "Did you buy a balloon? What attractions did you ride and when? Did you shake Goofy's hand, but snub Snow White? If you fully use MyMagic+, databases will be watching, allowing Disney to refine its offerings and customize its marketing messages" (Barnes 2013)

These are examples of the way in which companies use Big Data to improve sales, regardless of privacy issues and people's concerns. As a web blog commentator points out: "If you are not paying for it, you're not the customer; you're the product being sold"[1].

Thus, it becomes clear that companies nowadays are not only collecting but also analysing data, as well as rapidly changing and adapting to new online strategies. Humans are embedded in a society in which there is a growing access of information and consequently more and more contents are being created and analysed. Even though this is very beneficial for companies (Ohbyung et al. 2014), these practices are not exempt of criticism. It becomes, therefore, necessary to ethically study the use of Big Data in online marketing, and to establish an ethical framework that is capable of assuming questions about risks, privacy intrusions and biases to the user, and give an answer to questions such as: is the use of Big Data for marketing purposes creating better services or tools? Will it bring opportunities for privacy incursions and invasive marketing? The use of Big Data in online marketing raises ethical questions about the use, processing and analysis of personal information, which also warrant study into the boundaries and limits of these online practices. The purpose of this study is to answer the following question:

Research question

How should companies use Big Data in Online Marketing in an ethical way?

Sub-questions

- How do companies collect, interpret and make use of Big Data?

[1] Metafilter Blog. (2010). User-Driven Discontent. Retrieved from: http://www.metafilter.com/95152/Userdriven-discontent#3256046

- What are the provisions and limitations of legal regulations regarding Big Data?
- What are the limitations on current Big Data ethical theories?
- Which ethical framework can be applied to pursue an ethical use of Big Data?

In order to answer these questions, this research is divided into three parts. Firstly this study defines Big Data and it conducts a series of interviews where current online marketing practices have been analysed, and gives an overview of values in Big Data technologies. Secondly, it reviews literature on European legislation, in order to understand laws and guidelines on Big Data. These two sections provide empirical background from which ethical question can be raised and discussed more precisely. Thirdly, this work revises different frameworks in Big Data ethics, and proposes a suitable applied theory that explains the ethical use of Big Data in companies, where the values are re-examined within this framework.

CHAPTER 1: THE TECHNOLOGY DRIVING BIG DATA

1.1 Big Data Technologies

Big Data is a broad term, which is used for many purposes such as scientific research, measuring people's behaviour[2], measuring data gathered from people's credit cards, even in

[2]Abad demonstrates that Big Data is used in London to measure people's behaviour in the trains, by using phone's wifi connections, to improve train services - Abad Liñan J.M., (2017)- *El Gran Hermano de Londres está en el Móvil.* El País. Retrieved from: https://elpais.com/elpais/2017/07/26/talento_digital/1501081908_570798.html?id_externo_rsoc=TW_CM

measuring economies[3] and so forth. Also highly prominent currently is the use of Big Data in online marketing, as described earlier, where companies can deduce details of users that they did not specifically disclosed themselves[4]. For this reason, Big Data has very different definitions but in order to answer this study's main research question: how should companies use Big Data in online marketing in an ethical way, it is essential to firstly define the term "Big Data". Two very different views are expressed here. On the one hand Big Data is generally defined as:

> "Gathering massive amounts of data without a pre-established goal or purpose, about an undefined number of people, which are processed on a group or aggregated level through the use of statistical correlations" (Van der Sloot 2016, p.2).

On the contrary, Big Data can be described as:

> "The growing technological ability to capture, aggregate and process an even greater volume, velocity, and variety of data" (Podesta et al. 2014, p.1).

The first definition shows Big Data as gathering massive amounts of data, it is only about gathering large *data sets* that are stored and which circulate on the web without a pre-established goal. While the latter proffers that Big Data is the *technological ability to process* the data. Similarly, other authors have argued for the second such as Boyd & Crawford (2012) by considering that Big Data is less about data than it is about a capacity to "search, aggregate, and cross-reference large data sets". One of the greatest values of Big Data for companies (online marketing) is its predictive potential, which is why Big Data cannot be considered mere

[3]Salvatierra gives examples on how banks use Big Data to analyse people's behaviours through credit cards. For example, by using financial transactions to measure economic impacts - Salvatierra J. (2016). *Eres un dato y las empresas te quieren*. El País. Retrieved from: http://economia.elpais.com/economia/2016/10/07/actualidad/1475854855_806318.html?id_externo_rsoc=FB_CM

[4] Other examples are: Political view, religion, dieting, sexual orientation, education, economic level etc. Retrieved from: http://www.socialcooling.com

data, because it is often used with a *pre*-established goal (Buttarelli 2015). Previously, through Google and Target examples, it has also been shown the capacity of data analysis and the importance of its predictive potential. Thus, with regards to online marketing, Big Data should inculcate the latter definition. Therefore, I propose the following definition of Big Data in online marketing: the technological ability to process, analyse large data sets and predict patterns of users behaviour.

It is, therefore, the possibility of prediction and analysis in Big Data (not the mere data itself), which allows tracking and building profiles of possible buyers. In other words, Big Data in online marketing should not be only considered as raw data alone, but as the technological ability to process and analyse those data. For example, in order to improve sales, an analysis of people's behaviour can be done through online marketing tools, which are used to track people in order to find pregnant women, or to predict user's preferences and advertisements at Disney World.

The understanding of Big Data as mere data have led many authors[5] to question its uses and ethical implications without considering the technologies behind it. On the contrary, understanding Big Data as a technological ability that not only stores data but also creates new analyses and cross-references data sets shifts the paradigm towards questioning the technology itself and its influence. Therefore, Big Data is not only data, but also a technology that analyses it. This reason justifies the choice for an ethical analysis that must be focused on the technology, instead of other parts of the social structure. In addition, the technological methods for processing information grow rapidly. The information stored is also moved around

[5] Authors such as Nissenbaum (1998) and Van der Sloot (2015)

the Internet through different webs, social networks and so forth, and will continue to grow in the future (Batesole 2016). All these new technologies facilities to analyse data and therefore there is an ethical necessity to consider the technological changes and what these involve. Thus, it becomes questionable how companies collect it and the techniques employed for the analysis.

In this study it is argued that an ethical use of Big Data cannot be studied in isolation of the online marketing systems and technologies used in gathering, processing and analysing Big Data. Different technologies are being used to carry out these analyses, and there are two, which are prominent in online marketing. The most common technologies for the process of personal information are:

1. Analytic tools such as Google Analytics tools which according to Dubois (2015) is being used by 50 per cent of companies; and
2. Different forms of behavioural targeting such as marketing automation tools

Both systems gather different types of user's information. On the one hand, there are different analyses that can be conducted by Google Analytics, normally about demographic and geographic factors. It also provides general reports such as "0.2% of people who visit websites about cycling click on ads for bikes, while 0.1% of random people clicks on such ads" (Borgesius 2013 p.12). The aim is to collect general users' information and to strategize the way products are sold. It provides general information abstracted from aggregated data. Marketers use this information to make informed decisions on their e-commerce strategies.

On the other hand, behavioural targeting tools differ from Google Analytics, because it is a technology that processes data about a specific individuals, a more targeted strategy

(Borgesius 2013) such as what a specific user likes or what they are interested in. Thus, behavioural targeting is defined as "*a technology* aimed at increasing the effectiveness of advertising by online publishers" (Chen 2014), an example of this can be linked with Target or Cambridge Analytica[6], which targets audience groups by more than 5.000 data points of each individual to predict behaviour. This results in the recognition of individual likes and dislikes.

These two types of technological systems explain how Big Data technology allows for the collection, analysis and generalisation of claims. In particular, when a user visits a website, all the information of that person such as what pages s/he has visited before or even the age, helps to create people's profiles allowing marketers to focus on individuals (behavioural targeting) and generalise claims (Google analytics) about people (Custers 2004, p.151).

In summary, nowadays Google Analytics and behavioural targeting tools go beyond merely gathering data, but also they process and analyse data, which gives predictions about people. It has been shown that Big Data phenomenon is therefore not a passive technology but it is constantly finding new patterns to drive sales. I consider, therefore, necessary to explore the features and limitations that these systems have with its users, and how they are being regulated, to pursue an ethical use of Big Data in online marketing.

1.2 DEC as a case study

In order to study how the Big Data analysis through online marketing is being done, this work explored in-depth DEC[7], which helps a variety of businesses in web development and in

[6] Visit website: https://cambridgeanalytica.org/about

[7] This is a fictitious name; the company prefers anonymity

using online marketing tools, applications and platforms for their marketing campaigns. Chamber focuses on Business-to-Business (B2B) as a digital partner for business, connecting the digital world between companies and their customers, employees and stakeholders. DEC focuses on digital strategy, customer experience, innovation, business creation and development. This makes the company a viable choice as a case study for this field of interest.

B2B means that DEC's clients are usually businesses, instead of individual consumers, and this company helps their clients to do their marketing campaigns online. In this way, Big Data analysis enables DEC to provide better content to their clients (other businesses), and helps to start and/or improve their marketing campaigns. Thus, DEC uses Big Data analysis to improve company's behaviour online, and helps other business to adapt to new online scenarios and benefit from it. To achieve this, DEC uses basically two tools: Google Analytics for general abstracted information and Marketing Automation systems for more specific customer information (Appendix B, C).

For this study four in-depth interviews were conducted with experts in online marketing strategies at DEC. The interviews were qualitative in nature, based on eleven questions that contained both technical as well as ethical questions (Appendix A).

1.3 Marketing Automation at DEC

DEC is specialised in a form of behavioural targeting called Marketing Automation (MA). It combines both software and online marketing tactics in an automated way, such as analytic tools and customer's data. MA is defined as:

"A software and tactics that allows companies to buy and sell… to nurture prospects with highly personalized, useful content that helps convert prospects to customers and turn customers into delighted customers" (HubSpot 2016).

MA is therefore a technological system that helps to automate online marketing strategies, which helps to find potential buyers, also called "leads", and turn them into customers, or as a quote says: "the right customer with the right message, at the right time" (Coveney 2015).

MA has been subject to change over the last five years; Expert 1, MA consultant, affirms that MA is a process of digital marketing; he explains that it is a sub-category, based on digital marketing (Appendix B). Expert 1 offers a new way of understanding MA:

"MA in essence is a way of looking, and thinking, and automating Euro-campaigns. It is more than just a tool or a technology… MA has evolved in automating repetitive task, like send a newsletter, an email, more kind of email marketing way, we have content marketing where you can distribute an email message using various channels such as social and email" (Appendix B).

Achterkamp, expert in online marketing, has written extensively about MA. He has recently distinguished between five different characteristics of it (Achterkamp 2015). Firstly, MA is the control centre for campaigns and customer data, through a central place; companies are able to influence these campaigns. This is helpful for companies due to the fact that it centralises the data stored from a variety of channels such as web, email, and social networks. Secondly, MA is considered a *technology*[8] that is used in the strategy of online campaigns; there are MA tools (technological systems) used in the cloud such as Adobe[9], Oracle[10] or

[8] See also Hubspot (2016). *What is Marketing Automation*. Retrieved from: http://www.hubspot.com/marketing-automation-information - where it is defined MA as a technological system (software and tactics)
[9] Adobe website: https://www.adobe.com

SharpSpring. Thirdly, MA started from the need to *automate repetitive actions,* to send relevant messages to leads. Fourthly, MA enables to automate operations such as email campaigns, and allocates marketing resources effectively. Moreover, in an article he also affirms that: "Marketing automation allows you to automate strategy. Without it, it will just automate chaos and confusion" (Achterkamp 2015).

Damveld, E-commerce strategist, explains that MA is a process, which allows the creation of a *comprehensive profile* of the prospect (Damveld 2015). She also summarizes MA into three special categories. Firstly, she shows the importance of MA as target (individual) identifications, which is an important key to know who the target audience is, and how to be relevant to them. Secondly, MA allows the *automation of* the marketing strategy – the basic technology that marketers support in conducting, managing and automating their online activities. Finally, *relevance* is an important factor about content, timing and channel: provides information at the right time, in the right form, to the right person.

In summary, it has been shown that MA is a technological ability that process data with the capacity to automate strategy, centralise marketing campaigns, and personalize useful (relevant) content. Thus, I argue that the main components of MA are: centralisation, automation, creation of profiles and relevance for the user. There are different systems that can be used, where at DEC it is normally used SharpSpring system, there are many different ones such as Adobe and Oracle. Therefore, it is shown that is not only "Big Data" but also different strategies and systems can produce different results. Also it is shown the importance of the companies' decisions (design) at the time of developing the strategy that results in

[10] Oracle website: https://www.oracle.com/index.html

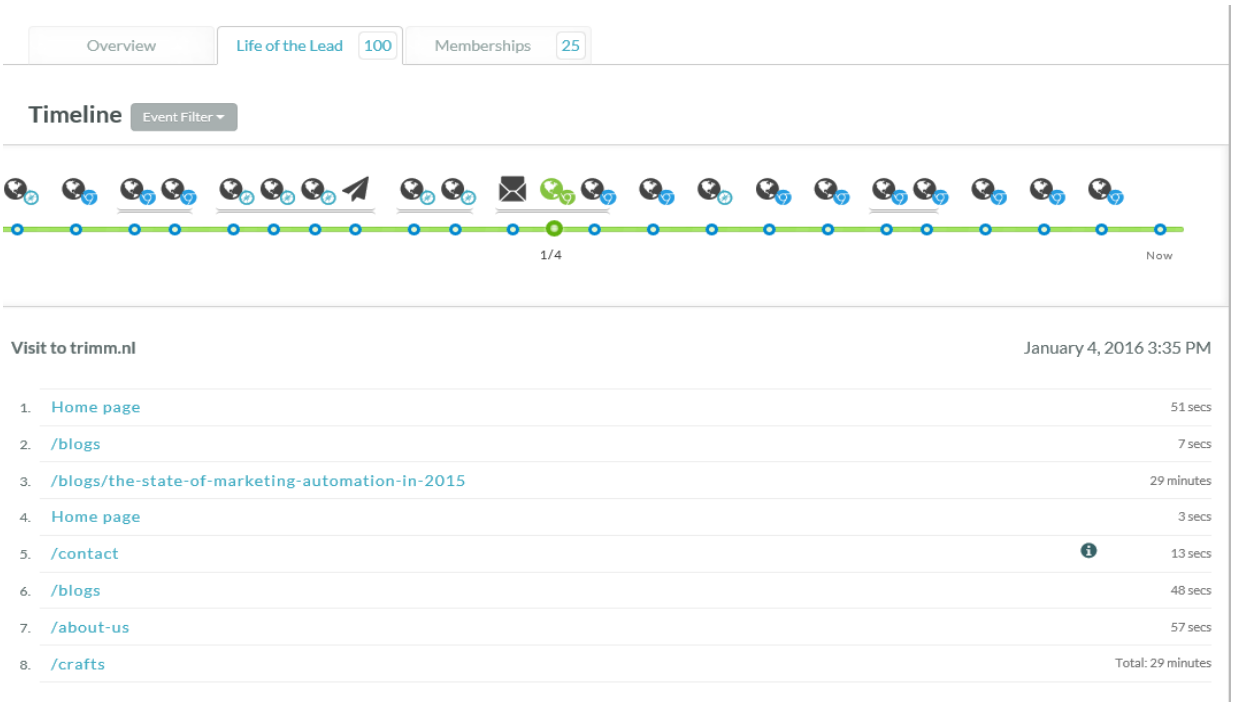
different data points is now apparent. Companies have the possibility to choose a different "way of looking" (Appendix B) that is, using a different strategy while retrieving data.

1.3.1 SharpSpring System

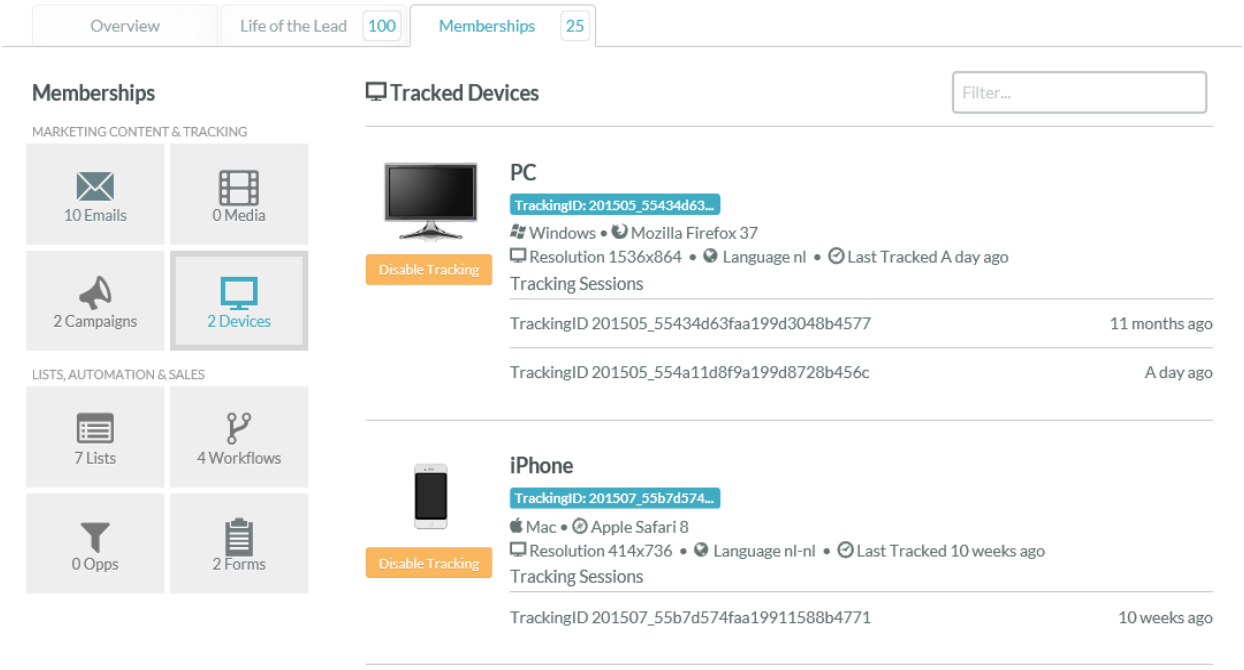
In order to elucidate how DEC employs Big Data through its MA systems, Marketers at DEC use different MA tools, such as Oracle[11]. However, this study focuses more on SharpSpring because it is the most utilized MA tool at the company (Images 1, 2). Expert 1 (Appendix B) illustrates how this system works, by giving an example of what can be analysed about himself through SharpSpring:

"Here [Images 1,2] you can see that they know my Twitter account, they know I work at DEC, I'm interested in marketing automation, I read my emails in Dutch, this is what I did in the last couple of months to get here: I read that article, and they fill out the form, then I visited some pages, and then I read an e-mail, I decided to click an e-mail, visited a couple of sites, etc." (Appendix B)

[11] More information about Oracle can be read from here: https://www.oracle.com/marketingcloud/products/marketing-automation/index.html



[Image 1- Example of SharpSpring System-Life of the Lead]



[Image 2- Example of SharpSpring system- Devices]

Furthermore, it is explained that this system acquires vast customer information from different channels:

"There is also other data that we gathered from digital platforms, for example, I visited three specific pages on DEC's website, and I have clicked in two emails, and downloaded a brochure. The user will never know that he downloaded anything… but...we captured it" (Appendix B)

In addition, not just customers/clients but also anonymous visitors are being targeted. However, data is also being generated even before they have a profile name, such as with cookies and MA tools. Valuable content such as user's name is only accessible if a person fills out a form, but information about an anonymous person can still be obtained through Big Data analysis. This shows that anonymous data should be still questioned, and privacy status of anonymous individuals as well:

"The anonymous visitor who typed in Google search, click on a link on the email and pointed to us. That is when our information system becomes active; this anonymous visitor that I don't know yet because he hasn't told me anything, but we know that he came from Google using this Google search… What he doesn't know is that we also have the historic data, that Google search from months ago, is also appended to the contact. So we know a lot more on that specific contact than just the information that was filled out in the form" (Appendix B)

Based on the information provided by Achterkamp it is evident that depending on MA design, it will be decided the data (entry points) that will be measured, which represents MA as an active element. In fact, this technology is an important decision-making factor. For example, the information or variables displayed on SharpSpring (images 1,2) is a design decision, both provided by the systems (technology) and accepted by the company. In addition, expert 3 also mentions that marketers should decide how much information they will acquire:

"More information is more valuable. But, if you don't use this information properly you could even lose value on that. You really need to set up a plan about how to use that information, if you are using it. And if you don't, I would advise not to even take it up in your database. Because every information that you won't be using for analysis purposes is just clutter, and you have enough clutter on the internet already, and you cannot manage every information of everyone, not like we open the gate and collect every data we can, is really important that you only collect data that you are going to use and that you have a plan for" (Appendix D)

Similarly, Boyd and Crawford (2012) mention that design decisions determine what will be measured for interpretation (analysis), such as in the case of social media, making decisions about what attributes and variables will be counted, and which will be ignored. This process is open to interpretation and therefore, it is also subject to company's choice. However, there are also some common features of these systems, such as the analysis of anonymous visitors, as well as gathering data about previous activities of users history.

