Online Social Lookup: A Study of a Future Employment Tool

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Bachelors Thesis

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Abstract

From the days of Antonio Meucci and Alexander Graham Bell when the telephone was invented, people have been looking for ways to communicate with each other through the use of technology. With the introduction of the Internet new possibilities were created to communicate with other persons around the world. As more and more individuals got access to the Internet more and more data got sent through the network. As with any platform where number of individuals keeps growing, business is to be made.

Different companies offer different types of services, and many of these companies are niched in services where people in some way interact with each other. Social communities are some of the largest websites that are used and on these websites a lot of data is being shared. Pictures, life stories and interests are shared and this data is something that advertisement companies pay money to obtain. We can see this since a large part of revenues from social communities come from ad companies. Since these websites save data about individuals one could collect this data to sum up how an individual act online.

In this thesis, we wanted to see if there was any interest in collecting this type of data to develop a business model where the data of individuals would be sold to a third party, and how individuals feel about this type data collection. To get an understanding of what type of data that can be collected, different companies that gather data were looked into. To get an understanding if this business model is something wanted recruiters of different IT companies were contacted for interviews. Focus groups and surveys were used to see how individuals close to their college graduation feel about data collection and the business model that is under construction. From the data collected, we saw that recruiters were not interested in a business model that gathered personal data, but rather professional data such as education, projects and other job related facts that can prove what the job applicant have done. And from the public we got the response that data collection of this sort is not something that is desirable. With the data collected we saw that our business model did not fit our targeted audience, but rather that a modified business model aimed on professional data rather than social data is something that could be developed.

Keywords: Communication, Data Collection, Social Media, Business Model
Sammanfattning

Ända sedan den dagen telefonen skapades av Antonio Meucci och Alexander Graham Bell har människan letat efter nya sätt att kommunicera med varandra via teknologin som finns idag. Internet har introducerade nya sätt att dela olika typer av data världen över. Varje dag får fler och fler människor tillgång till internet det betyder då också att mer data skickas via nätet. Som med alla plattform där antalet individer växer skapas då nya affärsmodeller.

Olika företag erbjuder olika typer av tjänster och många av dessa företag fördjupar sig inom kommunikationssektorn så att människor kan integrera med varandra. Socialmedia är bland de populäaste webbsidorna idag och här kan användarna dela data och information med varandra. Dessa data är viktiga för annonseringsföretagen då de vill rikta rätt reklam till användarna. Detta ser vi nu eftersom sociala mediernas största inkomstkälla kommer ifrån säljandet av data till annonsering bolagen.

Man skulle kunna ta all data som dessa företag har sparat på sina användare för att sammanställa hur de använder tjänsten.

I vår rapport ville vi se om det dann något intresse för att samlan in denna typ av data för att utveckla vår affärsmodell där individens data och information säljes till en tredje part. Vi ville även undersöka hur användaren känner när det gäller datasamling på internet. För att få en uppfattning på vad för data som kan samlas in på internet har vi undersökt två företag för att se vad för data de tar. När det gäller vår affärsmodell har vi kontaktat och intervjuat rekryterare från olika företag för att se om vår affärsmodell är något som de behöver. Focused Groups och ankäter skickades ut till studenter som nästan har sin examen för att höra vad de har för åsikt och vilket rekryterare från olika företag för att se om vår affärsmodell är något som de behöver.

Vår undersökning visade att datainsamling inte var eftertraktad, men de ville däremot samla kompetens information istället. Information såsom utbildning, projekt och arbetskarriär. Ankäten och Focused Groups visade även där att personlig datainsamling inte var något som de ville ha. Med de data vi fått under vår undersökning tydde det på att vår affärsidé inte var riktad mot rätt målgrupp, men en justering av vår affärsmodell i form av datainsamling av kompetens information var något de ville ha.

Nyckelord: Kommunikation, Datainsamling, Sociala medier, Affärsmodell

Acknowledgment

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List of abbreviations

- App – Application
- CV – Curriculum Vitae
- CSS – Cascading Style Sheet
- E.g. – For example
- HTML – HyperText Markup Language
- ID – Identification
- IMEI number – International Mobile Equipment Identity
- IMAP – Internet Message Access Protocol
- IP – Internet Protocol
- IRL – In Real Life
- IT – Information Technology
- HCE – Host Card Emulation
- KTH – Kungliga Tekniska Högskolan
- NFC – Near Field Communication
- NSA – National Security Agency
- PC – Personal Computer
- PH.D – Doctor of Philosophy
- POP – Post Office Protocol
- RTB – Real Time Bidding
- SMS – Short Message Service
- SNS – Social Network Sites
- TLS – Transport Layer Security
- TV – Television
- UI – User Interface
- URL – Uniform Resource Locator
- User Id – An identification name for a certain user
- Wi-Fi – IEEE 802.11b Wireless Networking
Chapter 1: Introduction

1.1 Overview

Looking at the world today, more people have access to the internet than ever before [1] at the same time that the number of devices connected to the internet is growing like never before. With this we have different platforms emerging, presenting opportunities for individuals. New multimillion-dollar companies are formed that earn money by offering different solutions and services for different markets.

With the growing number of users online, more and more data is available online [2] and this brings different business opportunities. One market that has exploded is online advertising that in recent years creating more revenue than Broadcast TV ads [3]. The future of advertising is often discussed, Aseem Chandra the vice president of Adobe brings up that personalization is the key in advertising [4] where the ads are based on data collected on you. With this we can realise that ones that can gather the best data about individuals have a good business in front of them. Looking at what the public believes about data collection “91% of adults in the survey “agree” or “strongly agree” that consumers have lost control over how personal information is collected and used by companies“ [5].

We have a growing market of where data of individuals are becoming more and more important, and at the same time that we can see a concern in how this data is being gathered by the public.

1.2 Problem definition

With the growth of personal information available online, new ways can be used to gather information about individuals. Information saved online can be difficult to delete and is something that others could possibly access. This information can be used for different purposes; one example could be companies looking into candidates that they are looking to employ. If a recruiter could look at the data from social media sites and search engines they could get an understanding of how this individual acts online. This data could lead to a better understanding in how this individual acts and thinks giving the recruiter additional information on the behaviour of the jobseeker.

It would become a social credit check-up, much as credit companies look into individual’s economical credit.

1.3 Purpose

The purpose of this thesis to introduce a business model based on the gathering of personal information with data collected from different online sources without violating the personal integrity of individuals. We believe that gathering of data online is something that will grow and in this thesis we will investigate if this is something needed and how it should be developed.
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1.4 Goals

There are different goals that this thesis is looking to achieve.
- To see if the business model introduced in this thesis is something that is wanted in the industry.
- Find studies that show data regarding user’s perception on privacy and if they feel violated online.
- By interviews see if people feel supervised online
- Analyse the data that is gathered by us by comparing it to similar work and other fields where privacy and employment is discussed and investigated.
- By interviews with persons working with recruiting individuals, see if they feel that this is something needed

1.5 Limitations

The key to understand if this business model is something that is needed in the industry, different consulting companies will be contacted for interviews to see if this would be something they want.
To understand how individuals think about privacy, studies will be made to find previous work on people’s perception on how they feel online. Do they feel that they are watched and what would they think about the business model that is being developed for this thesis? Some interviews will also be done.
The limitations will for this thesis is lack of time and the small sample of people that collaborate in the surveys and interviews. We have decided to focus the interviews on a limited age span, we chose the age between 25-35 since we believe that limiting our interviews to a certain age group will lead to results that are more reliable compared to the situation where all age categories are present.
For the interviews with the recruiters we will focus on the IT sector.
The thesis is a 10-week project giving it a time limitation that has to be held. With the short time span for this thesis the amount of people will have to be small to fit the timeframe.

