ONLINE MARKETING FOR THE COOKIELESS FUTURE IN FINLAND

**Jyväskylä University
School of Business and Economics**

Master's Thesis

2023

Author: Tiia Koskela
Subject: Digital marketing and Corporate communication
Supervisor: Outi Niininen

JYVÄSKYLÄN YLIOPISTO
UNIVERSITY OF JYVÄSKYLÄ

2

ABSTRACT

Author	
Tiia Koskela	
Title	
Online marketing for the cookieless future in Finland	
Subject	Type of work
Digital marketing and Corporate communication	Master's thesis
Date	Number of pages
19.5.2023	64 + Appendix

The goal of this master's thesis was to study a novel phenomenon: the future without third-party cookies, also known as the cookieless future. The research was conducted by studying the evolution of the online privacy, including the rise of the General Data Protection Regulation. As the Google has announced that it will be removing the third-party cookies from its ecosystem this master's thesis aims to provide information of what will be the effects of the third-party cookie removal, how online marketing operators can prepare for the removal and what are alternative options after the third-party cookies are removed. The research was conducted with quality research method that uses exploratory research design. The data for this master's thesis was collected through twelve semi-structured online interviews with professionals in the online marketing industry.

The results of this master's thesis indicates that the online privacy has gone through major evolution during the years. This can be identified from the data of the interviews as major of the interviewees referred the online privacy industry before the GDPR as *wild west.* However, it is also discussed that the online privacy regulations are even disruptive for the operators nowadays after the development.

Third-party cookie removal is identified as being the biggest change after the eCommerce and having major effects on the online advertising ecosystem. It is discovered that the targeting and measuring in online advertising will be most affected. The consequences of these are towards advertisers, publishers, society and technology operators. As the third-party cookie removal will have major effects on the whole online advertising ecosystem it is vital for the operators to prepare for the removal. The results of this master's thesis highlights that the preparing is important to start early.

The results of this master's thesis provide deeper insights for the evolution of online privacy in addition to the existing literature. The findings highlight the importance of knowledge towards the third-party cookie removal and the effects of the removal. In addition, the findings presents new, interesting findings and insights of how the operators should prepare for the removal of third-party cookies with suggestions of new, alternative solutions for the third-party cookies to be utilized in the future.

Key words	
Online privacy, online marketing, third-party cookie removal, cookieless future	
Place of storage	
Jyväskylä University Library	

TIIVISTELMÄ

Tekijä Tiia Koskela	
Työn nimi Online markkinointi keksittömässä tulevaisuudessa Suomessa	
Oppiaine Digitaalinen markkinointi ja yritysviestintä	Työn laji Pro gradu -tutkielma
Päivämäärä 19.5.2023	Sivumäärä 64 + Liite

Tämän pro gradu -tutkielman tavoitteena oli tutkia uutta ilmiötä: tulevaisuus ilman kolmannen osapuolen evästeitä. Tutkielmassa tutkittiin yksityisyydensuojan kehitystä verkossa, sisältäen yleisen tietosuoja-asetuksen kehityksen. Google on ilmoittanut poistavansa kolmannen osapuolen evästeet ekosysteemistään, joten tämän pro gradu -tutkielman tavoitteena on tarjota tietoa siitä, mitä vaikutuksia kolmannen osapuolen evästeiden poistamisella on, miten verkkomarkkinoijat voivat valmistautua kolmannen osapuolen evästeiden poistumiseen ja mitä mahdollisia korvaavia vaihtoehtoja kolmannen osapuolen evästeille on tulevaisuudessa.

Tutkielmassa käytettävä tutkimusmuoto oli kvalitatiivinen ja kartoittava tutkimus. Tutkielman data kerättiin kahdentoista verkkohaastattelun kautta. Haastatteluissa käytettiin puolistrukturoituja haastatteluita ja haastateltavat koostuivat laajalti asiantuntijoista verkkomarkkinoinnin alalta.

Tämän pro gradu -tutkielman tulokset osoittavat, että verkkotietosuoja on kehittynyt merkittävästi vuosien aikana. Suuri osa haastateltavista kuvaili aikaa ennen yleistä tietosuoja-asetusta verkon villiksi länneksi. Tuloksissa kuitenkin käy ilmi, että verkkotietosuoja on jopa liian pitkälle kehitetty, sillä haastateltavien mukaan tiukat lait ja säädökset ovat alkaneet haitata liiketoimintaa.

Kolmannen osapuolen evästeiden poistuminen identifioidaan merkittävimmäksi muutokseksi verkkokaupan jälkeen. Kolmannen osapuolen evästeiden poistumisella koetaan olevan huomattavia vaikutuksia koko verkkomarkkinoinnin ekosysteemiin. Tuloksissa esitetään, että kolmannen osapuolen evästeiden poistumisella on suurin vaikutus kohdentamiseen verkkomarkkinoinnissa sekä verkkomarkkinoinnin mittaamiseen. Koska kolmannen osapuolen evästeiden poistumisella on suuria vaikutuksia koko verkkomainonnan ekosysteemiin, toimijoiden on tärkeää valmistautua tähän ajoissa.

Tämän pro gradu -tutkielman tulokset tarjoavat hyödyllistä tietoa, merkittäviä löydöksiä sekä ammattilaisten näkemyksiä verkkoliiketoiminta-alalle kolmannen osapuolen evästeiden poistumisesta, sekä vaihtoehtoisista mahdollisuuksista hyödynnettäväksi tulevaisuudessa kolmannen osapuolen evästeiden poistumisen jälkeen.

Asiasanat
Yksityisyydensuoja verkossa, verkkomarkkinointi, kolmannen osapuolen evästeiden poistuminen, keksitön tulevaisuus

Säilytyspaikka
Jyväskylä University Library

4

CONTENTS

LIST OF TABLES AND FIGURES

TABLES

FIGURES

1   INTRODUCTION

The goal of this master's thesis was to study the effects of the removal of third-party cookies. Research was done from a media agency perspective focusing on online marketing in Finland. The introduction begins with presenting the background of the study. Next the research questions are presented. The research structure is presented under the final subheading.

1.1   Background of the study

As the world has turned towards digitalization consumers concerns towards privacy has increased. Generating vast amount of personal data and dealing with online activities has become an everyday activity which also inevitably increases the privacy concerns. Are people aware that before their alarm clock wakes them up in the morning, their smart watch has recorded their sleeping patterns and heartbeat? Or, how imperceptibly people share their activities during the day into the Facebook or other social media channels. These are usually somehow connected with each other as well. At the same time, people read the news from news application while listening to their favourite music from Spotify.

Online advertising and digital marketing have become one of the main strategies for operators utilize to gain worthwhile results from their Internet marketing and communication strategies (Jung, Pawlowski, & Kim, 2017). Following and tracking online users have always been important part of the online marketing industry. Online users provide a vast amount of personal data while surfing online without realizing it. All this data has been used in online marketing for a long time. Cost efficiency and successful online marketing is mostly based on targeting online activities towards target audience, in order to gain more customers. This online targeting has been mostly based on online cookie data generated by tracking and following the online users. Data has been mainly collected through third-party cookies that enable tracking the users while they surf online over different domains. (Lammi & Pantzar, 2019.)

Google has announced that it will remove the third-party cookies from their ecosystem. The date when this is going to happen is not known while this research was made, as Google has postponed the removal two times. Latest announcement was in summer 2022, when Google announced that the removal will take place in 2024 (Clark, 2022). However, it is clearly entrusted that the removal will happen eventually, and now is the latest time for operators in the online marketing industry to start preparing for the cookieless era.

This master's thesis discusses about the effects of third-party cookie removal and what are the options for the operators in online marketing industry after the removal. Online privacy, including the evolution of the online privacy

and the rise of the General Data Protection Regulation, have had a major role in online marketing throughout the years, which makes it necessary part of the research. This master's thesis was made from media agency perspective and focusing on online marketing in Finland. As the research was done by studying a novel phenomenon which has not happened yet, it is important to highlight that the research is conducted from assumption perspective including insights and suggestions from professionals, as well as literature from whitepapers, blogs and interviews.

As the goal of this master's thesis is to study a novel phenomenon which has not happened yet, similar former research does not exist much. Any research made from similar perspective and focusing on online marketing was not found. Previous studies from similar subject mainly focus on a specific area in the marketing industry, as an example the research by Kollak (2022) focusing on the programmatic advertising in the cookieless future. Oksanen studied in 2022 how the companies can prepare for the removal of third-party cookies, aiming to build a maturity model for this. Research by Kourtellis et al. (2021) studied how websites are able to pass the GDPR consent to track users in the cookieless future. In one research by Hana et al. (2023) develop strategies for effective display advertising in the future was studied. This research by Hana et al. can be identified having similar characteristic as this master's thesis. However, research by Hana et al. is focusing on display advertising. As no former research is made, this master's thesis aims to conclude the effects of third-party cookie removal without specifying any specific area in online marketing and providing useful insights and suggestions for the online marketers from media agency perspective.

Online privacy as a concept is well studied as it has been meaningful part of online marketing for a while. However, it can be identified that the GDPR, General Data Protection Regulation, has increased the discussion around online privacy. Degeling et al. (2018) studied the GDPR effects on online privacy by analysing in total 500 most popular websites from all 28 member states of the European Union. This current master's thesis covers online privacy and the rise of the GDPR as a supplementary part for the removal of third-party cookies. As the discussion towards online privacy has increased, at the same time discussions of online data collection and the use of online cookies have increased. These subjects are covered in this master's thesis with also supplementing the understanding towards entire online marketing area.

The subject of cookieless future with all its characteristic there are no former research found. A lot of discussions and suggestions around this theme can be found, as an example the Sobo & Vigh (2021) suggesting ways for operators to prepare for the removal of third-party cookies and possible managing methods when the removal of third-party cookies will eventually take place. This master's thesis is aiming to supplement these discussions by providing both theoretical contributions as well as managerial implications.

1.2   Study objectives and research questions

The online privacy has gone through major development throughout the years. The General Data Protection Regulation has been the biggest influential actor towards online privacy by the year 2023. Data collection and the use of online cookies play key role in the online privacy area as well as in the online marketing business. Now, as Google has announced the removal the third-party cookies from their ecosystem online marketing will most likely go through major changes. As this third-party cookie removal will most likely take place somewhere in the near future it is vital for the operators in the online marketing industry to identify what is going to happen, what are the effects and how to prepare. These are the subjects that this master's thesis is covering and offering insights and viewpoints from industry professionals' point of view.

This master's thesis aspires to answer these research questions:

1. How has the online privacy developed over the years?
2. What are the effects of third-party cookie removal?
3. How can an online marketing operator prepare for the removal of third-party cookies?
4. What are the alternative options for operators in the cookieless future?

This master's thesis is executed as a qualitative research method. The data collection is made through twelve semi-structured interviews of relevant professionals in online marketing industry. Qualitative research method is justified as a method for this master's thesis as the goal is to gain deeper understanding of a new phenomenon, a world without third-party cookies (Hirsjärvi et al., 2009). The methodology of this master's thesis and the data collection are further discussed later in the master's thesis.

1.3   Structure of the research

This master's thesis is organized into six chapters. Thesis starts with an introduction chapter including the background of the study, study objectives, research questions and the chosen methodology. Second chapter presents the literature review covering the concept of online privacy including the evolution of online privacy, introducing the General Data Protection Regulation, data collection with the concepts of first- and third-party cookie. The concept of cookieless future is covered next in the literature review based on existing literature. The subchapter Cookieless future covers discussions of why the third-party cookie are being removed, what are the effects of the third-party cookie removal, how operators can prepare for the removal and what are the suggested alternative options for the

future for online marketing operators. The existing theory of the third-party cookie removal is limited as the theory follows behind the actual appearing. In addition to existing theory the literature review includes interviews, discussions and blog posts from the industry professionals. Developing the theory is complicated as it is not confirmed when the third-party cookie removal will happen.

In the third chapter the research design, data collection and data analysis methods of this master's thesis are presented. The chapter includes the qualitative research methodology. The collected data based on literature review is presented in the fourth chapter. The collected data is organized into themes based on the literature review and research questions. Fifth chapter includes conclusions covering the most important theoretical and managerial findings and discussion between the theoretical contributions and managerial implications. In the last chapter the trustworthiness, limitations of the study and future research subjects are considered. References can be found at the end of this master's thesis.

2   LITERATURE REVIEW

The literature review of this master's thesis presents the online privacy, online data collection and the concept of the cookieless future based on existing theoretical literature.

Online privacy is presented with the explanation of the concept followed by historical insights based on the literature and the evolution of online privacy, including two important phenomena's regarding the evolution of online privacy, by the date this master's thesis was executed. Online data collection with the two collection methods, first-party cookie, and third-party cookie, are explained and presented on the next subchapter. Last subchapter discusses about the phenomenon Cookieless future covering discussions of what is going to happen, what are the effects of the third-party cookie removal, offering suggestions on how to prepare and what are suggested alternative mechanisms for the future. As the phenomenon of third-party cookie removal is novel majority of the existing literature is including opinions, interviews and blog posts with suggestions from the industry professionals.

2.1   Online privacy

Digital information and digital activities increase among consumers every day, and at the same time consumers become more aware of online privacy issues (Palos-Sanchez et al., 2019). However, the awareness towards online privacy and the use of online environment does not necessarily grow evenly. Not all the consumers consider and discover the privacy issues similarly. Rosenthal et al. (2019) discovered that users who have higher privacy literacy are more concerned, while users with lower literacy are less concerned about the online privacy issues. In addition, according to Tucker (2013) users are aware that their personal data, as well as their geographical data, is utilized while operators provide personalized adverts.

At the same time as the technology has evolved it has become easier to almost anyone with some basic knowledge of online data literacy to collect data from consumers and to sell it further. From this, it can be identified that the privacy paradox is real even though there are no correlation seen between allowing the data sharing and data privacy concerns. (Chen et al., 2021a). From the results of the research by MeasureProtocol (2020) it can be identified that most of the consumers are worried about their online data and how the data is processed and used. This subchapter presents the subject of online privacy, covering the development of online privacy, including the rise of the General Data Protection Regulation.

Online privacy, or Internet privacy, as a concept is defined as the level of security protection that user have while connected to the Internet. Online information can be secured for example with strong password or by turning off tracking while they surf online. (Winston & Strawn, 2023.) However, the research by Al-Fannah et al. (2019) discovered that approximately 69% most popular websites utilizes a large scale of unauthorized tracking.

Network of Excellence in the European Statistical System in the field of Statistical Disclosure Control (ESSNet SDC) defined the personal data as following; "*Any information relating to an identified or identifiable natural person ('data subject'). An identifiable person is one who can be identified, directly or indirectly. Where an individual is not identifiable, data are said to be anonymous.*" Name of the user, telephone number, user income or health information are examples of personal data (EuropeanCommission, 2019b.)

The perfect online data privacy framework should allow users the control of what data and information they share, also which parties the data is shared with, when the data is shared, why the data is shared and for what purpose it is used. However, this it has not always been the case. In 1604 Sir Edward Coke announced simple framework towards privacy overall: "*A home is one's castle*". This was one of the first statements towards the Right to Privacy. This statement concludes the individual's right to private life at their home, as well as their license to be left alone, outside from the public. As straightforward statement as this is, served during times when all communication and socializing was done through speaking with each other or contacting with eyes. (Sharma, 2019.)

2.1.1 Evolution of the online privacy

The online data security and the online data protection have both been developing while the technology has advanced. However, the development of the laws and regulations has always been lacking behind from the technology development. The need for wider privacy has been noticed after the recognition of how much new technologies can enable and utilized in law enforcements. Hence, the personal right has been extended to personal privacy and afterwards to personal online privacy. Eventually the laws and regulations towards online privacy have been developed as they are nowadays. (Sharma, 2019.) This subchapter covers the evolution of the online privacy with four most meaningful steps of it demonstrated in the Figure 1 (p.12).