Thus, I argue that the design of what and how to analyse user's information, such as when you open your email, is related with the concepts and values such as privacy or autonomy. One might ask: Why do companies need to know the exact time a targeted user opens the email sent to them? These are companies' decisions, and some others proposed by standardized systems. Most importantly, it will also influence the user, such as in this case when a user will receive the next emails, but also, depending on the analysis (technology), what type of information form of advertisements will be receive.

Privacy, a term that can be at first considered something characteristic of a person, is in relation to online marketing systems and its respective analysis. It is not just information you get from a user, but the deductions you get from the analysis of that information; which are often trying to answer certain questions such as: when does she prefer to receive emails,

where does she go to get the information, how does she use this information; privacy and control is therefore invaded depending on specific online marketing or MA design decisions of the company. Companies are constantly modifying Big Data uses through gathering different personal behavioural data, and therefore producing new and different results.

1.3.2 Characteristics of Marketing Automation at DEC

This section will summarize some parts of the interviews that are related with the technical category of online marketing and which are especially important due to the ethical challenges. On the one hand, the interviewees gave a reason for the gathering of customer's data where *relevancy* becomes an important aspect for the use of Big Data in MA, and expert 2 gives an example of what "relevance" means to them, which is related to user's engagement:

> "I want to be *more relevant* towards the user, so he will become more engaged, that's kind of the goal on the development… This is kind of a win-win; we don't spam a person… we don't want to send to someone that is not interested. Because that's how you generate spam complaints and unsubscribe... We want to reach out to them, a solution to your problem" (Appendix B).

Therefore, the gathering of Big Data is explained as a positive advantage in order to target interested people who find the information relevant, this creates more engagement and prevents spamming of uninterested users. Moreover in order for a company to be relevant to the user, expert 2 noted that they *should* question the abusive gathering of data. This suggests a dichotomy between relevancy and uninhibited gathering of information: is all the information that is being gathered really necessary?

"Should I do something with this data? Am I being relevant, am I aiming for the company's goals or the end user's goals? What I think, and this is a question that we all need to answer ourselves, is this being relevant? Or do I need to actually know this?" (Appendix A).

Similarly, expert 2, a product owner, considers that one of the positive sides of MA is that the information is relevant to the user, but he also mentions that MA should have limitations on what companies know about their customers:

"The more you know of the people, the more you can guide them into a certain direction. And this is also the case with marketing automation, on the one hand it is positive because you can give them more relevant information, on the other hand we should question what companies know of the people and where is the limitation, and what is that practice" (Appendix C).

"Zuckerberg is a billionaire because of what they know about us. It is only 2016, you have to be digital, things are digital, but people should be more aware of what's going on" (idem)

"...all the things they [companies] share is being used by companies and governments and people are not aware, that's my biggest concern, people are not aware enough" (idem)

In addition of being relevant, expert 1 sees the problem of *control* over user's data. According to him, customers also play a role and should have control over their data. He explains that it is important to give the customer some sort of control. He argues that people are usually not interested in concerns about their data or privacy policies: "the users should have a role in that, but I also think a lot of users simply do not care. There are a lot of users that only want to be helped, and those are the best customers for marketing" (Appendix B). Similarly, expert 4 argues, "I think almost 100% of the people just click ok. Look at the statements that for example Google or Apple gives you, you don't read them, terms and conditions, you just click accept and then you continue, and you don't even know what you

have signed up for" (Appendix E). Although expert 1 also mentions that people need to be aware of the fact that their data is being collected, as he pointed out: "this particular solution is not because of some *magical reason*, is because we know things from you" (Appendix B).

"Not simply allow us to collect it but also what am I [the user] providing, what data there is from you. And I think in the end can also help with being more relevant, because, he or she can say if the data we have is correct. It all comes down into how do we handle the data. Because indeed it is their data" (idem).

Expert 3, front-end developer, shows that it is important of making users understand that companies are using their data, due to the fact that data breaches[12] can often happen (Appendix D). He shows the importance of making customers aware of company's strategies, so they can also have control for future data breaches. However, expert 3 points out that from a marketing perspective, the more steps a customer needs to do, the more likely she or he is to drop off.

In addition, expert 3 shows that there are some steps that could be taken to give people information and provide more privacy and control. He mentions the "unsubscribe" list, which, according to him, should be taken care by companies, as a guarantee that the information will be completely deleted by company's database:

"There will be more tools to store data but also more to secure this data…. it is a two-way development, and I really hope that also more and more companies will start to show or allow you to remove your data completely from their database… That is the ideal step forward. It is possible right

[12] Data breach is defined as "an incident that involves the unauthorized or illegal viewing, access or retrieval of data by an individual, application or service. It is a type of security breach specifically designed to steal and/or publish data to an unsecured or illegal location" Retrieved from: https://www.techopedia.com/definition/13601/data-breach - It was also defined by expert 3 as "data leaks" - If the personal information was hacked (Appendix C)

Other data breaches in the world are shown in this website [In real timing] :
http://www.informationisbeautiful.net/visualizations/worlds-biggest-data-breaches-hacks/

now, but a lot of companies don't do that, they let you unsubscribe, your information is still in your database. You won't receive any emails but you can see that a specific contact is still visiting your pages" (Appendix D).

1.4 Conclusions

The interviewees showed relevancy and automation as advantages for MA systems, with which they do not need to spam people, even they can help customers achieve what they are looking for. They also mention negative implications such as the abusive gathering of data, and the necessity for awareness and control. They argue that there are negative repercussions for the user such as the possibility of data breaches, which it is a prominent risk, that is why there is a necessity to make customers aware of company's strategies, as it is now the companies that know much more that what the user's send or fill in the forms. All four interviewees have agreed that users are not interested in concerns about their data or privacy policies.

To the first sub-question: How do companies collect, interpret and make use of data? The answer is through different online marketing systems that are divided in two: behavioural targeting such as MA tools, and analytic tools such as Google analytics. These systems retrieve information from various channels and cookies and produce analysis of users. People's information is analysed even if they are anonymous, and the historic data is still retrieved. It is also shown that companies' analysis produces more information than the one provided by the user, through different analysis. For these reasons, I argue that it is justified that the ethical study must be directed to Big Data technologies, as one cannot be separated from the other. I hereby give an overview of the important points of MA retrieved from the interviews (Table 1):

Technical characteristics:	**Limitations for the users:**	**Company's perspective:**
1. Relevancy 2. Autonomous systems 3. Centralisation of different channels 4. Design choice: The possibility to chose what data is analysed, creation of unsubscribe lists, and to be completely removed from the database, etc.	1. Autonomy/control: Limitations on what companies know about their customers. Excessive collection of data; and limited users control over their data. 2. Informed consent/awareness: necessity of users to be aware of online marketing strategies. Companies know much more that the users send, and the repercussions such as user' influence	1. People are not interested in concerns about their data or privacy policies 2. The more steps, the more likely a customer is to drop off

[Table 1- Overview Interview results]

1.4.1 Values resulting from the conclusions

Value Sensitive Design (VSD) is a design approach developed by Friedman and Khan; this approach focuses on human values[13]. Friedman et al. give a set of human values related to the technological design (Friedman et al. 2013, p. 90-91). This table is useful to suggest the values that should be considered in the technical study. Here I highlight the ones that have appeared in my analysis resulting from the interviews, and therefore are related to the uses of Big Data in online marketing activities. This table is intended as a heuristic tool for suggesting values that

[13] I do not intend to focus on this approach, but rather to use the table which provides a good overview of values in design

should be considered in the technologies. They affirm that these values are technical mechanisms that can show multiple or conflicting values; and to anticipate values and value conflicts that emerge after a system is developed. This approach argues for a consideration of values in the design of Big Data technologies:

Values in Big Data Technologies	Definition
Privacy	Refers to a claim, an entitlement, or a right of an individual to determine what information about himself or herself can be communicated to others[14]
Freedom from bias	Refers to systematic unfairness perpetrated on individuals or groups, including pre-existing social bias, technical bias, and emergent social bias Refers to making all people successful users of information technology[15]
Trust	Refers to expectations that exist between people who can experience goodwill, extend goodwill toward others, feel vulnerable, and experience betrayal[16]
Autonomy	Refers to people's ability to decide, plan, and act in ways that they believe will help them to achieve their goals[17]
Informed consent	Refers to garnering people's agreement, encompassing criteria of disclosure and comprehension (for "informed") and voluntariness, competence, and agreement (for "consent")[18]
Accountability	Refers to the properties that ensure that the actions of a person, people, or institution may be traced uniquely to the person, people, or institution[19]
Identity	Refers to people's understanding of who they are over time, embracing both continuity and discontinuity over time[20]

[Table 2- Values in Design. Friedman et al. (2013) – in relation to Big Data interviews results (table 1)]

14 Nissenbaum (1998)
15 Friedman and Nissenbaum (1996)
16 Nissenbaum (2001)
17 Friedman and Nissenbaum (1997)
18 Faden and Beauchamp (1986)
19 Friedman and Kahn (1992)
20 Bers et al. (2001), Rosenberg (1997), Schiano and White (1998), Turkle (1996)

CHAPTER 2: CURRENT REGULATIONS IN DATA GATHERING

2.1 Data protection regulations: Dutch, European and German laws

Once values in Big Data technologies have been identified (Table 1,2), a next step entails examining the regulations that protect them. The use of Big Data in companies imposes questions about design decisions, user's control and awareness, privacy of individuals, abusive gathering of data among others. Moreover, it is important to study the current state of regulations and legal limitations that have to be followed by companies for the gathering, processing, storage and use of customer's data. It becomes necessary not only to question which technological systems are driving these practices, but also which ones (and how) are regulating them. The study of the legal framework allows for an understanding of Big Data gathering legal provisions, or in other words, it allows us to see the current state of Big Data gathering as permitted by law.

Data protection regulations are the main legal instrument that companies are obliged to follow to secure customer's data. It grants rights to people whose data are being stored and analysed, and imposes obligations on companies that process user information[21]. The Electronic Commerce Directive (2000) provides legal advice for businesses and consumers; it serves to control information of businesses and citizens, and the exchange of information among national and European authorities. It establishes rules for transparency and information

[21] Such as the Data Protection Directive. See Art. 6(1) fairness. The European Union Charter of Fundamental Rights also refers to fair processing Art 8 (2)

requirements to online service providers. The directive emphasises that, given the constant technological innovations and the rapid growth of online marketing technologies, the European Commission will need to *continuously* control the execution of the Directive.

It was already mentioned that cookies are an important element in online marketing, from which it is retrieved information that will be put into their systems. It is also a central element in Big Data regulations. Cookies are defined as "a kind of short term memory for the web. They are stored in your browser and enable a site to 'remember' little bits of information between pages or visits" (OneTrust 2017). The European data protection legislation currently uses an *implicit* consent for cookies. When users visit a website they accept implicitly the placement of cookies on their computer[22]. In contrast, The Dutch Telecommunications Act (DTA) established that since 2012 if any party wants to store data they must show in advance that they will store people's data before accepting cookies. They must provide the user with clear information on how companies collect data (DTA, article 11.7a under 1). This means that the consent should be done *prior* (explicit) to the acceptance of cookies*,* instead of implicit consent (European regulation), where a clear message must be sent to the user explaining the consequences of accepting these cookies, that is, an explicit[23] consent.

[22] In the EU Internet Handbook (2016) It is explained that cookies are exempt from consent according to the EU advisory body on data protection when "1) **user input** cookies (session-id) such as first party cookies to keep track of the user's input when filling online forms, shopping carts, etc., for the duration of a session or persistent cookies limited to a few hours in some cases 2) **authentication** cookies, to identify the user once he has logged in, for the duration of a session 3) **user centric security** cookies, used to detect authentication abuses, for a limited persistent duration 3) **multimedia content player** cookies, used to store technical data to playback video or audio content, for the duration of a session 4) **load balancing** cookies, for the duration of session 5) **user interface customisation** cookies such as language or font preferences, for the duration of a session (or slightly longer) 6) **third party social plugin content sharing** cookies, for logged in members of a social network" Retrieved from: http://ec.europa.eu/ipg/basics/legal/cookies/index_en.htm#section_2

[23] Definition of "explicit"– Stated clearly and in detail, leaving no room for confusion or doubt. In Oxford Dictionaries. Retrieved from: https://en.oxforddictionaries.com/definition/explicit

The DTA's cookie law (2012) is shown as to have explicit consent. However, it also has the following two exceptions in which cookies' implicit consent is allowed: implementing the communication via electronic networks, or delivering the information service requested by the subscriber (DTA 2012, article 11.7a under 3). In March 2015, a new exception was approved: it is no longer necessary to ask or obtain cookies' consent if it is to obtain information about the *quality or effectiveness* of a service provided, or if it has a limited impact on user's privacy (DTA 2015, article 11.7a under 1). This includes analytical cookies for the generation of statistics about the website's usage, affiliate cookies that reads which advertisement leads to a purchase, and a/b testing cookies that gathers which version of a website the user prefers to be displayed (for example about language). This results in companies that no longer need to inform users, neither asks for their consent while storing *analytical* cookies. These cookies allow for general statistics, which includes Google Analytics. Thus, cookies in The Netherlands are still following users without their consent (implicit acceptance) in many occasions for online marketing purposes. Dutch legislation appeared to be stricter than the European by using prior consent. However, it opens up ambiguous zones in which different tracking cookies are still allowed. Thus, regulations in The Netherlands still allows cookies to access and store information, without people's consent in E-commerce activities.

German data protection laws are quite strict as well. A good example is shown by expert 3, frontend developer at DEC (Appendix D) explains that if users fill a form, they will receive an email that they need to re-approve in order to be subscribed (double acceptance); if people do not accept it, they are not allowed into company's database. Thus, Germany opts for a different approach that gives importance to teach users how their data is being processed, as

visible in the fact that cookies require *prior consent (explicit)* as well as double-check subscriptions. And also there are options to opt-out and users are informed about cookies, and methods that could identify users. Therefore, companies must inform users about how cookies and their personal information are used. However, German laws have their own limitations as they only consider it necessary to inform customers when "personal information" is stored, but it only refers to relevant information that can identify the individual, but not other details such as age and so forth (Schneider 2014).

2.1.1 Limitations on the current legal approach

The Eurobarometer survey (Jourová 2016) conducted in March 2015, asked 28.000 European citizens what they think about the protection of their personal data. In the survey, it was discovered that 31% think they have no control[24] over it. Two-thirds of respondents (67%) are concerned about not having complete control over the information they provide online, a majority of respondents are concerned about the recording of their activities via payment cards and via mobile phones (55% in both cases). The overall conclusion shows that privacy remains a very important concern.

The European data protection summary[25] (2015) has shown that only 18 per cent of the people fully read privacy statements. Although most respondents in the remaining 82 per cent noted that they fail to read the privacy statements because they are too lengthy (Eurobarometer 431, p.19). Half of the users were concerned about being victims of fraud, and

[24] By "control" they mean: "How much control do you feel you have online, e.g the ability to correct, change or delete this information" (Jourová 2016, p.1)

[25] Visit Data protection summary, Eurobarometer 431 (2015): http://ec.europa.eu/public_opinion/archives/ebs/ebs_431_en.pdf

two-third felt that they do not have control. These results highlight that users value privacy as well as the control over their personal information, and that they have limited control on their information nowadays. Thus, regardless of the provisions of the regulations imposed by the European laws users still have deep discomfort about their data.

These results not only show discomfort of users and insufficiency of regulations, but they also show the importance of privacy policies (and informed consent). Similarly, Obar and Oeldorf-Hirsch (2016) give an explanation to consider the importance of privacy policies' design with what they called "privacy paradox": people seem to value privacy but their behaviour online suggest that privacy is actually not important because they do not spend time reading privacy policies or terms of service (TOS). In their analysis, it is revealed that there is an average of only five minutes reading policies, which makes marketers and other online experts consider that users do not value privacy as it as an "unwanted" impediment to the desire of enjoying the ends of digital production. Slove (2012) express the same idea by making a similarity between privacy policies and students getting too much homework, the users that go online are not looking for some homework (Slove 2012, p.23). On the contrary, Obar and Oeldorf-Hirsch show that this is too simple of an explanation for a complex matter. They affirm that it is because it is difficult to deal with massive amount of pages about privacy and security, and even more to understand them (Obar and Oeldorf-Hirsch 2016, p.23) but being almost impossible to read does not mean that the users do not care about privacy. Their research concludes "If governments continue to cling to romantic ideals and fallacy, the internet's biggest lie [privacy paradox] will surely move from anecdote to liability" (Obar and Oeldorf-Hirsch 2016, p. 25). Thus, fallacies in online marketing gimmick are therefore important to consider in order to pursue values in Big Data technologies. This should be taken into account for marketers and software engineers

(companies in general) as this was one of the answers during the interviews, where three interviewees argued that people are not interested in privacy statements.

These authors focus on a change that must be directed towards policies. Privacy, as shown by these authors, refers to "the question of what rules should govern the use of personal information" (Richards and King 2014, p. 421). Thus, here "privacy" refers to laws and regulations. Similarly, Nissenbaum (2010) explains that privacy in this context only focus on the rules that govern how information flows and restrictions on getting personal data. This shows that privacy is thought as information, as what rules are in place (legal, social or otherwise)" (Richards and King 2014, p. 413). These authors affirm that we need new rules to regulate the societal costs of new tools for companies "without sacrificing their undeniable benefits" (King and Richards 2014, p.408).

On the contrary, Richards and King affirm that privacy is not only a matter of protecting secrets, but a matter of defining and enforcing information rules, not just rules about data collection, but about data use and retention such as recognising people's ability to manage their information (Richards and King 2014, p. 411). They further assert that technology itself can provide an important element for ethics (Richards and King 2014), by showing that modifying technological characteristics can lead to a different design on data trackers that can tell us how our data is being used; thus, allowing people to make the decision about whether or not they want to give certain information. Nevertheless, they do not develop this argument, and their main focus is still about laws in privacy and information. Thus, these authors assume that the focus should be on society (laws and regulations) and not in technology, which seems

to be considered as something neutral[26], and the role of regulations is to guide it. In this way, technically-skilled people do not recognize their power on moral decisions[27], such as the capacity to modify their tools and protect the users about their privacy and storage of data, as described in chapter one, and they also permit politicians, laws and regulations to conduct that analysis, while companies only focus on technical capabilities such as: if the technology is smarter (relevant), easier, faster and so forth.

Against this neutral understanding of technology, Giovanni Buttarelli (2015), head of The European Data Protection Supervisor (EDPS), warns that the law cannot address all the different scenarios that will arise in the future of digital marketing, although he maintains that the reform must be focused on laws and regulations.

Thus, I argue that an ethics of Big Data technologies is needed to breach the gap between technologies and the law. There are deep questions between *values* (ethics) and technology that cannot be answered only by law, or just by cookie policies. Thus, not only legal advisors but also technically-skilled people should cooperate in the future of Big Data in online marketing, which changes the traditional idea where technology is merely seen as instrumental (technical).