1.6 Targeted audience

The audience for this thesis is aimed for anyone interested in how data is being collected online. To be more specific we believe that organizations such as consulting companies and others looking to hiring candidates would be the specific targeted audience. Of course this thesis is also aimed to persons that are interested in how future employment could work with social lookups, a thus the scope of the targeted audience is large.
1.7 Structure of the thesis

The thesis can be divided in different chapters:

- **Chapter 1**: General information about different parts of the project such as ethics, what methods that will be used and how data will be gathered for this thesis.
- **Chapter 2**: Give an introduction to different areas that needs to be introduced to understand how the climate of data collection in the IT section has changed and where it stands now. The studies from the literature will also be brought up here.
- **Chapter 3**: Show what methods that will be used and how the data is going to be collected.
- **Chapter 4**: Shows how we collected the data through surveys, focused groups and interviews.
- **Chapter 5**: Data results from data collection is shown in this chapter.
- **Chapter 6**: Our analysis of the data gathered is shown with text and figures.
- **Chapter 7**: Our thoughts and discussion is shown in this chapter, we will discuss why we did get the data, what could have been done differently and if possible present the business model that we believe is wanted.
- **Chapter 8**: Show our conclusions and discuss future work.
Chapter 2: Background

For the gathering of data, two companies will be deeply investigated in this paper, Facebook and Google. The two companies were chosen on the basis of their size, Google is the most used search engine worldwide and Facebook is the largest social media platform online. [6]

2.1 The definition of Social Media

According to the national Swedish encyclopaedia: “Social medias are communication channels that allows users to communicate directly with each other through different way such as text, videos and sound.” [7]

The paper Social Network Sites: Definition, History and Scholarship written by Danah M. Boyd and Nicole B. Ellison defines social media as “web-based services that allow individuals to construct a public or semi-public profile within a bounded system, articulate a list of other users with whom they share a connection, and view and traverse their list of connections and those made by others within the system. The nature and nomenclature of these connections may vary from site to site”[8]

Oxford University definition of social media is defined in the Oxford dictionary as “Websites and applications that enable users to create and share content or to participate in social networking”[9]. As we can see there are several different definitions of what social media is. There are several similarities when looking at the different definitions that are presented in this thesis. We can see that they all refer to some kind of communication between individuals using different applications to get the communication through to the user that one is trying to communicate with. To get a wide view on what social media is, this thesis will define social media as a mix from the statements above. Our definition will be: Websites and applications where individuals creates a profile within the boundaries of the system, to be able to interact and receive information from other users within the system through different types of communication channels such as text, video and sound.

2.2 Definition of Privacy

There are several different definitions of privacy. To get an understanding of the general idea several theories will be brought up in this section. Alan Westin wrote a book on Privacy in 1967 called privacy and freedom [10] where he defines privacy as “Privacy is the claim of individuals, groups, or institutions to determine for themselves when, how, and to what extent information about them is communicated to others. [11]”

Irwing Altman PH.D in Psychology currently employed at the University of Utah has worked in the field of interaction between humans and privacy for over two decades. [12] With his first publication of privacy back in 1975 called “Environment and Social Behaviour Personal Space, Privacy, Crowding and Territory [12]”, he has influenced the perception of privacy. [11]

Altman also wrote an analysis of privacy called Privacy: A conceptual Analysis. [13] Altman brings up several definition of privacy in his analysis written by others.

“Rapoport (1972) The ability to control interaction, to have options, devices and mechanism to prevent unwanted interaction and to achieve desired interaction” [13] “Proshansky Ittelson And Rivlin (1970) Obtaining freedom of choice of options to achieve goals, control over what, how and whom a person communicates information amount.
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themselves." [13]  
Altman himself defines privacy for his paper as “Select control of access to the self or to one’s group” [13].

The Oxford dictionary defines privacy with two definitions. The first one is “The state of being free from public attention”[14] and the second one is “A state in which one is not observed or disturbed by other people” [14].

The book Privacy online, Perspectives on Privacy and Self-Disclosure in the Social Web compares Westins and Altman’s theories in chapter 2 written by Stephen T. Margulis [11]. Both theories are brought up and discussed and the conclusion is that they have plenty of similarities [11].

The book Privacy online also mentions the Petronio Communication Privacy Management theory that is seen as one of the key privacy theories for understanding personal communication through the usage of computers[11]. The theory was developed by Sandra Petronio who is a professor in the department of communication studies at Indiana University. [15] In January 2014, miss Petronio took part in an interview where she explained the keys to the theory.[16] Key factors that she brings up are that individuals feels that they own their private information and that when sharing this information with other individuals the ones that take part of this information will become co-owners of that information. [16] Miss Petronio also mentions that an individual can change if the information should be shared based on the group of individuals that are present in the communication.[16]

As we can see there are several different definitions of privacy developed for different scenarios.  
Since this thesis regards information on the internet, privacy will be defined as: The ability to choose what information to make public to a certain group of people without any other parties being able to intercept or see the information.

2.3 Privacy in social media

We have now defined social media and privacy, and now we will look at privacy in social media.


The authors mention that sharing data such as contact information, the interactions that exist with other users and the public visibility of which one person is connected to be something that is needed to use the social network full benefits. This even though there are research pointing at the privacy concerns that exist with Social Network Sites (SNS).[11].

Looking at the book the social media industries written by Alan B. Albarran, the author discusses how privacy on social media looks like today. [17] Albarran brings up the perception that individuals have on privacy and mentions that the publics opinion about privacy is that they are more concerned now than ever (page 146) [17]. According to Albarran there are two different sides on the issues regarding privacy. You have the ones that believe that privacy is a growing concern in social media, and then you have the ones
that believe that privacy is dead [17]. In the chapter *The Nature of Privacy and Social Networking* Albarran discusses if privacy on social media can exist. Albarran believes that the nature of social networks is not designed for privacy. When choosing to interact with individuals one is making the choice of sharing information which is the opposite of private that he defines as “withdrawn from public life”[17]

As we can see, privacy on social media is something that is different from what the definition of privacy in general means. The books that are brought up in this section leans towards that privacy on social media can’t co exists together. To now get an understanding of how social media sites handle privacy, we will take a closer look on Facebook to get an understanding of how a social media site works.

### 2.4 User Data

The word User Data or Personal data will be mentioned frequently during this paper, User data is information that can be collected from the Internet and will correlate to an Internet user or identify an individual with the use of personal data. Information that can be collected online are e.g. name, gender, date of birth, surfing habits or online search just to mention a few. This information can be collected and used for different purposes such as delivering relevant ads to the Internet users.

### 2.5 Facebook

Facebook Inc. was formed in 2004 [18] and reached one million users in December 2004 [18]. Facebook kept growing and reached over one billion users in October 2012 [18].

Looking at the number of users today we see that the user base keeps growing. In 2015 their user base was at an all-time high with 1.441 billion users. [6][18][19][20]

As we can see Facebook is the social media that has most users. Back in September 2012 Facebook Inc. purchased Instagram that today has 300 million current users [6]. In October 2014 Facebook Inc. purchased WhatsApp with 700 million current users.[21] With the owning of these companies Facebook Inc. owns four out of ten largest social media platforms with respect to their users [6]. If we add up the users from Facebook, WhatsApp and Instagram the total number of users are 2.415 billion users if we do not consider that one person could have access to all these platforms.

One big question regarding social media is how the privacy of the users is being handled. To get an understanding on how collection of data on the Internet has evolved with time, one could look at the history of policies that different companies applied for data collection through time.

Looking at the policies today we can see that Facebook has made some changes since the beginning when they launched the website in 2004 [22]. Looking back in 2004 when Facebook just had launched privacy was something that was in focus. Kurt Opsahl runs the website Electronic Frontier Foundation, a site that focuses on people rights on the Internet. [23] He covers the changes in Facebook privacy policy in his article Facebook’s Eroding Privacy Policy [24]. Looking at the privacy policy’s back in 2005 Kurt Opsahl “No personal information that you submit to The Facebook will be available to any user of the Web Site
who does not belong to at least one of the groups specified by you in your privacy settings." [24]
For 2010 the difference differed compared to 2005 “When you connect with an application or website it will have access to General Information about you. The term General Information includes your and your friends’ names, profile pictures, gender, user IDs, connections, and any content shared using the Everyone privacy setting. ... The default privacy setting for certain types of information you post on Facebook is set to “everyone.” ... Because it takes two to connect, your privacy settings only control who can see the connection on your profile page. If you are uncomfortable with the connection being publicly available, you should consider removing (or not making) the connection.” [24]. In 2012 Facebook started selling personal access to other companies. [25] In 2014 Facebook allegedly sold information from users messages [26].