1950:
The European Convention on Human Rights

1995:
Minimum data privacy and security standards passes the EU Data Protection Directive

2011:
The need for updated directive recognized
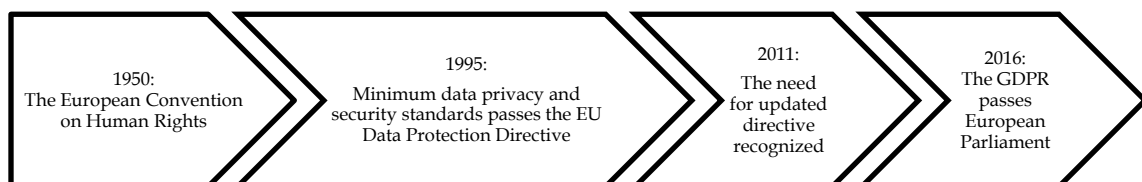
2016:
The GDPR passes European Parliament

Figure 1: The evolution of Online Privacy

2.1.2 The General Data Protection Regulation

During the past seventy years online privacy and online security laws and regulations have gone through evolution, as the Figure 1 (p.12) demonstrates. In 1950 European Convention on Human Rights made a statement "*Everyone has the right to respect for his private and family life, his home and his correspondence.*" This statement is part of the European Convention on Human Rights which EU has been using as a base while aiming to The General Data Protection Regulation legislation. (Wolford, 2022.)

After the Internet was invented and the technology started to evolve the EU identified emerged need for online security development. In 1995 EU established minimum online security and online data privacy standards which passed the European Data Protection Directive. Every member state was obligated to address their own implementation laws for these standards. At the same time the Internet was already collecting a vast amount of the online data and turning into the data vacuum cleaner as it is nowadays. (Wolford, 2022.)

Between the years 1995-2011 technology and the Internet continued their revolution. During the years online services became more common for the people. For example, Online banking services became general, and socialization moved towards online channels as the Facebook was launched to the public. In 2011 Europe's data protection authority announced that the 1995 directive needs to be updated. It was recognized that the EU needs a comprehensive approach on personal data protection. This recognition was announced two months after Google user had sued the company for scanning their e-mails. However, it must be highlighted that there are no proofs testifying the connection between these two events. (Wolford, 2022.)

The developed comprehensive approach on personal data protection was The General Data Protection Regulation, referred as the GDPR. The main objective of the GDPR is to give online users the possibility to protect their own online data by giving them power to control the data collection. This is seen for example from the cookie consent banners which appear when the user enters the website and the consent banner announce that the data is collected. Example of cookie banner presented in Figure 2 (p.14). Users have the ability to approve or decline the data collection, however often the cookie banner is aiming to the results where user clicks *Accept* and instead of *Decline* option banner is offering opportunity to modify collection settings. For the operators which collect and process the online data the GDPR, and transparency requirements are more strict. The GDPR passed the European Parliament in 2016 and all organizations obligated to the GDPR were required to be GDPR compliant latest on May 25th 2018. (Wolford, 2022.)

THIS WEBSITE USES COOKIES
This website uses cookies to improve user experience.
More information on <u>Cookie Policy</u>
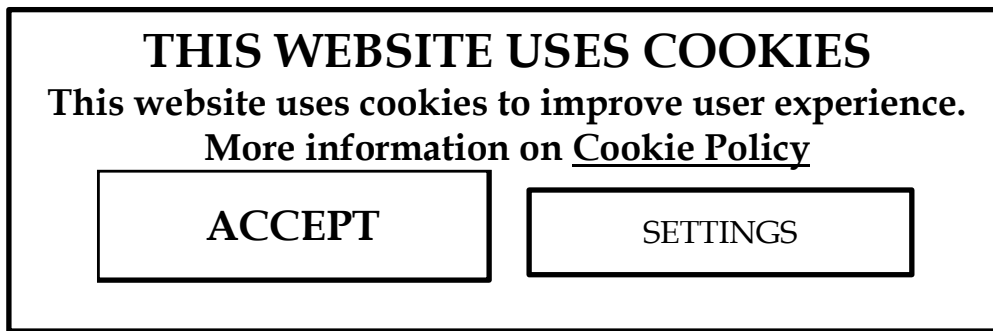
ACCEPT   SETTINGS

Figure 2: Cookie consent banner

The GDPR is the most demanding data security and privacy law in the world by the April in 2023, also regarding the penalties and fines. If the operator that is obligated by the GDPR does not apply the laws and regulations defined in the GDPR it can be expecting financial penalties reaching into 4 percent of company global revenue or max out at 20 million euros. Whichever is higher. (Wolford, 2022.) As an example, the biggest fine given during 2022, 405 million euros, was signed for Instagram by the Irish Data Protection Commission. Instagram violated children's privacy through the publication of phone number and email addresses. Instagram allowed children between 13 and 17 age use business accounts where the phone numbers and email addresses be accessed. In addition, the accounts were not set to private by default and they could be viewed by the public in some instances. (McCarthy, 2023.) The fines given by authorities also the data owners are allowed to demand compensation from the damages of the data collection up to tens of millions of euros. During the digitalization the world is at the moment the consumers are trusting more and more their personal information into the cloud services while the privacy breaches become more common. With the help of the GDPR Europe is demonstrating their opinion towards the data security and data privacy. (Wolford, 2022.)

As discussed earlier in this chapter all the operators obligated by the GDPR were required to be GDPR compliant latest on May 25th 2018 (Wolford, 2022). However, in 2018 Degeling et al. discovered that, even though there has been positive effects towards the web transparency after the GDPR, the implementation of the new regulations required by the GDPR have not been perfect and not all the operators support it. As one example was Google Chrome's Federated Learning of Cohorts (Google FLoC) (Block, 2021). FLoC was created to use audience targeting in a more privacy friendly way as it has been done via third-party cookies. Instead of showing ads to individuals, the idea of the FLoC was to show ads to people based on their cohort, a number assigned to a user's browser. (Sweeney, 2022.) Google invented the FLoC as replacement for third-party cookies (Block, 2021).

As aforementioned, the GDPR was developed to serve better protection for consumers towards their online data. However, there are exceptions and limitations of which operators are legally obligated to apply the GDPR. As shortly

described, operators anywhere in the world as long as they collect or target the data related to people in the EU are legally obligated to apply the GDPR. Below presented with examples of the operators legally obligated to apply the GDPR:

1. entity or company which is observing the behaviour of individual inside the European Union (EU), or offering free or paid goods or services and established outside the EU; or:
2. entity or company that deals with personal data as part of their work of one of its sectors which is established in the EU, no matter where the data is processed (EuropeanCommission, 2022a.)

However, if processing personal data is not the key business of the operator, and the operations do not cause a risk for individual the operator is not legally obligated to apply the GDPR. Prior business is hereby covering as an action where processing the data pattern is integral part of the processor or the controller work. (EuropeanCommission, 2022a.)

The operators which are obligated to apply the GDPR need to be able to authenticate this. The possible employees working under the operator are required to have an education towards the technical security measures, and these measures needs to be executed. Operator is required to have a specified team where every member of the team has responsibilities regarding the data protection. Operator must have the Data Processing Agreement in order with the third parties processing the data for the operator. All the collected and processed data are required to be able to validate; how the data is collected, how the data is used, where the data is stored and who has the main responsibility over the data. (EuropeanCommission, 2022a.)

2.1.3 Digital Markets Act and Digital Services Act

After conducting the use and collection of the personal data via the GDPR, the EU is going to implement two new acts. New act is aiming to establish a healthier competitive environment for users where they are not forced to use certain platforms for basic services. Another one of these two new acts is for to regulate the risks linked to the use of the latter through. (Buster.ai, 2022.)

The European Commission (EC) is part of the executive of the European Union (EU) and it is the EU's politically independent executive arm. It makes decisions on the Union's strategic and political direction. Digital Markets Act (DMA) and Digital Services Act (DSA) are policies under the EC. DMA and DSA concludes a selection of rules which applies across the whole EU's. The DMA and the DSA have been approved by EC in 2022. These policies have two main goals regarding the online data privacy:

1. Develop safer digital environment where the fundamental rights of all users of digital services are protected;

2. Establish an equal operation ground to advance innovation, growth and competitiveness in globally as well as in the European Single Market. (European-Comission 2022a,b.)

The mutual, larger goal for these two smaller objects is to re-write the rules of the internet. These two suggestions represent a dominant step ahead in updating regulations for online companies, or operators selling third-party products or hosting third-party content, as it will take years before the Digital Markets Act (DMA) and the Digital Services Act (DSA) come into force. The drafts will discover how the Commission will cut the possible negative impacts for society and consumers, and drive the digital platforms to compete with each other. The DSA and the DMA offers balanced approach which appoints additional regulations where the damage for consumers is maximal, as well as the competition being maximal. However, there is still space to ensure that the platform structures are made more competitive and transparent. (Blankertz & Jaurcsh, 2021.)

The DSA and the DMA are interacting with each other. The DSA is mainly focusing on consumer protection and transparency and utilizing additional qualifications for intermediaries used by more than 10% of the EU consumer protection. The DMA focuses on the lack of competition in digital markets, and affects only so-called "gatekeepers", platforms with at least 45 million monthly active users. National regulators will be authoritative for applying the regulations of the DSA, while The European Commission will be responding for enforcing the DMA. (Blankertz & Jaurcsh, 2021.)

2.2   Online data collection

Online platforms, like Google and Meta would not be free for the users without advertising (Küpper & Raschke, 2018). Online cookies, also known as HTTP- or web cookies, are text files including a small piece of data. Online cookies are comprehensively utilized in online marketing, and they have had a meaningful role in the current web advertising model (Alfeld et al., 2016). In this subchapter the online data collection, covering the concept of online cookies is presented. In addition, the different types on online cookies are reviewed.

The concept of online cookies was first presented in 1994 (Pierson & Heyman, 2011). The online cookies are widely defined as messages of information or small text files that web servers share to the web browser when a user visits a website (Cahn et al., 2016; Kristol, 2001). Online cookies are created by a web server at the same time while the user is browsing online. With the help of the online cookies online user can be followed inside the internet environment. Through online cookies operators can track where the user browsed, what they searched or what they bought from online store. The whole user experience can

be followed through online cookies; hence the whole user experience requires the use of the online cookies. (Alfeld et al., 2016.)

Majority of the websites uses online cookies. Cookies were created with the mission to improve user interactivity with the website and the digital communication (Pierson & Heyman, 2011). The goal was to enable the user to continue from the same website they left earlier. Online marketers, publishers and advertisers are few examples of a big operators which use the online cookies to collect the data from online users. (Lammi & Pantzar, 2019; Ito et al., 2021.) In addition to the online data collection, the online cookies enables faster online navigation, removing the need of entering information such as username and password, or language preference each time when entering the website (Cofone 2017).

As discussed at the beginning of this chapter, big online platforms like Meta and Google would not offer their services as free for the consumers without advertising. The information, data, collected through online cookies can be utilized in online marketing (Cofone 2017). Collected data allows timely and accurate dissemination of adverts, which increases the chance to drive clicks or purchases (Huang, 2017). In addition to data collection, the online cookie enables website to recognize the device when it visits the website again, remembering some information from the previous session (Cofone 2017). The online cookies can be identified from each other based on the way how they are used and created (Chen et al., 2021b).

2.2.1 First-party cookie

As identified, the online cookie is a small piece of text including a small piece of data. Online cookies are generally used for authentication and the identification of clients, session handling and storage of site preferences (Schmücker, 2011; Ito et al., 2021). Cookies can be separated into two categories based on the expiration timeline: session and persistent. Session cookies can store the data in browser without expiration attribute, and the data is deleted when the session is ended. Persistent cookie can keep the data in browser until a specified expiration date attribute. (Ito et al., 2021).

First-party cookie is set when the user visit on a website (Chen et al., 2021b). First-party cookie saves the browsing data from the online user. This data is utilized mostly for developing the website and improving the customer experience on the website. In addition, with the first-party cookie monitoring technologies as shopping cart are utilized on the website. (Demir et al., 2022.)

Utilizing the first-party cookie data is interesting in online marketing as it is data gained from the online users after signing in or subscribing. Other examples of the data collected through first-party cookie are Customer Relationship Data or data from surveys. First-party cookie data is one of the most valuable data for a brand in online marketing as it helps to create more persistent marketing which strengthens the relationships with the audience. (Competition & Markets Authority, 2020; Sickler, 2022.) First-party data includes historical and real-

time data based on actual interactions of user with the brand, which provides crucial and meaningful information. It gives the operators leverage to recognise and solve customers' problems. In addition, it enhances target precision which helps operators to improve the relevancy, accuracy, reduce ad wastage and thus boosts the return on ad spending (ROAS). (Thimmapuram, 2023.)

Big operators which have a vast amount of traffic on their website are able to collect lot of first-party cookie data which enables continuous leverage of high-quality data. At the same time medium- and small market operators will most likely suffer with monetizing and collecting the useful data. Unless they are able to invest properly in data collection technology or participate in some larger scaling solution system. (The Competition & Markets Authority, 2020.)

2.2.2 Third-party cookie

As the first-party cookie is set while the user visit on a website, third-party cookie is set by another domain when a first-party page merges third-party content. Third-party cookie enables tracking online user over the domains if the same third-party resource is presented on other domains. (Berke & Calacci, 2022; Chen et al., 2021b.) Third-party cookie tracking has been the most common and easiest tracking form and the third-party cookies have been widely used technique on the internet. (Bringas et al., 2017; Schmücker, 2011; Mayer & Mitchell, 2012; Cahn et al., 2016.) In addition, third-party cookies are utilized in retargeting of the online users. Retargeting, or remarketing, is referred as displaying ads to previous visitors who did not make a purchase (Sahni et al., 2019).

According to Geradin et al. (2020) and Guida (2021) third-party cookies are vital when it comes to personalizing ads, creating user profiles, and tracking effectiveness of advertising. Website owners can benefit from the third-party cookies by allowing them to get useful insights and create data analysis as they gather information from the user behavior on other websites (Sipior et al., 2011). A real research gap can be seen among the subject third-party cookie removal and how operators can prepare for this and what are the options once the third-party cookies have been removed. Some studies have been made but those are mainly focusing on analysing the different online privacy capabilities regarding the removal of third-party cookie and if they choose to block third-party cookies (De Corniere & De Nijs 2016; Du et al., 2020; Englehardt et al., 2015.) These studies focus more on the disposal effects of third-party tracking (Beales & Eisenach 2014; Cofone 2017; Abhishek et al., 2019). In addition, there are more technical studies which are aiming trying to explain the concept of third-party cookie themself and the examples of third-party cookie use (Alfeld et al., 2016; Gomer et al., 2013; Balzarotti et al., 2021; Abraham et al., 2020; Demir et al., 2022; Cozza et al., 2020.)

2.3   The future without third-party cookies

In March 2021 Google announced first time that it is going to remove the third-party cookies from its' ecosystem by the end of the year 2022. However, during the summer 2022 Google made another announcement informing that this third-party cookie removal is postponed until the year 2024. After the Google announcement removing the third-party cookies from their environment operators are forced to re-think the whole data collection ecosystem. Majority of the websites are collecting the data through online cookies and this data has a vital economic role in online marketing business environment. (Lammi & Pantzar, 2019.) This subchapter discusses the suggested reasons behind the removal of third-party cookies based on existing literature. The effects of third-party cookie removal, including the effected operators are presented. At the end of this subchapter the suggestions for preparation of the removal of third-party cookies for operators are presented as well as the suggested complimentary mechanisms for the third-party cookies are presented. It is important to highlight that majority of the literature used in this subchapter is based on suggestions and insight from professionals as the phenomenon is novel and it has not happened yet while writing this master's thesis. The theory is developing and changing while the third-party cookie removal is happening as the theory usually appears late.

2.3.1 Reasons behind the removal of third-party cookies

Data privacy has been a concern and discussion for a long time. Privacy-related concerns can be recognized as a reaction of the increased usage of third-party cookies and personalized browsing experience. Research regarding digital marketing and user integrity has discovered that larger concerns lead to negative consumer response, but additionally that user integrity is contextual and depends on several factors such as strengths of privacy policies, trust in the organization collecting data and fairness perception. In addition, other research discovered that if consumers sense the opportunity to control of what information they share and understand how it might benefit them, they are more likely to share data (Martin & Murphy, 2017). One way to decrease the privacy concerns is to develop stronger privacy regulations (Mitchell, 2012).

      According to the world leading media auditor Ebiquity there are three major possible reasons for the removal of third-party cookies suggested. First suggested reason is about society and the consumers' increased knowledge towards online privacy. Second suggested reason is because of the regulations. Final, the third suggested reason is that technology companies have discovered the potential of online privacy. (Sobo & Vigh, 2021.) According to Jayakumar (2021) Google considers the current state of online privacy as unsustainable.