The study of technical characteristics and values of Big Data in section one has shown that its leading to innovative ways of collecting, processing and using Big Data which imposes a

[26] A mayor view has been explained by philosophers of technology, where traditionally technology has been seen as "instrumental" which also supports the claim that technology is neutral with respect to values. This is extensively discussed in section 3.3.1 under "Philosophy of Technology" – Stanford Encyclopedia of Philosophy : "Often, however, these undesirable consequences are attributed to the users of technology, rather than the technology itself, or its developers. This vision is known as the instrumental vision of technology resulting in the so-called neutrality thesis. The neutrality thesis holds that technology is a neutral instrument that can be put to good or bad use by its users"

[27] See section three of this thesis

challenge to the current legal framework. Thus, technology is an agent in the discussion of Big Data values, and therefore worthy of study.

2.2 Future European data protection regulations

As explained in the last section, since 2000, it can be deduced that different laws across Europe regulates tracking cookies and gathering individual's information, such as the implicit/explicit cookies consent. On the contrary, the upcoming European data protection rules (2018) will give customers more control over their personal data and it will create a "uniform" level of data protection in Europe by setting minimum standards on data use (Uldall 2016). This reform will also replace the current directive in The Netherlands (DTA) established in 1995, where the new law is designed to give customers increased control over their own information. The new upcoming law in 2018 will be termed "The General Data Protection Regulation" (Verlaan 2016) and will be applied to all companies and institutions in Europe by 2018. This is an important change for the European parliament, supporting consumer rights over the growing data analysis that is occurring nowadays. Udall (2016) further summarizes the most important points of these new regulations:

- A right to be forgotten
- Clear and affirmative consent to the processing of private data by the person concerned
- A right to transfer your data to another service provider
- The right to know when your data has been hacked
- Ensuring that privacy policies are explained in clear and understandable language
- Stronger enforcement and fines up to 4% of firm's' total annual turnover, as a deterrent to breaking the rules

It proposes fines for violation of this law, for example by not protecting personal data of customers, or accidentally leak sensitive customer information (Appendix C). These types of

breaches (leaks) will be required to be reported to the authority. Moreover, companies will be obliged to take into account the risks that *could* occur in the future; as they will need to report any data breaches.

The protection of people's privacy will become an important factor. The new law will also favour the "right to be forgotten", stating clearly that companies need to have the possibility of deleting completely the customer's data if required. This supposes that the people should have more control and understanding of their personal information. The direction of the new European law of 2018 will make companies to re-think their way of gathering of data, as companies will have to inform users about cookies and privacy policies, as well as giving them more options to opt-out.

In addition, Butarelli outlines four essential parts for the EDPS, the future regulations of Big Data (Butarelli 2015, p. 9-10). The EDPS gives importance to the technology, as shown in the latter point "privacy conscious engineering" for future Big Data uses:

- Future oriented regulation: to give individuals more influence over decisions which affects them.
- Accountable controllers: internal policies and control systems that ensure compliance and provide relevant evidence in particular to independent supervisory authorities.
- Empowered individuals: the digital trends described above present opportunities for strengthening the role of the individual. They should become responsible together with service providers for processing personal data.
- Privacy-conscious engineering: The EU should develop and promote engineering techniques and methodologies that allows data processing technologies to fully respect the dignity and rights of the individual. Technical solutions should empower individuals who wish to preserve their privacy and freedom through anonymity.

2.3 Conclusions

Conclusively, these facts collapse to elucidate the second sub-question of this study: *What are the rules and limitations on legal regulations?* It states how data is handled in very different manners across European borders, such as with the placements of cookies with implicit/a priori consent, which allows for a broadly retrieval of data by companies. It also shows the limits of these regulations with privacy concerns: people still feel discomfort and that they have no control over their personal information. Legal requirements are therefore not enough to protect people's privacy. In addition, it has been shown that a new European law of 2018 will bring more strictness in this data gathering.

Taking technical design (ethics of technology) into account therefore becomes a necessity, as Butarelli (2015) showed with "privacy conscious engineering". However he does not mention how this can be achieved. It has been exemplified that design or engineering should also play a role to empower the people with more control and understanding of the values in design. It is therefore evident that technical side also plays a role in reinforcing ethics of Big Data in online marketing technologies. Then, I argue that an ethics of Big Data should support both sides, legal European requirements as well as consider the non-neutrality of Big Data, ad how this affect to values in Big Data design. It is clear that there is an interrelation between ethics and the technology behind Big Data: technologies that should be included in the discussion about the ethical uses of Big Data in online marketing.

CHAPTER 3: TOWARDS AN ETHICAL USE OF BIG DATA IN ONLINE MARKETING

3.1 Traditional Ethics versus Big Data Technologies

For an ethical analysis of Big Data in online marketing to be effective, it should be able to at least 1) supporting or reinforcing new legal requirements (2018) for the use of Big Data in online marketing and 2) taking into account the technical characteristics as an active element of change. In this light, an appropriate ethical analysis of these topics needs to acknowledge the influence of technology and its entailed risks, by taking into consideration that technology is not value-neutral. Building on this insight, recommendations to relevant stakeholders, such as companies and regulatory bodies, could be derived from it.

Existing literature on Big Data issues largely focus on traditional ethical frameworks (Van der Hoven (1997); Van der Sloot (2014)). While these contributions are important in their own right, the contribution of this thesis lies in the consideration of the technical parts of Big Data as an explicitly *active* element of change. Originating the 1920s with emblematic authors such as Heidegger, the philosophy of technology has come a long way from its initial stance of negativism and rejection of technological development (Brey, 2010). Different approaches have been developed, ranging from the strictly consequentialist analyses to the more pragmatic STS-inspired research. This thesis attempts to amplify these approaches by offering a view that takes into account postphenomenological insights, while being sensitive to other ethical traditions.

Traditional ethics concerns ethics of "right", that is, what is right or what one should do, such as deontology[28], consequentialism[29] or virtue ethics[30]. There is also ethics of the "good" such as ethics of wellbeing that focus on what is "good", something that is worthy of aspiration. All these different traditional frameworks focus on human moralities and virtues, neglecting the importance of technological agency such as Google search engine and different social networks that perform a type of reality (Just & Latzer 2016). This also relates to the set of human values that has been presented on chapter one. On the contrary, the different analyses produced by Big Data technologies ("*their reality")* will re-enforce what people want to buy. For example, the consequences of search engines, and Google in particular, are that users get presented a set of pre-selected results that the users will click, however the users need to know what Google actually *does* when it shows its sites; but users cannot assess when it is acting in their benefit or favouring certain companies.

Traditional ethics normally distinguishes between humans (subjects) and non-humans (objects), where only humans are morally responsible, and therefore only society (also regulations and laws) is a matter of ethical analysis, while objects (technology) are often

[28] Broadly, deontology mainly focus on the evaluation of actions on the basis of adhering to *principles*, *obeying duties*, and *respecting rights* rather than the results. An example of a deontological framework is the "categorical imperative" Kant, I., (1785), *Groundwork of the Metaphysic of Morals.* Deontology focuses on principles, rights and duties, within the focus will be on *which values* are at stake, and whether it is morally rightful to accept them.

[29] Broadly, consequentialist frameworks argue that humans should "base our actions on promoting good consequences and avoiding bad ones": (see Gotterbarn D. & Moor J., (2009). *Virtual decisions*. In: *ACM SIGCAS Computers and Society* 39.3, pp. 27–42. issn: 00952737. doi: 10.1145/1713066.1713068)
Master thesis like Slot (2016) have given an overview of consequentialist arguments of technology, however, those are still considered in relation to human beings, instead of considering it a separated entity (See page 26-28 of the thesis); "we might see algorithms not just as codes with consequences, but as the latest, socially constructed and institutionally managed mechanism"

[30] An example of virtue ethics can be found with Plato. Platonist views define virtues in terms of their relationship to *eudaimonia:* the good life is the *eudaimon* life (Happiness) – see Annas J. 1999, *Platonic Ethics, Old and New*, Ithaca, NY: Cornell University Press.

forgotten. Authors such as and Van der Hoven (1997), Van der Sloot (2014) through traditional ethics, have studied concepts like "privacy" and "freedom" in Big Data gathering as a human problem. Van der Hoven (1997) focuses on privacy as a problem of freedom and autonomy, where protecting privacy is proposed as a way of acknowledging our inability to identify an individual, a person with autonomy, as well as personal privacy. In other words, they both focus on what people should or should not do or have. Therefore, both authors miss the importance of Big Data technologies, which is an element responsible to influence values such as "privacy" or "freedom". Following this idea, technological systems such as DEC's SharpSpring will not be forgotten in the ethical analysis. What Van der Slot and Van der Hoven affirmed is a matter of freedom, autonomy, and personal privacy of the individual.

On the contrary, Tavani (1999) mentions that there are new concerns raised by new uses of Big Data such as implicit patterns in data-mining techniques, he argues:

> "Data-mining programs, by their very design, reveal information about individuals that would have been extremely difficult for data users (those who use data mining to collect information) to foresee and for data subjects (those about whom the data is collected) to consent… " (Tavani 1999, p. 138).

He further argues that privacy concerns raised by data mining go beyond traditional techniques such as the multiple databases to retrieve and exchange information, the capacity of prediction, the private nature of information that can be retrieved and so forth. The importance is that new patterns are discovered through associations; it automatically discovers information hidden in the data. However, he ends by arguing for a change in current data protection guidelines and privacy laws. Thus, Tavani noticed that technology is changing, but he still maintains the difference between human/non-human, by arguing that guidelines should

change to be able to cope with new concerns on Big Data, and he does not argue for an ethics of technology in data mining.

This, I argue, does not sufficiently provide a framework for Big Data ethics, which, as it has been explained earlier, is not only non-neutral but also highly dependent on different systems and constantly changing technologies such as SharpSpring system or Google analytics. A different perspective can be achieved by theories of technological agency and Science and Technology Studies (STS). Authors such as Winner (1985) show technology as political; others such as Latour (2005) and Akrich (1992) affirm that technology acts upon networks (Verbeek 2005). In a more radical form is postphenomenology (Don Ihde 2009), which affirms that technology and humans are not only related, but they co-shape (co-evolve) one another (Verbeek 2005). These show the agency of technology and how it co-evolves or influence the values of individuals. Theories of technological agency overcome the dichotomy between human/non-human. The values and meanings of humans are influenced by the technology, and vice-versa, and this co-shaping enables us to understand how technology influences humans. Thus, against traditional ethics, humans do not exist independent of the technology, and that invokes questions of not only how people should act, but also how designers and technology should act in changing the world. In other words, postphenomenology shifts the attention to Big Data technologies itself, which are not a passive element nor neutral, and it becomes an active element that influences users.

There is currently no literature that has explicitly focused on the agency of Big Data with a postphenomenological background. Thus, this work aims at throwing some light on this obscure field of interest in online marketing by focusing on the technology, instead of only

users, regulations or ethical standards (deontology). Postphenomenology, therefore, argues for a framework in which technology do not only influence humans, but that their values are being re-defined. In chapter one, it has been noted that Big Data technologies are an important (active) element. I have defined Big Data as "the technological ability to process and analyse large data sets of users behaviour". Thus, Big Data cannot be studied outside its different technologies, and not only that, but it must be studied its agency and the changes it produces to values (table 1,2), which have an agency, and therefore, it is necessary to consider the different technologies and their relation to the user-values for the ethical study. Thus, it will be argued that postphenomenology offers a framework that should be taken into account to propose an ethical study for the use of Big Data in online marketing; as it shows the importance of Big Data technology, as well as designers and companies as co-shapers of values in Big Data. Now it becomes necessary to study what are the relations or implications that are being created between the technological systems in online marketing such as behavioural targeting (SharpSpring) and analytic tools, and its users.

To the sub-question: *What are the limitations on current Big Data ethical theories?*, the answer provided here is that traditional ethics does not fully cover the active element of technology. It is necessary to explore Big Data as a technological activity that can influence its users as well as their values.

3.2 Postphenomenology and Big Data mediations

Peter-Paul Verbeek (2005) explains postphenomenology in his book *What Things Do*, by differing from traditional ethics that focus on the human aspect of morality. He affirms that

technology has moral value because technology *acts* and influences the world. The concept of "multistability" is central, which explains that technological uses can be unpredictable from its original intentions.

Verbeek develops Mediation Theory framework (idem), based on postphenomenology, where technologies are considered as mediators of the relation between humans and their environment (idem); technologies mediate human values, for example to drive slowly due to the road design with speed bumps, or to stop while doing exercise due to a fitness-app. Verbeek's mediation relations are represented as [I--TECHNOLOGY--WORLD] (Verbeek 2005, p.125). Technological artefacts mediate relations to the world, and even how people encounter the world. The agency of technology opens up different questions, because how we describe the problems matter for how we give solutions to them. Thus, Mediation Theory helps to shift the attention on its technologies, and therefore to the moral value of Big Data technologies, which are actively shaping the relation between human and their world. This study attempts to argue this as the first step towards an ethical study of Big Data, in which mediation relations reshape Big Data ethics. The relations [Users -- Big Data -- World[31]] are studied within the technological characteristics, the interviews results and analysis of Big Data technologies, as highlighted in chapter one.

As explained earlier, Verbeek bases his work on Don Ihde's postphenomenology (1993). Ihde argues that there are *at least* four ways in which technologies mediate the relation

[31] For the purpose of this study, the term "world" is understood as the world online. This interpretation can lead to further applications in mediation theory, as today in the era of social media and the Internet we spend a lot of time online (Wellman et al. 2002). Specifically, due the focus in online marketing, the "world" will be understood as advertisements received online.

between humans and the world – embodiment, hermeneutic, background and alterity relations:

1. Embodiment relations, represented as [(I-Technology) → World], are the ones that expand humans' sensory relation with the world through artefacts. For example, the dentists that uses a dental tool to "feel" the teeth, where touch is embodied. The physical characteristic is important because it allows humans to embody it[32]. Although new understandings of embodiment relations show that different technologies can be embodied and they do not necessarily need to be conscious, Big Data is not particularly embodied, therefore this relation is in principle not existent in Big Data uses[33].

2. Hermeneutic relations, represented as [I → (Technology-World)], correspond to those where humans have to "read" the technology in order to have a relation with the world. The technology here is seen as a representation of the world and humans know something else from it, that is, human have to interpret the information given by the thermometer. For example, a thermometer does not give a sensation of temperature but it gives a representation in the form of a number that requires interpretation. Although the use of Big Data technologies does not represent the world in itself, it does offer new representations and gives new knowledge of people's tastes and likes in the form of advertisements online, the same way a thermometer gives a representation of temperature. For example, in chapter one it has been shown that Big Data systems such

[32] More contemporary interpretations expands the embodiment relations that becomes not merely focus on physical or conscious experience, but also to other technologies such as brain implants or insulin pumps that adapts to our body but are not consciously noticed (Kiran et al 2015)

[33] This does not become a problem for the use of this framework given that it still shows different relations (Background, Alterity, Hermeneutic).

as SharpSpring not only show people's activities, but also has the capacity to produce a new analysis (or new interpretations) of people's tastes, which was also shown by Tavani (1999). Similarly, Target and Google examples have also shown that these systems display new patterns such as the lotions to find pregnant woman, this is not something that was knowledgeable before the systems have analysed the data: "What he doesn't know is that we also have the historic data, that Google search from months ago, is also appended to the contact. So we know a lot more on that specific contact than just the information that was filled out in the form" (Appendix A). Furthermore, it is important to notice that the advertisements that are targeted to the users will be modified through Big Data hermeneutic relations, that is, it requires an interpretation from the user. The relation towards advertisements changes when there is a comprehension on how the systems work. This is done by privacy policies and terms of service. Thus, Big Data technologies become an active element that give an interpretation of people's interests and tastes in forms of advertisements, abstracting information that can determine what users will buy, which is in relation to the user's understanding of the system. However, as the user is not properly taught on the procedure of these systems; the user is, in most cases, not aware of it: "The more you know about people, the more you can guide them into a certain direction… people are not aware, that's my biggest concern" (Appendix C). The analysis produced by Big Data technologies, as explained earlier, says something new about the users, therefore, I argue that there is a necessity to explain how it works. It is now represented as [User → Big Data (-Ads)]. This occurs if and only if the customer learns that the ads are produced

by Big Data. Otherwise Big Data remains totally in the background (see background relations). It affects users without its awareness but the user's relation changes depending on the information it has been received.

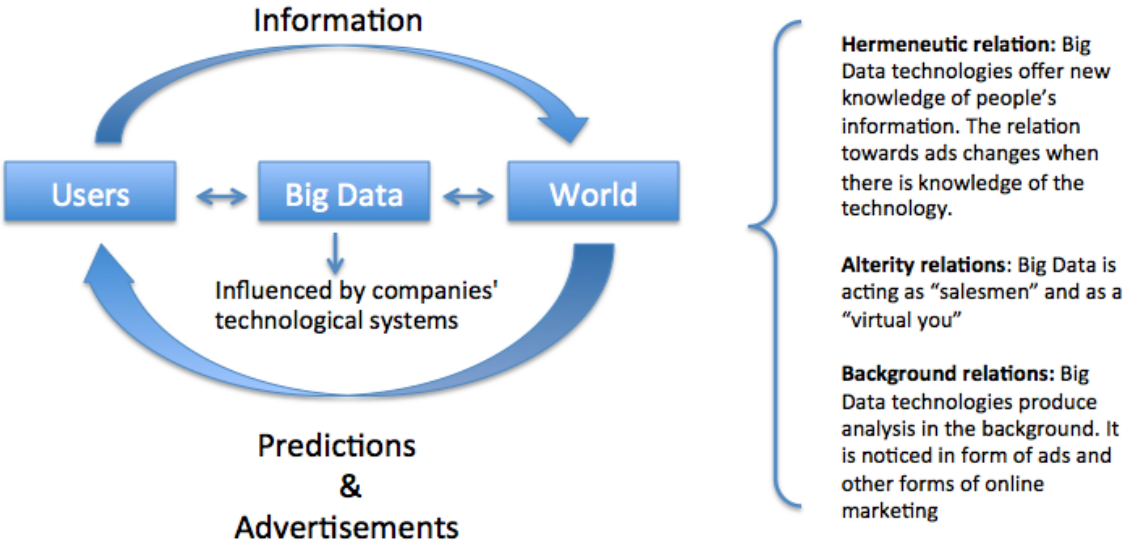
3. Alterity relations, represented as [I → World (-Technology)], in which technologies behave as "other subject", as anthropomorphic, and they possess autonomy. For example, to withdraw money from an ATM, or to communicate with social robots. A form of alterity relations can be found based on how online marketing and Big Data technology act as "other subjects". Big Data technologies act as if they are sellers, such as when salesmen show products to people (for instance Big Data analysis decided to send an email) at a perfect time, or send advertisements of products that are interesting to them. This salesman is not a "normal" one, it is representing what could be called a "virtual you" that is operating by decisions users already made online (user's history). The autonomy possessed by Big Data technologies can take for granted certain characteristics of a user as if they were "facts". One cannot take for granted that Big Data is acting as a "salesman", or as a "virtual you". It is noticeable that Big Data is acting as if they were the users, but in fact, they are not.