quotes from the terms of service of Facebook:
“For content that is covered by intellectual property rights, like photos and videos (IP content), you specifically give us the following permission, subject to your privacy and application settings: you grant us a non-exclusive, transferable, sub-licensable, royalty-free, worldwide license to use any IP content that you post on or in connection with Facebook (IP License). This IP License ends when you delete your IP content or your account unless your content has been shared with others, and they have not deleted it.”[27]
“When you delete IP content, it is deleted in a manner similar to emptying the recycle bin on a computer. However, you understand that removed content may persist in backup copies for a reasonable period of time (but will not be available to others).”[27]
“You give us permission to use your name, profile picture, content, and information in connection with commercial, sponsored, or related content (such as a brand you like) served or enhanced by us. This means, for example, that you permit a business or other entity to pay us to display your name and/or profile picture with your content or information, without any compensation to you. If you have selected a specific audience for your content or information, we will respect your choice when we use it.”[27]

If we look at the mobile application developed by Facebook Inc. for devices running the Android operating system we will also find different things regarding privacy. The Android platform has different categories where they define what type of information and data that an application will use [28]. By default, applications developed for Android has no claims for different permissions, this is something that is added by the developer of the software. [29] When installing the software, the user will be shown the permissions that the software requires and then has to accept it before finishing the install process [30]. All of the permissions that exist can be found in Appendix 1 with an explanation of what type of data the application gets access to. If we look at the applications that Facebook Inc. owns the list of permissions that they use are found in the picture below.

<table>
<thead>
<tr>
<th>Facebook</th>
<th>WhatsApp</th>
<th>Messenger</th>
<th>Instagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device &amp; app history</td>
<td>Device &amp; app history</td>
<td>Identity</td>
<td>Identity</td>
</tr>
<tr>
<td>Identity</td>
<td>Identity</td>
<td>Contacts</td>
<td>Contacts</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Calender</th>
<th>Contacts</th>
<th>Location</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contacts</td>
<td>Location</td>
<td>SMS</td>
<td>Photos/Media/Files</td>
</tr>
<tr>
<td>Location</td>
<td>SMS</td>
<td>Phone</td>
<td>Camera</td>
</tr>
<tr>
<td>SMS</td>
<td>Photos/Media/Files</td>
<td>Photos/Media/Files</td>
<td>Microphone</td>
</tr>
<tr>
<td>Camera</td>
<td>Camera</td>
<td>Camera</td>
<td></td>
</tr>
<tr>
<td>Photos/Media/Files</td>
<td>Microphone</td>
<td>Microphone</td>
<td></td>
</tr>
<tr>
<td>Phone</td>
<td>Wi-Fi connection</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Picture 1. List of permissions needed by different applications owned by Facebook Inc. on smartphones running the Android operating system.

All these different permissions are explained in appendix 1.

Understanding how Facebook earns money is an essential way to find out how their business model is formed. Looking at the reports provided by United States Securities and Exchange Commission United States Securities and Exchange Commission we can see how the revenues of the company has changes with time. United states securities and exchange commission mission is to protect investors and facilitate capital information.[31] On their website information can be found of companies quarter and annual reports.

![Graph showing the total revenue in millions of dollars from ads between the years 2009 to 2014](image)

Looking at Facebook, the revenue from 2009 and 2014 has changed drastically. In 2009 the revenue was 0.76 billion dollars compared to 2014 that was 11.5 billion dollars. As we can see, the revenues from ads are something that has grown with the user base of Facebook.
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From the report done by the United States Securities and Exchange Commission in 2015 for the first quarter, it is stated in the report that compared to the first quarter of 2014, the prices of ads has gone up with 285%. [20] This led to that Facebook lost 62% in ads that was delivered. Comparing the revenue from advertising from 2014 to 2015 q1 the revenue for 2015 was 3317 million dollars and for 2014 2265 million dollars. [20]

As we can see, the revenues that Facebook brings in are money from advertisers. And from this, one can understand that the business model of Facebook is to provide information to advertisers.

Paul Levy, Senior Researcher in Innovation Management at the University of Brighton in United Kingdom wrote an article regarding the business model of Facebook. To quote Levy “The free service Facebook offers to its 1.2 billion users is free because of the advertising revenue the site generates from the time that users spend on the site.”[34]

Rod King, Adjunct Business Professor at International Technological University provides a presentation regarding the business model of Facebook. [35]

In this presentation King mentions that business model of Facebook is aimed at the developers of applications. Facebook provides a platform for development. He also mentions the advertisers as a key in their business model. The advertisers get information about the audience that they seek.[35]

Looking at Facebook’s annual report for 2014 from United States Securities and Exchange Commission we can also find how they see their own business model. Under the first part of the annual report we can see that Facebook defines it’s business to create value for people that use Facebook, create value for Marketers and create value for developers. [33] To quote the document “We generate the substantial majority of our revenue from selling advertising placements to marketers. Our ads let marketers reach people on Facebook based on a variety of factors including age, gender, location, and interests. Marketers purchase ads that can appear in multiple places including in News Feed on mobile devices and personal computers, and on the right-hand side of personal computers.” [33] In the document you can also find information on how Facebook meets the business goals of the advertising companies. “Our ad planning tools are designed to align with marketers' business goals. When marketers create an ad campaign on Facebook, they can specify their budget, marketing objectives and the types of people they want to reach. Facebook’s ad serving technology then dynamically determines the best available ad to show each person based on those dimensions. Marketers can also use our platform's insights to measure and optimize both the in-store and online performance of their ad campaigns. These insights help marketers not only understand how their ads drove results but also help them make modifications to their ad campaigns to improve those results. In addition to ads on Facebook, marketers can buy ads on Instagram and on other websites and applications such as Audience Network, Atlas, and LiveRail.” [33]

Looking at older reports from 2012 we can find that the same line of thought has been with the company with focus on data collecting for advertisers. [32]

We can see here that Facebook relies on data from their users to earn money. If one is interested, data can be found on one’s own account. This is accessed by logging on to Facebook, going under the settings menu, pressing Download a copy of your Facebook-information and then start my archive. This will generate an E-mail with a download link from where you can download you Facebook Archive. Opening you archive you will find different things such as all your activity on Facebook and your contact information. You will also find a section called ads where one can find different headlines. Examples of
headlines for ads are these that come from my own Facebook profile, in this case containing football players, videogames music and companies.

#Fernando Gago
#José Mourinho
#You Got Served
#Lenovo
#Real Madrid Baloncesto
#Drake discography
#West
#Michael Jackson
#FIFA 12
#Ultimate Fighting Championship
#Luis Suárez

Picture 3, showing an example from what headlines one can find under the ads section of ones Facebook account. This example comes from my own account.

Previously in this thesis there was a quote from Facebook in the security and exchange commission mentioning how Facebook brings value to their advertisers. So as we can see, Facebook can categorize ads with not only age and general information, but they can also categorize in individuals different interests.

In 2013 Edward Snowden, a former employee at the National Security Agency (NSA) released documents regarding espionage programs that USA were responsible for.[36] NSA is a government security agency responsible for collecting, gathering and understanding data and signals intelligence information so that they are able to support national missions.[37] The purpose for these programs was to collect and store communication between individuals both within the USA and other countries. [36] This information was leaked to journalists that released parts of the documents [36]. Parts of the released documents contained information regarding a data collection program called PRISM, where the NSA collects data from different websites such as Facebook, Google, Apple and Skype and Hotmail (Skype and Hotmail owned by Microsoft [38] [39]) [40][41].