      The actual reasons will most likely appear after the removal of third-party cookies have come true. Meanwhile there are only suggestions from different authorities. As the removal of the third-party cookies have been postponed two

times it has given operators more time to prepare for the effects of the removal of third-party cookies and develop new alternatives for the use of third-party cookies. The Google Chromes' vice president Anthony Chavez wrote in his blog that the development of new online data privacy centric solutions, which ensures the financial security of online marketing operators, requires a lot of time and sufficient amount of testing and developing the new technologies before the third-party cookies are removed from the ecosystem. (Clark, 2022.)

2.3.2 The consequences of third-party cookie removal

As aforementioned, third-party cookies have been a generally used technique for tracking online users for years. In online marketing third-party cookies have been effective way to collect behavioural data from the users and utilize this data in online marketing. As an example, it has been suggested by Cofone (2017) that the click-through-rate of online marketing can increase approximately 670 percent with the use of data collected via third-party cookies in targeting, compared to traditional advertising.

The third-party cookie removal will have an effect on measuring online marketing. As an example, the attribution modelling will not be possible to utilize after the third-party cookies are removed. As the measuring of online marketing will change it will have an effect on the key performance indicators (KPIs), and some of the KPIs will be outdated. (IAB, 2022b.) The results from the IAB survey (2022b) implicates that the measurement of online marketing campaigns and attribution modelling will be most affected by the removal of third-party cookies. At the same time the results identifies the measurement of online marketing as a multibillion dollar issue. In addition to measuring online marketing, as the tracking of online users have been based on the third-party cookie it will be effected. Tracking users have enabled online targeting based on the third-party cookie data. After the third-party cookies are removed, targeting will be based on the first-party cookie data. If the first-party cookie data does not exist targeting in online marketing will be challenging. (Sobo & Vigh, 2021.)

For the consumers the removal of third-party cookies can be recognized as increased amount of content behind registration or paywalls. Reduction of the free content is a result of the economic effects that the removal of third-party cookies will have towards the online marketing ecosystem (Korula & Ravichandran 2019; Abhishek et al., 2019; Beales & Eisenach 2014; Du et al., 2020). As an example of the economic effect, Korula & Ravichandran (2019) discovered that by blocking the third-party cookies the revenue of the top 500 publishers has decreased at least 50 percent. Du et al. (2020) identified that the users who are not inside the behavioural targeted pool, the data collected via third-party cookies, will generate 52 percent less revenue for the publishers.

For the technology companies the removal of third-party cookies can be identified as an opportunity to innovate and develop new solutions. For example, towards measuring marketing modelling systems, or new data solutions which are based on first-party data. Advertising technology softwares like demand side

platform (DSP) and supply side platform (SSP) are forced to re-think how to operate in the online environment without the third-party cookies as those have been leaning on third-party cookies. (Brodherson et al., 2021.)

After the removal of third-party cookies major focus will be on the first-party data, which is collected through the first-party cookies. It is suggested that the operators which have strong first-party database will benefit most from the removal of the third-party cookies. Examples of these operators are Meta and Google, and they are also known as Walled Gardens. (Brodherson et al., 2021; Mehra, 2011.) Operators that identify themselves as walled gardens keep their user data, technology and information completely for themself without any accessibility or involvement to outside parties (Bleier et al., 2021).

2.3.3 How to prepare for the third-party cookie removal

As Google has delayed the death of the third-party cookies several times it has given the world more time to prepare for this and develop alternative options for the third-party cookies. The Table 1 (p.21) presents the three important suggested actions that every online marketing operator should take, based on the literature by Juškaitė & Janušauskaitė (2021), Shehu et al. (2020) and Sobo & Vigh (2021). Actions are not necessary to be completed in a specific order, however it can be identified that reviewing the current strategies and evaluating the effects of the third-party cookie removal could be the important first step, which can be seen as a base for the other steps. Beginning to utilize tools and solutions which are not based on third-party solutions is vital as the third-party cookies will be removed. The functionality of own channels, for example website, should be considered. Important to develop the own channels, for example the quality of the website, as supportive for the first-party data collection.

Table 1: Preparing for the removal of third-party cookies

Review the current online marketing strategies and evaluate the effects of the third-party cookie removal	It is vital for the operator to be aware of what are the effects of the removal of third-party cookie and how it effects on their online marketing strategy. After familiarizing what are the effects operators should re-think their strategies. Strategies include the goals for the operator and the reasons behind those goals.
Start utilizing tools which support alternative mechanisms for third-party cookies	As aforementioned the third-party cookie removal will change the measuring in online marketing. Utilization of alternative tools and metrics when analysing and measuring online marketing are needed. As an example, measuring the reach and frequency metric will become unreliable after the third-party cookie removal campaign studies with relevant metrics can be used. Evaluating the campaign success beyond the media boundaries.

	As the targeting online users will have an effect it is another area which need to be re-think. Targeting options without the use of third-party cookie are required. Utilizing new mechanisms and tools, which can be considered as a long-term solution, is important as the removal of third-party cookie is suggested to be permanent.
The functionality of own channels based on strategy goals and the first-party database	As the operator have the goal it is aiming for the functionality of own channels, for example website, is important to be analysed. Two example issues to consider: How reachable the website is and is it search engine optimized (SEO) so that the users find it? Is the website operating to support the removal of third-party cookie, for example is there an opportunity for the users to sign up for newsletter? The importance of first-party data is increasing after the removal of third-party cookie, as discussed. It is important for the operator to be aware of the size and effectiveness of their own first-party data base and how this can be fostered in a GDPR compliant way. Functionality of own channels is a key when growing the first-party database. While collecting the first-party data operator should be transparent for their users by providing information of why they are collecting the first-party data. Providing added value, for example what the user benefit of signing up for a newsletter, will increase their willingness to provide this information, or to sign up for the newsletter. Users are more willing to become customer of a operators they consider trustworthy and beneficial.

With the three steps presented in Table 1 (p.21) the operator has a good base of preparation for the removal of third-party cookies. However, as the phenomenon is novel and there are no certainty or no established policies of what the effects of the removal of third-party cookie will be, testing is considered as a one major preparing mechanism. Operators need the courage to test new tools, new mechanisms and new channels to replace the use of the third-party cookie to reach the goals set in the strategy. (Juškaitė & Janušauskaitė, 2021; Shehu et al., 2020; Sobo & Vigh, 2021.)

2.4   Alternative options for the third-party cookie

As discussed, the removal of third-party cookie will have impact for example measuring and targeting in online marketing, in addition to other effects for different online operators. New tools and innovations have already been developed

to facilitate the effects of the removal of third-party cookie. In this subchapter the five alternative methods for third-party cookie are presented. It is important to highlight that these methods are suggestion based on literature developed by the time this master's thesis was executed.

2.4.1 First-party data

As aforementioned the first-party data will have major role after the removal of third-party cookie. The first-party data is defined as a data which is gained from the online users after subscription or after signing in, or data gained while the user is interactive with the operator website or application (The Competition & Markets Authority, 2020b, p.300).

 The loose legislative restrictions are seeing as the major advantage of the first-party data. As discussed, big operators as Meta and Google acquire a vast amount of first-party data which enable leverage high-quality data continuously while smaller operators will have difficulties gaining valuable first-party data. Partnering with other data providers will enhance smaller operators first-party database enabling them to have more quality data to use in their online marketing. Partnering is already seen as an interesting option as over the 40 percent of the companies from the IAB survey (2022b) are willing to enhance their relationship with third-party trade operators aiming to build identity resolutions solutions for the era after the third-party cookie removal. (IAB, 2022b.) In addition, over 80 percent of the respondents in LiveRamp survey (2021) are either planning to, or are already co-operating with a third-party data operator to share their first-party data for activation, attribution, insights or measurement online marketing activities.

2.4.2 Contextual advertising

Contextual advertising a method that has had a remarkable role in online marketing business already before the data-driven advertising. Contextual advertising is a method where the advertisement is shown based on the content of a website. For example, advertising car tires on a car seller website. Contextual advertising can be done through the keywords which describe the overall subject of the website. Tracking techniques are not affecting for the contextual advertising which is why it is suggested method for online marketing after the removal of third-party cookies. (Katona & Zhang, 2012; Schmücker, 2011.)

 As targeting based on third-party cookie will not be possible after the removal of third-party cookie it could be implicated that this would be a renaissance for contextual advertising. According to the Competition & Markets Authority (2020), it is *"widely anticipated that advertisers will return to spending larger proportions of their budget on contextual advertising"*.

 Contextual advertising method and third-party cookie method have similarities, but the most dominant pricing methods are based on impressions or clicks (Cui et al. 2010; Broder et al. 2007). In contextual advertising the cost per

thousand of ad impressions visible (CPM) price is around a quarter of the CPM price in behavioural targeted advertising (Schiff, 2019). As aforementioned, in contextual advertising user can be followed in every step or the purchasing journey without third-party cookie.

The role of contextual advertising in the future has been dividing opinions and generated discussion. For example, Washington Post as a publisher and technology company Gum Gum have invested towards contextual advertising, while at the same time attribution company Neustar is questioning the frequency capping and measurement possibilities in contextual advertising. (Schiff, 2019.) According to the IAB survey results (2022b) over 40 percent of the respondents have increased the spend towards contextual advertising. The results from Adweek (2020) implicates that more than 50 percent of respondents have changed their advertising strategies towards contextual targeting strategies. The research by Shehu et al. (2020) suggest that contextual advertising is going to play an increasingly remarkable role in the future of digital advertising

As the website usually changes over the time it is a problem in contextual advertising. The ad server invests computation resources in a process which analyses the website content and match the ad with the website content. This method functions while the website content is static. However, in websites where the content cannot be analysed beforehand, for example dynamic websites, more latency costs and excessive communication are required. In addition, if the website content cannot be evaluated beforehand nonrelevant advertising for the users which will generate lower number of impressions or clicks high latency and higher preprocessing load and more communication. All these are identified reasons behind lacking consumer experience. (Anagnostopoulos et al., 2007.)

2.4.3 Google Privacy Sandbox

Safari and Firefox have already blocked the third-party cookies without any alternative replacements. It is suggested that Google will not accomplish the removal of third-party cookie without effective alternative. In addition, Google need to show its' own power as resistant operator for new market entrants, leaving these with little possibility for consumer substitution (Nottingham, 2021). The need for new techniques to protect users' privacy while maintaining the internet accessible and useful for advertisers and publishers is recognized and the result from Google is Privacy Sandbox (Jayakumar, 2021).

Google's Privacy Sandbox is a set of browser Application Programming Interfaces (APIs) to enhance online privacy while retaining the benefits of online advertising (Sadeghpour & Vlajic, 2021). As an example, online advertiser is aiming to reach website visitor, who have visited the website earlier, with retargeting. The domain will store an information about the user and use this data to allocate the user into a defined interest group. This data is used for advertising, but the operator is not able to connect the interest data to other user information. (Cooper et al., 2022; Mendys & Jensen, 2021; Rycroft, 2022; The Privacy Sandbox, 2020.)

2.4.4 Modelling solutions

A method already developed and used which is not affected by the third-party cookie removal is marketing mix modelling (MMM). Marketing mix modelling is a statistical method operating without third-party cookie where the marketing and sales data is utilized to evaluate and analyse the outcomes of the whole marketing campaign, not limiting to the online marketing. Marketing mix modelling utilizes specified external and internal factors to evaluate which effected on the sales performance over a defined period, which is usually complicated to define. However, the use of marketing mix modelling will require a vast amount of data and can be expensive for the operator which is why it is identified that it would not be the first choice for smaller operators. (Tellis, 2006; Crotts & Wolfe Sr, 2011.)

2.4.5 Data Cleaning Room

Data Cleaning Room is cloud-based, independent from advertiser or publisher, privacy policy environment, or data repository, for storing a vast amount of user data. In Data Cleaning Room the first-party data can be connected with another operator, for example publisher or advertiser, data. In other words, the data or the information which can be personally identified is anonymized, processed and stored in a privacy-compliant way. As a results operator will gain insights of their audiences which can be utilized in online marketing after the removal of third-party cookie. (IAB, 2022a; Microsoft, 2022; Rycroft, 2022.)

The Data Cleaning Room requires a scale. It requires a tens of millions of entrances to be able to have a good match for specific user. And this requires coordination and co-operation among multiple operators to share the user data. In addition, the data pool in the Data Clening Room is required to be neutral and trusted intermediary which justifies privacy laws and regulations in locally and globally. (Rycroft, 2022.)

3   DATA AND METHODOLOGY

This chapter includes the methodological approach of the thesis. Research design and chosen methods which are utilized in this master's thesis are presented first. Next the data collection process and the execution of the research are presented. Finally, this chapter presents the data analysis methods.

3.1   Research design

Research design can be explanatory, descriptive, evaluative, exploratory or a combination of these (Malhotra, 2017; Saunders et al., 2019). Exploratory research is suitable in situations where the research goal is to gain deeper understanding, findings and insights of a new subject or phenomenon that has not yet been studied deeply (Hirsjärvi et al., 2009; Malhotra, 2017). Goal of this thesis was to gain deeper understanding of what will happen in the digital advertising business area after the third-party cookies will be removed. As the subject under investigation is new, exploratory research was chosen as it allows the flexibility of the research process (Malhotra, 2017).

Research methodologies can be divided into two categories, quantitative and qualitative. The quantitative methodology aspiration is to holistically understand the subject in question. Quantitative methodology is based on analysing hypotheses and statistics, and it is suitable when more explanation and information is needed, and the subject of matter is unstructured. Qualitative methodology is better when the goal is to gain deeper understanding of an issue, as in this thesis. (Eriksson & Kovalainen, 2008, Hirsjärvi & Hurme, 2015.) However, the differences between these two methodologies are under debate and should not be too strictly dichotomised. (Hirsjärvi & Hurme, 2015.)

As the goal of this master's thesis was to gain deeper understanding of new phenomenon and the design of the research is exploratory qualitative research methodology was chosen. Qualitative research approach is used to study phenomenon and relationships in a flexible way through images and words (Malhotra, 2017; Saunders et al., 2019). Qualitative research method is known to take cultural and constructs better into consideration than quantitative research approach (Eriksson & Kovalainen, 2008, Hirsjärvi & Hurme, 2015.) Qualitative research is used to explain and make detailed sense of a phenomenon in a deeper level (Saunders et al., 2019).

In theory development researchers can use deductive, abductive or inductive approach (Saunders et al., 2019). In deductive approach research starts with the theory and the data is utilized in testing the existing theory which is based on literature. In inductive approach research begins by collecting the data from studied phenomenon and theory is develop based on the data. (Saunders et al., 2019.)

The abductive approach combines the deductive and inductive approach in the iteration of collected data and chosen theory which is why it was chosen for this master's thesis (Saunders et al., 2019). In the abductive approach the literature review is utilized for presenting the recognised preconceptions on the research subject and it is designed before the research (Dubois & Gadde, 2002). Abductive approach utilizes those preconceptions while reviewing the the empirical data to developing the existing theory instead of building completely new theory (Dubois & Gadde, 2002). Hence, the abductive approach is suitable for combining the data and the theory (Dubois & Gadde, 2002; Saunders et al., 2019).

3.2   Data collection

In qualitative research the data is collected with research interviews, secondary data or observations (O'Gorman & MacIntosh, 2015; Saunders et al., 2019). Research interviews are suitable when the goal is to gain findings, views, and deeper understanding for a phenomenon (Metsämuuronen, 2011). Therefore, research interviews were utilized in this master's thesis. Interviews were one-to-one interviews as these provides more personal experience between interviewee and the interviewer and more comfortable for interviewees to share their personal experiences. More personal responds will generate richer data. (Malhotra, 2017.)

Research interviews can be identified as structured, unstructured or semi-structured interviews (Saunders et al., 2019). Semi-structured interviews was conducted in this thesis as the subject of the research includes phenomenon which is not deeply studied the research applies exploratory research design as it allows gaining deeper insights of the research context (Metsämuuronen, 2011; Saunders et al., 2019). Researcher develops questions to ask from interviewees based on predetermined themes (Saunders et al., 2019). Semi-structured interview is adjustable approach as it allows interviewees to elaborate and explain their own views. This can lead the conversation into areas which were not considered important previously but can generate important, rich information from the research subject. (O'Gorman & MacIntosh, 2015; Saunders et al., 2019). The prepared questions operate as a framework for the interview and lead the discussion but at the same time interviewer can adjust the order of the questions and leave out or add other questions in accordance with the natural flow of the conversation (Eriksson & Kovalainen, 2008; Saunders et al., 2019).