   For example, how can they know for sure, if it is the same person sitting behind the computer or using that phone at any given time? How can the company distinguish from a person that has a disease from a person that is just researching on it? This will lead to accept the necessity of user's control over their information. In the interviews, that problem was also noticeable following the question: "Do the users ever get upset?"– "Yes, they send an email back saying: why did I get that email! Unsubscribe

me! I didn't ask for this. We have seen a lot of complains about it and we try to do something about them… we unsubscribe him, so they won't receive an email again, unless they want to" (Appendix B). It can be seen now that to be relevant becomes a very different activity, marketing automation not only has to gather data to be relevant, but to maintain a connection with the users themselves. It is represented as [User → Ads(-Big Data)]

4. Background relations, represented as [I → Technology (-World)], where technology do not play a central role in human experience but it is shaping the experience in the background. For example, the heating system or refrigerators, they are not being noticed but they are always present. They shape human actions and perceptions, such as the possibility to buy more food that can last longer in the fridge. Big Data systems act similarly, as users do not perceive the targeting and the analysis of user's data, but they only receive the advertisements: "there is also other data that we gathered from digital platforms, for example, I visited three specific pages on DEC's website, and I have clicked in two emails, and downloaded a brochure. The user will never know that he downloaded anything… but...we captured it" (Appendix B). Big Data has been characterized in chapter one as the technological ability to analyse data, contrary to the users who do not experience that an analysis is being done, but users do not know *how* this happen. Customers do not perceive the online marketing or behavioural targeting systems such as Oracle, SharpSpring or Google Analytics, how they work and gather our data, it is invisible to the user's eyes. It will be now represented as [User → Big Data (-Ads)]

To conclude, Big Data is understood as technologies that mediate between the users and the companies, in which the user is in direct hermeneutic relation to the advertisements. It is necessary to understand that companies/technologies are mediating how people understand or interpret advertisements, how they see the relation of a person with its "virtual you", and that they are acting in the background. Therefore, it is necessary to explain to the user how this procedure is being done. Big Data's alterity relation is shown that it is acting as "salesman" but also as a "virtual you", thus I argue that there is a necessity to realise the difference between the user and the online marketing system. If this is noticeable, the companies might give users more control over their information. Big Data technologies act in the background, which is still a concern given that people do not know how their analysis is being done. Thus, Big Data in online marketing is creating what I called a "circular" system of predictions and analyses as it mediates the relation with the world in two ways, 1) users search for information 2) that information will be analysed and produce new relations and interpretations of the data and predict user's necessities and 3) this new analysis will influence the user, who does or not know how it is being done. Thus, Big Data not only helps people to get better advertisements, but it is an active intermediary that co-shapes what type of advertisements are received. These mediation-relations propose a new form of understanding Big Data, as a technology that mediates (and produce different types of relations) between the users and companies, as illustrated in the following diagram:



[Image 2- Big Data mediation relations]

3.2.1 Big Data Mediations: Amplifications and Reductions

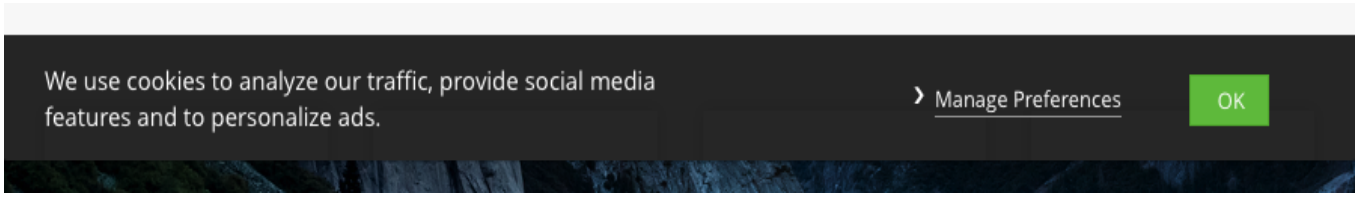
Verbeek affirms that mediation relations do not simply take place in a practical level between users and Big Data technologies, but it also co-shapes the cultural level. Just as Verbeek affirms "it shapes specific aspects of its user's subjectivity and the objectivity of that user's world" (Verbeek 2005, p.183); thus, it is influencing how humans perceive the world (idem). Verbeek explains that the influence is based on two variables: mediations strengthen (amplify) specific aspects of reality, and weaken (reduce) others; this is what he calls "transformation of perception" (Verbeek 2005, p.131). This has implications on cultural frameworks as it changes human perception and generates new meanings, which can lead to influence how humans interpret/see their values. This transformation of perception is

therefore related to the question of the role that technology can have in the generation of meaning, or in other words, technology provides specific forms to access reality which influences the aspects of reality that are perceptible (idem).

Verbeek expands the transformation of perception in his article "Materializing Morality" (2006), where he develops the notion of "scripts"[34]. Where Ihde proposes a more descriptive approach (Brey 2010), Verbeek gives an "ethical turn" towards a normative approach, in which technologies materialize morality. The scripts are the activities that technology "prescribe" or tend to impose on human actions (Verbeek 2006). For example a technology can prescribe an action of "safety", such as the car sound that starts because the person needs to put the belt on, this means that the technology helps to shape the action (or morality) of the users, and therefore its moralizing the individual, as it includes morals or standards for safety. This example can be related to Big Data technologies. The same as a sound of the car when it alerts a person to put the belt on, designers can also build scripts that alerts or stops people to accept the cookies or terms of service (TOS). Scripts can be built to make users to put a "belt on" when a user is sending data to a company, as well as different design scripts that could moralize a technology, to build "safety" scripts while being in relation to advertisements and Big Data tracking. However, as illustrated below (image 3) this does not encourage the user to put on the "belt"; instead, it encourage to press "OK". It has also been exemplified in chapter two with cookies' implicit consent. Similarly, Friedman et al., (2000) compare the design (script) of cookies information and informed consent, one that has awareness of cookies with color-coded entry in the centre of the screen (Third-party cookies

[34] The concept of "script", developed by Akrich (1999) is a central concepts in STS. It has indicated how technologies prescribe human actions. This concept has functioned in descriptive ways, where Verbeek (2006) proposes a more normative view in which "engineers do ethics by other means: they materialize morality".

are red; and the rest are green). They argue that this design influence how the user perceive the cookies, impacting how they perceived importance and risk of the informed consent, as they say, has an impact on "behavioural data (eye gaze)" (Friedman et al. 2000 p.78).



[Image 3 - sample of cookie tracking information. Retrieved from: https://onetrust.com]

Following Verbeek, scripts are not only descriptive elements, but can be turned into a more normative approach where scripts can be built to include moralization of the technology, and designers are now seen as inscribers of scripts. In order to include scripts in the design process, Verbeek proposes a vocabulary (table 3) that shows how technology mediates through scripts: by transforming experience (perception) and action (praxis) (Verbeek 2006). The former advocates that technologies mediate our experience by transforming what we perceive, for example the ultrasound or magnetic resonance transform human's experience of what it "means" to be pregnant by transforming how we look at the fetus. The latter shows that technology prescribes how to act, where a "program of action" occurs. For example, a microwave is a technology that makes people cook small and fast food meals, which it also results in eating alone, or usually eating fast food that can be heated. These two types of

mediations reveal that engineering is also a moral activity[35] by showing how technology shapes the actions of the users.

Table 1
A Vocabulary for Technological Mediation

Experience	Praxis
Mediation of perception	Mediation of action
Technological intentionality	Script
Transformation of perception	Translation of action
Amplification and reduction	Invitation and inhibition
Delegation: deliberate inscription of scripts and intentionalities	
Multistability: context dependency of scripts and intentionalities	

[Table 3, Verbeek P.P, (2006). Materializing Morality. Science, Technology and Human Values. volume 31:3 361-380- page 368]

It becomes a necessity to consider Big Data technologies as creators of scripts. Big Data technologies are also a moral activity, as it has been described in the last section, its technologies shape the actions of the users. Thus, this study aims at showing how this framework can be integrated in an ethics of Big Data in online marketing. This analysis starts with the assessment on the transformations of Big Data in online marketing based on table 3[36],and also to incorporate the way in which designers could try to build specific forms of mediation in Big Data. This analysis do not intend to propose a view in which a solution is to

[35] There are other studies that support this view, such as Boon (2004) "*Technological instruments in scientific experimentation*". Boon shows that the moral attitudes of engineers are of great importance.

[36] As this study refers to "mediation of perception" in the time of this study i snot possible to make a complete list of mediations, this study requires for a more in depth analysis.

radically reject the use of Big Data in online marketing, or to encourage it, but rather to reform it, by showing particular actions (amplifications/invitation) and (reductions/inhibition).

This study proposes an analysis of Big Data uses based on the characteristics and values of Big Data technology in chapter one (table 1,2), and following mediations and the vocabulary on image 3 based on Big Data's mediation of experience and action, within its amplifications/reductions and invitations/inhibitions[37]. Chapter one has shown technical characteristics: relevancy, autonomous systems, centralisation of different channels, and design choice. It has also shown limitations for users in autonomy and control, the necessity for users to be aware of online marketing strategies and Big Data uses. In addition, it has been argued for values in Big Data technologies (table 2). Big Data is a not a neutral element but a technology or technologies that actively shape values and influence the user, by for example predicting new patterns and behaviours. Thus, I will study the values following the vocabulary of Table 3:

a) Automation and relevance

Big Data systems are affirmed to be automated and relevant. Online marketing systems that use Big Data amplify the automation of repetitive tasks: "Marketing automation allows you to automate strategy. Without it, it will just automate chaos and confusion" (Achterkamp 2015). In addition, he mentioned that it also amplifies relevancy "I want to be *more relevant* towards the user, so he will become more engaged, that's kind of the goal on the

[37] Amplifications/reductions and invitations/ inhibitions of experience and action are analysed together. On page 56 a division is proposed.

development... This is kind of a win-win, we don't spam people… we don't want to send to someone that is not interested" (Appendix B). Similarly, Gertz (2017) proposes a new mediation relation, described as a tendency in technological developments that he calls “leisure-as-liberation”. Gertz explains how technologies are typically designed to liberate humans from everyday life tasks that prevent them from doing what people “really want”, which in this case is to buy products. Companies like DEC do not want to bother users that are not interested in the product, and that is why they find the right customers, who they assist to find the right product. This idea can be translated into the use of Big Data: “Big Data works so you can buy”, the less can be shown about security and privacy statements, the faster people can arrive to their website, and the faster they can obtain their products. This shows Big Data technologies as a development that is directed to provide few autonomy to the users, because it is automated, thus the user do not “need to think”, and the advertisements will come to them. Gertz explains it as to liberate people from decision-making. Thus, it becomes clear that there is a reduction of user’s choice (decisions) an automated system reduces the possibility of the user to *choose* what they want to receive or see. There is dramatic reduction of choice (autonomy), together with an even greater amplification of systems to automate user’s information, but it does not allow people to *choose*, nor have control over their personal data. This does not mean that relevance as such is amplified, because companies can also be less relevant. Such as finding different prices, or by data containing mistakes. The very meaning of what it is to be relevant has changed, as it is only considered possible with Big Data analysis.

b) Privacy

There is a reduction of privacy. Chapter two has shown the study conducted by Obar and Oeldorf-Hirsh (2016) with 543 participants on the reading behaviour of terms and conditions, the common responses are that users never read terms and conditions. This lead to consider that people do not care about privacy, that they are not interested. In addition, interviews at DEC showed that marketers and software developers also consider that privacy policies are an impediment, an step or condition, that nobody cares. On the contrary, scripts have been shown also as a possible inscribers of risk; and it was explain that the practice of ignoring privacy policies is not due to the lack of interest but also due to design. It has also been shown how Big Data is acting as background relations, which also influence the user not to see the risks (Taplin 2017). Thus, it was explained that individuals consider that privacy is important, however their behaviours show otherwise (privacy paradox). In most cases, that was due to the length, difficulty and so forth. Thus, "privacy" is altered by Big Data technologies, which are inscribers of scripts. For example, the design of cookies acceptance, if its implicit, users will not "see" or understand the cookies, and therefore they will not "care". The same was shown with privacy statements and TOS.

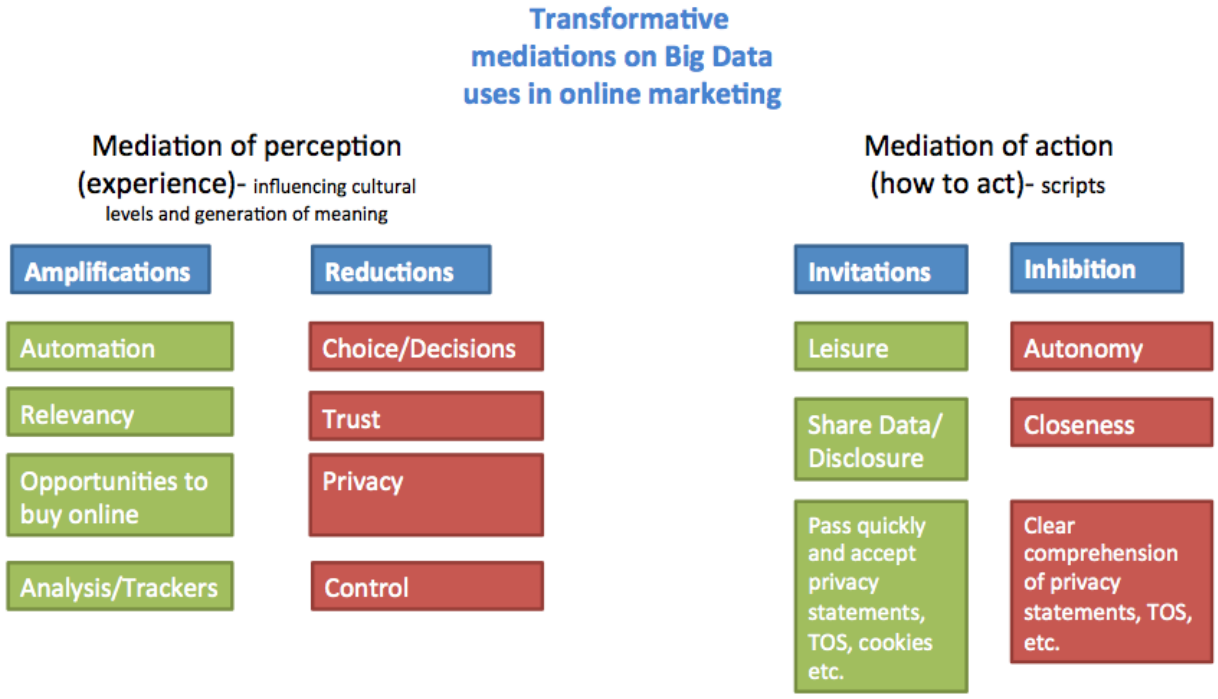
In addition, I argue that the concept of privacy is changing. For example, the relation of privacy is different from a person that you see looking through your window, than a person who does not know that an analysis of her is being done. If technologies that has privacy issues are shown in a concrete or precise way, instead of in the background, people tend to care about them (Oeldorf-Hirsh 2016); like putting a belt while driving a car, Big Data technologies in online marketing transform perceptions of privacy. Thus, through mediation theory, becomes

possible to understand how Big Data design influence people's interest in privacy, and allow companies to design, shape and redefine privacy issues themselves. For example the issue of "privacy" as earlier exemplified with Target and Google examples, not only becomes a problem to the users, but also to the systems that are behind Big Data that facilitate this. It is therefore cogent that the people´s privacy might not be only a problem for the user, but also to the systems that creates new patterns, or as Tavani (1999) says: "Even though individuals might have explicitly authorized information about themselves to be collected for use by a business in one context, it does not follow that those individuals have also authorized that such information can then be subsequently mined for further use and analysis" (Tavani 1999 p.144).

c) Invasive practices and a loss of trust

Big Data in online marketing have been argued to be useful for purchase intention due to its relevancy. However, it comes with a hidden cost, particularly with more invasive practices and a loss of trust. This refers to what people experience in response to perceived threats to our freedom and autonomy. For example, when people receive an advertisement from a brand that they never bought before, or when they surprisingly receive an email they never subscribed to (Appendix B). Companies and marketing practices can have a reduction of trust, which at the same time is in relation to hermeneutic relations. For instance, the example from Target (Duhigg 2012) have shown that user customer's information can reduce consumer trust. However, trust can also be amplified if the users do not know what is happening (or if they do not care) as if for example their aim is to only receive personal advertisements (hermeneutic relation).

Resulting from this analysis, the transformative mediations are summarize in the following diagram. Here I propose an overview of how Big Data in online marketing is trasforming and mediating the users:



[Table 4- Transformative mediations on Big Data uses in online marketing][38]

To the sub-question: *Which ethical framework can be applied to pursue an ethical use of Big Data?* It has been proposed Mediation Theory as a usefull framework that allows to focus on the technology to study how it is influencing the users. The results are the consideration of postphenomenological mediations, and mediation of perception and action.

[38] I have left out other mediation worth considering: mediation of the *perceptual field,* allowing distant companies to access to a large amount of data and analysis everywhere, that is, an amplification of the field of action, as well as it allows users to receive information from everywhere, or at least, a huge variety of it. However, this is not relevant for this study and will need further research. In addition, these mediations are resulted from my study, but it requires further study to include new ones.

3.2.2 Big Data design and responsibility

The recognition of different technologies in Big Data as "moralizing technologies", including the transformation of perceptions, does not reject the responsibility of designers and companies. The transformations of perception and action display the importance of the agency of technology, and it also shows the responsibility of companies and designers, or Latour puts it: "change the instruments, and you will change the entire social theory that goes with them" (Latour 2009, p.9). Verbeek argues that "Designers no longer can hide behind the needs and wishes of the consumer; instead, they have to take *responsibility* as shapers of society" (Tromp, Hekker, Verbeek, 2011, p.19). Thus, I argue that Big Data in online marketing should consider the designer's and company's *moral responsibility.* Barret (2004) defines moral responsibility as "accountability": "A capacity for making rational decisions, which in turn justifies holding moral agents accountable for their actions". Contrary, Gertz (2016) warns us about companies who might reduce responsibility to merely *accountability*, for which reason being moral requires not that we take responsibility (follow regulations) but that companies should be *held responsible.* To be held responsible means to take responsibility for their actions even before it happens. Companies now are not only accountable for Big Data uses, but they should be "held responsible". Therefore, designers and employees that use Big Data in online marketing has a *responsibility* while creating and using tools, they are creating morality through development and uses of Big Data technologies, as this agency "awaken us to responsibility" (Gertz 2016).

I argue that it is company's responsibility to consider its respective Big Data uses, to limit themselves in data gathering, to grant people the necessary information about how much

data is being gathered from them; to explain what analysis is being process (behavioural targeting or Google Analytics) or to explain TOS in a simple way[39].

Thus, the previous framework can be used to give an answer to an ethical use in Big Data technologies. For example, companies are not only accountable for a mistake, but they are being held responsible in the performance of a task to guarantee that this is not happening. I propose a model that can be taken into account to be "morality responsible". An example of this model of responsibility in design can be found in Apple's model of trust and compromise[40], in which by taking responsibility, they offer a statement about how do they store users information:

> "We believe in telling you upfront exactly what's going to happen to your personal information and asking for your permission before you share it with us. And if you change your mind later, we make it easy to stop sharing with us. Every Apple product is designed around those principles.... We're publishing this website to explain how we handle your personal information, what we do and don't collect, and why. We're going to make sure you get updates here about privacy at Apple at least once a year and whenever there are significant changes to our policies"

Apple's statement is opposed to the view where companies take a passive model, in which it is considered that people do not care about privacy statements. On the contrary, Apple is showing users how they treat people's data and it seems to be held responsible in a way that it makes users understand the data analysis and procedures. Here not only relevancy is important; Apple has made an effort to show their customers how they process their data.

The same way as the concept of scripts (Verbeek 2011) have shown that technologies and designers can prescribe morality into products, how users must act; it has also shown how

[39] Rawl's argues that "Justice is about equality, and to be equal is to be equally knowledgeable" Rawls (1971) *A Theory of Justice.* In order to be equally knowledgeable, the users need more understanding of Big Data's background relations.

[40] See Apple's website: http://www.apple.com/privacy/

the transformative mediating roles. Currently, companies are not being responsible for the moral agents that they are[41]; but it is argued that companies *should* consider not only the technical characteristics, but should favour a responsibility (held responsible) model for the use of Big Data in online marketing in design.

3.3 Ethical-Constructive Technology Assessment: Big Data Ethics and technological mediations

Heidegger (1977) in his book "The Question Concerning Technology", has warned us that rather to consider a technology positive or negative, it is more dangerous to consider it neutral. This author was referring to the dangers of technology, as it has the power to change the world, and it should not be taken as a passive element. It is now understood that Big Data technologies play a central part in the construction of ethical issues, and it is influencing users in many ways. Big Data technologies and systems become agents that construct and interact with ethical values, but they also co-evolve with them. It becomes evident that Big Data ethics is not only a matter of autonomy or personal privacy of the individual, It is also a matter of how the technology allows this autonomy and privacy to "happen", mediating perceptions and actions, and modifying ethical values, such as how the companies use Big Data, and hence the design is important to maintain privacy online (Floridi & Sanders 2005). I argue that concepts such as "privacy" online should be taken in consideration with its technologies because these produce analysis that are not only people's personal information, but much more. For example,

[41] See "limitations and future research": User's responsibility is missing from this framework, as this is a strong version of responsibility that I am promoting. This is not an "either/or", I do not support the idea that users are *not* responsible; I am proposing a frameowrk in which companies can understand that the actions they take has an influence in user's morality.

it was mention the company's ability to know much more than people's personal information (Appendix B), but they can deduce many other variables of the individual, as if you will break up with your partner soon, or if you an addictive person, physical frailty and so forth[42].