The documents contained information regarding what data that could be collected, examples named are anything from content of emails, file transfers and live chats. [40]

Looking at the data that has been gathered regarding data that exist online and the companies that collect these, we can understand that there is a lot of data collection going on. As brought up before, Facebook earns money primarily on data that their users post about themselves. We can see that it is something that advertising companies want since the increase in pricing for ads by Facebook still had companies buying their data. Perhaps this is not something that bothers everyone but we can see that there are some users that believe that their [42]

From the data showed in this thesis we can see that services and devices that we use collect and gather data about individuals that is saved in different databases. This information could in the wrong hands create different types of problem. It has been shown in this section of the thesis that data about individuals is stored and for Facebook this data can be downloaded. In December 4 2013 hackers stole 2 million accounts from different social network sites. [43] With the amount of data that is stored on individuals, and that
can be accessed so easy, it can become a dangerous way of getting information about
individuals you interact with and other data that you believed was private on you account.
In June 21 2013 it was revealed that Facebook had due to technical errors revealed
information about individuals that were not supposed to be public. [44] The error resulted
in that if an individual downloads contact data containing information about their friends,
they also got extra information (phone numbers and e-mail addresses) about their friends
that they were not necessarily entitled to. [44]
There are also other examples of incidents where individual’s data are stolen, several
regarding credit card information and personal information. In August 2014 Community
health systems, a company that operates and own hospitals in USA was hacked resulting
in that data about 4.5 million patients were stolen. [45] This containing information about
individual’s names, birthdate, social security numbers and addresses were stolen. [46]
In September 5 2013 PewResearchCenter realised a paper named Anonymity, Privacy
and Security Online. [47] In this document one can find different statistics regarding privacy
online. 21% of users whom use internet have had their emails or their accounts to social
networks compromised whiteout their permission.[47] 13% of users have had problems
with their relationships with their family or friends based on something that they have
posted online. [47]

As we can see what individuals share online is something that one has to be careful about.
Considering that Apple, Google and Microsoft together make up for a total of 99% of the
operating systems used by smartphones [48], and that Microsoft and Apple together hold a
total of 96.4% [49] the possibility for data collection with the PRISM program includes most
people using any type of device where one can interact with others online.
Individuals need to think about what they share online and save on their PC’s, phones and
other devices connected to the Internet.

In this part of the thesis we have defined social media, privacy and privacy on social
media. To understand how a social media site works we have looked at Facebook, how
they have developed throughout the years, what changes has been made and what their
financial situation looks like. We have covered where their revenue comes from and we
have seen that it is from advertising. From that we can understand how their business
model looks like. We also understand how data is saved and how it can be accessed. We
will now take a closer look at how it looks like on the search engine side in part 2 of this
background study.
2.6 Google

As mentioned before Google is by far the most popular search engine on the market today, reaching over one billion unique visitors each month[50]. Being one of them one billion users, I use Google frequently for numerous reasons. According to Google I am Darryl Manalo Cornejo who lives in Stockholm Sweden, speaks both Swedish and English. I am currently using an iPhone 5 and a MacBook pro. Google can even tell how many android devices I have owned over the years, what phone carrier, IMEI number, time and date when it was last active. In my Gmail account I have roughly 700 emails which 100 of them was outgoing. Based on my search habits the last month indicates that I have been searching a lot on Google, basketball and the comedian Dave Chappelle. These data is directly taken from Google and can be accessed by any Google users through Google Dashboard. [51]

The purpose of the dashboard is that the users can monitor their online activity, if they suspect any unusual activities and edit settings such as privacy, calendar etc. Google has openly stated that they will collect and store everyone’s data information[52]. Even though I know that Google collects and stores my data I use their services, I use their search engine because it is easy to understand, their UI is very neat and uncluttered, searching for keywords will give me relevant webpages, brows images, show news articles and even translate foreign webpages into desired language. Google has not always collected data this way; back in September of 1999 Google’s privacy policies stated; “Google does not collect any personal information about you (such as your name, email address, etc.) Except when you specifically and knowingly provide such information”[53]. Unlike today, they collect your personal data whether you like it or not. [52]

Google collects data in so many ways a casual user would not understand, I will describe shortly how they collect the data and how they user it and how they are using these data to their advantage.

2.6.1 Google Cookies

Cookies are small file that websites stores in users web browser and in those cookie files contains preference settings such as preferred language, remembering items in your e-shopping cart and keeps track of what links that has been accessed within their website[54]. When the users visits Google.com for the first time, Google will then place a cookie on the users Internet browser containing a cookie ID number that allows Google to recognize the user's computer whenever they visit that website again[54]. These cookies can be accessible to Google and their partners[52].

Google and its partners use these cookies to deliver relevant ads to their users[52]. Without cookies, it makes it harder for Google’s customers (the advertiser) to reach out to its audience. Google will then help their business partners and website owners to analyze the data traffic running through their website that will eventually lead to delivering relevant adds and services to the Google users [52].
It will collect information like surfing habits, preference settings, will resume the user where they left off, what links has been clicked within the website etc.[55] Google has stated that they will not collect sensitive information such as ethnicity, sexual orientation, religion or health[52]. But they will combine all of the personal information collected with these cookies for the purpose to deliver relevant ads and webpages to their users, however they will not do so until the users has opt-in to the terms and conditions, which is done when signing up for a Google account [52].

The advertisers get services from Google to manage their ads on the Internet, product such as AdSense, AdWord, Google Analytic and several DoubleClick –branded services, also known as Advertising cookies[52]. Each ad is recorded in Google’s own server logs, and in these server logs contains the users web request, IP address, browser type, date and time and one or more cookies to easily identify the users more efficiently.[52]

The privacy policies regarding cookies back in September of 1999 stated, “A cookie can tell us, this is the same computer that visited Google two days ago, but it cannot tell us, this person is Joe Smith or even, this person lives in the United States” [56] compared to the current terms and conditions regarding their cookies

“We and our partners use various technologies to collect and store information when you visit a Google service, and this may include sending one or more cookies or anonymous identifiers to your device. We also use cookies and anonymous identifiers when you interact with services we offer to our partners, such as advertising services or Google features that may appear on other sites. Our Google Analytics product helps businesses and site owners analyze the traffic to their websites and apps”[52].

This means that Google can track everyone’s movement on webpages that uses AdSense ads or DoubleClick.

An article published by Washington post shows a document provided by Edward Snowden that the NSA has been using one of Google’s cookies called PREF Cookie, which is the preference cookie, this cookie helps the NSA to track people on the Internet [57]. The cookie itself does not store any personal information but contains the Google ID number to identify a person browser[58].
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2.6.2 Server Logs
Like most websites today, its server generates automatic log or files consisting a list of different activities performed [54]. This example below is for a Google web search on ‘cars’.

```
1. This is the users IP address
2. Time and date when the user accessed the website
3. This is the URL request with the key word search
4. What kind of internet browser and operating system that has been used
5. The Google ID number that the web site stores in a cookie file on the user's computer
```
2.6.3 Google Maps

Google map is a web application service that will show the user the geographical location information[59]. It offers different features such as aerial and satellite view of plenty of places, route planner for drivers and/or walkers who wants go from point A to point B[59]. In many cities, Google maps offer street view, which has been photographed from a moving vehicle of the actual location, this view allows the users to see and navigate the environment in a panoramic photographs[60].

Google maps are also available for mobile devices and it uses GPS to locate the user together with wireless, cellular networks, accelerometer, gyroscope, compass and barometer to enhance the location accuracy[61][62].

With this Google can tell if a user is walking, riding a bike or driving.

Google is storing user’s location information to give more relevant ads such as restaurants or establishments based on his or hers last known location.

If the user is connected to Google via his or her device, then the location history will be stored; these logs are accessible by Google and its partners. The user can choose to turn off the location service in the app and on the mobile device. Even if it’s turned off, most smart phone will log the location in the background using the Wi-Fi and cellular towers.

![Google Maps](image)

Picture 6. A map showing the movement of an individual for a day

2.6.4 Gmail

Gmail is a free email service created by Google and anyone who signs up for a Google account will get this services included [63]. Gmail can be accessed as webmail also POP and IMAP.

Brandon Long a member of Google Delivery team wrote a blog post saying “Gmail has always supported encryption in transit by using Transport Layer Security (TLS), and will automatically encrypt your incoming and outgoing emails if it can. The important thing is
that both sides of an email exchange need to support encryption for it to work; Gmail can’t do it alone.” [64] This means, if both parties do not support the same encryption protocol then anyone can snoop through the message and read them. Brandon also revealed that almost 50% of all emails coming in and out of Gmail is not encrypted.[65]

This is not the only issue with Gmail; Google will scan all contents coming in and out from a Gmail account [66][67]. Google has an automated scanning system that reads all messages, whether you’re a Google user or not, all content will be scanned and analyzed[52]. These data is then stored on their servers and can be accessed by Google and their trusted partners[52].

![Image](image-url)

Picture 7. A statement regarding the email policies saying all incoming and outgoing emails will be scanned.

### 2.6.5 Google Wallet

Google wallet enables it’s users to pay with a digital wallet through a mobile payment app[68]. It will link your virtual wallet to the users personal bank account, credit card or debit card, all these data is then stored on Google’s cloud servers[69]. To make an in-store purchase using Google wallet, all the user has to do is tap their smartphone that supports NFC communication to a MasterCard PayPass terminal [70].