Interview questions can be found in Appendix 1 in this thesis. Interview questions were created according to the literature review and separated into three themes; online privacy and data collection, cookieless future, and future opportunities. Interview questions operated as a framework through the interviews. As the open conversation is encouraged in semi-structured interviews the interviewees were able to share additional statements and comments between interview questions and themes. With this it was ensured that the interviews will

generate rich data of the subject by allowing the interviewees the possibility to share extensive reasoning behind their insights among the interviews (O'Gorman & MacIntosh, 2015).

The goal of this research was to gain deeper understanding and views and insight of a specific phenomenon form professionals in the field of marketing. Interviewees were selected with purposive sampling. Purposive sampling is sampling method where the sample is selected based on researchers own knowledge and judgement to find the best samples to gain defined goal (Saunders et al., 2019). Interviewees used in this research needed to be familiar and somehow working with online privacy and online cookies to be able to participate in this research.

Candidates for the interviews were found from researcher's current workplace, researchers' network and asking from the interviewees who they think researcher should contact regarding the subject. Majority of the candidates were not familiar before for the researcher. Candidates were contacted through LinkedIn or through current workplace communication channels during December 2022 and January 2023. When candidates were contacted overview of the research topic was delivered to them. Majority of the contacted candidates worked in the media industry. In addition, candidates worked as software companies, consulting companies and technology companies.

Fifteen candidates were contacted. Eventually fourteen answered and with twelve interview was agreed and executed. Experimental interview was executed between the researcher and their friend in order to discover possible issues to consider. Majority of the interviews were conducted during January and February 2023, one in December 2022. Duration of the interviews were from 43 minutes up to 96 minutes. Interviews were executed online as the interviewees were in different locations all over Finland. Language of the interviews were Finnish as it was each interviewees native language. Before each interview written and oral briefing was delivered to each interviewee. Interviews were recorded with the consent of each interviewee to promote the research analysis process. Recordings of the interviews were deleted after completing the analysis process. Any personal information was not collected from the interviewees and all the interviewees, and the possible companies will remain anonymous. Information of the interviewees is presented in Table 2 (p.29).

Table 2: Information of the interviews and the interviewees

	Job description	Industry experience	Interview duration
Interviewee 1	Developing insight and foresight services, consulting companies while developing their ways of working	Over 30 years	96min
Interviewee 2	Development and sales focus in a technology company which connects identities and profiles in first-party data context	17 years	58min
Interviewee 3	Working a platform that combines data from different sources into a one view, lecturing about digital marketing and first party data	8 years	37min
Interviewee 4	Sales, new business and client work in a creative ad tech company which helps customers create better advertising solutions with the help of AI	8 years	48min
Interviewee 5	Development of technology and analytics in media business	Over 10 years	53min
Interviewee 6	Data collection and the use of the data through customer funnels in sales	19 years	54min
Interviewee 7	Developing advertising technologies and programmatic buying, online tracking tehcniques and the use of cookies in customers' marketing activities	5 years	64min
Interviewee 8	Responsible of data collection, the use of data, sharing the data and data development in media house	13 years	76min
Interviewee 9	Creating and developing data privacy software, consulting customers about their data collection in juridic and cookie perspective	10 years	47min
Interviewee 10	Marketing technology professional working with advertisers and media agencies, developing customers' digital marketing activities and processing data	10 years	54min
Interviewee 11	Digital media sales and development of digital business including display and video advertising, data- and product development in media industry	21 years	62min
Interviewee 12	Software- and service company operating in the field of digital marketing, collecting data and creating customer profiles, working with media houses and media sellers	7,5 years	43min

3.3   Data analysis

The sets of qualitative data can be identified by their fullness and richness. This enables possibilities for deeper analysis of the data when the goal is to explain, understand and analyse a phenomenon in a context. As the collected data sets can be analysed and reviewed multiple times the analysing process is highly iterative. In qualitative research method data analysis goal is to create base for answering the research questions within the literature review by categorizing and sorting the data. Data is analysed during the collection and after the collection. Analysing data during the collection allows researcher to adjust the direction of the data collection to gain more relevant information and more rich data for the research question. (Saunders et al., 2019.)

Thematic analysis technique was chosen for this thesis to analyse the collected data. Thematic analysis provides flexible and systematic approach to analyse qualitative data which offers in-depth theories and explanations to answer the research questions. (O'Gorman & MacIntosh, 2015; Saunders et al., 2019.) The goal in thematic analysis is to discover patterns or themes within the datasets (Saunders et al., 2019). In this thesis goal is to find answer to the research question by using the thematic analysis based on the literature review in this thesis.

Thematic analysis process has six phases: 1) familiarisation with the data, 2) generating initial codes, 3) searching for themes, 4) reviewing themes, 5) defining and naming themes, 6) producing the report. The process of thematic analysis begins with reading the data several times and data transcription, aiming to familiarise the data. Among the familiarisation initial codes from the data should be generated. Next these codes are organized and after that combined into patterns for potential themes. In the fourth phase potential themes are checked against the codes and how the themes relate with each other. After this, themes are identified and refined to meet the argument of the research. The idea of the themes is to highlight interesting issues among the data. In the final phase of the thematic analysis process results are produced to present the information from the data. The analysis report should include examples of data extracts to support the results. (O'Gorman & MacIntosh, 2015.)

The thematic analysis process was conducted in this master's thesis during the data analysis. The data analysis utilized the literature review as the themes in the research interviews were based on the research questions as well as the literature review of this master's thesis. The collected research data was reflected on the literature review. This facilitated the process checking on how the refined themes relate to the literature review.

4   RESULTS AND ANALYSIS

The results of this master's thesis are presented and reviewed in this chapter. The results of the study are based on the methods, which were presented in the previous chapter. Two main themes were discovered from the data, including six subthemes.

Presentation of the results observes the same structure as the literature review with one exception where the online privacy and data collection are combined as a one main theme. Presentation starts with online privacy and data collection, including the historical viewpoint of online privacy and the GDPR. Next theme covers the suggested reasons behind the removal of third-party cookie, effects of the removal, preparation suggestions and finally suggested alternative options. The key aspects are included in mini conclusions after each sub chapter and the key insights are presented after each theme.

4.1   Online privacy

This subchapter focuses on online privacy. Subchapter covers the historical viewpoint of the online privacy, development of the online privacy including the GDPR and the effects of the GDPR for operators. These are the first two themes discovered from the literature review: Online privacy and the online data collection.

The interviewees have wide experience from the online marketing industry from over 30 years to minimum five years which justifies them being applicable to give insights for the historical viewpoint of the online privacy.

4.1.1 The evolution of the online privacy

"The use of the data has risen into a totally new atmosphere." (Interviewee 1.)

The results among the interviews clearly indicates that data privacy and information security have always been important part of the online marketing and the data collection, and the authorities have been supervising this. However, results also indicates that majority of the interviewees identify that online privacy has changed and developed at the same time as the amount of online data has increased. As in the past online users did not leave remarkable amount of online footprints which made it easier for the company to secure the data. Also collection of data and privacy issues overall were more liberal and multicoloured.

Majority of the interviewees referred the online data world before the GDPR as *wild west* when they considered about the history. One interviewee suggested that fifteen years ago the world started to awake for the online marketing

and started to learn the benefits of the online marketing industry. Back then online privacy had no role in online industry.

"Before the GDPR era online world was like a wild west." (Interviewee 1.)

Interesting suggestion from Interviewee 6 was that the USA president election in 2016 could have been the awakening for the people towards online privacy. Company called Cambridge Analytica purchased tens of millions of private profiles Facebook data from Americans without their knowledge, with the intention of building a targeted campaign tool. The created voter profiles were utilized in the Trump campaign. (McIntosh, 2020.) This is nowadays known as The Cambridge Analytica Scandal. There is no certain information if the scandal effected on the presidential election results or not, however some effect on peoples' knowledge among online privacy for sure, as the Interviewee 6 suggested.

"In the past almost anyone was able to see the name, address and maybe also the telephone number of the people who order a newspaper that was delivered into a letterbox. Nowadays this kind of information is defined quite sensitive information, and with the help of data trackers these information enables companies follow the users online and create customised personal profiles." (Interviewee 1.)

Interesting issue to consider is the sensitiveness of the data and how it has changed among the changing privacy issues. Something that was sensitive data forty-fifty years ago is not necessarily that anymore as the Interviewee 1 identified. In addition, Interviewee 5 identified interesting issue towards the data sensitiveness that nowadays small amount of data can be easily reformed into a something which is harmful for a person.

"I would never give the permission to collect my data for any outside operator as it [the data] *is so delicate."* (Interviewee 7.)

The results from the collected data indicates that the online privacy has developed during the years. The development is result from the increased amount of the online data as well as the increased knowledge of consumers towards the online privacy, as the results suggest. At the same time as the online privacy has developed, more ways to utilize the online data has been discovered, as the Interviewee 5 identified. One interesting suggestion was that the privacy issues are focusing excessively on the online privacy perspective while privacy should be containing the whole privacy area, including all the touchpoints that consumer has with the operator. These suggested touchpoints covering for example online or offline customer service or meetings with the customers, competitions and after marketing through different channels. However, this master's thesis is focusing on the online perspective which is why this suggestion was not covered in deeper level.

4.1.2 General Data Protection Regulation

"Before GDPR in programmatic advertising the baseline was to share the data without informing consumers, actually without thinking that the data is from a person at all – there were just machines that sent the information/data to each other and created the personal profiles. Somewhere in between media took its' earnings." (Interviewee 11.)

It was not mandatory to ask consent from the user when collecting the data of the online users before the General Data Protection Regulation, the GDPR. Majority of the interviewees identified that concerns regarding privacy and security started to rise around the years 2015-2016 when the GDPR hype started. Operators started to get concerned about the changes that GDPR will generate. During these times authorities started to distribute fines for those operators which did not follow the regulations. This was done as an example, aiming to show other operators the consequences which will appear if should they not apply the GDPR, as suggested in the results. This started the overall discussion of the GDPR, and according to Interviewee 1 this could be identified as a main aspect which started the rise and evolution of the GDPR in big picture.

"GDPR exploded everything!" (Interviewee 10.)

"GDPR is response to a liberal and irregular world." (Interviewee 11.)

From the results of the data collected it can be implicated that before the GDPR there have been remarkable differences between countries on how the data privacy is considered and implemented. For example, Interviewee 2 implicated that in Germany the laws and regulations are implemented more restrictively compared to other countries. As aforementioned in this master's thesis majority of the interviewees referred the online privacy in the past being *wild west*. In this part of the interview majority of the interviewees referred to the wild west again, suggesting that thanks to the GDPR online privacy has developed from the wild west into a more protected version of online environment where the individuals' legal rights in online data collection perspective are more considered as before, in every country inside the EU.

"Online privacy is extremely important; it can be referred as a fundamental right of society." (Interviewee 9.)

Majority of the interviewees indicates that operators concern regarding fines are still the major force which leads companies to follow the GDPR. In addition, it was suggested that when the operator is applying the GDPR consumers' trustworthiness towards the online data collection of the operator is more powerful.

"I can trust that company operates among GDPR as otherwise they need to pay large fines and I do not think that they are willing to risk it." (Interviewee 4.)

Interviewee 1 and interviewee 12 suggested interesting issue regarding the quality and the amount of the online data. When the collected online data is used of large groups of people it is not as privacy sensitive as when the data is used for rummaging one persons' private information with the help of the past online cookie data. The results indicates that when concerning the GDPR the amount of data should be considered as well, and that the laws and regulations should focus more on one persons' sensitive information, not the use of the data towards massive group of people.

"Privacy issues are important, but it is also important to note the scale of the data – even though from the juridic perspective third-party cookies processes with personal data it is different when dealing with hundreds of thousands of cookies versus dealing clearly personal data, which requires specific tools and precautions." (Interviewee 12.)

"Not all the data is so super sensitive that it needs to be under strict laws and regulations." (Interviewee 5.)

The results of the data indicate that the interviewees do not consider the GDPR only as a positive thing. Interviewee 2 suggested that the baseline of the GDPR was to give birth to the European data economy. Contrariwise it has started to kill the data economy as the laws and regulations are getting more restrictive and making the complicated to understand. In addition, the results suggest that the GDPR is overreacting, and that it has failed as getting too restrictive and difficult to understand and utilize.

"Authorities keep an eye on that every single information, cookie and data is separated, and at the same time they change the laws and regulations towards these all the time. GDPR has gone into a peripheral situation." (Interviewee 11.)

As the GDPR is developing and becoming more restrictive the authorities has started to consider the user and the consumer as a data subject instead of possible customer for the operator the results implicate. From the results it is identified that as the authorities have begun to monitor the operators so closely it has started to disturb the business of the operator. Not only the laws and regulations are identified too restrictive, in addition they are appearing too late, and they are not combined with the business models. This is identified leading towards endless debated among the authorities and the operators.

"Which will be the winner – privacy issues or the benefits gained from the business?" (Interviewee 9.)

"After GDPR asking the consent has become a necessary evil." (Interviewee 7.)

The results indicates that the GDPR is not considered only as a positive development as the continuously changing laws and regulations makes them difficult for companies to follow. The Interviewee 12 identified an interesting issue regarding the complexity of the GDPR and online privacy suggesting that the development of online privacy and technology have been proceeding hand in hand, however the technology companies are slightly behind the laws and regulations. At the same time the technology develops new laws and regulations are needed. Interviewee 12 referred this as an endless "rat race". In addition, the Interviewee 2 suggested, the GDPR is only the beginning, ePrivacy is coming and that it will reshape the future completely.

"Transparency in the use of the data and the future of the Internet goes hand by hand, and the laws and regulations will become more and more restrictive. At the same time technology is the pioneer of the development, the birth of new laws and regulations follows behind." (Interviewee 12.)

As aforementioned, the results indicate that the online privacy has been developing while the amount of the online data has increased. It can be suggested that the GDPR is consequence for this development, however differences between opinions towards the GDPR being identified as positive results or negative result. The development of the online privacy and the technology are identified as endless race as those are both results of another development. In addition, the result suggested that the scale of the used online data should be considered while applying new laws and regulations towards the online privacy, and the more restrictive the laws and regulations become more difficult it is to apply them. Eventually this will lead to disturbing the operators' business, as the results suggest.

4.1.3 Summary of the results of online privacy

Table 3: Summary of the results of online privacy

Online privacy	
Evolution of online privacy	The GDPR
➢ Developed as the amount of online data has increased ➢ Before the GDPR *wild west* ➢ Consumers knowledge towards the privacy has increased as well as the sensitiveness of the data has changed	➢ Response to the liberal privacy world ➢ Moderated the differences among privacy issues between countries ➢ Too strict regulations disruptive for the operators businesses ➢ Rat race between technology and law development

The key insights of the results of online privacy are presented in Table 3 (p.35). From the results it can be summarized that the online privacy has developed while the amount of the online data has increased and the consumers knowledge towards privacy issues has increased. The GDPR is one result of this development. However, there are disagreements towards the GDPR being a positive or negative result as too strict laws and regulations have begun to disturb the business as the consumer is considered as a data objective, not a potential customer.

4.2   Cookieless future

In this subchapter the future without the third-party cookie is discussed. At the beginning suggestions of why the third-party cookies are being removed, based on the collected data, are presented. Next subchapter discuss of the suggested effects which will happen after the third-party cookie removal. After that preparation mechanisms based on the collected data are presented. At the end of this subchapter the suggested alternative options based on the collected data for the third-party cookie are presented.

4.2.1 Reasons behind the third-party cookie removal

The data was collected through interviews with professionals from online marketing industry. Most of the interviewees have been operating in the industry several years which justifies them to be applicable to discuss about the possible reason for the third-party cookie removal as they have wide knowledge from the online industry. However, this subject area turned out to be complicated and majority of the interviewees did not want to make suggestion. Majority of the interviewees demonstrated that the reasons behind the third-party cookie removal should not be focused excessively as it will happen eventually. Instead, majority of the interviewees suggested focusing on the preparation and the future without the third-party cookies. too much as it will appear eventually. However, two interesting suggestions was identified from Interviewee 2 and Interviewee 11.