Theories such as postphenomenology and mediation theory normally refer to an evaluation of a checklist of ethical issues. It serves as a *tool* for identifying negative effects of new technologies (Kiran et al. 2015). Authors such as Palm and Hansson (2006) show certain problems to this approach, one is that it only assess different *effects* of new technologies, which allows only for an evaluation on how new technology have constraints, violate norms or produce positive norms, as a list of positive and negative influences. However, it does not show *how* ethical principles may be affected by technology, and what type of ethical principles may apply. In addition, Kiran et al. propose a normative ethics framework that can accompany postphenomenology mediations, instead of only list or assess them. This framework is named Ethical-Constructive Technology Assessment (eCTA) (Kiran et al. 2015, p.3). It is included in a micro-level perspective, instead of a macro-level that includes moral frameworks. The micro-level refers to a "soft-impacts" (Ibid, p. 4) or the moral implications to innovation, which are usually viewed as irrelevant or a private issue; but it can also refer to how technologies *enable and constrain* characteristics through shaping identities (directly) and by shaping values and norms (indirectly). These characteristics influence or change the moral landscape, as technology challenges the moral principles by disturbing the existing structure: "Emerging technologies… can rob moral routines of their self-evident invisibility and turn them into topics for discussion, deliberation, modification, reassertion" (Swierstra and Rip 2007,p.6).

[42] Retrieved from: http://www.socialcooling.com

It was argued that users recognise their possibilities in the technical possibilities of their surroundings, for example with privacy or control (Kiran et al. 2012, p.9). Thus, these authors show the importance of having possibilities (choices, autonomy) within Big Data technology, as users also recognise the possibilities in the technical possibilities of these systems, they also recognize their privacy or autonomy in the technical possibilities of marketing automation technologies. This analysis explains that situation when using a website, as privacy is the privacy given by technology, this modifies the technology into an ethical matter, as new online marketing technologies are not just means of communicating or being relevant with customers, they also shape customer's privacy, autonomy, and so forth.

The ethical shift is towards the agency of technology and responsibility of the company: companies have to take an active part in this shaping, as well as designers should take into account the shaping impact of technology. Thus, it is argued that deliberation within companies' internal framework must be pursued to study its specific analysis and Big Data uses. Technologies in Big Data are a constantly changing technology, which is influenced by different necessities of the companies, and analysis that are being done. Thus, it can be argued that one cannot hold to a unique ethical or moral framework because technologies change rapidly, or in other words, it is necessary to constantly focus on the technologies as moral agents of change.

Big Data has become a moral agent. Thus, the ethics of Big Data cannot be limited to assess the moral quality of technologies form an external position, rather, it should accompany the development and implementation of technology from "within". Big Data changes the moral landscape even before its ethical or philosophical deliberations, because they increment *behavioura*l change. The availability of "privacy through technology", that is, how companies

and Big Data analysis allow privacy, affects meanings of privacy itself, and can induce to reflections over what type of privacy a society wants. This idea implies a co-evolution between technology and ethics. It is therefore questioned the possibility for a unique moral or ethical framework, and I argue that it is a problem of "measure" or tensions between different mediations of amplification and reductions (Image 4), and the agency of technology.

Kiran et al. (2015) affirm that there are three levels in which technological mediation plays a role:

1) It is a heuristic tool that anticipates potential mediations

2) These mediations can be evaluated

3) Designers can design mediations (scripts). After the identification of potential mediating roles of Big Data uses, these roles can be evaluated in terms of *desirability*[43]. Designers can redesign specific characteristics of Big Data systems in order to avoid or promote specific mediations. Policy makers can also choose to develop specific procedures regarding these mediations.

These authors have developed an ethical constructive technology assessment (eCTA) approach that is based on mediations and ethical reflection in decision-making about the social impacts. It is based on four principles:

1) It is an attempt to determine moral issues.

2) Is an accompaniment rather than an assessment, it is only "in the inside" that do not step out of the mediations to shape our moral frameworks, addressing ethics of

[43] What is "desirable" requires further research, which is outside the scope of this thesis, and must be decided by companies. It can be argued to have ethical desirability, which had to be argued for in *normative* terms of an ethical theory.

technology. However, this point is not clear due to the fact that opens up a framework in which technologies (and Big Data) are moral and can be evaluated, including its values.

3) It supports design practices towards openness that allow seeing the moral routines.

4) It addresses practices of moral responsibility of shaping user's lives in accompaniment with these new technologies, and to recognise how this moral responsibility is achieved in daily life between designers and users.

An ethical use of Big Data must first recognise 1) technologies as moral agents and recognize its influence. 2) To apply to the study of technological mediations describing human-technology relations as it was previously attempted, which demonstrate the background relations with its users, and intermediaries between advertisements (hermeneutic relations) as well as the difference between real "salesman" and "virtual you". In addition, it should be also taken into account amplification/reductions and invitations/inhibitions. I argue that this can be done in different ways, but must be decided by the companies as a deliberation within internal framework. 3) To recognize the designer's and company's responsibility (to be held responsible not mere accountability).

3.4 Values in Big Data and mediation theory study

I hereby propose a summary of Big Data values retrieved from the Value Sensitive Design developed by Friedman et al. (2013). These values are re-interpreted from the above study of mediation theory in Big Data use:

Values in Big Data	Definition	New interpretations and considerations
Privacy	Refers to a claim, an entitlement, or a right of an individual to determine what information about himself or herself can be communicated to others.	Technology has altered notions of privacy, which has become apparent with systems that predict behaviour. Privacy is co-shaped by decisions and uses of the company that have altered the privacy as mere information. The results of the analysis carried out by these technologies are not people's information but a prediction of behaviour that sometimes is not even in the scope of the user. The availability of technology to analyse and compare large data sets brings new privacy intrusions.
Freedom from bias	Refers to systematic unfairness perpetrated on individuals or groups, including pre-existing social bias, technical bias, and emergent social bias Refers to making all people successful users of information technology.	Big Data used by companies focuses on relevancy, however this seems to be the only way that companies consider that this can be done. Control is needed to be able to have this technology free from bias, as exposed with alterity relations, Big Data is not a "virtual you" even if he acts like one.
Trust	Refers to expectations that exist between people who can experience goodwill, extend goodwill toward others, feel vulnerable, and experience betrayal.	Hermeneutic relations have shown that advertisements are perceived depending on how much the users know about that analysis. It is necessary for users to be more knowledgeable about how companies are using their data.
Autonomy	Refers to people's ability to decide, plan, and act in ways that they believe will help them to achieve their goals.	Users also recognise the possibilities in the technical possibilities of these systems. They also recognize their autonomy in the technical possibilities of online marketing technologies. Given that Big Data mediates in the background, more control is needed.

Informed consent	Refers to garnering people's agreement, encompassing criteria of disclosure and comprehension (for "informed") and voluntariness, competence, and agreement (for "consent").	The scripts inculcated in online marketing TOS and privacy policies mediate user's understanding. Currently, cookies and TOS are what people perceive, but these are not the only technologies involved. The result is that people are not sufficiently informed.
Accountability	Refers to the properties that ensure that the actions of a person, people, or institution may be traced uniquely to the person, people, or institution.	Companies, and Big Data technologies must be held responsible as a moral agent and moral technology, not only as mere accountable. Companies have to take an active role.
Identity	Refers to peoples understanding of who they are over time, embracing both continuity and discontinuity over time.	Big Data is acting as if they were the virtual users and sellers but in fact, they are not. Companies must recognise that the advertisements are influencing the users.

3.5 Discussion

The main research question of this study is: *How should companies use Big Data in Online Marketing in an ethical way?* Mediation Theory is proposed as micro-perspective that highlights the importance of Big Data technologies. I have argued that Big Data cannot be understood outside its technologies, and the ethical analysis must consider them as moral agents. The necessity to understand different aspects of Big Data through its technologies has been shown; in opposition to authors who have argued for a focus in policy and forgetting the implications of Big Data as an ethical/moral agent.

As technology continues to evolve, this interpretation has been shown not only as a "personal privacy" but it also gives new analysis outside the scope of individual privacy. This surpasses mere personal information of the people. Now the technology has the possibility to connect different entry points, and to identify more than mere information, but analysis and predictions of the users. This study has produced two main arguments:

1. Postphenomenology is capable of bringing a different perspective on Big Data collection, by making the technology an active part of the ethical discussion.
2. Considering the technology behind Big Data as part of the study opens up a new field of research that is not being covered right now, and could potentially lead to (a) new questions and orientations of research, and (b) an urgent call for new methodologies to study these mechanisms in the field.

Thus, I argue that an ethics of Big Data should be directed towards specific contexts and technologies. Designers and companies should take responsibility in design: (1) There should be an identification/evaluation of mediation issues as proposed earlier (image 4) and (2) a design feedback that uses the results of the evaluation stage that will guide development of the technology.

Finally, this study advocates for a responsibility of the companies, but it also can be used for governance advices. Mediation Theory offers a framework that can be included in Big Data design and responsibility, which favours the upcoming European laws of 2018. It can be used as a tool for privacy-conscious engineering that is referred in this new law, as it also expands its interpretations to not only privacy, but as a conscious-engineering where control, biases and awareness have been mentioned, among others.

This study also influences the philosophical analysis of Big Data. It is deduced that not only users are moral agents but also Big Data technology itself requires ethical work. Thus, an ethics of Big Data cannot limit itself to assess the moral quality of systems (deontology), or its consequences (consequentialism), rather, it should accompany the development and implementation of technology from "within". Addressing this dynamic reveals changes in values brought by Big Data technologies and how existing and new norms, such as privacy, are modified by its technologies.

CHAPTER 4: RECOMMENDATIONS FOR COMPANIES

4.1 General recommendations

There are three steps that must be considered by companies for an ethical use of Big Data:

1) Design feedback must be focused on each different system, using the results of the mediation relations to guide development. They must also ensure that the used systems and technologies balance or considers the amplification/invitations with inhibitions/reductions.

2) Companies must be held responsible of its Big Data uses. To recognize that different technological actions generate different outcomes for the user, such as background relations. In order to act in an ethical way, it is important that companies reflect on what data they are gathering, how they are handling the user's data, and for what purposes. This requires rigorous thinking about the ramifications Big Data systems depending on the companies, rather than

assuming that regulations will do all the work. For example, companies have control over who gets to see their data stored. In this regard, it is important to recognize the choices of systems in online marketing such as SharpSpring or Google Analytics, as it allows companies to choose which data is being received. Here there are websites that support software privacy such as OneTrust[44].

3) In addition, customers should have flexible control over the information they provide. The scripts concept can help to achieve this. Nowadays it is obligatory to fill certain private information, often marked with an asterisk sign placed on forms, companies could consider not making it obligatory without users being restricted from proceeding to another page or action. In addition, data should be processed in a manner that is secure for the user, including protection against unauthorised third parties or data breaches, using appropriate technical or organisational measures. Thus, companies should ensure that the processing is transparent by providing meaningful information to the user about the logic involved.

The responsibility (held responsible) of companies towards making users more aware of privacy issues can bring some benefits, such as reinforcing the current customer/public opinion and trust of the company (see hermeneutic relations). On the one hand, it can change the attitude of people who are aware or have privacy concerns, and it informs the user who is not aware, so that they do not form a negative attitude: “Within a company, for example, designers would bring values to the forefront, and in the process generate increased revenue, employee satisfaction, customer loyalty, and other desirable outcomes for their companies” (Friedman et al. 2000, p. 89). There are other significant benefits available through an ethics of technology,

[44] Website One Trust: https://onetrust.com

such as the value of taking a "leader" role on an explanatory (comprehensive) action such as to avoid misunderstandings, generating trust, faster consumer acceptance; reduction of future problems or adaptation to the new European legislations of 2018; risk reduction of unintended consequences; and social good generated from leading the ethical example. When companies understand or com-prehend their power as moral agents, they can also expect to behave differently.

Some recommendations for companies can be drawn from this study based on the mediation perspective of Big Data technologies in online marketing. Companies should inform customers *comprehensibly* by informing users of cookies displayed and methods the user could identify them. This can be done by:

1) Showing a clear understanding of the most important points of information of privacy policies and TOS, in a way that users have a proper and clear understanding of them, and what these entail for their own privacy.

2) Following Apple's model, to create a website where companies properly indicate how they track, store and analyse Big Data. The type of data they store, and what type of marketing systems they use. In this way, this will give options to interested people to be informed.

3) A creation of a newsletter for privacy updates.

4) Take into account scripts such as to propose double-check subscriptions, by which users receive an email to double-check, options to opt-out and delete customer's information completely from the database.

5) Increase the possibility of customer's inclusion (control) by providing the option for users to access their data in real time. An easy access of users to update their data on the website they visit. This is a necessity, due to the different analysis created by each company.

4.2 Recommendations for DEC

Following the Business-to-Business (B2B) model, DEC is different from other companies that sell products such as Target or Apple. For this reason, DEC can play an important part in leading the example of Big Data Ethics to other companies. Thus, DEC can ensure that:

1) Study whether mediations and amplifications/reductions and inhibitions/invitations have been considered and balanced.

2) MA data storage is secured and protected

3) To develop an internal framework that ensures user's privacy and protection, contemplating how much user's data is gathered or needed. Make an analysis of what "necessary information" must be obtained, depending on the marketing systems. There should be questions such as: who gets access to it? how it is being used? And to what ends?

4) DEC can lead the example by informing other business about Big Data ethics

5) Necessity to adapt to the 2018 regulation

6) Possibility to develop a privacy statement online or newsletters for privacy updates

7) Give more options, control and awareness to people, for example by providing users the data that companies are storing about them, and to allow more control (give options) over their data.

8) Ensure that there are options to opt-out as well as delete the information completely from their system if asked.

CONCLUSION

Big Data cannot be understood outside the technological realm. Is not only notable because of its size, but because it is producing analysis and deductions from the data. This work has offered an applied ethics on Big Data practices with the postphenomenological and Mediation Theory framework, rather than traditional ethics that are focused on the individual. This framework helps to recognize that Big Data is creating new challenges and influencing user's perception of what privacy, automation, relevancy and so forth means online. It offers a new method to engage in an ethical discussion that does not forget the technology. The question of this study: *How should companies use Big Data in online marketing in an ethical way?* Has been answered based on the study of the technical part in detail, the study of the laws and regulations in Europe. The regulations have shown to be insufficient to understand the challenges of Big Data. It shows that ethical values such as "privacy" are in relation to company's actions, and it supports the importance of responsibility in design. This thesis not only argues that companies should be more responsible in the use of online marketing systems,

but it also suggests the Mediation Theory tools as an approach for Big Data ethics in design. A practice of companies to engage in an ethical use of Big Data that contributes to maintain a balance between the risk of unintended consequences and the benefits of ethics in design. It shows that the technologies of Big Data shape values such as privacy and control, as the technology change the moral routines and turn them into topics of discussion.

While legal requirements have set the parameter of expected behaviour regarding the use of Big Data by companies, there are still ethical problems such as privacy and control that should complement the legal apparatus. To achieve this, I argued that this ethical study could compliment the legal standards with correlative ethics in technology of which the tenets of Mediation Theory clearly outlines. This results in an argument in which the company self-regulates by setting moral standards in their use of Big Data technologies and systems, which are exemplified by the amplifications/reductions and invitations/inhibitions as well as the explanation of postphenomenological mediations.

This paper contributes to the development of ethical assessment and it gives an applied ethics that can accompany design. This study can also be beneficial to policymakers to be aware of how ethics contributes in Big Data design. This study has contributed to the philosophical, legal and technical literature on Big Data by offering a building block for future research, companies' ethical use of Big Data, and policy-development.

LIMITATIONS TO THIS STUDY

The design of Big Data technologies with the explicit aim to influence user's actions raises moral questions itself. It is not evident that all attempts to control or influence users behaviour are morally justified, which can be associated with the technocracy that appears in Orwell's famous Big Brother or a propagation of technocracy. This refers to a reduction of user's freedom when human actions are explicitly produced with the help of scripts. Human beings then simply show a type of behaviour that was designed by companies, rather than explicitly choosing to act this way. This problem of freedom is not addressed in this study. However, this does not justify the conclusion that it is better not to pay attention to Big Data mediation during the design process, if designers who do not consider ethics in design make the judgements. This might lead to a form of technocracy.

The focus of this thesis has been companies, as the research question was: *How should companies use Big Data in online marketing in an ethical way?* Thus, the users have been left out, and it raises important questions as whether predictions given by Big Data is influencing or reinforce certain lifestyles and advises (Parisier 2011).

In addition, this study has not focused in depth on what it means to have an identity online, which raises deeply important questions for the future of privacy (Craig & Ludloff 2011). This thesis has mentioned the alterity relations in which Big Data is seen as a "virtual you" or as a "salesman", but not in detail.

Similarly, this thesis has not pay attention to the possibility of selling data to the companies. There are companies who provide users with information in exchange for a fee

(Brown 2015). However, this option raises problems in it as to whether the users are responsible enough and know every consequence.

This study was also limited due to dearth of literature focusing on Big Data from a Mediation Theory framework.

It can be argued that a normative ethical framework is missing from this study. As explained, mediation theory offers a list of amplifications and reductions but it does not show a normative perspective on whether it should be done or not. Thus, this requires further investigation. However, this study has shown that Verbeek proposed an "ethical turn", based on the moralization of the technology. This thesis requires further study in relation to more traditional ethical frameworks. This is due to a lack of time in this research. However, although I argue that Big Data should not be considered outside its technologies, this does not reject other ethical frameworks. I still consider that, based on my study, the technological characteristics of Big Data should not be forgotten.

Furthermore, because of the technological implications, this study has not taken into account the questionable state of data itself. Is it right to use people's data to influence and sell goods? This falls outside the scope of my study.

FUTURE RESEARCH

The focus here is mainly on Big Data in an online marketing context. However, I consider that this study can lead to the same analysis in other fields such as Big Data used in social sciences, or scientific research. In addition, a more oriented user study can also be pursued. Furthermore, the results in the mediation analysis should be developed further in detail, and can constitute an evaluation of it. Moreover, a study of the possible future scripts in Big Data should be also be taken into account, as it was shown that it requires specific study for each system and company, and what each company considers to be “desirable”.

This study has shown that the normative (traditional) ethical study lacks the technological characteristic, however it is necessary to further research more literature to investigate how these two different frameworks can be beneficial to one another. Another key point that requires further research is the “algorithmic selection” versus “Big Data”. For the purpose of this study I left it out, but it can be beneficial to include this research in algorithmic studies.

REFERENCES

Accenture (2015). *Winning with the Industrial Internet of Things: How to accelerate the journey to productivity and growth*. Retrieved from: https://www.accenture.com/nl-en/~/media/Accenture/Conversion-Assets/DotCom/Documents/Global/PDF/Digital_1/Accenture-Industrial-Internet-of-Things-Positioning-Paper-Report-2015.pdf

Authority for Consumers and Markets ACM. (2015). *ACM will actively enforce compliance with the new cookie rules.* Retrieved from: *https://www.acm.nl/en/publications/publication/14327/ACM-will-actively-enforce-compliance-with-the-new-cookie-rules/*

Angwin J. (2012). *The Web's New Gold Mine: Your secrets*. The Wall Street Journal. Retrieved from: http://www.wsj.com/articles/SB10001424052748703940904575395073512989404

Akrich, M. Latour B., (1992). *A summary of a convenient vocabulary for the semiotics of human and nonhuman assemblies*". *Shaping Technology/Building Society*, The MIT Press, Cambridge, MA, pp. 259-64.