Google Wallet uses a technology called HCE for a secure payment transaction and it is described briefly below [69]:

1. Google acknowledges the request from the host operating system
2. Google responds with a virtual credit card number and uses an industry standard contactless protocol to complete the transaction
3. The transactions will send this to Google cloud servers, where the virtual card will be replaced with the real card data and will be authorized with the real issuer

This raises concerns of storing financial data on Google’s servers. Not only that, Google has openly stated that they will disclose information to third parties about users credit card, transactions made and government requires the data[71]. Even though NFC is adding layers of security to protect its users[72], nothing is safe on the net.
2.6.6 YouTube

YouTube is a website for users to watch and share original videos clips online and has online since early 2005. Google bought YouTube the following year for 1.65 billion dollars and YouTube retained its brand identity, support and complementing Google’s business. [73] [74]

Users get a YouTube account when the sign up for a Google account and can start using it right away. The uploaded video can then is shared to other websites, blogs or sends the video clip by e-mail. YouTube has become the most popular website for video entertainment online with over 1 billion users, one hour of video is uploaded to YouTube every minute every day, a total of 4 billion views a day on YouTube[75], over 300 hours of video uploaded every minute, YouTube can be found in 75 countries and is available in 61 languages and half of all YouTube users are on their mobile devices[76]. YouTube generated total revenue of 3.5 billion and 4 billion dollars in 2013 and 2014 respectively by using Google ad platform on the video clips. They have over one billion advertisers using this service today.

Shea Bennett from adweek.com wrote an article regarding GlobalWebIndex [77] survey and their findings was that Facebook is the pre-eminent when it comes to active users with 1.3 billion. But the survey also showed that Internet users from the age 16-64, when asked about their Internet habits found that Facebook beat YouTube with overall membership, but YouTube had more visitors. 85% of online adults said that they regularly visits YouTube compared to Facebook’s 76%. GlobalWebIndex conclusion to this was users don’t consider themselves as active users of YouTube but they sure visit the website often [77].

2.6.7 Google’s Assets

To get a deeper understanding on Google’s business, a huge factor is to understand their finical situation.
As mentioned several times, Google will collect data in order to deliver relevant ads to its users. A Report provided by UNITED STATES SECURITIES AND EXCHANGE COMMISSIONS shows most of Google’s revenue comes from delivering online advertising, by the end of 2014 they increased their revenue by 18.9% to 66 billion dollar. 28.1 billion, 6.5 billion and 31.4 billion dollars were revenues generated by United States, United Kingdom and the rest of the world respectively[78].
Google offers various tools for private users and advertising companies manage and promote their ad campaign[79].

- **AdWords** – Is a pay-per-click advertising tool for private persons and companies who want to place an ad on Google. Users start off by creating their ad, describing what they are offering and what keywords are related to the ad. So when a Google user searches for any keywords, the add will be placed on top of Google’s webpage and Google will only charge when the ad is accessed [80]
- **Adsense** – This is a tool used by anyone who runs a website and wants to earn money using Google’s ad connections. The web administrator will make space on their website for the ads. Advertiser is then fighting for this place in a real time auction and the highest payer will earn that spot on the website. Google will handle all money transaction and they will make sure the owner of the website will be paid[81]
- **DoubleClick Ad Exchange Real-Time Bidding Protocol** – We mentioned the real time ad auction in section above. This tool will allow advertisers to set their to compete for those ad spaces on all webpages. Google will send the buyer applicant a request that a certain space is available for auction. The buyer will then send Google a response with the amount of money they are willing to pay for the ad space. If the buyer does not responds within 100ms, the request will be ignored and the auction will proceed asking others applicants. The ads on the webpage are based on the data Google has collected on their users[82]
2.7 Credit bureau
Credit reports is a service mostly for moneylenders and banks whether to grant an applicant a loan or credit, also determine how high the interest they can charge, but is also used by employers, insurers, investors and others, and there are three major credit bureau in the states that provides this service, they are also sometimes called Consumer Reporting Agencies. Those three agencies are Equifax, Experian and TransUnion.

These agencies will collect and do a report about an individual’s wealth, on this report they can find credit history information, such as bank accounts, credit card accounts, active bills, missed or late payments, loans and debt that has been paid off. This information is then analyzed, compiled and then sold to their customer, like prospective creditors.

They will give this individual a credit score, usual range between 300 and 850, the higher credit score they get, and the higher chance they have getting a loan, for instance. Having a high credit score will pose less risk for an investor or a moneylender, knowing that they will get their money back.

A landlord might want to demand a report like this from a renter, with the report the landlord will get a better understanding of the renters financial situation and the ability to pay rent in order to protect his or hers investment.

2.8 Business Plan
The plan is to provide our service primarily to recruiters, candidate managers or HR department, these professions has been our main target since we believe that they can use our service in their work. But anyone interested can use our service.

Let’s say a recruiter is looking into hiring a candidate that has applied for a vacant job at their company. This company is handling confidential information and is need of a server administrator with security knowledge. The recruiter reaches out to the candidate saying they will need to do a background check, which includes criminal records, financial records and personal data found about them on the Internet. When the candidates have confirmed that he or she has agreed to do this background check, the recruiter will have to place an order to use our service, which is Online Social Lookup. When the order has been placed, only then will we gather the personal data about the candidate. We can collect the user data from different websites due to the person being looked into has agreed to it.

In the document which can be delivered through e-mail or sent by mail, the recruiter and the candidate can find all information stored about them on the Internet, information such as Internet searches, Facebook status, Twitter feed, Instagram photos etc. There will also be a filter function; this allows the recruiter and the candidate to choose what type of information they want to see and not see.
Chapter 3: Methodology

This section will describe the research method process used in this thesis.

The idea behind this thesis began while discussing that user’s integrity and privacy on the Internet is violated on a daily basis without them knowing it. Mass surveillance, mass data collection and privacy were heavily discussed and that the users have no power to prevent that from happening other than terminating their account. The data collection by social media giants generates millions of dollars to respective company without giving a fair share to the users. Based on these facts a business idea came up. A service for users and others to request a complete document with all or some content gathered from various social media, such as Internet search, likes, interests and hobbies without violating any privacy and integrity. We believe this data can be used for better things than selling user data to advertising companies.

There are two research methods commonly used in projects like these, a quantitative research method and qualitative research method[89].

- **Quantitative research method** – involves experiments and testing of data variables to justify if their theory or hypothesis is true or false. It requires a large amount of statistical data for testing in order to verify the research validity.
- **Qualitative research method** – this research method requires a lot of analyzing and accepting the data, understanding meanings, taking opinions into considerations and behavior analysis to come up with a provisional theory and hypothesis.

Both approach was used in this paper; quantitative research method was used to justify our theory that Internet user have minimal or no knowledge that Internet services are violating user’s privacy and integrity online by collecting their data and selling them to advertising companies. We would also like to know what they think about our business model. We intend to collect these data by conducting online survey and focused groups. Qualitative research method was used to analyze the data gathered from the interviews and literature studies; we believe by doing this way will lead to a better understanding and will contribute to a collective opinion regarding our business model.

3.1 Research approach

An inductive approach [89] was applied to sum up conclusions. The data collected from our survey, interviews, focused groups and literature study will then be evaluated to gain better understanding if there is a need for our business model, how user’s perception on privacy and integrity are on the Internet and what our focused group thinks of our service. We took all input, comment and thoughts into consideration when developing our business model; we used both Analytical research and Fundamental research methods[89]. This guided us in our decision making phase when developing our business plan, this will be done by critically evaluate our information findings, analyze data and validating our theories. We also think as we proceed testing our theories, new theories will occur and will benefit our thesis because we think this will give us a wider perspective in our research area.
3.2 Ethics

Since the business model is to collect data from individuals online, ethics is something that is important to mention. The data that will be collected could either be done without the approval of the person that is being investigated, or with the knowledge of the investigated person.

Our model is based on that the person being investigated needs to approve that their data will be collected and without their acceptance their data will not be collected. This way of business was chosen since this builds on trust between the two parties, the information seeker and the one that the information is about.

Building a different model where anyone can obtain information about anyone is not something that we want to support since this can be used for malicious purposes.