"When operators started the war [third-party cookie removal], *they explained it with the goal to improve data quality and privacy security, but I think in reality the goal is to improve own competitive advantage and for Google* [as a big operator to gain advantage inside another operator ecosystem] *to build own ecosystem inside the Safari* [another big operator which has own ecosystem. Google is trying to take place inside this operators' ecosystem].*"* (Interviewee 2.)

"The mastery of the USA companies, upholstered with consumerism, is behind this. Apple has started it and they justify it with more plausible data privacy and consumer rights, and now Google is just trying to survive under these challenges. This is a

race between big companies, they want to bring down each other, not think of the consumerism. (Interviewee 11.)

As from these results it could be implicated that the reason behind the third-party cookie removal is competition between big operators. However, results demonstrate the suggestions from just two online marketing industry professional which is why no further conclusions cannot be outlined.

4.2.2 Third-party cookie removal effects

As half of the interviewees identified that the biggest effect of the third-party cookie removal will be in online marketing. It was suggested that the effect will be most impactful towards the operators which have built their online strategy leaning on third-party cookie. In addition, the operators which do not have strong first-party database will be effected.

If you think really carefully, it is totally against common sense that all this data and information is collected from us, from the users, don't you think? (Interviewee 3.)

During the data collection the question regarding the biggest effect of the third-party cookie removal was identified as being complicated. Majority of the interviewees required some time to consider their answers while repeating that the effect will be remarkable. Interviewee 3 implicated the online data collection being something which is totally against the common sense.

As aforementioned the third-party cookie removal was identified being a big change. Interviewee 2 suggested that the removal of third-party cookie is the biggest change after the appearance of the eCommerce and that the third-party cookie removal will reshape the whole Internet and the logic around online marketing. In addition, interesting suggestion from the Interviewee 2 was a threat related to economic barriers and society. If all the quality journalism will move behind paywalls how it will effect on the society as not everyone has the financial ability to pay from the content. Eventually, it will divide the society as class society, the Interviewee 2 identified.

Interviewee 3 and interviewee 5 identified the removal of third-party cookie as a positive issue. As data collection is too vague, the removal of third-party cookie will increase the transparency and responsibility, Interviewee 3 and Interviewee 5 suggested. Five of the twelve interviewees identified the removal of third-party cookies as an opportunity for operators to develop and innovate new solutions or techniques as they are forced to in the online data privacy context. Six interviewees suggested that the third-party cookie removal is a great opportunity especially for the Finnish operators as a lot of technical professionals existing in Finland and Finnish are identified as an engineer people. Another interesting suggestion related to Finnish operators from Interviewee 4 was that the removal of third-party cookie opens a great opportunity for the Finnish operators as they have the best knowledge of their people which they can utilize in the

future online marketing. As an example, the Interviewee 4 suggested that this knowledge can be utilized when designing the creative ad content as the Finnish operators have recognized which are the subjects that draw attention among Finnish people.

Interviewee 1 and Interviewee 9 suggested that the third-party cookie removal will enable advantages for big operators, for example Google, Meta and Apple, as they have a strong first-party database. After the third-party cookie removal advertisers' budgets will be even more focused towards big operators as they have effective opinions to offer which will strengthen the first-party database even more. As an opposite suggestion from Interviewee 2 was that the big operators will lose economic value as their business in online marketing is based on targeting which will not be functioning similarly after the removal of third-party cookie.

Related to big operators the Interviewee 5 suggested that they will be also experiencing challenges like any other operators in the online marketing industry, most likely even with wider scale as their business is so remarkable. One of the challenges Interviewee 5 suggested was related to online advertisers' budget allocation. The budget allocation among the online and offline channels will most likely be different after the removal of third-party cookie as the online channels are not considered as effective as before, Interviewee 5 suggested. Another interesting suggestion from Interviewee 5 was that the big operators will most likely be facing more competition than ever after the third-party cookie removal as new operators will appear with new techniques and solutions.

"Money and data will focus on towards bigger operators. Small operators which don't have the first-party database or analytical resources Google will offer different kind of "plug in and everything is like they used to be" solutions to buy." (Interviewee 9.)

Six interviewees from twelve identified the third-party cookie removal effects relating to targeting and measuring in online marketing. Majority of these six interviewees suggested that online advertisers are not able to reach their potential customers as intensively and effectively as before. Interviewee 10 identified interesting issue related to online targeting. If no solution for online targeting is developed, or the advertisers do not have required first-party database, it will eventually lead to the point where online users will begin receiving annoying and irrelevant advertising online, Interviewee 10 suggested. As an opposite suggestion from Interviewee 4 identified that after the third-party cookies cannot be utilized in online marketing the use of creativity will increase and improve the user experience towards the advertising. This will eventually lead to the point where the user begins to be attracted of the advertising which will drive them to become a customer for the advertiser Interviewee 4 implicated.

"Programmatic advertising, which is based on third-party cookies, will be totally scrapped as its' point is to control frequency over domains and targeting over medias with the third-party cookies." (Interviewee 10.)

Interviewee 2 identify that as the baseline for online marketing have been dependent on third-party cookies after the removal of the third-party cookie everything in the online marketing industry will go through change as the functionality of thousands of technologies will finish. Another issue identified by the Interviewee 2 was that after the third-party cookie removal advertiser cannot measure the online advertising functionality or the budget allocation as easily as before due to the change on the frequency setting. The advertising can be displayed multiple times towards the same domain and all the displayed ads cost which makes it impossible to control the budget allocation efficiently, Interviewee 2 identify.

Now is the ultimately latest time to start developing strategies around the first-party data if company wants to keep on business without suffering." (Interviewee 2.)

The online marketing has been highly leaning on third-party cookies as the results implicate. Majority of the interviewees identified that especially targeting in online marketing will be different after the third-party cookies are removed. In addition to targeting, measuring the functionality and development in online marketing was identified being significantly affected area of the third-party cookie removal.

"First-party data is the most valuable business value that company could have when it comes to understanding their customers. But many companies do not know how to utilize the first-party data in deeper customer understanding or developing customer value." (Interviewee 3.)

Understanding customers was one issue that majority of interviewees identified being effected by the removal of third-party cookie. Results implicate that the operators are not familiar of how to utilize the first-party data in their customer service, creating value for the customer or in deeper customer understanding development. In addition, it was identified that combining the first-party data together with other data, for example with the third-party data, is important when developing the data and creating quality data, for example profiles or segments. Interviewee 5 suggested that with the first-party data operators are capable of offering more efficiently solutions for their customers. In addition, the Interviewee 5 identified that at the same time operators should be able to be completely transparent for their customers of what the identified first-party data is, which sources and information it includes.

"For the media houses first-party data is extremely important source of economic value as many services and operations they sell are built on that." (Interviewee 8.)

"Important yes to collect the first-party data but if you really think, how many operators really have the possibilities to collect enough the first-party data, that it really matters, that it can be used and activated effectively?" (Interviewee 12.)

From the results it can be implicated that the removal of third-party cookie is identified as a major issue which will have wide range of effects. Majority of the effects are identified towards the online marketing, especially targeting online users and measuring online marketing efficiency. Big operators as Google Meta are suggested having competitive advantage as they have strong first-party data base. However, it was also suggested that these big operators will be experiencing the same challenges as other operators, most likely with larger scale. In addition, it was suggested that big operators will be experiencing more competition than before as new technologies and solutions are required to develop. In addition to the third-party cookie removal effects towards online marketing, issues related to society and the customer experience was identified.

4.2.3 How to prepare on the removal of third-party cookies

Aa discussed earlier in this master's thesis Google has postponed the removal of third-party cookies twice. However, it is clearly considered that the removal will happen. The results of the collected data suggest that it is important for the operators to be prepared for the removal of third-party cookie and the preparation should start early before the removal appears. Major identified issue towards the preparation is collecting the first-party data. Majority of the interviewees suggested the first-party data collection as a first preparation mechanism. First-party data collection was identified as an act for operators to protect their business after the third-party cookie removal from the online environment.

In addition to the first-party data collection two major preparing mechanisms can be identified from the results: learning what is going to happen and what are the effects and start to test and use tools which are not dependent on third-party cookies. There was no clear order suggested between the preparing mechanisms, however the first-party data collection was highlighted the most.

Five interviewees from 12 interviewees suggested that now is the latest time for operators to start to familiarize of the phenomenon of third-party cookie removal. Study and learn what the removal of third-party cookie signifies and what are the effects which will appear. Interviewee 2 identified that many operators do not know the differences between first-party and third-party data. Operators do not understand what is identifiable data and what is the incognito data and what are the differences. Four interviewees identified that at the end operators have surprisingly narrow knowledge towards the data collection and the online cookies, and the differences between the first-party data and third-party data. Interviewee 3 and Interviewee 4 suggested that in addition to learning and studying operators should bravely test new solutions, develop and innovate as it can result even better solutions compared to the previous ones. Communicating

and partnering with other operators were suggested as effective preparing mechanisms by Interviewee 3 and Interviewee 4.

As a technical perspective, Interviewee 2 suggested that now, when it is still possible, operators should begin to label devices behind the third-party cookie as first-party devices in their own databases. Utilizing tools which are not dependent on third-party cookie and strengthening first-party data goes hand-by-hand Interviewee 2 indicate. Interviewee 3 suggested that the data should be collected from all customer contact point, including the points when customer is somehow connected to the operator, not only consisting of the online data. For example, customer service executed through phone, competitions and events the operator organizes for the customer. Interviewee 6 suggested that in addition to learning and testing new tools and solutions, operators should consider more about the big picture as well as the long-term solutions. As an example2, in online marketing Interviewee 6 demonstrated with short campaign burst versus long-term always-on visibility. However, Interviewee 11 identified that it is already too late for the operators to start preparing for the third-party cookie removal as it is already appearing, thirty percent of the use of third-party cookie have already been stopped which implicates that thirty percent of the users are already invisible.

"It is weird that many big marketing operators and organizations still encourages to use third-party cookies and resist authorities' regulations. At the same time parties which finance these organizations are building new advertising networks which operates without third-party cookies. Like, stick with the old one, when it stops operating you can buy a new solution from us." (Interviewee 9.)

Interesting issue identified by the Interviewee 9 was that even though the online privacy as a business area is wide it is still compartmentalized, which is explained in the citation above. Operators should prepare, study and communicate with each other about the third-party cookie removal but also operators should have familiarity other operators among the industry as well. As aforementioned in the subchapter discussion about the reason of the third-party cookie removal, two interviewees suggested that the removal is competition between big operators in the industry. Based on the identified issue by Interviewee 9 that the industry is compartmentalized we could suggest that this somehow supports the suggestion where the removal of third-party cookies is identified as a competition between big operators.

The competitive advantage of the big operators as Google and Meta was identified as being one effected area by the removal of third-party cookie. As aforementioned, after the third-party cookie removal happens operators which have a strong first-party database are able to gain competitive advantage, and operators without the first-party database will lose business opportunities. Interesting issue related to the first-party data collection from Interviewee 12 was, that how many operators are eventually capable of collecting the required amount of first-party data. As an example, the Interviewee 12 suggested big, global fast

moving consumer good operators, global multichannel media houses or the worlds' biggest airline operators, all operators which have hundreds of millions of customers. As an opposite, those operators which do not have the possibilities to collect the required amount of the first-party data to be able to utilize it are Finnish advertisers, the Interviewee 12 identified. Especially when using Finnish language content advertisers are not able to drive enough traffic to their website as the Interviewee 12 suggested.

From the results it can be implicated that the early preparation for the third-party cookie removal is identified being important. Collecting the first-party data is highlighted among the results. In addition, learning the meaning and the effects of the third-party cookie removal as well as developing and testing new solutions which are not dependent on third-party cookie are identified as an important preparation mechanism. However, it was suggested that the preparing is already too late as thirty percent of the users are already inviable. This statement supports the suggestion of the early preparation.

4.2.4 Alternative options for third-party cookie

"Third-party cookies cannot be replaced as they are idiot accurate!" (Interviewee 7.)

As discussed earlier in this master's thesis the third-party cookie has had wide role in online marketing business. As the third-party cookies are being removed from the online environment it is necessary to develop alternative solutions for the third-party cookie. In previous subchapter it is suggested that collecting the firs-party data is identified as an important mechanism for preparing the third-party cookie removal. The use of the first-party cookie solutions and the first-party data are identified as a key alternative solutions for the third-party cookie. Majority of the interviewee suggested that the alternative solution for the use of third-party cookie are first-party identification solutions. Suggested examples are the first-party data management platform or the first-party customer data platform, and other solutions which are built on top of the first-party data base. Solution which is under development suggested by the Interviewee 10 is a solution which combines the first-party ID with the buyer or the advertiser ID, with the publisher ID in a GDPR compliant way. One solution mentioned by six interviewees of twelve was the Universal ID. Universal ID is one identifier that enable information to be shared over the online ecosystem combining all the users. However, Universal ID was identified as a solution which will most likely never be developed, as all six interviewees mentioned. Universal ID could be identified having similar characteristics as the online privacy before the GDPR. As it cannot be considered privacy-friendly it is most likely why it is not considered as an alternative option.

The rise of the Web 3.0 was suggested by the Interviewee 2 and the Interviewee 5. The Web 3.0 is identified as a third generation of the Internet which utilizes for example edge computing. Edge computing enables creation of more open, more intelligent and more connected website. In addition, Interviewee 12

suggested interesting solution developed by the IAB Tech Lab. Solution is technical specification called Seller Define Audience (SDA). SDA enables first-party data scaling for data management platforms, publishers and data providers by responsible and reliable way without data leakage or dependence on deprecated IDs and/or untested new technologies (IAB Tech Lab).

One suggested solution by five interviewees from twelve was the Data Cleaning Room. However, the interviewees were not confident about the use of Data Cleaning Rooms. Interviewee 2 identified that as the data passes through many layers in the Data Cleaning Room is the data eventually accurate anymore. Interviewee 3 and Interviewee 12 identified the Data Cleaning Rooms beneficial among the big markets where vast amount of the data is moving. For example, in Finnish market many operators have so narrow own database that they would not gain any financial value of sharing their data, as the Interviewee 2 and Interviewee 12 identify. Data Cleaning Room was suggested as added value by the Interviewee 11 and the Interviewee 10. Data Cleaning Room could generate added value for the operators after the removal of third-party cookie by combining the data from different sources.

"Are advertisers able to utilize contextual targeting in the future, how it is defined does it also require asking the consent from the users? ePrivacy Directive applies when saving or reading the information from users' device but many people in data privacy environment thinks that contextual targeting requires asking consent. If the consent is asked anyway many operators will most likely use this for asking the consent for following the user, not just for contextual advertising." (Interviewee 9.)

The role of the contextual advertising was suggested growing among the interviewees. However, majority of the interviewees identified the contextual advertising will not be a single way, but the use of the contextual advertising will increase and develop. Interesting suggestion by the Interviewee 9 was related to the online privacy and GDPR among the contextual advertising. Interviewee 9 identified that the contextual advertising should apply to the GDPR as the other online advertising, requiring the consent from the user.

From the results it can be implicated that the contextual advertising is identified developing after the removal of third-party cookie. As the use of the contextual advertising is increasing it is required to develop, as the Interviewee 11 suggest. At the same time as the role of the contextual advertising increase and it innovates it becomes more complex for the operators to use, Interviewee 11 identities.

"Is it enough to advertise cameras on the website which sells cameras or are the operators required to think wider outside the box as the selection will increase and more advertisers start to utilize contextual advertising?" (Interviewee 11.)

Interesting suggestion by the Interviewee 7 and Interviewee 8 was that at the same time as the role of contextual advertising increase and develops the role of

the advertisement content creativity will become more important. In addition, Interviewee 7 suggested if the creatives are effectively developed, towards the way they draw users attention more than before it will eventually increase the amount of potential customers for the operators. This suggestion supports the aforementioned suggestion by the Interviewee 4 that as the content creativity will become more meaningful it will drive more potential customers towards the operator. In addition, the Interviewee 7 suggested that the effectiveness of the creatives can be used as measuring methods by measuring which kind of emotions the advertisement content awakes.