Archterkamp F., (2015). *Marketing automation: wat is het en waar bestaat het uit?.* [Translated by me]. Retrieved from: http://trimm.nl/blogs/marketing-automation-wat-is-het-en-waar-bestaat-het-uit

Batesole B., (2016). *What is Google Analytics?.* Retrieved from: https://www.lynda.com/Google-Analytics-tutorials/What-Google-Analytics/197523/415171-4.html

Barlow, J. P., (1996). *A Declaration of the Independence of Cyberspace.* Retrieved from: https://www.eff.org/cyberspace-independence

Barrett W., (2004).*Responsibility,Accountability and Corporate Activity.* Online Opinion: Australia's E-journal of Social and Political Debate. Retrieved from: http://www.onlineopinion.com.au/print.asp?article=2480#.

Brey, P. A. (2011). Anticipatory technology ethics for emerging IT. *CEPE 2011: Crossing Boundaries*,

Boon, M. (2004). *Technological instruments in scientific experimentation*. International studies in the philosophy of science. *18*(2-3), 221-230

Latour, B. (2009) 'Tarde's idea of quantification', in The Social after Gabriel Tarde: Debates and Assessments, ed. M. Candea, Routledge, London, pp. 145–162

Borgesius F.J.Z., (2013). *Singling out people without knowing their names-Behavioural targeting, pseudonymous data, and the new Data Protection Regulation.* Retrieved from: https://drive.google.com/drive/folders/0B7qkPl_ujLKOdnB0SzdYVzdPNUE

Boyd D. & Crawford K., (2012). *Critical Questions for Big Data*. Information, Communication & Society, Routledge 15:5, 662-679, DOI: 10.1080/1369118X.2012.678878

Blanchette J.F., Johnson D.G., (2002). *Data Retention and the Panoptic Society: The Social Benefits of Forgetfulness*, The information Society, 18: 1, 33-34

Bentham, J. (1798). *Proposal for a New and Less Expensive mode of Employing and Reforming Convicts*. London

Butarelli, G., (2015). *Towards a new digital ethics. Data, dignity and technology*. Opinion 4/2015. European Data Protection Supervisor.

Brey, P. (2010). *Philosophy of Technology after the Empirical Turn*. Techné: Research in Philosophy and Technology 14:1

Brown M.S., (2015). *When and Where To Buy Consumer Data (And 12 Companies Who Sell It)*. Retrieved from: https://www.forbes.com/sites/metabrown/2015/09/30/when-and-where-to-buy-consumer-data-and-12-companies-who-sell-it/#221adabc3285

Coveney J., (2015). *What is Marketing Automation? 21 Pros Weigh In.* Retrieved from: http://revengineinsider.com/what-is-marketing-automation-top-answers-from-industry-thought-leaders/

Chen J., (2014). *An Economic Analysis of Online Advertising Using Behavioural Targeting*. MIS Quarterly 28 (2): 439-449

Custers, B (2004). T*he Power of Knowledge, Ethical, Legal, and Technological Aspects of Data Mining and Group Profiling in Epidemiology*. Nijmegen: Wolf Legal Publishers

Damveld J., (2015). *Marketing automation @ Emerce Conversion 2015.* Retrieved from: http://trimm.nl/blogs/marketing-automation-at-emerce-conversion-2015

Dubois, L. (2015). *11 Best Web Analytic Tools.* Retrieved from: https://www.inc.com/guides/12/2010/11-best-web-analytics-tools.html

Dutch Data Protection Act (DDPA).(2014). Unofficial translation. Upper House of the Dutch Parliament. Retrieved from: http://www.coe.int/t/dghl/standardsetting/dataprotection/national%20laws/NL_DP_LAW.pdf

Dutch Telecommunications Act (DTA). Retrieved from: file:///C:/Users/afernandez/Downloads/telecommunications-act.pdf

Duhigg C., (2012). *How Companies Learn Your Secret*. The New York Times Magazine. Retrieved from: http://www.nytimes.com/2012/02/19/magazine/shopping-habits.html?_r=2&pagewanted=all

E-commerce Directive. (2014). Retrieved from: http://ec.europa.eu/internal_market/e-commerce/directive/index_en.htm#maincontentSec1

Edelman D. C., (2010). *Branding in the Digital Age: You're spending your money in all the wrong places*. Harvard Business Review. Retrieved from: https://hbr.org/2010/12/branding-in-the-digital-age-youre-spending-your-money-in-all-the-wrong-places/ar/1

Eagle P., (2006) *Reality mining: sensing complex social systems*. Journal Personal and Ubiquitous Computing. Volume 10 Issue 4, pp. 255–268. Shoshana. EU: Case C-101/01, *Lindqvist,* EU:C:2003:596, par 27

Englehardt, S. Narayanan, A., (2016). *A 1-million-site measurement and analysis.* In *Proceedings of the 2016 ACM SIGSAC Conference on Computer and Communications Security* (pp. 1388-1401). ACM

Floridi L., (2006). *The Ontological Interpretation of Informational Privacy*. Springter. Ethics and Information Technology

Floridi, L., & Sanders, J. W. (2005). Internet ethics: the constructionist values of Homo Poieticus. The impact of the internet on our moral lives, 195-214.

Fogg B. J., (2003). *Persuasive Technology: Using Computers to Change What We Think and Do*. San Francisco. Morgan Kauffman Publishers

Friedman, B., Kahn Jr, P. H., Borning, A., & Huldtgren, A. (2013). *Value sensitive design and information systems. In Early engagement and new technologies:* Opening up the laboratory (pp. 55-95). Springer Netherlands.

Goodwin T., (2015) *The Battle Is For The Customer Interface*. Retrieved from: http://techcrunch.com/2015/03/03/in-the-age-of-disintermediation-the-battle-is-all-for-the-customer-interface/

Gertz N. (2015). *Autonomy online: Jacques Ellul and the Facebook emotional manipulation study*. Pacific Lutheran University, USA

Gertz, N. (2016). *Designing responsibility*. 191-201

Hanlon, A (2013). *The AIDA Mode*l. Retrieved from: http://www.smartinsights.com/traffic-building-strategy/offer-and-message-development/aida-model/

Holman W. Jenkins Jr., (2012) *Google and the Search for the Future*. The Wall Street Journal. Retrieved from: http://www.wsj.com/articles/SB10001424052748704901104575423294099527212

Heidegger M., (1977). *The Question Concerning Technology*. New York: Harper and Row

Interactive Advertising Bureau. (2009). *A Guide to Online Behavioural Advertising.* Retrieved from: http://www.iabuk.net/sites/default/files/publication-download/OnlineBehaviouralAdvertisingHandbook_5455.pdf

Ihde D., (1983). *Existential Technics*. Albany: State University of New York Press

Ihde D., (1990) Technology and the Lifeworld. From Garden to Earth. Bloomington: Indiana University Press

Ihde D., (1993). *Postphenomenology: essays in the postmodern context*. Northwestern University Press.

Just N. Latzer M., (2016). *Governance by Algorithms: Reality Construction by Algorithmic Selection on the Internet.* Media, Culture & Society

Jourová V., (2015). *Data Protection Eurobarometer.* Retrieved from: http://ec.europa.eu/justice/data-protection/files/factsheets/factsheet_data_protection_eurobarometer_240615_en.pdf

Kiran A.H. Oudshoorn N. Verbeek P.P., (2015). *Beyond Checklist: towards an ethical-constructive technology assessment*. Journal of Responsible Innovation. 2:1, pp. 5 –19. ISSN 2329-9460

Mayer-Schönberger, V., & Cukier, K. (2013). *Big data: A revolution that will transform how we live, work, and think*. Houghton Mifflin Harcourt.

Nissenbaum, H., (2010) *Privacy in Context : Technology, Policy, and the Integrity of Social Life*. *Ithaque*, 12, p. 199-202

Obar J. A. Oeldorf-Hirsch A., (2016) *The Biggest Lie on the Internet: Ignoring the Privacy Policies and Terms of Service Policies of Social Networking Services*. TPRC 44: The 44th Research Conference on Communication, Information and Internet Policy 2016. Available at SSRN: https://ssrn.com/abstract=2757465 or http://dx.doi.org/10.2139/ssrn.2757465

OneTrust. (2017). *The Cookie Law Explained*. Retrieved from: https://www.cookielaw.org/the-cookie-law/

Ohbyung K., Namyeon L., Bongsik S., (2014). *Data quality management, data usage experience and acquisition intention of Big Data analytics.* International Journal of Information Management.

Palm E. Hansson S.O., (2006). *The Case for Ethical Technology Assessment (eTA).* Technological forecasting and social change 73 (5): 543-558

Pariser, E. (2011). *The filter bubble: What the Internet is hiding from you*. Penguin UK.

Podesta J. Pritzker P. Monitz E. J. Holdern J. Zientz J., (2014). *Big Data: Seizing Opportunities, Preserving Values.* Executive Office of the President. The White House. Washington. Retrieved from: https://www.whitehouse.gov/sites/default/files/docs/big_data_privacy_report_may_1_2014.pdf

Richards N.M. King J.H., (2014) *What's Up With Big Data Ethics?*. Radar. Retrieved from: http://radar.oreilly.com/2014/03/whats-up-with-big-data-ethics.html

Schneider A., (2014). *Germany finally moves on Cookie Laws*. Journal of Direct, Data and Digital Marketing Practice (2014) 15, 339–341. doi:10.1057/dddmp.2014.28

Tavani H. T, (1999). *Informational privacy,data mining, and the Internet*. Ethics and Information Technology 1:137-145. Kluwer Academic Publishers. The Netherlands

Tromp N. Hekkert P. Verbeek P. P., (2011). *Design for Socially Responsible Behaviour: A Classification of Influence based on Intended User Experience.* Design Issues, 27:3, p.3-19

Uldall R., (2016). *Data Protection Reform, Parliament approves new rules fit for the digital era*. European parliament news. Retrieved from: http://www.europarl.europa.eu/news/en/news-room/20160407IPR21776/data-protection-reform-parliament-approves-new-rules-fit-for-the-digital-era

Verbeek P. P., (2005). *What Things Do: Philosophical Reflections on Technology, Agency, and Design.* Pennsylvania State University Press.

Verbeek P. P., (2006). *Materializing Morality: Design Ethics and Technological Mediation.* Science, Technology & Human Values. Volume 31: Number 3, 361- 380

Van der Hoven M. J., (1997) *Privacy and the Varieties of Moral Wrong-doing in an Information Age.* Computers and Society

Van der Sloot, B., (2016) *Is the Human Rights Framework Still Fit for the Big Data Era? A Discussion of the ECtHR'S Case Law on Privacy Violations Arising from Surveillance Activities.* Instituut Voor Informatierecht. Amsterdam, the Netherlands Retrieved from: http://www.ivir.nl/publicaties/download/1701

Van der Sloot B., (2014) *Privacy as human flourishing: could a shift towards virtue ethics strengthen privacy protection in the age of Big Data?*. Journal of intellectual property, information technology and electronic commerce law. Volume 5. 230-244

Winner L., (1985). *Do Artifacts Have Politics? The Social Shaping of Technology*. London: Open University Press. Daedalus, Vol. 109, No. 1

Wright J. (2009). Googleblog. Retrieved from: https://googleblog.blogspot.nl/2009/12/this-week-in-search-12409.html

APPENDICES

Appendix A

Interview Guide

- How do companies collect, interpret and make use of Big Data?

1. **How do you collect Big Data?**
2. **How do you interpret Big Data?**
3. **How do you use Big Data?**
4. **What new technologies are being incorporated lately in Big Data in this company?**

- What are the provisions and limitations of legal regulations regarding Big Data?

5. **What legal regulations do you apply for Big Data?**

- What are the limitations on current Big Data ethical theories?

6. **What are the ethical limitations to this regulations?**

- Which ethical framework can be applied to pursue an ethical use of Big Data?

7. **Do you think that ethics is relevant in Online Marketing?**

8. **Is privacy a concern to the company?**

9. **Did you encounter any problem regarding ethical aspects (privacy, etc) within this company?**

Appendix B
Expert 1 - Interviewed by Ana Fernández (14\3\2016)

A- Hello. Maybe you can start explaining what do you do at DEC.

B- I've been working at DEC for almost 10 years, since my graduation, in various positions, I started as a webmaster with content, contact data, and then product owner at Penter Team, I basically determine priorities for companies, and determine marketing automation. So for this interview, my previous role is also relevant, I was responsible for the entire marketing automation internally and externally at DEC. Working with re-generation, neuromarketing, contact data and that stuff as my daily practise. However my role changed I am still related with marketing automation (MA), only that now I am focus on one particular client.

A- You have 10 years of experience, that is great.

B- Yes, but in various roles. A lot of us we basically get offered a job after graduating and after we have been moved.

A- Ok. This is good, because what I want to understand is how the marketing automation changed and also with the uses of Big Data.

B- Yes of course, maybe you can explain me what is your research you are doing for my understanding, so I might be able to help you.

A- Yes, well, you already knew that my research is about Big Data and Online Marketing, but that changed a little bit and I am rephrasing it with marketing automation, which for me is something knew, but I guess that is something we can discuss, because I think this change it will be better for my proposal. I would like to study MA as the technology that involves all the data, software and so on whereas Big Data is only the data. What I am trying to do is to understand the legal aspect, the technology and you have ethical boundaries to take into account, of course privacy issues are one of the most important, but I am also looking at the user's perspective, what companies are doing with people's data and what kind of ethical implications there are.

B- Ok. You mentioned a couple of things that triggered me. For example, marketing automation for me, the definition of the word "marketing automation" has changed a lot, I have never seen a word changing that much, meanings with the word. I wrote a blog about it, you have to check the Blog at DEC, one article is called "the state of marketing automation in 2015", and what basically says is that to look at the opinions of marketing automation, and respected people with useful insights about it, and what I did is to see what they thought marketing automation was, and what i thought it was. I divided into 4 or 5 categories of what they think it is, there is no one meaning for the word, that is quite strange, for DEC I set a definition on my own as a combination of tools and processes with data, always to gain more leads. One of the things you do with MA is to work with various tools, and those tools with technology basically behind MA is one of the definitions we are working on, so it's a combination of tools and processes. It is a way to automate marketing strategy.

A- Yes , I see. I will check that blog. One of the problems that I have is that MA is quite broad, in every blog or page is different so I don't know how to define it. So, if I will define MA as a technology, would you agree with it?

B- I think in terms of your thesis it can work indeed, but in a broader way it will not because it is more broad than that, you have last few years specially more MA technology has been released to the public, and tools. But MA in essence is a way of looking, and thinking, and automating Euro Campaigns. It is more than just a tool or a technology.

A- Ok. So the "automation" is more related with the technology.

B- Yes, exactly. As I said, for your thesis I think it will work, you can focus on the technology side of things, it is also the main part of MA anyway, but I would include something about you, what for you mean by MA.
What I am basically saying is that MA has evolved in automating repetitive task,like send a newsletter, an email, more kind of email marketing way, we have content marketing where you can distribute an email message using various channels such as social and email.

A- Do you usually work with Big Data in MA?

B- Yes, I work with Big Data, because I have a huge customer or potential customer database. But all kind of implicit and explicit data meaning: people who have declared that they come from the netherlands, I work at DEC, but there is also other data that we gathered from digital platforms, for example, I visited 3 specific pages on DEC website, and I have clicked in two emails, and downloaded a brochure. The user will never know that he downloaded anything but he does and we captured it. So, we also capture behavioural data, what does this user do on our platforms.

A- So you have more that what you say you do.

B- Yes, for instance, more relevant information. Because that is always the goal, I want to be more relevant towards the user, so he will become more engaged, that's kind of the goal on the development.

A- OK. Have you ever encounter any problems like the pregnant woman on Target? Like some user realise that you have some information he\she didn't want to share

B- Yes, we always try to be relevant but of course if you have a database with 500 k of contacts you kind of create a context in that very large data base, that for example I want to know the people who is interested in the purple umbrella, then the system generates a list and gives you the people who is interested in purple umbrellas, then I send an email saying that we have purple umbrellas in stock. It can happen that somebody who was interested in purple umbrellas before or just checked the website gets an email that doesn't do anything to him, meaning the message is not relevant, the timing is not good

A- Do they get upset?

B- Yes, they send an email back saying: why did i get that email! Unsubscribe me! I didn't ask for this. Or something like that. We have seen a lot of complains about it and we try to do something about them. First of all, if someone says that he doesn't want to receive the email anymore, we unsuscribe him, so they won't receive an email again, unless they want to. So you need to have something for us to reach out to them, like cookies or forms: like this user went there and downloaded this form. The other user, popped out, or subscribe at this date. You always need to have that data present or available, specially regarding the future.
The German privacy regulation is very strict, whenever I get into a challenge implementing a new MA with data I always use the German privacy standard because is more strict than ours, because we are always save. You need ti be very specific.

A- So I think the European one is the most open, and then the one in the netherlands is good, but I never heard from Germany.

B- Yes, I assume the German one will be the standard European in the future. The European one is indeed very broad and you can do a lot. It does not comply with the German and Dutch one. Legislation is very behind, specially in this.

A- Yes, that is also what I get to understand while writing my thesis, legislation is behind.

B- Yes, but this always have been the case, legislation was always behind innovation, and then the legislation will follow sometimes 10 years after. And you see that with the cookie discussion, that's also interesting for Big Data, what can we do with your data, knowing that there is no real legislation or agreement, either European one or worldwide. Three are guidelines, but here is no real strict regulation. It is not permitted but it is permitted. There is no agency enforcing the law.

A- Yes, I was talking with one of my team members and he was explaining that the regulation is actually not doing anything because in every website you have 15 cookies. They are doing it and there is nobody who can stop them.
So, I would like to ask you the next question: **How would you deal with data privacy?** Because I imagine that most of the people from your team came from an engineer background.

B- Well, for instance Penter is a high tech company, and their e-mail address is more engineer, smart thing,consultancy, business partners, so they are for technically oriented people. You need to be able to notify them as well.

A- Ok. **How would you deal with all the information that you have?** Because You say that you need it to provide a better service, but is this information also available for users?

B- Is just for generating more revenue. We do that by becoming more relevant. The idea is that we can narrow down the people who are interested in several products, we try to aim towards those specific people, we use it merely for increasing revenue or new and existing customers. And we do that by becoming more relevant. This is kind of a win-win, we don't spam people, that's what we don't wanna do, we don't want to send to someone that is not interested. Because that's how you

generate spam complaints and unsubscribe. And that's not what we want. We want to reach out to them, a solution to your problem, because we know you have this problem due to your behaviour, you have visited this blogs, you have downloaded this brochures, a webinar on this specific topic. So we want you to see this as well, because that is relevant to you, that is how we use it.

A- Before you get this leads, or people who might be interested, you kind of need this data, at the end you also need information.

B- Yes, we call it a visitor, an anonymous visitor, someone in their office who use Google to make solutions to their problem. Then, we reach you on mail. The anonymous visitor who typed in Google search, click on a link on the email and pointed to us. That is when our information system becomes active, this anonymous visitor that I don't know yet because he hasn't told me anything, but we know that he came from Google using this Google search, with that program.

B- So you also have access to Google data

F- I will show you the system that we use later, you will get the feeling on how we use it. But you come in as an anonymous visitor, but it comes with data because you have search that, looked at these pages, and a certain point you get so much interest from that person that he or she is really interested in purchasing our products so he wants more, the valuable content which is only accessible if you fill out the form. So if he or she does fill the form then we know who that is. And the historical data of that anonymous visitor is then bended to this new contact. So from the visitor, we converted to a contact, we have an email address.

A- They know that they are giving you this information because they fill that from, they are showing interest.

B- Yes, they know only that they are giving data which is your name and very explicit data, the clear data, personal name, email, company name, stuff that you actively type. What he doesn't know is that we also have the historic data, that Google serach from months ago, is also appended to the contact. So we know a lot more on that specific contact than just the information that was filled out in the form.

A- Then, where do you think that this is leadin? You said that there has been a lot of changes in the last 10 years, if now we can do that, all that information. What do you think is the next step?

B- I think we now have a lot of behavioural data that is included in the same picture, and it doesn't get very ethical when you get to the point that biometrical devices like apple watch, and gets connected to a marketing system, know everything your refrigerator is connected to the internet. Your microwave is connected to the internet. All of this devices are talking to various systems. In the future it can also become accessible to marketing incentives.

A- Do you think is relevant to know this things, what a person eats...