In this report we won’t be collecting any personal data, but we will collect users input regarding this matter in order to answer one of our problem statements.
Chapter 4: Data Collection

Before conducting any interviews or sending out the survey, questions needed to be defined. We used open-end questions, we avoided leading questions and we let the questions lead the interview. For the survey we used semi-closed questions meaning some of them were closed questions and some of them were open.

4.1 Surveys

We worked on defining the questions for the survey to be as precise and appropriate as possible to avoid leading and misinterpretations. The form was worked a few times before conducting a pilot test. The purpose of the pilot test was to if the structure and questions were understandable and clear.

We tried structure our survey with a cohesive thread and meaningful purpose to get an understanding of what users think about privacy, how companies violate user’s privacy and if their employer had access to their online activity data. We chose this structure because it would be easier to understand for the interviewees. We tried to make the survey as professional as possible by providing relevant question and our target groups would have a purpose for answering them.

We chose to work with Google form [90] for its simplicity and user friendly. This made it possible for us to work simultaneously on the questions, get the responses summarized in a spreadsheet also easy to send out. Our targeted group is students at KTH Kista, we sent out the form by contacting the students on Facebook.

4.2 Interviews

We used same approach as above, formed questions suited for the qualitative interview. We reached out to consultant recruiters and consultant managers, this since they are responsible for recruiting individuals to their organization and thus are the ones opinions we need. Three responded and agreed on doing this interview. We conducted the interview face-to-face at their workplace. We tried to keep the interviews as similar as possible so that each interviewee got the same prerequisites. By doing this we can collect comprehensive data by asking more complex, sensitivity and follow up questions.

4.3 Focused groups

For the focus groups we basically used same questions from the survey. We conducted this by asking friends, gathering students from classrooms and private occasions. We chose this approach since it gives us an opportunity to get a better understanding behind the data that we get. When using surveys we get clear answers that can be hard to understand the underlying reason for why a person feels in a certain way. We wanted to have as big groups as possible for this and the size of the smallest group was at 8 persons and the largest group was at 10 participants. We conducted it by asking the questions that we had and then let the participants discuss with each other and if anything was unclear they could have the possibility to contact us. After some discussion the participants came their conclusion and we moved on the next question. We documented the answers on our computers.
Chapter 5: Results

In this section the results will be displayed, the results from the surveys will be shown in graphical format while the results from the focus groups and interviews will be text based.

5.1 Surveys

Which of these definitions of privacy do you think is the most accurate?

- Privacy is the claim of individuals, groups, or institutions to determine for themselves when, how, and to what extent information about them is communicated to others
- Selective control of access to the self or to one’s group
- The ability to control interaction, to have options, devices and mechanism to prevent unwanted interaction and to achieve desired interaction
- Obtaining freedom of choice of options to achieve goals, control over what, how and whom a person communicates information amount them selves
- The ability to chose what information to make public to a certain group of people without any other parties being able to intercept or see the information.
- A state in which one is not observed or disturbed by other people

Is there a difference between privacy online and privacy in real life?

- Yes
- No
- They are the same
- No perception

Picture 9. The first question of the survey

Picture 10. The second question of the survey
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If we look at different platforms online such as Facebook and Google, do you think that they violate your privacy?

Picture 11. The third question of the survey

Have you ever been in a situation where your privacy online has been violated?

Picture 12. The fourth question of the survey

What do you think the largest source of income is for Facebook?

Picture 13. The fifth question of the survey
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**Picture 14. The sixth question of the survey**

**What do you think the largest source of income is for Google?**

- Advertising
- From different applications on different platforms
- Selling of products
- Offering data and phone subscriptions
- Sponsorship
- Investors

**Picture 15. The seventh question of the survey**

**How much does it affect you that online services gathers information about you?**

- Very little: 1
- 2
- 3
- 4
- Alot: 5

**Picture 16. The eight question of the survey**

**What type of data do you think Facebook gathers about you?**

- Personal data such as name, age
- My Facebook friend-list
- Information posted on my wall
- Persons that i interact with
- Interests such as persons that i like on Facebook
- All of the above
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What type of data do you think Google gathers about you?

- My online searches
- My contacts
- Webpages visited
- Youtube videos watched
- All of the above

Picture 17. The ninth question of the survey

How do you feel about employers requires information like crime, financial data etc?

- It’s ok
- Not ok
- It’s ok if I’m aware of it

Picture 18. The tenth question of the survey

How would you feel about employers having access to information about you found online?

- I would be ok with it
- I would not be ok with it
- It would be ok if i was told before they gathered the data

Picture 19. The eleventh question of the survey
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For the surveys there were 43 participants that answered the questions. These individuals were found on Facebook and contacted by us to do this survey. The number of contacted persons was 221 and this gives us an answering ratio of roughly 20%. The individuals that were invited to take part of the survey were students that are in the end of the education and soon will be looking to apply for full time job applications.

5.2 Focus groups

The question that were asked for the focus groups were the same that were asked in the surveys regarding privacy and data collection. Since there were four groups the results of the groups will be described separately. There were some similarities in the groups such as all the groups defined privacy all the same, Privacy is the claim of individuals, groups, or institutions to determine for themselves when, how, and to what extent information about them is communicated to others. All the groups also said that there was a difference between privacy in real life and online. All groups also agreed that they didn’t want their employee to gather data about them from different online sources, but that it’s ok for them to collect data about their economic situation and their crime record.

5.2.1 Group 1

A total of 9 participants were involved in this group and this session took place at KTH Kista library.

The first group was convinced that online services such as Facebook and Google violate the privacy of individuals. One example that one of the individuals brought up was that if your landlord enters your apartment and takes copies of things you own such as pictures it would be illegal but that it is ok if it happens online. Some of the participants of this group were not aware of the fact that companies sold information about them that they considered private. But still with the knowledge and their belief that online services violate their privacy all of the participants will still use these services. This based on a sort of addiction that has been built up with time for these services.

5.2.2 Group 2

A total of 8 participants were involved in this group and this session took place in an open area in KTH Kista.

This group had similar thoughts as the first group besides that group 2 thought that online services did not violate their privacy. The reasoning behind this was that the data that you post online is data that you have shared. If you did not want it to be public property you should not mention it online. This group also discussed the business idea about gathering economical and crime data that companies use before employing someone. They believed that when this probably was considered a controversial thought in the beginning but with time it got accepted. They thought the same thing about collecting data on online services, that it would be accepted with time.
5.2.3 Group 3 and Group 4

A total of 8 and 10 participants were involved in these groups and this session took place in an open area in KTH Kista during different days.

Group 3 and group 4 basically had the same thoughts as each other; they thought that that the selling of data is something that is the natural evolvement of online services. Since there are so many different “free” services offered to customers one has to think critically and understand that these are companies that in some way will earn money when it is possible.

We set a timetable for each session for 60 minutes and in three of the groups session escalated some extra minutes while one of the group talks ended some minutes earlier.

5.3 interviews with recruiters

Down below are the results from the questions that were asked to the recruiters. The answers are

**Question 1:** Considering the amount of information that can be collected online, e.g. pictures, likes, posts on Facebook. Could this information be in any use in the recruiting process?

For all the recruiters, the data gathered from social media like Facebook and twitter were not relevant. The recruiters all mentioned that the data that they primarily look at is qualifications that are needed for the job. If the recruiter were looking for a person to develop java code, it was not of great importance what this person does on SNS.

**Question 2:** If candidates brings up their hobby project in their CV, let’s say the candidate have built a website for a company, how would you gather this information and would you use Internet sources for this task?

For these references was brought up as a key to get an understanding of how this project has been done. The recruiters mentioned that for all jobs that they handle, they require two references to get an understanding of how the interviewee was at the previous workplace. None of the recruiters used any form of online lookup to see if this person has done the project that they have claimed to be involved with, but two of the recruiters were interested in a system that could find relevant data about this matter.

**Question 3:** Have you ever used online sources such as Facebook or Google to draw a conclusion on a candidate?

No was the answer from the recruiters, online searches were not a part of the application process for any of them. One of the recruiters mentioned that it is a violation to look into a person’s online data such as political views and that if one decides to not call in a candidate based on their personal data it would be a violation of that individuals rights.
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**Question 4:** Will a candidate be more interesting if you would know who or what they are following on twitter, Facebook or Instagram?