Interesting viewpoint towards the contextual advertising by the Interviewee 10 was that the contextual advertising will begin utilizing the Artificial Intelligence the future. Interviewee 10 suggested that in addition to the elements the contextual advertising has now in the future it will be measuring the user behaviour from the way the mouse is moving on the screen, how the website is scrolled and which part the user spends more time on and are there more conversions becoming from the happy context or from the sad context. Supporting finding towards the converting measurement by the context, the Interviewee 10 told about a research which studied the meaning of the context while converting. In this research it was found out that the users converted more from the happy context than from the sad context. In addition, Interviewee 7 suggested a solution where the effect of seeing the ad can be measured by using client website analytic which is connected to the publishers' website. Publishers' ad serving system informs when the users sees the ad and is able to identify how it effect on the conversion. With this suggested solution optimization can be executed based on seeing the ad, not based on clicks. This solution was under development while this data collection for this master's thesis was executed.

The results implicated that targeting in online marketing is a major effected area after the third-party cookie removal and alternative solutions for targeting are required. Interviewee 11 and Interviewee 5 suggested that the targeting in online marketing will take a big step back to the history and that the targeting will be implemented towards big groups of audiences instead of individual data targeting as it has been. In addition, it was suggested that the targeting methods will become more equal between online and offline channels, which will eventually generalise the online marketing planning between online and offline channels. In addition to targeting big audiences, it was suggested that targeting will be based on a specific website. As an example, if the operator is selling cars the marketing will be targeted to the car websites without any detailed additional targeting. However, as an opposite suggestion by the Interviewee 7 was that in the future targeting in online channels will become more fragmented where multiple, narrow targeting options are combined to reach the desired audience.

"Fragmented rotation of the targeting palette." (Interviewee 7.)

The third-party cookie has had important role in online marketing measurement as the results implicates. Majority of the interviewees identified that measuring online marketing will go through wide changes after the removal of third-party cookie and new solutions for the measurement are required. Marketing modelling solutions can be identified from the results as one alternative solution. Interviewee 10 and Interviewee 7 suggested that in the future operators will utilize probabilistic modelling in measurement. Probabilistic modelling is a method which is built by forecasting of possible future results using effect of random actions, the Interviewee 10 demonstrates. Interviewee 6 and Interviewee 8 identified that the modelling will change from last click attribution modelling towards more holistic contribution modelling where all online marketing channels are included and analysed. In addition, Interviewee 8 suggested that in the future after the removal of third-party cookie operators will be focusing more on analysing the return on marketing investment (ROMI) and utilizing the ROMI-modelling. In the ROMI-modelling all included marketing activities are compared to the incomes. In addition to these modelling methods the results implicates that many new modelling solutions will be developed and utilized after the removal of third-party cookie. It can be implicated from the results that the measuring overall will become more equal between online and offline channels after the removal of third-party cookie. Four Interviewees from twelve identified that online channels have had dominant role in online marketing measurement as the measurement has been more precise compared to offline channels. However, after the removal of third-party cookie offline channels for example radio will be considered differently in the marketing mix. In addition, the results suggest that the use of offline channels will increase as the online measuring is not as precise as before. Hence, the online channels could be identified less effective after the third-party cookie removal as before, the results suggest.

Market research which utilizes the surveys executed by asking consumer opinion are not affected by the third-party cookie removal. The interviewee 6 identifies that role of market research will grow and the use will increase after the third-party cookie removal. In addition, Interviewee 12 suggested the increasing use of market research however they questioned the trustworthiness of the results of market researches. Interviewee 12 identified the increased amount of data bots which will effect on the market research results not generating accuracy information. As there are no certainty which part of the data is accuracy the data is complicated to be processed, as the Interviewee 12 identifies. Major of the interviewee suggested that testing is the key to develop solutions to measure after the removal of third-party cookie. In addition to discovering solutions which operates effectively new and more effective ways will be innovated as the results suggest.

From the results it can be concluded that there are already existing solutions developed which are not dependent on the third-party cookie. Interviewee 2 suggested a software that is the way to avoid intelligent tracking protocol. This solution divides the user profiles in the first-party data context and moves them across domains. Other existing solution were suggested by the Interviewee 3, a

tool which transmits the custom audiences to the ad tool through integration which develops one customer data. In addition, Interviewee 8 suggested that operators should be more innovative and begin to develop more solutions which connect any first-party cookie with other in a data privacy accepted way. As an example, the Interviewee 8 suggested the existing ID Fusion by Adform.

"It is insane how far ahead for example Denmark and USA are when it comes to targeting and measuring [in marketing], *and also how all the technology operators are supporting one and same solutions. Here in Finland we just don't know how to work together for a common goal."* (Interviewee 7.)

Interesting issue identified by the Interviewee 7 was that in Finland operators are trying to develop and manage by themselves. As an opposite, the operators in other countries are working more together towards the common goal. Another interesting issue identified by the Interviewee 2 was that among technology operators the atmosphere is waiting. Everyone is hoping that the third-party cookie removal will not happen, or if so, everyone expects that someone else will find the right solution which everyone can utilize. Related to this Interviewee 2 indicated that the waiting and Google postponing the removal is rather a poison than opportunity for development with longer period.

"Waiting and postponing [the death of third-party cookies] *is a poison for companies and operators as the fall into a limbo."* (Interviewee 2.)

One suggested solution which operators are already executing was partnering with the big operators for example with Google or Meta. Interviewee 1 and Interviewee 12 identified that in Finland operators, especially the media houses, have started to discuss with global big operators aiming to develop data contracts and other data solutions which benefit their customers. It was highlighted that these contracts and solutions are still under development while this data collection was executed.

"Google is trying to push new technologies and solutions out, but who are the right operators to say which ones are right or wrong as these are mainly based on opinions? One operators shoots another one solutions down as they come out – this is a storm rotated by authorities and tech companies" (Interviewee 12.)

From the collected data it can be concluded that wide uncertainty lies on the whole online marketing industry towards the solutions after the third-party cookie removal. As the citation from the Interviewee 12 demonstrates it is difficult to identify correct alternative solutions for the third-party cookie. The use of first-party data and first-party cookies are highlighted in the results. Solution as Data Cleaning Room is suggested, however there is identified uncertainty to-

wards the data accuracy in this solution. The use of contextual advertising is increasing as an additional method for other solutions. In addition, modelling methods are developing and overall the marketing is identified moving from separated online or offline marketing towards more generalised marketing. It can be identified from the results that the testing is the key and the status at the moment is waiting.

4.2.5 Summary of the results of cookieless future

Table 4: Summary of the results of cookieless future

Cookieless future
Reasons behind the third-party cookie removal   ➣ Initially goal to improve online privacy, turned into a competition between big companies

Third-party cookie removal effects
  ➣ Biggest effect for online marketers utilizing third-party cookie strategies
      o Targeting and measuring online marketing most effected
      o Effective budget tracking and allocation will change
  ➣ Biggest change after eCommerce in online marketing ecosystem
  ➣ Barriers between society as the content will move towards paywalls
  ➣ Opportunity for operators to develop new solutions
      o Especially for Finnish operators
  ➣ Big operators will gain even more competitive advantage
  ➣ The role of creativity in advertising will increase
  ➣ Tracking customers online will be effected which will result lacking customer understanding

How to prepare on the removal of third-party cookie?
  ➣ Preparing important for operators in online marketing industry
  ➣ First-party data collection to secure business
      o Capability to collect enough first-party data?
  ➣ Study what is going to happen and what will be the effects
      o Lack of knowledge towards online data and data collection
      o Familiarity for other operators among the industry
  ➣ Utilize tools which are not dependent on third-party cookies
      o Test and develop new, long-term solutions

Alternative options for third-party cookie
  ➣ First-party identification solutions
      o First-party data management platform
      o First-party customer data platform
  ➣ Universal ID not considered as an option
  ➣ Data Cleaning Room
      o Is the data accuracy anymore after passing through cleaning layers?

> ➤ Contextual advertising
>   - o Is it GDPR compliant?
>   - o Utilizes AI in the future
>   - o Measuring for example mouse movement on the screen or the effect of the content for conversions
> ➤ Content creativity will become more meaningful
> ➤ Targeting towards big audiences and to specific websites
> ➤ Generalised targeting between online and offline channels
> ➤ Modelling solutions for measurement
>   - o Probabilistic modelling
>   - o Holistic contribution modelling
>   - o ROMI-modelling
>   - o Generalised measurement between online and offline channels
> ➤ Partnering with big operators like Google and Meta
>   - o Finnish operators not co-operating with each others

The results of the cookieless future are summarised in the Table 4 (p.47). It is suggested that the reason behind the removal of third-party cookie is competition between big operators. Third-party cookie removal is considered as a major issue towards the online advertising industry. Operators should prepare by collecting first-party data, studying what will happen and what are the effects, and testing new solutions. Highlighted alternative suggested solutions for the third-party cookie are first-party ID solutions, Data Cleaning Rooms and contextual advertising. However, there are disagreements identified among these solutions, and the usage and effectiveness of these. In addition, it is suggested that targeting and measuring will be more generalised after the third-party cookie removal. The role of content creativity is suggested increasing, as well as the use of modelling solutions.

5   CONCLUSIONS

The conclusions of this master's thesis are presented in this chapter. First the discussion between theoretical contributions and managerial implications is presented. Next the theoretical contributions divided based on the literature review are presented. Third subchapter presents the managerial implications in order based on the research interview themes. At the end of this chapter the limitations of this research are analysed and suggestions for the future research are presented.

The objective of this master's thesis was to study the novel phenomenon of third-party cookie removal, gain deeper understanding and insights of what will happen, what are the effects and how the operators can prepare for the removal of third-party cookie. This master's thesis offers deeper knowledge of the phenomenon based on theoretical contributions as well as managerial implications based on industry professionals experience and viewpoints. As the theory of this subject is constantly developing the findings of this master's thesis provides major benefits for to use in practise.

5.1   Theoretical contributions

The goal of this master's thesis was to study the effects of the removal of third-party cookies in a media agency perspective, focusing on online marketing. The literature review of this master's thesis presents the online privacy including the evolution of online privacy and the rise of the GDPR, online data collection presenting first-, and third-party cookies. Final theme of the literature review presents the future without third-party cookies, including the reasons behind the third-party cookie removal, what are the effects appearing of the third-party cookie removal, how operators can prepare for the removal what are the alternative solutions after the third-party cookies have been removed. This master's thesis includes four research questions: *How has the online privacy developed over the years?, What are the effects of the third-party cookie removal, How can an online marketing operator prepare for the removal of third-party cookie?* and *What are the alternative options for operators in the cookieless future?* The research questions of this master's thesis are answered in this chapter to conclude the results of this research.

As the digitalization becomes more generalized users become more aware of the data collection and how and where the data is processed and used. It is discovered by Rosenthal et al. (2019) that users with higher privacy literacy are more concerned, while users with lower literacy are less concerned about the online privacy issues. While knowledge towards online data collection and online privacy is increasing it makes it easier to almost anyone with basic knowledge to collect and share the data of online users. Communicating with

each other has changed from speaking and eye contacting towards electronic devices. Hence, more advanced data privacy laws and regulations are required. However, the development of laws and regulations towards the online privacy are identified appearing late, after the recognition of how the new technologies can be used in law enforcements. (Sharma, 2019.)

The development of online privacy from the statement of European Convention on Human Rights to the GDPR took over sixty years as presented in the Figure 1 (p.12) (Wolford, 2022). During these years the use of online services increased, as an example the use of online banking and the use of social media platform Facebook. The findings of the laws and regulations developing in a low-speed and after the technology development are supported with the timeline presented in the Figure 1 (p.12). However, it was discovered that two new laws are under development for the online privacy area already. The goal for these two new laws is to establish a healthier competitive environment for users and to regulate the risks linked to the use of the latter through. (Buster.ai, 2022.)

After the appearance of the GDPR operators have been required to consider how the data can be collected in a GDPR compliant way, in order to secure more safer online browsing for the users. As for the research question *How the online privacy has developed during the years?* The results based on the theoretical findings indicates that the online privacy has developed remarkably, hence the development has been following the technology development. However, it must be highlighted that for example the most significant development towards online privacy, the GDPR, is covering only the EU which leaves out the whole other world. Hence, the findings towards positive development cannot be generalised covering the whole world.

The findings of this master's thesis implicate the removal of third-party cookie will have effects towards the online marketing, especially measuring online marketing and tracking online users (IAB, 2022b). The tracking of online users over the domains have been based on third-party cookie. After the third-party cookie will be removed the tracking will be different and based on the first-party data. It is identified that if the operator does not have strong first-party database the targeting of online users will be challenging. (Sobo & Vigh, 2021.) For the research question *What are the effects of the third-party cookie removal?* the findings indicates that the online marketing ecosystem will be affected in the big picture. Hence, the third-party cookie removal is discovered as an opportunity for technology operators to develop new solutions (Brodherson et al., 2021).

The Google Chromes' vice president Anthony Chavez has announced that the removal of third-party cookie has been postponed as Google wants to ensure enough time for the operators to prepare for the removal of third-party cookie (Clark, 2022). As one of the research questions in this master's thesis was *How operators can prepare for the removal of third-party cookie?* the findings are presented in Table 1 (p.21) based on literature by Juškaitė & Janušauskaitė (2021), Shehu et al. (2020) and Sobo & Vigh (2021). Sobo & Vigh (2021). Analysing the effects of

the third-party cookie removal and the functionality of own channels and beginning to utilize alternative tools and solutions which are not based on the third-party cookie are recommended preparing steps.

After the removal of third-party cookie, the alternative solutions are required as the results of this master's thesis identifies (Brodherson et al., 2021). The use of first-party data is discovered as an alternative solution for the third-party cookie. The findings based on the results of this master's thesis support this is identifying that the big operators, for example Google and Meta, which have a strong first-party database will benefit from the removal of third-party cookie. (Brodherson et al., 2021.) Another alternative solution based on the findings of this master's thesis is contextual advertising. The use of the contextual advertising is identified increasing after the removal of third-party cookie according to the Competition & Markets Authority (2020). However, the results based on Anagnostopoulos et al. (2007) identifies that the use of contextual advertising is functional as far as the content of the website is static. After the website content changes the use of the contextual advertising will become ineffective (Anagnostopoulos et al., 2007). Nottingham (2021) and Rycroft (2022) suggest that Google will not accomplish the removal of third-party cookie without effective alternative solution. Google has developed their own solution, Google Privacy Sandbox. as the results of this master's thesis presents. The Privacy Sandbox is a solution consisting of several tools collecting the online data and allowing this data to be used in online advertising as a GDPR compliant way (Sadeghpour & Vlajic, 2021). The fourth discovered alternative solutions for the third-party cookie based on the results of this master's thesis are modelling solutions. The benefit of the modelling solutions based on the findings are that the source of the marketing outcomes can be identified over all used marketing channels without the third-party cookie solutions. However, it is identified based on the results of this master's thesis that the modelling solutions might not be possible for every operator as they require a vast amount of data and are expensive to execute. (Tellis, 2006; Crotts & Wolfe Sr, 2011). Fifth alternative solution presented based on the results of existing literature is Data Cleaning Room. However, like the modelling solution the Data Cleaning Room requires a vast amount of data to operate effectively which is why it's effectiveness among the smaller markets are questioned (Rycroft, 2022). The third research question in this master's thesis was *What are the alternative solutions after the third-party cookie removal?* The findings based on the literature review of this master's thesis presents five alternative solutions to utilize after the removal of third-party cookie.

5.2   Managerial implications

This master's thesis presents managerial implications in addition to the theoretical contributions. The goal of this master's thesis was to study the online marketing in the cookieless world. The theoretical research of the study is supplemented

with views and insights of professionals in the online marketing industry. The results offer suggestions and solutions which can be utilized in practice. However, it must be highlighted that the given suggestions are made assumption perspective as the removal of third-party cookie is an upcoming phenomenon which have not happened yet.

The results based on this research presents the importance of online privacy in the online marketing business. It is identified that online privacy have always had a major role. However, it is highlighted how remarkably it has developed during the years. Majority of the interviewees referred the online privacy as being *the wild west* before the GDPR. However, it is discovered not only as a positive development, as the laws and regulations have begun to disturb operators businesses. Managerial implications are supportive towards the theoretical findings of online privacy developing after the technology development. In addition, the results of the collected data suggested that the sensitiveness of the online data has changed while the amount of the online data has increased. This suggestion is supported by the viewpoint presenting that nowadays a small amount of data from person can be turned into a something harmful as in the history nobody knew how the data could be utilized. As the theoretical findings based on literature identifies that the evolution of online privacy begun after the Google users' online privacy was injured, the managerial implications suggest that the awakening towards the online privacy was the USA president election in 2016 where the data from Americans were used to build voter profiles.