B- Well, we seen this with email marketing as well, first we had newsletters sent to the wide audience you can imagine, the idea was the longer the list with email addresses the better. Now it becomes smaller and relevant. So if it adds to being relevant, then I can understand that all of this it will become relevant. But it gets a little bit scary when companies have access to that information,one without you knowing it, and two if companies are not relevant anymore, if they are using it for spamming, moving from being relevant to just shooting to a large group of people.

A- Even before you can reach out to them, you need to show this company, advertisements. And I am wondering how do you do that the users go into your website.

B- That is kind of the marketing strategy, we have various traffic drivers, and those are pointing to your domain, banner ads, display ads, retargeting, you have social media channels, mobile apps, they all can point to your control domain.

A- Also what you might be interested...

B- Yes, Yes. As long a you can point to your website, is not that they can also share historical data. For instance, if you did before the Google search on purple umbrellas, you did a Google search on yellow umbrellas, I don't know that, i would only know when you go from the purple umbrellas to my domain. I do know what you are doing on my website from that point on. I don't know your FB profile yet, I don’t have that data, but regarding the future, we go in a way that various systems like Google, Facebook, the major influencers, they are connected their systems for marketing purposes, and I think that's an

interesting thing to see because now even people who are practising in this area of marketing will get question marks on what should I do, should i do something with this data? Am I being relevant, am I aiming for the company's goals or or the end user's goals. What I think, and this is a question that we all need to answer ourselves, is this being relevant? Or do I need to actually know this?

A- I can just finish with one question. I guess from your last answer you mentioned ethics or social behaviour, do you think ethics are relevant for MA at some point? How to treat people?

B- I think is very important for MA, if we throw abroad ethics and we only focus on what our clients want, then sometimes they completely disregard other regulations, please know that you want us to do this, we cannot do that because we are not doing the right thing here. But it comes down to individuals, that's the main issue that i have, parties can have their own opinion, should be some kind of basis, this is how we are going to treat this data.

A- Before you said that you didn't tell everything to the users of the website. What you actually know about them. Is it better to tell them that we have it? I mean, is their data, they should be in control at some point.

B- I agree, the users should have a role in that, but I also think a lot of users simply do not care. There are a lot of users that only want to be helped, and those are the best customers for marketing. We always try to help the customer to achieve their goals, but I can also imagine that there are other parts that are aiming for company's goals, so then it will get specially for those kind of people in the base layer, specially in the future, I think it will become more and more important that it will be regulation, and also influence from the user in the data we collect, not simply allow us to collect it but also what am I collecting, what data there is from you. And I think in the end can also help with being more and more relevant, because, he or she can say if the data we have is correct. It all comes down into how do we handle the data. Because indeed it is their data.

A- Yes, there are now some websites that get the data from you and they pay you.

B- Yes exactly, you can learn a lot of money in Big Data, selling sensitive data, or interest data. If you think on what other things that they will be able to tell, it all comes down to money, Big Data is there because there are a lot of stakeholders there, that's kind of hard when there are so many stakeholders and os much money involved to regulate it. We need a new digital regulation.

A- Is there something else you want to add?

B- Perhaps you can read the blog like I said, and I do know several sides. In Ma as well as digital marketing the principle is the same, user data and behaviour data to be relevant, retargeting is working. MA is kind of a way of digital marketing, is a sub, you have digital marketing, and then you have MA. If you look at MA, the definition is still related to scoring contact and sending info in various channels.

A- It is still difficult for me to understand the difference, you have MA that is much more than just sending emails but less than the broad concept of Big Data.

B- I am eager to know what will you do. I always try to think by myself what the user want, what would they want me to use my data, I care about privacy, that's the whole point, the groups of people that need to protect data.

A- What advices would you give to someone that you are collected data from?

B- I would like him to know however some people don't care or don't know, and i wouldn't want to put it in their faces, they want to have a good experience, they search for answers to their problems, because we are trying to help them. So I can't really say please know this or data, but i would like to see that people are more aware of what is actually happening. They need to be aware of the fact that data is being collected, this particular solution is not because of some magical reason, is because we know things from you.

A- Just know at least

B- Yes, just know. If you are ok with it then fine, if you are not ok then you need an option to escape from that, still find some of things you need, but in the end you still have to get there.What is being store from your Whatsapp data?
(...) I am going to show you now our system, which is SharpSpring, here you can see that they know my twitter account, they know I work at DEC, I'm interested in MA, I read my emails in Dutch, this is what I did in the last couple of months to get here: I

red that article, and they fill out the form, then I visited some pages, and then I red an e-mail, I decided to click an e-mail, visited a couple of sites, etc.

A- I am seen that everything looks professional, can facebook appear as well?

B- This is collected from our domain, facebook is not my domain, DEC is my domain, there I can track the pages you visited and so on.

A- What happen if I visit your page with my own gmail account not the DEC one

B- This is a very interesting question, then yes.

A- Thank you very much for your information

Appendix C
Expert 2- Interviewed by Ana Fernandez (10\3\2016)

A- Can you introduce yourself?

C-, I work here, I have a couple of roles, consultant and product owner, so i'm like the linking between the customer and the development team. I got a marketing background.

A- What are you working on right not at DEC?

C- I work for a few customers, I work for (Golden Group…) around the world, around 10 customers.

A- What do you have to do with them?

C- They got certain challenges that they want to address, so for example for philips brand, they have a couple of other brands and they needed a couple of websites for them so I discuss what do they want to show in them, what do they need. So I try to define what do they need. So we develop websites or apps or campaigns website if necessary. I work with them with SCROM, I always give the same example, if you have a painting such as the Mona Lisa, you only start for the top left corner, and only the top left corner works but nothing else, only when all the squares are complete you can see the Mona Lisa. However, with SCROM you can start with drawing with pencil and so on… and you can see everything immediately, and after that you can add colours, and you can see that everything works since the beginning.
Thus at the beginning the website works, nothing fancy but at least it shows a list of products. After that we add a picture and so on.

A- That's good. So you basically work with websites for those companies. Then, how is it that you know that much about Big Data? I have seen also a youtube video, I also would like to talk a little bit about this video.

C- Well, is not that you know that much about Big Data, I am not a Big Data specialist, in a former job I was innovation consultant, technical innovation and cultural, and I work a lot with internet and social media, questions about internet related stuff always came to me, and as a consultant I give advices of what can you do and I became across Internet of Things. I got a broad interest about Big Data, and that is why I know a bit about Big Data, but not bigger than that, is just that I read a lot of books about it. I am gonna show you some books that you can read about it.(....) Companies like Axion get a lot of information, they store data, they really have a lot of information about people, the thing is, that you have all this information that is stored, used without people knowing it, and they can get a lot of information, income, where you life, so much connected information, general interests… People don't know what they are giving up.

A- It is interesting that you mentioned your motivation of Big Data, because you started working with user's perspective….

C- Yes, they really have a lot of information about people, the thing is that all this data is stored, and used without people knowing it, and they can learn a lot from this information, your income, because is related to where you live, because there is so much "connected" so they can know a lot about it. This is one of the reasons why I work

here, because I used to work on a government agency, and I did internet related stuff, so people don't know what they are spreading around, what kind of information they leave behind.

A- So you were always interested or you had encounter some problems?

C- I was always interested, I had several jobs, one of them was about purchasing online, like ten years ago and this job happen to have a lot of internet, always internet related, even when the internet was very early on.

A- Can you explain me the video/ speech you have online?

C- Yes, there are a lot of things interrelated such as sensors, your phone got like 45 sensors, 25 sensors for movement, geolocations,gps, acceleration, and stuff like that, embedded in lives, with philips for example you can control the light with your phone, even more, chairs, they are incorporating sensors that track if you are sitting correctly, also they can send data about how long have you been sitting on that chair, and then they can send information of when you should have a brake and so on… and this will be happening a lot more, cars are getting more sensors, they can drive autonomously, sensors in the floor that track what are your normal walking patterns, alerting for example if you fall down, because you are not moving and you are in the same place. But, what is a normal pattern? This will be happening much more in the future, your clothing will be full of sensors, everything will be connected, what you really seen in my presentation is a pyramid, for example, Google Now, based on who you are, what you do on your telephone, it knows quite a lot about you, and it shows you apps without you asking for it. Based on data, sensor data, a lot of things they know with facial recognition, where you go, who you are. This will be happening a lot more, but we still don't realize that this will be happening. There are already clothing for babies that measures heart beat. I think that we still have seen 10% of it.

A- I understand. There is something that I am researching on, you can use Big Data in a good way, as you mentioned tracking heartbeat with babies. However, the relation between Big Data and marketing automation is more blurry, and you know a little bit about.

C- When you know what people are doing, because companies like Axion combines all that stuff, I am not an automation specialist, but you can see they are getting a lot of information about it. To give you an idea with my phone, it says it is in Paris, I get advertisements on spotify in French, because I don't want for people to following me around, to know who I am. Sometimes they know so much about you, they know what you search, they know if you are ill and the profile later on. Have you heard the pregnant woman in Target?

C- They can deliver all this information, it's all about relevancy, as long as you are relevant, like Google,a lot of it can be objective but mostly is subjective, relevant advertisements. And when you think on marketing automation you know quite a bit about people who really do neuromarketing, you are not aware what you really do. There is also a very famous example of neuromarketing, among the advertisements they played a Pepsi image very fast, and they realised that the pepsi sales were increasing. The more you know of the people, the more you can guide them into a certain direction. And this is also the case with marketing automation, on the one hand it is positive because you can give them more relevant information, on the other hand we should question what companies know of the people and where is the limitation, and what is that practice.

A- Is it marketing automation using neuromarketing or is it included?

C- Yes, they want to know what is your trigger points, it was an example years ago in bookin.com or experia.com, and they also tracked whta computer you use, and if you are using Mac they got higher prices than the ones with Microsoft, thats whats going on. Same with Amazon, they show you information of "people who bought this also bought that", sometimes they have certain profiles of people, and some people are very sensitive if they said that they only have two books in stock but this is the biggest lie of all because they can have thousands of book in stock, and people will buy it, otherwise they have to wait. They make these profiles with people when they are on the internet, and they say ok this person is sensitive with these arguments so that is the way they are gonna sell to that person. You see that all these data is being stored and then they can select which people are sensitive to what argument, so we are gonna say there is only two in stock.

A- What you are doing is creating websites, but right now you are not using these marketing tools, or are you including them?

C- Yes we include them, for example we are working to Tegi Website, we are just at the beginning of the set up, but they want to know which people could be interested in them and tailor information to them. For example, if its an engineer we will give him engineering information, but you need to have more information, but for that you need to know about people, what kind of pages did this person visit, if they downloaded specific information about technical details then we know then we can make a profile saying that he is an engineer. We are not that far, we are already doing it.

A- Ok. Then, I would like to know about the newest technologies that you have incorporated.

C- I'm not into the technology but I am gonna give you some names in the company that are more technical about marketing automation (...)

A- Yes of course, thank you, I understand. What kind of advices will you give to people or users? What are the most important things to take into account while buying in the internet or using websites? So, if you have to give advices to people that doesn't know about the technology neither.

C- Someone using a website or building a website?

A- Using**,** more about people who goes to the internet to buy something. As you said, people don't know almost anything about what companies are doing with your information, what advices would you give to the people?

C- Use things such as add blockers, search engines that doesn't track so much of you, empty your history regularly, all sort of things, have tools that tells you what cookies do you have, where you can see how many cookies keep tracks of what you are doing, that's why I use VPN, because I don't want people to know where I am from. You can use like the browser "onion browser", that it relates your signal to different browsers that doesn't allow you to know where you are from, sometimes it is also used by criminal users, people from Iran and south korea use things like that, where they cannot be followed, and that is the reason I use things like this, I don't use any hotmail, what I do is not to put everything in one big file, I don't use Facebook, but I do use Whatsapp, although I am not a fan of it because I know is from Facebook, and I am not a big fan of Facebook because of what they do with privacy, because if its free, you are being sold, as the saying. Zuckerberg is a billionaire because of what they know about us. It is only 2016, you have to be digital, things are digital, but people should be more aware on what's going on. So I try to divide it, at least I try to separate it, I used Telegram. But then they said Putin was behind it, but at least I tried to separate it, I don't use instagram, but whatsapp. And it's all own by Facebook, and

Facebook have all this combined information that have an advantage for them but not so much for you. People should think about it because it's all connected.

A- Alright. So you think disadvantages are worst than the advantages.

C- Yes, Facebook has a good side because you came across information and you can share stuff, on the other hand they know quite a bit about you, they can get information that they normally wouldn't have. They don't know about your specific health information but they have other data, and your data can tell something about your health situation. So much investigation has been done, and so many things are interlinked, in the past it was not possible to combine this stuff and now you see that it is a lot easier to combine it. You are being sold in the Internet, if you want to know information about Ana you can just buy it.

A- Yes indeed, every time you want to buy online you have to log in with Facebook or gmail…

C- Yes, when you sign in the privacy rules while using these websites, there is so much to read that you are giving away everything, there was one company that wrote among those pages "if you accept our conditions you sell your soul to us" just made fun of it because people don't actually read it. A Dutch Website did an investigation on how long will people need to read all of it, and in a year, it will take about 2 years to read all of user registration stuff. You are being sold, people are using you.

A- Then, what would you say about how companies should behave? Because, of course companies like DEC they want to sell things, they have the entire Facebook to track these people, then, how do you think companies should behave? If you are concern about privacy and you find some website that appear to take care of your privacy you might be inclined to use it.

C- Yes, that depends on your moral standings, I believe companies should be very careful, it all has to do with relevancy, provide relevant information, but what I think is the biggest problems between consumers and companies and government organisations is that misalliance, they know a lot about us that we don't know, and they keep it to themselves, and a little while ago I was in an interview where they explained that there are companies in which you can sell your information for money such as, Data Coop, Data is Me, they pay you, they give you the tools to share the information you want to share with companies, and I think it will be moving to that direction. People think data is free, but data is not free, we are providing Google with information, they are using it, it's the same when Google send a picture a while ago asking What do you see? And we give information, I think it will be information brokers in the future, but know we just give it away. Companies like Facebook or Google are built from Data, they are making big money, the good companies of the future I think are the ones they are transparent about data usage, now we have this cookie law that I think that, also when people are more aware because that is also a problem, people are not aware that this is happening. I think that technical people like myself, hackers and stuff are more aware because we know what they are actually doing. But general people don't know what is going on. Google slogan used to be "do not evil" but they are actually doing that. Companies of the future should be transparent, but I think it will be like the Green Companies, a while ago they were really special not to use chemicals, to be good for the environment, but nowadays people expect them that they actually work in a good way. And I think that will happen with data, that people expect them to use data in a proper way, and with the data exponential, people will expect them to work in a proper way.
In the Netherlands, on January 1st a new law was introduced, companies were obliged to say if they had a data leaks

A- What is a data leak?

C- If the personal information was hacked, and now they have to say it but not before. Because this information was out. Detec, a company for kids, it was hacked a millions of kid's data were stolen. I think a good combination is to use data and being transparent about it. A lot of companies don't tell you what they are doing, on the other side of the screen. We will probably be better in saying which data can be stores or is out there.

A- I guess people give all the data to Facebook because it's for free

C- I will pay for an app that secured my data. But Facebook has the information and you don't, and they have that in advance.

A- When you login on facebook, you have to write your date of birth, and in the privacy concerns they said is because they can give you a better service if you write your age. But I think they give you more than a better service,they have access to your age, they can know a lot. Well, I guess we will still be using Facebook, because I need it, and I cannot go out.

C- You don't want to go out!

A- Yes you are right, I need it, and I shouldn't go out. Then, in my generation, and even in younger generations, Facebook have the power to influence us in an enormous way. Then, how would you think that marketing automation, what you are doing with big data, is changing people's behaviour?

C- I think it is not different than 20 years ago, the information is always circulated in a certain way, like the catholics, socialist, your own newspaper, TV channel, before you also pre-define what you will do, I don't think there is so much different as how it used to be. What people should be aware of is what is actually happening, keep asking yourself the right questions like don't take everything as true what you see on the internet because is predefined, preset. Let's say in Dutch the word couch is the same as bank, so if you write bank you will have some information about a couch but I will see Ambro or ING, so this is predefined, on the one hand you get information that is suited for you, but on the other hand is predefined, so you don't get all the objective information, and people should be aware of, especially the younger people, all the stuff they share is being used by companies and governments and people are not aware, that's my biggest concern, people are not aware enough.
Sometimes my girlfriend thinks I'm paranoid but someone can easily steal your data identity, is one of the biggest criminal activities.

A- Yes indeed, that happened to a friend of mine, she found a false profile with her photos. So that actually can happen, is not that weird.

C- Yes, and people should be more aware of what they share about themselves. I had a discussion with someone a while ago in my former job, because they found crazy pictures of a party about someone on the internet. However we were also drunk but we just didn't put pictures online. Ok, what are you uploading on the internet because it will never leave, it wont go away.

I have a next appointment so i gotta go.

A- Yes, thank you very much, you have given me a lot of information.

C- You are welcome, if you have any other question please contact me.

A- Thank you. Bye.

Appendix D

Expert 3 - Interviewed by Ana Fernández (12/5/2016)

A: I already sent you an email about my proposal, maybe we can start from there. What do you think about it?

D: Any tips on your research? I think you are going into the right direction, but you need to set your boundaries. About your research question is good, but is vague, but if you want to get a good grade is always better to do it really specific on what you want to achieve. So maybe even state numbers, like I want to give five tips, or I want to write a short blog about it. Like make it more practical ending to it.

A: Yes but with my study is more theoretical. I should analyse philosophically like what does it mean privacy, because I am here I want to give some advices. But here Judith and Joeri always tell me that at the end I need you need some advices.

D: So you need to go into the theoretical not practical. A: Yes. I have some questions for you. Maybe you can start introducing yourself, what do you do.

D: Yes, I am a frontent developer. But my specialisation is with marketing automation. Specifically, I mostly focus on email templates. Implementing content for customers. But also landing pages. I give advices on this subject as well. I really like to strategize the entire marketing automation plan for customers, and implement such plans. As you already know, the whole internet is based on code, and we specify on where the image on the emails are placed, how the content is placed, and what it looks like. We create good looking emails. But this technique is a bit different form website developments because email has specific guidelines, so you don't really need to know much about coding while creating such templates. That is my main specialty, but when I started was very frustrating, because everybody has either mobile phone, laptop, outlook, safari, mac and such, so there is a lot of different devices and browsers so it is difficult to make your email look good on everything, it takes some time to get used to it. This is one example of hard process, we found some tools that helps with that so in the future we will have some more. We see a big curve of development that will help us make better email templates.

A: So, how would you define marketing automation? You focus on for example emails, but first you need to get to those clients.

D: Yes, so that is more a project management. When a project come to us, we start with a global overview. There are landscape, physical form, what are they doing for marketing at this moment, so what we do is try to make that or rebuild it, and sometimes a minor improvements. Sometimes they need to rethink their entire marketing strategy: and we have experience with a lot of customers, and we have people who are very good in marketing, online and offline. We try to get the global picture, get it right, what they need to do. How they need to deploy the marketing, and the marketing automation too. Then we can start defining small campaigns within the marketing plans, build campaigns around new products, an introduction for example, and that's where me and my time comes in, we define path to be taken when sending emails, defining people to land pages. If we do it properly, is all based to the customers, but you always have to make concessions, this is a very idealistic tool, our customers do not want to pay for everything, even too big, and they just say let's cut all the automation stuff or campaign and we only will send 3 emails to promote our product. This is what I see often and it's a shame because we have a lot of potential.

A: Would you say then that the small companies don't want to be linked with this MA?

D: Even big companies. They either don't see the revenue is gonna bring, its really hard to make it visible and to actually tell a company that this will make this revenue.

A: Yes, I even red that MA is so new that they cannot even promise you to get profit from it.

D: Yes, it's hard to promise anything of course, even without marketing automation, if you send emails you never know if people were already intending to go and buy your products, or if they were inspired by your email. This is just an example, but of course there are ways to give a very good approximation of the revenue, we advice to start with a small campaign fist, and then take that as a basis of knowing how good is the revenue with MA. So, then you can always rethink and adjust and try to bring it to the revenue.

D: I see. I am interested for my thesis is to have an step back, like Sharpspring, how even even DEC they use profiles of people, So you might want to talk about that. Before sending emails we have to find the people.