The answer for all recruiters was no.

At this point we explained more in detail what type of data that can be collected from different online sources. Parts of Google and Facebook’s data collection methods were mentioned so that the recruiter could understand what type of data there is.

**Question 5:** We are building a system that will collect and summarize all data gathered from various online services, Facebook, Yahoo, Skype, Google just to mention a few. Would you be interested in this type of service and if so what kind of information would you like to see in this report?

This question was the one that the all recruiters spent the most time on discussing the matter. None of the recruiters were interested in a service that delivered data regarding people’s online social life. They believed that what a person does online is not of that much relevance to applying for a job. Interviews are the solution that the recruiters wanted to use to get an understanding about the person applying for the job. From there the recruiters can meet the interviewee and talk to them face to face, read body language and see how they are as persons.

In these interviews the key was the last question that was asked. Since none of the recruiters were interested in the business model that was presented it was vital to find out if there was any similar type of business model that they would have been interested in.

**Question 6:** What type of data would you like to see gathered about individuals from online sources?

The answers were, data that made their search for potential candidates for a job vacancy easier, professional data about the candidates. It was also brought up a system that was desired. Recruiters wanted a system where they could create a demand specification and from that the system would find different candidates. An example that was brought up from one of the recruiters was for a system developer that had knowledge in a HTML CSS and JavaScript, studied at a university and lived in Stockholm, Sweden. From this they wanted a way to see profiles based on the data that they had given. One of the recruiters also mentioned that she would like a system where she could find data regarding the experience of the person that she is interested in recruiting.
Chapter 6: Data Analysis

The data that was gathered from the focus groups were similar to the ones gathered from the surveys. This is something that was expected. The benefit of focus groups was the possibility to get an explanation to why individuals believed what they did and to see discussions rise from differences in opinions.

**Question 1:** Which one of these definitions of privacy do you think is the most accurate?

Looking at the answers we received from the surveys several things can be brought up. Starting with how people define privacy we can see that the perception of privacy differs from each person. The answer that was chosen by most individuals (43%) was “Privacy is the claim of individuals, groups, or institutions to determine for themselves when, how, and to what extent information about them is communicated to others.” This is the definition that Altman created regarding privacy and as we can see it is something that is something many seems to agree with. Looking at the rest of the answers in the survey for question one we have the second most popular alternative as “The ability to choose what information to make public to a certain group of people without any other parties being able to intercept or see the information” with 21%. The rest of the answers were close to each other with ranging between 5% and 12%.

If we look at the focus groups this was also the definition that the groups chose when asked except one group that preferred the definition named “A state in which one is not observed or disturbed by other people”.

We can see that Altman’s theory is the preferred theory amongst the participants and the individuals in the focus groups. Why this is can be for several reasons. Altman’s theory is one of the most famous definitions of privacy and judging on the participants from the surveys we can see why this definition is well used worldwide.

But one has to notice that 57% of the participants of the survey chose other definitions. It is a big number and one could say from these numbers that the majority of the participant does not agree with Altman’s theory of privacy.

**Question 2:** Is there a difference between privacy online and in In Real Life (IRL)

From the data gathered in the surveys we can see that 62% of the individuals believe that there is a difference between privacy online and IRL while 31% believe that the are the same. We can see that there are twice the amount of individuals that believe that there is a difference in privacy online and IRL.

From the focus groups there were individuals in the groups that believed that privacy online and IRL was the same, but for all the groups the answer was that there is a difference between privacy online and IRL. As we can see from the data that has been gathered, there is a difference in these circumstances. Why this is can be related to what one shares online.
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Question 3: If we look at different platforms online such as Facebook and Google, do you think that they violate your privacy?

Here we can see why the focus groups are something that are desired to understand why people think the way they do. From the surveys it is difficult to understand why people feel what they do. From the focus groups this question could be evolved. Participants from the focus groups brought up that they felt violated when searching for things on different websites and from that Facebook generates advertising. They also mentioned that the standard privacy of Facebook is an open climate. This can of course be modified by the user so that information is excluded for a certain group. Looking at the surveys we can see that 62% of the users feel that different online platforms violate their privacy. Looking at the paper posted by PEW research centre there is data provided regarding individuals and their look for privacy. It is mentioned that 59% of individuals would like to have the ability to use the internet anonymously.[47] This could be connected to the question asked here. If people feel violated they might move towards a wish to hide online.

Question 4: Have you ever been in a situation where your privacy online has been violated?

As we saw in the results 47% of individuals felt like different companies violated their privacy at some point. One of the flaws in this survey was that we did not have any follow up question regarding if these persons lost faith in any of these companies of if they stopped using these. In the focus groups we could bring this thought and when asking about this matter to the persons of the focus groups we saw that there was only one person that stopped using Facebook for this matter. People they continued to use these platforms even when feeling that their privacy had been violated. It was out of habit and the ability to be able to connect with their friends.

Question 5 and 6: What do you think the largest source of income is for Facebook and Google?

This was one of the questions that were quite easy to discuss and to understand the results. For Facebook it was clear obvious for the individuals of both the survey and the focus groups that Facebook earns money from advertisements. For Google this wasn’t as clear. If we compare the numbers of the survey 81% of the participants of the survey thought that Facebook’s largest income was from Advertisement while the same number for Google was 48%. The same pattern was seen in the focus groups giving us the data that individuals are more aware of Facebook’s way to earn money compared to Google.

Question 7: How much does it affect you that online services gathers information about you?

Looking at the data that is collected and the data that was collected from the focus groups we can see that the results were similar. The question was asked as a scale with 1 being not worried about that online services gather data about you and 5 being that one is really worried. 4-5 on that scale was a total of 49% showing us that individuals are affected by
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the fact that data is collected about them. Looking at the focus groups the results were the same, no individual mentioned that they did not care about the data that was collected about them.

Looking at the report from PEW Research Centre we can find data about the concerns that individuals have regarding how they feel about the data that is available about them online. In this report it is mentioned that 50% of individuals are worried about the data that exist on them online. [47] This is something that we can see matches the data that has been gathered for this thesis through the focus groups and the surveys. Individuals are worried about the data that is collected about them and about the data that exists online.

Question 8 and 9: What type of data does you think Facebook and Google gathers about you?

Looking at the surveys we can see that 88% of the participants believe that Facebook gathers different types of data that are connected to the way one interacts on their social media site. For Google the numbers are a bit smaller, it is 81% of the asked individuals that believe that Google collects data connected to your Google account. This seems to well known facts since the focus groups all agreed that Facebook and Google’s main income comes from advertising.

Question 10: How do you feel about employers requires information like crime, financial data etc?

Individuals were ok with this with the precondition that they were told before the data was being collected. We can see this from the data gathered from the surveys where 90% of the participants are ok with it as long as they are aware of it. When working with children in Sweden or for other companies that are interested in an individual crime history, a check-up is made with the authorities in Sweden to see if this person has a past crime record. [91] The usage of this service keeps growing in Sweden showing that companies are using the data that exists and that individuals accept being looked into. [92] Perhaps this is a reason that this is accepted by the individuals that participated in this survey.

Question 11: How would you feel about employers having access to information about you found online?

This question is the key to understanding a big part of the thesis. Almost everyone (3 persons not included) that was in the focus groups and answered the survey (95%) did not want any company or organisation to have data about them that is collected from online services. Comparing our data with the data collected by PEW Research Centre we can see that there is some data that users do not want to share. The PEW report mentions that 68% do not want to share information about what is in their e-mails, while 33% care about that no one knows at what time of the day they are online. [47] By the data from the PEW report we can understand that there are some type of data that individuals do not want to share with others while other type of data is ok.

If we compare this to question 10 where we ask about collecting data about their finances and crime history this is something that has to be highlighted. We have seen from the answers in the other questions that people are aware of the fact
that online services gather data about them, and a majority of the people are aware that these companies main income is from selling data for advertising. This means that they know that their data is being collected and sold to companies, and these are services that people still continue to use even with these facts. Now looking at question 11 we can see that people do not want their information to be seen by their employer. This is where the privacy part online comes to play yet again. Individuals that believed things you post online is fair game to use should not be strangers to the idea of their data being sold to their employee. This is again where the focus groups come in handy. Majority of the ones that mentioned that they think that data put online is fair game did not want their employer having their online data. This is something that is contradictable since the statements go against each other. For advertising they believed that it was ok since the ads are directed at them directly and a person that is looking into them does not view the data. It seems there is a boundary some were in selling data and to where the data should go. Everyone have a different way of finding that boundary.