As from the results of the collected data it can be implicated that the effects of the third-party cookie removal are identified major. This is supported by the suggestion that the removal of third-party cookie is the biggest change after the appearance of the eCommerce and that the third-party cookie removal will reshape the whole Internet and the logic around online marketing. In addition, it is identified that the data collection as it is nowadays, is against the common sense and that after the removal of third-party cookie it will be more transparent. The suggestions based on the collected data identifies that the third-party cookie removal will have an effect on the society. In the theoretical findings it was recognized that the society will be affecting as the free content decreases. In the results of the collected data this is supported with additional suggestion that the decreasing of the free content will lead towards divided social classes as not everyone has the possibilities to pay for the content. Another suggested effects by the interviewees will be towards the targeting and measuring in online marketing. It can be implicated from the results that both targeting and measuring will change and operators are required to reconsider their strategies towards the targeting and measuring in online marketing. The results from the collected data suggest that as the targeting will not be as specific as before consumers will begin to receive irrelevant advertising. As an opposite, it was suggested that after the advertisers are not able to use as specific targeting as before they will need to focus more on the creativity which could lead more likeable ads for consumers. For the

technology operators, and especially for the Finnish technology operators the removal of third-party cookie was identified as a great opportunity to develop which is supported by the theoretical findings based on the existing literature.

There was no doubt towards the appearing of the third-party cookie removal in the findings from the collected data. It is strongly believed that the removal will appear. Preparing for the third-party cookie removal was identified as an important for the operators. Early preparing and the learning and studying of what will happen and what are the effects for own business were identified as the most important mechanisms. It was identified that the professionals in the online marketing industry have surprisingly narrow knowledge towards the online data, how it is collected and what are the differences between the first- and third-party data. In addition to studying of the removal of third-party cookie and the consequences it was identified that important to have the knowledge of the other operators in the industry as it is lobbed. The removal of third-party cookie was identified as a competition between the operators. Another highlighted preparing mechanisms identified were the first-party data collection and beginning of utilising tools which are not dependent on the third-party cookie solutions.

As the removal of the third-party cookie is identified appearing new and alternative tools and solutions for the third-party cookie are needed. As aforementioned, the collecting the first-party data was identified as an important preparing mechanism among the collected data, the use of first-party data and first-party data and ID solutions is suggested as an alternative options for the third-party cookie. However, it was identified that collecting required amount of the first-party data requires scale and not many operators, for example Finnish advertisers, have the possibility for this as they are not able to drive enough users to their website. In addition, the Data Cleaning Room was identified as an alternative option after the removal of third-party cookie. However, it was suggested that the accuracy of the data will suffer as the data is processed through many layers in the Data Cleaning Room. The role of the contextual advertising was identified as growing, which is supported in the theoretical contributions. Interesting suggestion identified from the collected data was that contextual advertising will go through major development and for example begin to utilize AI.

Results implicates that after the third-party cookies are removed first-party identification solutions will be replacing them. Suggested solutions are for example first-party customer data platform and first-party data management platform and solutions which combines first-party ID from advertisers and from publisher in GDPR compliant way. Data cleaning rooms are also identified as having a role in marketing after the third-party cookies are removed. However, it is not identified as a replacement for third-party cookies on its own, more as adding value. Results suggest that the data is not necessarily accurate anymore after data cleaning room as it passes through many layers. It was suggested that in the contextual advertising possible to track how the website is scrolled by the user or how the mouse is moved on the website. This information can be used as measuring in online marketing, the results from the collected data suggest. In

addition, market research and modelling solutions were suggested as alternative solutions after the third-party cookie removal. It is highlighted among the insights that many new alternative solutions will be developed, and many of those will be developed after the third-party cookie removal has happened.

5.3   Discussion

In this subchapter the key correlations between the theoretical contributions and the managerial implications are discussed.

The results clearly indicates that the online privacy laws and regulations have gone through major changes during the years. As an example, before the General Data Protection Regulation online data was collected from the users without consents. Majority of the interviewee referred to the online world before the GDPR as a *wild west.* Such conclusions are supported by the results from the literature review regarding the long-term evolution of online privacy (Wolford, 2022). The sensitiveness of the data has changed while the knowledge towards online privacy have increased, and the amount of online data has increased. The laws and regulations under the GDPR are identified very restrictive, which is indicated being disruptive for the operators' businesses. The laws and regulations are identified appearing late and changing frequently, which is identified causing race between technology companies and authorities. In addition, it is suggested that the GDPR should be considered based on the data sensitiveness and if the data is not identifying individuals.

Brodherson et al. (2021) identified that the operators which are mostly impacted by the removal of third-party cookies are advertisers and the publishers. This is supported among the collected data, as it is suggested that targeting online will change and the publishers will lose economic value as they are not able to offer similar solutions for customers as before. Operators which have strong first-party data base will be benefiting from the third-party cookie removal. For technology companies the removal of third-party cookies is considered as an opportunity according to theoretical contributions as well as the managerial implications. For the consumers the removal of third-party cookies is suggested effecting on the availability of the content which will result as barriers among the society. This suggestion is supported by the literature by Korula & Ravichandran (2019), Abhishek et al. (2019), Beales & Eisenach (2014) and Du et al. (2020).

The importance of preparation for the third-party cookie removal is highlighted in the results. It can be implicated that the first-party data collection is seen as a major preparing mechanism among the Interviewees. This is supported in the theoretical findings based on the literature by Juškaitė & Janušauskaitė (2021), Shehu et al. (2020) and Sobo & Vigh (2021), demonstrated in the Table 1 (p.21). It is important for the operators to study the effectiveness of their own channels and how strong their first-party database is, and how to strengthen the first-party database (Sobo & Vigh 2021). Testing and utilizing tools which are not

dependent on third-party cookie solution is identified as an important preparation mechanism among the theoretical findings as well as in the collected data.

After the third-party cookies are removed the importance of new, replacing solutions are increasing. First-party data-based solutions, contextual advertising, modelling solutions and Data Cleaning Rooms are examples of discovered as alternative solutions. However, there are discussions and disagreements among different operators towards these alternative solutions. Before the third-party cookie removal will actually happen there are no certain information what solutions will be replacing them. Similar uncertainty towards the alternative solutions can be identified from the theoretical contributions as well as from the managerial implications.

5.4   Limitations and future research suggestions

Trustworthiness and limitations of this research are evaluated through its validity and reliability. Reliability refers to the replicability and consistency of the research as the research aims to produce identical and consistent results despite the identity of the researcher. Validity refers to the degree to which study conclusions provide an accurate description of what is measured (Eriksson & Kovalainen, 2008.) Validity and reliability also influence the impartiality and quality of the research which is why these should be considered throughout the research (Saunders et al., 2019).

Precisely constructed and evaluated research process is the key for ensuring reliability (Saunders et al., 2019). Research process should not include false assumptions or logic leaps. This is authorized in this thesis by choosing suitable research methods which are presented and justified in this thesis. Interview questions are included into the appendices in writing. The supplementary questions which appeared while the interviews due to the open nature of semi-structured interviews, which were not part of the initial interview questions, cannot be documented.

Researcher bias is a phenomenon where the researchers' view or attitude can either cause bias in the interviewee's answers or effect on the judgement of the responses. Bias and errors are threat to the reliability of the research. (Saunders et al., 2019.) Interviews were managed by one researcher in this thesis which might be a threat to the quality of the research. However, in this research the objective analysis is ensured through precisely constructed research process and methods. Researcher avoided statements and implications while conducting interviews to overcome bias. In addition to support the reliability interviews were recorded and transcribed.

In addition to reliability the research quality is dependent of the research validity. To obtain validity researcher must utilize suitable measures to collect the data, precisely analyse the data and the findings from the data and obtain generalisable results. To avoid systematic errors and to ensure the validity of the

research validity must be evaluated throughout the research process. (Saunders et al., 2019.) In this thesis the validity is obtained through choosing suitable research methods to collect and analyse the data. In addition, the utilized interview questions based on the literature review were precisely planned and evaluated. Anonymity can encourage interviewees to openness and honesty (Krefting, 1991.) which is why not any personal information from the interviewees were collected or presented. At the end of the interview interviewees were given the opportunity to modify their answers or add more insights which strengthens the validity and the trustworthiness of the research (Saunders et al., 2019).

The data collection of this research was conducted through online interviews. Online interviews were chosen as the interviewer and the interviewees were not located at the same regions. Conducting online interviews as a method decreases the validity of the research as some information might have got lost. Generalisability is limited as the results are based on suggestions and insights from the professionals and the data was collected from the Finnish operators. The goal of the research was to study a phenomenon which do not exist yet, so it is important to highlight that the interviewees answers are considerations based on their own knowledge and experiences.

As this research was conducted by using qualitative research method more deeper understanding of this phenomenon could be obtained by conducting research utilizing quantitative research method. In addition, this research covered only Finnish companies from different industries. Companies from different countries could result wider insights and increase generalisability. The phenomenon studied in this research will most likely have different effects on different operators though it is mainly focusing on online marketing. Conducting a study by focusing on a specific industry could contribute deeper insights for the chosen industry. This research was conducted as professional perspective however the phenomenon may will have effect on consumer perspective as well which presents interesting perspective for future research. For the privacy concept it was suggested by interviewee that the privacy should be studied as covering the whole privacy, not only from the online perspective. After the third-party cookie removal has happened it would be interesting to study the actual effects for different operators and what suggested alternative solutions have functioned.

REFERENCES

Abhishek, V., Acquisti, A. & Marotta, V. (2019) Online tracking and publishers' revenues: An empirical analysis. *Workshop on the Economics of Information Security.* https://weis2019.econinfosec.org/wp-content/uploads/sites/6/2019/05/WEIS_2019_paper_38.pdf

Abraham, I., Athey, S., Babaioff, M. & Grubb, M. D. (2020) Peaches, lemons, and cookies: Designing auction markets with dispersed information. *Games and Economic Behavior. 124,* 454–477. https://doi.org/10.1016/j.geb.2020.09.004

Adweek, (2020) Measures undertaken by marketers from The United States to counter the impact of the deprecation of third-party cookies as of September 2020. Statista. Accessed: https://www.statista.com/statistics/1221696/measures-impact-third-part-cookie-depreciation-usa/

Al-Fannah, N., Li, W., & Mitchell, C. (2019). *Beyond Cookie Monster Amnesia: Real World Persistent Online Tracking.* https://www.researchgate.net/publication/333337731_Beyond_Cookie_Monster_Amnesia_Real_World_Persistent_Online_Tracking

Alfeld, S., Barford, P., Cahn, A., & Muthukrishnan, S. (2016), An empirical study of web cookies. *Proceedings of the 25th international conference on world wide web.* p. 891–901. https://doi.org/10.1145/2872427.2882991

Anagnostopoulos, A., Broder, A. Z., Gabrilovich, E., Josifovski, V. & Riedel, L. (2007) *Just-in-time contextual advertising.* 331–340. http://dx.doi.org/10.1145/1321440.1321488

Balzarotti, D., Bilge, L., Dell'Amico, M., Sanchez-Rola, I. & Vervier, P.-A. (2021) *Journey to the center of the cookie ecosystem: Unraveling actors' roles and relationships.* http://dx.doi.org/10.1109/SP40001.2021.9796062

Beales, H. & Eisenach, J. A. (2014) *An empirical analysis of the value of information sharing in the market for online content.* https://dx.doi.org/10.2139/ssrn.2421405

Berke, A., & Calacci, D. (2022). Privacy limitations of interest-based advertising on the web: A post-mortem empirical analysis of Google's FLoC. Cornell University. Accessed: 18.5.2023. https://arxiv.org/abs/2201.13402

Blankertz, A. & and Julian Jaursch, J. (2021) What the European DSA and DMA proposals mean for online platforms. TechStream. Accessed: 5.2.2023. https://www.brookings.edu/techstream/what-the-european-dsa-and-dma-proposals-mean-for-online-platforms/

Bleier, A., Goldfarb, A., & Tucker, C. (2020). Consumer privacy and the future of data-based innovation and marketing. International Journal of Research in Marketing, 37(3), 466-480. https://doi.org/10.1016/j.ijresmar.2020.03.006

Block, M. P. (2021) Assessing privacy protected cohort-based market segmentation. *Applied Marketing Analytics: The Peer-Reviewed Journal. 7*(2), 131–143. Accessed: 29.11.2022. https://hstalks.com/article/6573/assessing-privacy-protected-cohort-based-market-se/

58

Bringas, P. G., Sanchez-Rola, I., Santos, I. & Ugarte-Pedrero, X. (2017) The web is watching you: A comprehensive review of web-tracking techniques and countermeasures. *Logic Journal of the IGPL* 25(1), 18–29. https://doi.org/10.1093/jigpal/jzw041

Broder, A., Fontoura, M., Josifovski, V. & Riedel, L. (2007) A semantic approach to contextual advertising. *SIGIR '07: Proceedings of the 30th annual international ACM SIGIR conference on Research and development in information retrieval.* 559–566. https://doi.org/10.1145%2f1277741.1277837

Brodherson, M., Broitman, A., Macdonald, C., & Royaux, S. (2021) The demise of third-party cookies and identifiers. McKinsey & Company. Accessed: 29.11.2022. https://www.mckinsey.com/capabilities/growth-marketing-and-sales/our-insights/the-demise-of-third-party-cookies-and-identifiers

Buster.ai. (2022) GDPR, DMA, DSA, how does the European Union want to frame the digital world? Accessed: 4.4.2023. https://www.buster.ai/blog/gdpr-dma-dsa-how-does-the-european-union-want-to-frame-the-digital-world

Chaffey, D. & Patron, M. (2012) From web analytics to digital marketing optimization: Increasing the commercial value of digital analytics. *Journal of Direct, Data and Digital Marketing Practice* 14(1), 30–45. https://doi.org/10.1057/dddmp.2012.20

Chen, L., Huang, Y., Ouyang, S. & Xiong, W. (2021a), The data privacy paradox and digital demand. *Technical report.* National Bureau of Economic Research. Accessed: 29.11.2022. https://www.nber.org/papers/w28854

Chen, Q., Ilia, P., Polychronakis, M. & Kapravelos, A. (2021b) Cookie swap party: Abusing first-party cookies for web tracking. *Proceedings of the Web Conference 2021.* 2117–2129. https://doi.org/10.1145/3442381.3449837

Clark, K. 2022. Google says the cookie is here to stay until 2024. *The Drum.* Accessed: 21.9.2022. https://www.thedrum.com/news/2022/07/27/google-says-the-cookie-here-stay-until-2024

Cofone, I. N. (2017) The way the cookie crumbles: online tracking meets behavioural economics. *International Journal of Law and Information Technology.* 25(1), 38–62. https://dx.doi.org/10.2139/ssrn.2541215

Competition & Markets Authority. (2020) Online platforms and digital advertising, Appendix G: the role of tracking in advertising. P. 326, Paragraph 300. *Competition and Markets Authority.* https://www.gov.uk/cma-cases/online-platforms-and-digital-advertising-market-study_Tracking_and_PETS_v.16_non-confidential_WEB.pdf

Cooper, D. A., Yalcin, T., Nistor, C., Macrini, M., & Pehlivan, E. (2022). Privacy considerations for online advertising: A stakeholder's perspective to programmatic advertising. *Journal of Consumer Marketing*, *ahead-of-print*(ahead-of-print). https://doi.org/10.1108/JCM-04-2021-4577

De Cornière, A. & De Nijs, R. (2016) Online advertising and privacy. *The RAND Journal of Economics* 47(1), 48–72. http://www.jstor.org/stable/43895634

Cozza, F., Guarino, A., Isernia, F., Malandrino, D., Rapuano, A., Schiavone, R. & Zaccagnino, R. (2020) Hybrid and lightweight detection of third party tracking: Design, implementation, and evaluation. *Computer Networks.* 167. https://doi.org/10.1016/j.comnet.2019.106993

Crotts, J. C. & Wolfe Sr, M. J. (2011) Marketing mix modeling for the tourism industry: A best practices approach. *International Journal of Tourism Sciences.* 11(1), 1–15. http://dx.doi.org/10.1080/15980634.2011.11434633

Cui, Y., Jin, R., Li, W., Mao, J. Wang, X. & Zhang, R. (2010) Exploitation and exploration in a performance based contextual advertising system. In Proceedings of the 16th ACM SIGKDD international conference on Knowledge discovery and data mining. 27–36. https://doi.org/10.1145/1835804.1835811

Degeling, M., Utz, C., Lentzsch, C., Hosseini, H., Schaub, F. & Holz, T. (2018) *We Value Your Privacy... Now Take Some Cookies: Measuring the GDPR's Impact on Web Privacy.* https://doi.org/10.48550/arXiv.1808.05096

Demir, N., Theis, D., Urban, T. & Pohlmann, N. (2022) Towards understanding cname based first-party cookie tracking in the field. *ResearchGate* https://www.researchgate.net/publication/358345287_Towards_Understanding_CNAME_based_First-Party_Cookie_Tracking_in_the_Field

Dubois, A., & Gadde, L.-E. (2002). Systematic combining: an abductive approach to case research. *Journal of Business Research, 55*(7), 553–560. https://doi.org/10.1016/S0148-2963(00)00195-8

Englehardt, S., Reisman, D., Eubank, C., Zimmerman, P., Mayer, J., Narayanan, A. & Felten, E. W. (2015) *Cookies that give you away: The surveillance implications of web tracking.* 89–299. http://dx.doi.org/10.1145/2736277.2741679

Eriksson, P. & Kovalainen, A. (2008). *Qualitative methods in business research.* Sage Publications Ltd.