D: Yes, first Sharpspring is only one of the MA tools. The most use tools for our customers. But we work also with Eloqua, from Oracle, and is a package that we use for MA. However Eloqua is really big software package mainly used in enterprise companies, big companies with thousands of people. But sharpspring, does the same. For tools in general, the question was how do you find people in general? It doesn't matter for me if I use Eloqua, or Sharpspring, that is how we see contact information, you place a form where we ask for contact information on the website, maybe only email address, for example lots of sites ask you to register for a newsletter or maybe even they ask for your email so they can send you a coupon discount. And that is where all starts for us. But of course before someone fills it in, you need to at least visit the page, and you know how and why you were there. That's where Google Analytics comes in, and SEO (Search Engine Optimization) it's really important in our line of duty because SEO makes optimization for the website so it's found better in google. If someone looks for carpets, you want to show up at the top, and SEO can help you with that. If you are not even found by google or anywhere else, you won't likely have contacts in your website. Other options are social media for instance, like Twitter, Facebook where you can compose messages and people can share it based on followers, and that way you can direct people to your website.

A: Right. You said you need to know why you were in a specific website, even before they fill those forms.

T: Not everybody does that. Thank god haha. Because you don't want people to fill in your form if they are actually not interested. If they are never gonna buy your products or services you don't need them in your data. Because you want to send them vouchers, promotions or info but you want to send content to contacts that are useful. Its two way street. People only fill in the info if they are interest of course, they can be a mismatch because how you are promoting your activities, and what people expect from your company. That is why you really need to be clear about your intentions, of course when fill in the forms you need to direct people to the privacy statement, that's different, that doesn't have to do with your marketing environment.

A: You said that you want people that are interested on us, but if you don't show yourself how they would be interested. For example Philips, you need to find the people that might be interested in buying bulbs. You really want to find those people, even if they still don't know you. And I would like to know how you work with it.

D: It is difficult to work from the perspective if they are not in your system yet, because you need to have a big website, with products and pages where you can analyse the traffic on your site in general. Because in general people are anonymous on your website, there are ways to know if there is the same person (the same device visiting your website again) it might be that 2 people are using the same laptop. There are ways to analyze that data and track your website with anonymous visitors, but that's not what I do here at DEC. I try to make people known as soon as possible, and only at the appropriate time. If you jump in right away, and you have a subscription form, you don't want to show it right away. You need to ask for the right info at the right time or else you scared the people. But once you make them known, and they filled a form, then is when my job comes in, at that point we can also see , if you are visiting from your home computer, at that moment I had the ability to see your email address from then on is also visiting pages, you are not unknown visitor, for me you are that email address visiting pages, because i can start building a profile around your contact info and not around some random visitor.

A: Yes that is true. It helps a lot, but what happens when you have a big company?

D: Yeah, so what is important is that you do a marketing analysis of our customer, that you can have pre-define your *buyer personas,* for example for Philips, you can easily divide between consumers, engineers and managers. You can name it whatever you want. For example, this is what Philips will spect on the website, if it turns out not then you have to adjust, it is usually 6 at most. For a lot of companies, 3 personas is enough. It doesn't matter how big your data is, but you need to fit them in one of these 3 profiles, you focus on what type of people you want to attracts and who are interested in your product, it needs to be a match. You need to try to put them in one of these profiles. If someone doesn't fit it means that he or she will not be interested on your product or the profiling is wrong.

A: Is the information of one person's twitter or facebook also valuable for you?

D: More information is more valuable. But, if you don't use this information properly you could even lose value on that. You really need to set up a plan about how to use that information, if you are using it. And if you don't, I would advise not to even take it up in your database. Because every information that you won't be using for analysis purposes is just clutter, and you have enough clutter on the internet already, and you cannot manage every information of everyone, not like we open the gate and collect every data we can, is really important that you only collect data that you are going to use and that you have a plan for.

A: You were saying that you collect information that they gave us, but at the end you know so much more. You are getting valuable information from people that they did not gave you. Then, about privacy, do you even consider the privacy statement? Do you consider it in your work?

D: Yes, that is what we say to our customers, but it also depends where the visitor is, because every country has different privacy regulations, and the issue is that most of the time is only regulations is not a law, so when we tell for instance Philps, this is just an example not like this happened with Philips, we say that you need to have visitors checked the box where they say that they agree to the policies and privacy statements, a lot of the times our customers say that they want visitors to fill in the form faster and they want to remove the actual click, checkboxes and only refereed to the privacy statement. And we say that at least you have to say like "filling in this form you agree to the privacy statement". This is the first point where visitors came into contact with privacy statement, and as you can see is already a vague area because you can make it mandatory to accept it, but of course a lot of visitors only click the box and don't even click about the privacy statement, but that is another story of course. But that does make it question if you even need a checkbox, or you can just say, by filling in this form you agree with the privacy statement.

It is a bit of a vague... like German regulations are very strict about that, so you need a checkbox and you need a second opinion, if you fill in the form for the first time you get an email which requires you to click again in the email that you approve, and if you don't, you are not allowed into the database. I think Germany is heading in the right direction here, we try to inform our customers to do the same in all countries, but it's really hard because from a marketing perspective, because the more time a person needs to do to start a profile, the more likely is to drop off and not complete their profile and then you don't have contacts in your database. So it's tricky situation, but the question was more about how we inform contacts, right? Filling in the form is the first thing when we direct customers or visitors to the privacy statement, and with wich email we sent we always have the ability to unsubscribe, and for most customers we tend to have a subscription management page, so as a visitor you can see which newsletters you are subscribed to for that company and sometimes which information is stored, your address or other preferences store, and you can adjust them. And in that page you can also see the privacy statement. But from that point on, is not necessary to accept it anymore because you accepted from the 1st time you access our database.

A: Ok.

D: In Holland there is a cookie law, it has been changing a lot. Even in your website you have to accept cookies. But for other countries is not mandatory.

A: Do you think the way that we are targeting those people is fair? Is not like you are using these information to sell it to 3rd parties

D: What we never do is sell info. I hope it stays that way. We haven't had that request. And we take the contact info very seriously. A lot of the times our customer has an internal database, with profiles, they have like Excels and they went on a trip and they collect info from going door to door for instance, of course everyone can collect data, if you call someone and you ask them about his name and address then you can write it down.

A: Bu this is less and less happening...

D: Well, Indian companies for instance, there are very cheap and they have a lot of people ringing, you can ring a lot of people, i'm not sure if that is less, but i think is happening less in Western society but in India is actuall.

A: When you call is different. When you ask you have this information. Here you are using MA with Sharpspring and Oracle, who is this information from. Is theirs? Is yours?

D: When we work with Sharpspring, we buy a license, mostly a licence plan, in this agreement, the info is yours and is not used by Sharpspring. Sometime is not even own by DEC, the info is own by the customers. For example, if we stop working with a customer, we have to give the info to the customer and we don't have it anymore.

A: What happens with Google Analytics?

D: We can combine Google Analytics with profiles, like Sharpring. If you are a visitors going around the website, Google Analytics knows is one single device because of the cookie. This cookie goes larger and larger as you travel more around the site . When you are traveling and you encounter and fill a form, We can take that cookie into the MA tool, suddenly you are known, even the steps you took before are visible, but usually that is only possible within one session, so if you close the browser and later go to the page and fill the form, we cannot use the steps before you close the window. But I must admit that I never use that browsing information, your profile, for me is more about how you react to our marketing campaigns, that's more valuable for me that the steps you took before, for instance if you have one contact that doesn't answer to an email over the past 3 months, for me this is more important that the pages you have visited.

A: Yes, that's true. You told me that you never encounter any problems with a customer. Such as price discrimination like when you book a flight. Maybe something related to it.

D: Yes. You have other ways of discriminating. What I see a lot is when you visit a site, and you visit certain products, like the white bulb, you could get a discount for light bulbs, i think that is positive discrimination, you discriminate other people that don't have a discount. You could state that anyone could get that 10% off, why don't you just have every product 10% off? Is the opposite with the flight and price, is not something we do for our customers.

A: That's very interesting. Anybody ask for that?

D: Yes they did. But it is really hard to implement, to do it properly. We have done this things for customers, but I was not involved. As with other problems, we have a subscription management page, we just have it online for two hours and some developers found out that you could fill any email address and they show all the contact information. If you were Jhone Doe you will see only limited information. We were testing it, but it could have been a problem, we did see the server logs, so thats a good thing, you really have to take care of every stage of personal data. If you build a subscription centre, you need to take care that the person filling that info is the person is about. That's something that we came across something, we have to taste it properly.

A: I think that's very important, this is what I call the broken trust between customers and companies. And that's also bad for sales.

D: Yes I think we did also see that broken trust issue, for example if you use the wrong surname in the email, for a lot of customers we send the first line in the email "Dear John, Dear Ana"but if we send an email to you with "Dear Jane" you could start questioning if your information in handled properly. Maybe Janne wrote your email. Most of the time when you have a different name display in the email, but it is something we need to take care of, to keep the trust between customers.

A: I think I have a couple of more questions. Maybe more in general terms, where do you think this is going? There is every time more and more info online.

D: I do see that happening. Because It is happening more data breaches, and you info is leaked online. The beginning of this week all Kimo account where visible on the internet, so you could see the password of billions of email account. Those sort of things will be happening more often. It will also be triggered. As marketers we will have more data available, but also that consumers will be more aware of the fact that their data is stored. That you use and linked most of the time. There will be more tools to store data but also more to secure this data. I think is a two way development, and I really hope that also more and more companies will start to show or allow you to remove your data completely from their database. I am not sure if that will be in the near future, but I really hope that they would implement those things. Not that you have to be able to see everything that is store about you, but the ability to remove everything. That is the ideal step forward. It is possible right now, but a lot of companies don't do that, they let you unsubscribe, your information is still in your database. You won't receive any emails but you can see that a specific contact is still visiting your pages.

A: I guess my last question is, where do you think is more important to have ethics of MA? Of course privacy is important, if not all, is mostly my main focus. But where is also important to research about?

D: Privacy is the main part of your research. And I think awareness within the company could also be important. I am not sure if people downstairs know that we are storing data over 200 thousands contact, if every colleague is aware of that. Awareness could help in the development process of the site. I am not sure if the impact could be big, but also sometime could be better for us to talk about this issue more with customers, like the checkbox near the subscription letter. I really think that we as a company either do that or just say I am sorry Philips we are not gonna work for you because you don't follow the DEC standards. It could be good for DEC to have their own regulations.

A: Maybe as you said advice your customers to keep or delete the information.

D: Yes, this could help a good overview of the good side of this, not like sometimes they want to checkbox gone because its facts for people to subscribe. But if we have with example of positive reactions keeping the checkbox then that would help us to advise the customers.

A: That's very interesting.

D: I think that for you it can be hard to grasp the technical part and what is going on. We don't have big data analysts, we don't properly investigate, so we do that access, it is possible but we don't do it.

The question you wrote down "people at the right content at the right time".

D: Yes, the problem with privacy and the ethical aspects, is that you want to send emails to the right people who might be interested.

T: Yes, at the end you say, "to target them at the right time, to make the move". What you are doing or what you are trying to do is when we do our jobs right, is not the right person, but the right product the right information. For him might not be the right time but…

A: You are saying like pushing

T: No, is if we provide it with the right information that also suits the person viewing it, it doesn't feel like pushing. Actually we could help him or her by staying away for more expensive brands or products or less quality brands. It's not about pushing the products but giving good advice. We don't focus that much on putting it at the right time. We do hope to find at least a bit of the right day, there are certain days where people don't look at the weekend like Friday is a bad day. But if we see that maybe less opens are done on Friday but more products ar bought, you are not supposed to focus on one aspect, keep a broad view and keep trying. At the end is how can we help him or her. If you can't answer that question you are not doing the right thing.

A: The problem that I have is that you need to know who that person is. You say that this is where we are going, we cannot stop that. To individualize the products.

D: I am not sure if every company is set up properly so they can individualize products, what you could do marketing statements. For instance, you promote the products in a more technical way if its an engineer, but the product stays the same. I do think is a way forward that the product is sold different. Most of the time is only different promotion.

A: Ok. I think that's it. I don't know if you want to tell me anything else.

D: I do think in regards to privacy, I think it is important that companies using MA tools most of the times is most a big bucket of contact information, what I notice is that a lot of our customers they don't take care when extracting a lot of contacts form that data set, for instance they want to analyze a separate part, they look a segment in that data set and they create an Excel document so they can scroll through it. I think is really important to inform your customers and colleagues about storing those excell data on your personal computer. I think not just put it somewhere and they forget it. You need to take care of password protection. Someone else comes in a look at that data set or take a USB.

A: If companies don't even know how much information they have, then there is a problem.

T: Definitely. Of course you need to take care of this when setting up a website or a MA tool, but there is always a possibility so you have to look out for those. But also when a customer send you contact with Excel file, we always advice them to put it in a ZIP file and encrypted, password protected. We get emails without protection. Emails can be intercepted.

A: You have this person here, Bas, responsible to privacy, this person is responsible for data?

D: No, in a way he is but I am not sure, because he will need to be at my desk every time im doing something, but it will be good for him to be aware of data, to have one person responsible for this things in this company.

A: Thank you very much, you have help me a lot!

Appendix E

Expert 4- Interviewed by Ana Fernández (12/5/2016

A: So as you read my thesis summary, can we start with what you think about it?

E: Yes, I was curious of the legislation part, every country has its own rules, things you need to know in advance like paying for instance in that county, what did you gather about that subject?

A: I am focusing on the laws of the netherlands, European Laws and Germany. Of course, every country is different and I cannot write my thesis about everything. But what I found is that Europe has general rules, the netherlands is a bit strict on how you gather information, and germany is even more strict. There is a new European law in 2018 ad they are trying to link it with the German law, make it much more strict, so every country will have to follow it such as asking 2 times the consent of somebody to gather any kind of information.

E: Do you think that websites or companies behind these websites follow these rules? Like you cannot gather any data if cookies are not accepted, I'm not sure that happens...

A:No, that's one of my problems, everything is so big, the engineers or people behind it can do anything they want to do, is very general, you have the law in the netherlands but you have exceptions, and that exceptions make it very easily for people to gather information. Maybe that is why is important what I am doing because the law seems behind the technology. The values we put in our work, even the engineer work, that make it better, that matter.

E:Do you have some user-perspective as well? How internet users feel about gathering information by companies?

A: Well when I started my thesis my main concern were users, but now is more related to the marketers or technical part. One of the things that I want to write at the end is user-awareness.

E: I think that is very important, how the users feel about it. How do people feel about it.

A: How do you think I can bring that into DEC. Because they are focus on business to business. A questionnaire maybe for the people at DEC?

E: Yes, but a questionnaire here will be for only the company not user. Although I am a user as well, personally I don't mind if it makes the content more valuable to me or direct to me, like I don't use children's clothes or woman's clothes. So I don't mind if the information is gonna help that. But yes there are a lot of opinions, and I don't know how other people feel about it. Because that's the difficulty, you talk about 2 different types of analytics, but both these types are not applied of me as a person but me as an entity. Is my behaviour that causes the actions that follows, it is difficult to explain. I am one of the users that they are trying to target, they don't know me, they just try to sell things. And that is an important part, it doesn't matter where I live or what car I drive, they just want an entity that they can exclude from the rest.

A: but how do they find that entity?

E: most of the times because of my behaviour, the sites I visited, keywords, can be a lot of things

A: One of the things that I try to study is why do we have this system that tries to find those people, why are not the people responsible, you mention that the actions that they did in the past, but why cannot they choose?

E: Choose the information that is targeted to you?

A: yes

E: Sometimes that happens, as if you filed a newsletter, you can tell them what kind of information you want, but there are different algorithms that can help you determine certain kind of information that can also be relevant for you, based on what you clicked on in that email or on the website with personalised content. When you go to a website is for a lot of targeted audience, so 90% of the website is not about me, but a lot of the products, and I just want my set of products. I think that it isn't happening because we don't want to bother people with all that kind of information, is like a questionnaire and its a lot of work. Just want to continue, you have a goal and you want to arrive there as soon as possible, without all kinds of questions. I think that it why isn't happening. But with the newsletters for example you can sign up for a specific part. But your thesis is more about the information gathering part?

A: Yes, I mostly research about Big Data gathering based on online marketing. I am researching about ethical values that can help. As you said it is a positive thing to do so you don't bother people, but what are the limits of that?

E:That is a very difficult question, I sometime disagree with people about that. I know for example that my parents don't want to give any kind of information, but I don't mind. Is very personal. I can imagine that younger people give their information much more faster, it's very personal. But the other part of ethics, is that we get a lot of personal information from our clients, which we have to make sure that is secure and nobody can access to it, unless they allow it, that is very important for us.

A:Ok. Can you explain me more about your work here?

E:I am an online marketeer, I am partly responsible for targeting the right people to my client's website.

A: Do you work with Big Data?

E:Not really Big Data, because for that it needs 3 components, that I don't remember by hard, but we do a lot of data analysis. Who their clients are, we have to make sure that is very secure. Also we helped them with their online presence, they depend on our experience on that.

A:What programs do you use? Google Analytics or something else?

E: Google Analytics yes, most of the times. Also a tool from Adobe, and there you have a lot of marketing automation tools. But those two have a lot of personal information, emails, company names etc. but the information that I gather is of a big group, I can tell that a lot of people from the U.S visited that website, not on entities but a big group.

A: so with Google Analytics you don't store any names ?

E:No, that is why ethics doesn't apply, for me ethics don't really apply that much, but I have to make sure that their online image is good.

A: So you've never have any problem with security?

E: No, not really problems, we had cases in which we noticed in a later stage of the project that we have to apply for example to german rules, which are much more strict.

A: What did you have to do or change?

E: For example, names online. We have a website and they wanted to launch the B-brand (sub brand) in germany, and there you need to explain everything, also the real brand. That's exactly what they didn't wanted to do, but they had to, that's the law. I am not sure how I feel about that, there are a lot of cases, in which it was good that they have that rules, but in others they don't.

A: In Germany, every time a person subscribes to a newsletter, the company has to ask twice, did you have the experience that people stopped joining more often?

E: The more steps you have to take before apply to something, the more people fall off. With quality is perhaps better.

A: So you don't have to work with privacy rules?

E: Except for the basic rules, no I don't have special rules.

A :But in every website you help to build, you need a specific privacy statement?

E: Yes, the cookie consent. Depends on what you are asking, if you can be completely anonymous, then the cookie consent is ok, if you also gather personal information,then you have to make sure that people have the chance to look at it, but I think almost 100% of the people just click ok. Look at the statements that for example Google or Apple gives you, you don't read them, terms and conditions, you just click accept and then you continue, and you don't even know what you have signed up for.

A: Yes, I am now researching on an author that is saying that we should make it more understandable for people, and on these examples you mentioned like Apple or Google, you have a lot of pages to read, and of course people don't do that. Do you think that it will help people or they will appreciate it, if companies make the privacy statements more clear like a few statements.

E: People still won't read it because the statements are too long. So if you for example have a pop-up with the info companies gather then people will start thinking, hey, what am I giving away, and these long list that we have now nobody is gonna read it. It is very good that you have to accept them but if they are so difficult to understand then they are no use.

A: Yes, it's very difficult, there is no simple answer, the point is that more and more people they are realising what is happening, and they do not want to give information away.

E: But that's a small group.

A: Yes, well, they appreciate that companies will go back to them. Some people are getting to understand how this works, and even if it's a small group, just by giving some power to the individual, just asking what they really want, it might be helpful to have a clear profile of them. Where do you think that it will be more important for me to research on ethics of big data?

E: Yes, and also from a personal perspective, what are people willing to give.

A: How do you think I could implement this in the real world? Maybe uses having more awareness.

E: For us, it will really help to have some checklist or a steps that you take, if you do a MA campaign you have to follow this rules or steps… cause that is what we are really doing, make sure that there is more awareness it's a conclusion, but it doesn't really help us continue or apply it to our work, so a checklist.

A: But if my main focus is ethics, I will say like in 2018 the world is gonna be more strict..

E: Yes, we never know when the laws will be updated.

A: If you have any idea later on about the checklist you can come back to me! Thank you so much for the interview!