EuropeanCommission. (2022a) Who does the data protection law apply to? Accessed: 18.9.2022. https://commission.europa.eu/law/law-topic/data-protection/reform/rules-business-and-organisations/application-regulation/who-does-data-protection-law-apply_en

EuropeanCommission. (2019b) Personal data. Accessed: 17.9.2022. https://ec.europa.eu/eurostat/cros/content/personal-data_en

Geradin, D., Katsifis, D., & Karanikioti, T. (2020). Google as a de facto privacy regulator: Analyzing Chrome's removal of third-party cookies from an antitrust perspective. *SSRN. 1-82.* http://dx.doi.org/10.2139/ssrn.3738107

Gomer, R., Rodrigues, E. M., Milic-Frayling, N. & Schraefel, M. C. (2013) Network analysis of third-party tracking: User exposure to tracking cookies through search. *2013 IEEE/WIC/ACM International Joint Conferences on Web Intelligence (WI) and Intelligent Agent Technologies (IAT). 1,* 549–556. http://dx.doi.org/10.1109/WI-IAT.2013.77

Guida, S. (2021). Third-party cookies and alternatives: what consequences in terms of consent?. *European Journal of Privacy Law & Technologies.* Accessed:

18.5.2023. https://universitypress.unisob.na.it/ojs/index.php/ejplt/article/view/1389/ 630

Hana, N., Mercanti-Guérin, M., Sabri, O. (2023) *Cookiepocalypse: What are the most effective strategies for advertisers to reshape the future of display advertising?* Technological Forecasting and Social Change. 188. https://doi.org/10.1016/j.techfore.2022.122297

Hirsjärvi, S. & Hurme, H. 2015. *Tutkimushaastattelu: Teemahaastattelun teoria ja käytäntö.* Helsinki: Gaudeamus Helsinki University Press.

Hirsjärvi, S., Remes, P., Sajavaara, P., & Sinivuori, E. (2009) *Tutki ja Kirjoita (Vol. 15).* Helsinki: Tammi.

Huang, Y. (2017). *The female gaze: Content composition and slot position in personalized banner ads, and how they influence visual attention in online shoppers.* https://doi.org/10.1016/j.chb.2017.12.038

IAB, (2022a) IAB Europe guide to a post third-party cookies era. Accessed: 7.12.2022. https://iabeurope.eu/wp-content/uploads/2022/03/IAB-Europe-Guide-to-aPost-Third-Party-Cookie-EraMarch − 2022.pptx.pdf

IAB, (2022b) State of data 2022. The measurement dilemma. Assesing the industry's awareness and readiness for changes in measurement and addressability. Accessed: 7.12.2022. https://s3.amazonaws.com/media.mediapost.com/uploads/IABStateofData2022Master.pdf

IAB Tech Lab. Seller Defined Audiences. *IAB Tech Lab.* Accessed: 9.4.2023. https://iabtechlab.com/sda/

Jayakumar, L. N. (2021) Cookies 'n' Consent: An Empirical Study on the Factors Influencing of Website Users' Attitude towards Cookie Consent in the EU. *DBS Business Review*, vol. 4. ProQuest, https://doi.org/10.22375/dbr.v4i0.72

Jung, Y., Pawlowski, S. & Kim, H-W. (2017). Exploring associations between young adults' Facebook use and psychological well-being: A goal hierarchy approach. *International Journal of Information Management.* (Vol 37). 1391-1404. ISSN 0268-4012. https://doi.org/10.1016/j.ijinfomgt.2016.10.005.

Juškaitė J., & Janušauskaitė M. A. (2021). Third party cookies: what kind of world is without them?. *Vilnius University Open Series*, 258-278. https://doi.org/10.15388/TMP.2021.12

Katona, Z. & Zhang, K. (2012) Contextual advertising. *Marketing Science. 31*(6), 980–994. https://doi.org/10.1287/mksc.1120.0740

Kollak, N. F. (2022) Programmatic advertising in a cookieless world. NOVA Information Management School Instituto Superior de Estatística e Gestão de Informação Universidade Nova de Lisboa. http://hdl.handle.net/10362/140586

Korula, N. & Ravichandran, D. (2019) Effect of disabling third-party cookies on publisher revenue. Google Report. https://services.google.com/fh/files/misc/disabling_third-party_cookies_publisher_revenue.pdf

Kourtellis, N., Markatos, E. P., Papadogiannakis, E., Papadopoulos, P. (2021). *User Tracking in the Post-cookie Era: How Websites Bypass GDPR Consent to Track Users.* Proceedings of the Web Conference 2021. https://doi.org/10.1145/3442381.3450056

Kristol, D. M. (2001). HTTP Cookies: Standards, privacy, and politics. *ACM Transactions on Internet Technology (TOIT), 1*(2), 151-198. https://dl.acm.org/doi/pdf/10.1145/502152.502153

Küpper, A & Raschke, P. (2018) *Uncovering canvas fingerprinting in real-time and analyzing its' usage for web-tracking.* Workshops der INFORMATIK 2018-Architekturen, Prozesse, Sicherheit und Nachhaltigkeit. Köllen Druck+ Verlag GmbH. https://dl.gi.de/bitstream/handle/20.500.12116/17237/3032414_GI_P_285_09.pdf?isAllowed=y&sequence=1

Lammi, M. & Pantzar, M. (2019). The data economy: *How technological change has altered the role of the citizen-consumer.* Technology in Society. 59. https://doi.org/10.1016/j.techsoc.2019.101157

LiveRamp. (2021) Share of organizations collaborating with others to share first-party data in The United States as of November 2020. Statista. Accessed: 7.12.2022. https://www.statista.com/statistics/1206477/popularity-first-party-data-sharing-usa/

Malhotra, N. K. (2017). *Marketing* Research (Fifth edition). New York: Pearson Education Limited

Martin, K, D., & Murphy, P, E. (2017). The role of data privacy in marketing. *Journal of the Academy of Marketing Science*, 45, 135–155. https://doi.org/10.1007/s11747-016-0495-4

Mayer, J. R. & Mitchell, J. C. (2012) *Third-party web tracking: Policy and technology.* Institute of Electrical and Electronics Engineers Inc. 413–427. https://doi.org/10.1109/SP.2012.47

McCarthy, N. (2023) The Biggest GDPR Fines of 2022. EQS Group. Accessed: 4.4.2023. https://www.eqs.com/compliance-blog/biggest-gdpr-fines/

McIntosh, V. (2020) *Looking at the Trump Administration's Impact on Privacy.* Accessed: 22.2.2023. https://www.comparitech.com/blog/vpn-privacy/internet-privacy-trump/#1_The_Cambridge_Analytica_Scandal

MeasureProtocol (2020) How worried are you about the collection and use of your data? *Statista.* Accessed: 5.2.2023. https://www.statista.com/statistics/1228198/personal-data-concerns-uk/

Mehra, S. K. (2011). Paradise is a walled garden? Trust, antitrust and user dynamism. *George Mason Law Review, Forthcoming,* 1-79. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1813974

Mendys, A., & Jensen, J. (2021). *How will Google Privacy Sandbox impact e-CRM of Danish SMEs?.* [Master Thesis, Aalborg University Denmark]. Accessed: 15.5.2023. https://projekter.aau.dk/projekter/files/418264996/Master_Thesis_jens_a ndreas_2_6_2020.pdf

Metsämuuronen, J. (2011). *Tutkimuksen tekemisen perusteet ihmistieteissä*: E-kirja opiskelijalaitos. Helsinki: International Methelp, Booky.fi.

Microsoft, (2022) The digital advertisers guide to privacy maturity. Accessed: 7.12.2022. https://about.ads.microsoft.com/en-us/microsoft-advertising-da-guide-privacy-maturity-us-accessible-march-2022.pdf

Mitchell, I, D. (2012). Third-Party Tracking Cookies and Data Privacy. *SSRN*. 19. http://dx.doi.org/10.2139/ssrn.2058326

Nottingham, M. (2021). *Playing fair in the Privacy Sandbox: competition, privacy, and interoperability standards.* http://dx.doi.org/10.2139/ssrn.3891335

O'Gorman, K., & MacIntosh, R. (2015). *Research methods for business & management: A guide to writing your dissertation (Second edition).* Oxford, England: Goodfellow Publishers Ltd.

Oksanen, T. (2022) *Companies' maturity for the deprecation of third-party cookies.* Lappeenranta-Lahti University of Technology LUT. https://urn.fi/URN:NBN:fi-fe2022061647157

Palos-Sanchez, P., Saura, J. R., & Martin-Velicia, F. (2019). A study of the effects of programmatic advertising on users' concerns about privacy overtime. Journal of Business Research, 96, 61–72. https://doi.org/10.1016/j.jbusres.2018.10.059

Pierson, J. & Heyman, R. (2011). "Social media and cookies: challenges for online privacy". *Emerald Group Publishing Limited.* 13(6), 30–42. https://doi.org/10.1108/14636691111174243

Privacy Sandbox. (2020). The Privacy Sandbox: Technology for a More Private Web. Accessed: 21.9.2022. https://privacysandbox.com

Rainie, L. & Duggan, M. (2016) *Privacy and Information Sharing.* Pew Research Center. http://www.pewinternet.org/2016/01/14/2016/Privacy-and-Information-Sharing/

Rosenthal, S., Wasenden, O. C., Gronnevet, G. A., & Ling, R. (2019). A tripartite model of trust in Facebook: acceptance of information personalization, privacy concern, and privacy literacy. Media Psychology, 23(6), 840–864. https://doi.org/10.1080/15213269.2019.1648218

Rycroft, B. (2022) 9 Best Alternatives To Third Party Cookies (2023) Definitive Guide. *Snigel.* Accessed: 6.4.2023. https://snigel.com/blog/best-third-party-cookie-alternatives

Sadeghpour, S., & Vlajic, N. (2021) "Ads and Fraud: A Comprehensive Survey of Fraud in Online Advertising." *Journal of Cybersecurity and Privacy*, vol. 1, no., pp. 804832. ProQuest, https://doi.org/10.3390/jcp1040039

Sahni, S. N., Narayanan, S., & Kalyanam, K. (2019). An experimental investigation of the effects of retargeted advertising: The role of frequency and timing. *Journal of Marketing Research, 56*(3), 401-418. https://doi.org/10.1177/0022243718813987

Saunders, M., Philip, L., & Thornhill, A. (2019). *Research methods for business students (Eighth edition).* Harlow: Pearson Education Limited.

Schmücker, N. (2011) Web tracking. *SNET2 Seminar Paper-Summer Term 2011.* Citeseer.

Sharma, S. (2019) Data privacy and GDPR Handbook. John Wiley & Sons, Inc., Hoboken, New Jersey. Accessed: 9.10.2022. https://books.google.es/books?id=Db64DwAAQBAJ&lpg=PR1&hl=es&pg=PR1#v=onepage&q&f=false

Shehu, E., Abou Nabout, N., & Clement, M. (2020). *The Risk of Programmatic Advertising: Effects of Website Quality on Advertising Effectiveness.* SSRN Electronic Journal. Published. https://doi.org/10.1016/j.ijresmar.2020.10.004

Schiff, A. (2019) Can Contextual Targeting Replace Third-Party Cookies? AdExchanger. Accessed: 21.9.2022. https://www.adexchanger.com/online-advertising/can-contextualtargeting-replace-third-party-cookies/

Sickler, J. (2022) Why First-Party Data Is Important: Benefits & Business Value. Terakeet. Accessed: 4.4.2023. https://terakeet.com/blog/why-first-party-data-is-important/

Sipior J., Ward B., & Mendoza R.A. (2011). Online privacy concerns associated with cookies, flash cookies, and web Beacons. *Journal of Internet Commerce, 10*(1), 1-16. https://doi.org/10.1080/15332861.2011.558454

Sobo, J., & Vigh, A. (2021) *Surviving the Cookie Apocalypse.* How concerned should digital marketers be? Ebiquity.

Sweeney, M. (2022) Google Chrome's FLoC Explained + FAQs. Clearcode. Accessed: 4.4.2023. https://clearcode.cc/blog/google-chrome-floc-explained/

Ito, D., Kamizono, M., Kumagai, H., Takata, Y. (2021) Risk analysis of cookie sharing by link decoration and cname cloaking. *Journal of Information Processing. 29,* 649–656. https://doi.org/10.2197/ipsjjip.29.649

Tellis, G. J. (2006) Modeling marketing mix. *Handbook of marketing research.* 506–522. https://doi.org/10.4135/9781412973380

Thimmapuram, Piyush Datta. (2023). Data Privacy & Changing Landscape in Digital Advertising. http://dx.doi.org/10.13140/RG.2.2.12620.90240

Tucker, C. E. (2013). *Social Networks, Personalized Advertising, and Privacy Controls. Journal of Marketing Research,* 50(5), 546–562. https://doi.org/10.1177/002224371305000501

Winston & Strawn (2023) What is the Definition of Online Privacy? Accessed: 5.4.2023. https://www.winston.com/en/legal-glossary/online-privacy.html

Wolford, P. (2022) What is GDPR, the EU's new data protection law? GDPR.eu. Accessed: 18.9.2022. https://gdpr.eu/what-is-gdpr/?cn-reloaded=1

APPENDIX 1 – INTERVIEW QUESTIONS

ONLINE PRIVACY AND DATA COLLECTION
1) How do you think online privacy has changed over the years?
   - How important and in what way you consider online privacy issues, like GDPR, at your current work?
2) How does your work relate to online privacy?
3) How does your work relate to online cookies and data collection?
4) How is the data collected and utilized at your current work?
5) How would you consider user information of the data collection in Finland?
   - How about at your current work?
   - How important do you think informing is?
6) Do you consider the collection of first-party data important?

COOKIELESS FUTURE
7) What is your opinion of the removal of third-party cookie?
   - Why do you think are being removed?
8) How important it is to prepare for the cookieless future?
   - How to prepare for the removal of third-party cookie?
9) How would describe the company's where you currently work the maturity level for the removal of third-party cookies?
10) What kind of questions have you received from customers, partners or other representatives outside of your company?
11) What do you consider as the biggest effect of the removal of third-party cookies?
12) What kind of operators will be most affected on with the removal of third-party cookies?
13) Do you consider the removal of third-party cookie as a threat or opportunity for technology companies?
   - How about Finnish technology companies?
14) How would describe the maturity level of technology companies for the removal of third-party cookies?
   - How about the maturity level of Finnish technology companies?

FUTURE OPPOTURNITIES
15) What opportunities and/or threats you consider in the cookieless future?
   - How about for the Finnish companies?
16) How do you consider the third-party cookies can be replaced?
   - Any tools for replacement?
17) How do you consider targeting in online marketing in the future?
18) How do you consider the role of contextual advertising in the future?
   - Compared to cookie based targeting?
19) How do you consider the role of the publishers, data providers and Data Cleaning Rooms in the future?

20) How do you consider the measurement in online marketing in the future?
21) What methods do you think will be developed for the future in online marketing and how do you consider the role of these new method compared to future methods?