Looking at the data that was gathered form the interviews with the recruiters we could also see that our business model was not what recruiters wanted. Personal information was not something that recruiters were interested in. What we believed to be a business model of value instead needed modification. All of the recruiters were interested in a modification of this business model, and that was to gather professional data about individuals that suited a demand specification that they were looking for. What type of work this person worked with previously, what qualifications this person has and their professional desires. Let’s create a scenario so that it becomes simpler to understand. Say that a recruiter is looking for someone with knowledge in JavaScript, HTML and has an experience of working with these tools for at least two years. The recruiter also wants the person to have an education with something related to IT. From this list of demands, the recruiter wants a list of people that fits this demand of specification. All of the recruiters were interested in this type of tool. This is something that was not expected. What individuals do on their spare time was not something that was interesting for these recruiters. Perhaps if looking into other fields such as employment at fields where individuals are exposed to media, this would be a tool worth using. Politicians need to have a credible face to the public, so this business model is something that perhaps could be used inside political parties so that they can get updates on what their party comrades are doing.

For our business model we wanted to sell data to recruiters based on data collected online about individuals. We wanted to get an acceptance from the individuals that are being looked into to accept this, or this lookup would not be done. With the data that we have gathered we can see that this part of the business does not hold up. Individuals are not ready to share their data with employers since they feel that it is an invasion of their privacy. Therefore there are two different choices, either the business model is developed ignoring this and selling the data without individuals knowledge or we follow the ethics we discussed and develop a different business model.

Considering that the recruiters were not interested in personal data collection from online services but professional data collection we see that none of the sides of the business model is something that is desirable.

A possible business model to investigate could be using LinkedIn profiles to gather candidates for recruiting companies.
Chapter 7: Discussion

This thesis was about presenting a social lookup business model and see if it is needed in the industry today. Other than that we wanted to look into if Internet users feel that their privacy is violated online.

According to Randy Milanovic from socialmediatoday.com states in his web post that Facebook and Google is top 10 most important social media websites today and on this list we can find other sites and apps like Twitter, LinkedIn, Xing and Snapchat. This thesis would have been so much bigger and more accurate if we chose to involve the other social media user-base regarding their perception on privacy online. Due to our time constraints we chose to work with Facebook and Google. We both shared the same experience when it comes to gathering information from our literature study. While doing the literature study we did not find many books written about Facebook and Google, we found the most information online. The biggest challenge was getting relevant information and reliable sources online. If we found some information on blogs or webpages we made sure to look up the author, reliability regarding his or hers references and if this person had some relevant experience or education that could backup his or hers statements.

Looking back we feel like we made the right choice with the literature study since we got a lot of good and useful information. In our findings we found how both Facebook and Google is collecting a lot of data and then delivering them to trusted partners and advertising companies which leads them to generate billions of dollars every year. We also found that Facebook and Google is changing their terms and conditions to their advantage regarding data collection to making it legal for them to collect and sell user data. Going back to our goal about Internet user’s perception on privacy online, we strongly believed that the majority did not know how their privacy was violated when using Facebook or Google. Results from the survey we conducted shows that Internet users have a general awareness of the term privacy, but more than half of the responders thought that privacy online and privacy IRL was not the same. We should have about IRL data collection; something like “How upset would you be (on a scale from 1 through 5) if the government came into your home and took private stuff, such as financial paper, testaments or photographs?” this could have supported our theory that Internet users don’t have the proper knowledge regarding privacy.

Another pleasant surprise with the results from the survey was that many did not quite know how Facebook and Google are earning their money. While 81% answered that Facebook earned their money from advertising and only 47.6% answered that Google earned most of their money from advertising shows us that user doesn’t really know how Google operate and how they earn their money. There is so much more to Google than just their search engine, which Internet doesn’t seem to be aware of. Again, we should have discussed this this topic further too really understand where the Internet user stands regarding data collection.

Before starting this research we thought that our ideas is a million dollar business and it is a wanted product in the industry. The preparations for the interview could have been executed better. We could have sent out the questions before hand so our interviewees could have prepare briefly before the interview, this could have led to a more effective
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Interview session and less explanation of what we were trying to accomplish with the interview. Our findings from the qualitative interviews gave us other results than expected. To summarize the results we got from the interview is that recruiters do not have any purpose using a system like ours in their work and they rather have a system collecting professional data such as education, work experience, interest and hobby projects on potential candidates for a job opportunity.

We made the decision to not proceed developing our business model, based on the response we got from our three interviewees. We felt like we did not have enough data to push through with this idea at the moment. Based on the data we got from our interviews, our service has no clear target group that will use our service. The result may have been differently if we to ask more IT consultant recruiters and HR departments, their input would be valuable to our research. Even if the result stayed the same, that they are not interested in social credit, this would justify that our service is not wanted or needed in the Swedish industry.

Another thing to note here is, we only manage to interview and conduct survey on Swedish recruiters and Swedish students. The results may or may not be differently if we were to conduct this research to non-Swedish recruiters and international students from different university. We could have done another survey aimed at non-Swedish recruiters and HR departments; similar questions that were used in our interview could have been used but rephrased them into semi-open questions to better suit the survey. We see two potential results if we were performed this survey, either they agree with their Swedish colleagues that there is no need for social credit lookup or that there is a want for a service like our business model and that indicates that our research should target their market and country.

Our research has been targeting IT recruiters and IT students from KTH Kista. Our research has not reached out to other professions or government. Both Swedish and international organizations should have been included in our study to support our theory that our business model is wanted and need today.

Based on the fact that we are not developing our business further our perspective on ethics still stands. We still believe that both parties, requesting the data and approving data needs to come to a mutual agreement before collecting and delivering data. These user data can be misused and can eventually hurt people. An Internet phenomenon has occurred in recent years called Catfishing[93], it is when a person builds a fake online profile by gathering information and picture from e.g. Facebook and expanding their network by developing and tricking other user into emotional or romantically relationships online. Facebook estimated in 2013 that they have between 5% and 11% are fake accounts and was Catfishing.[94] This is a perfect example of why people should be careful with their identity online and that’s why we value user data.

Based on everything that has been said above, we still believe in our service in our service. We don’t agree with the interviewed recruiters saying that they have no use for our service; we think that they did not want to admit that our service would be good for their work or that they did not want to violate Swedish Discrimination Law. If our service was available today, we think that they would want to use it in their work.
Time is a huge factor in this thesis, if we were to have more time to interview recruiters from different parts of the world, the outcome would not have been the same as it is right now. All input is valuable for our research, even if we had gotten more interviews and they still think that collecting professional data is more attractive, then we would have been able to alter our business plan according to their needs and wants. Speaking of time, if we were to prepare a few focused groups with experts, professors and psychologist with experience in human behaviour, then we could have gotten a deeper understanding on the human mind when it comes to perception on privacy and why privacy online is not the same as in real life. This also applies for our survey, if we could have gotten response from experts in this area we could have gotten a different results.
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Chapter 8: Conclusion and Future Work

This thesis was developed with the idea to bring a business model for data collection. The idea was to deliver a business model that brings relevant data for social credit with the permission of the individuals that were looked into. However during the evolvement of the thesis, we have seen that this is not what is wanted or needed by the end customers (the recruiters) or the individuals that are being looked into. The recruiters did not prioritize the social credit of individuals found online, but rather if it was possible to find professional information. One example that was brought up several times by different recruiters was the possibility to gather candidates from a specification of requirements, such as experience, education and interest. This is something that could be done on LinkedIn based on their competence.

Looking at how the persons being looked into feel about this service, we can see that it is something that is not desirable. Most people were not comfortable with sharing their social data with their employee. This business model investigated is found not to be desirable, but with the information gathered in this thesis several other ideas emerged that could be a part of other works.

Most of our survey subjects were not comfortable with sharing their social data with their employee. This business model investigated is found not to be desirable, but with the information gathered in this thesis several other ideas emerged that could be a part of other works. A research about why users are uncomfortable with their employers collecting social data can be conducted. While we are in the topic of social data gathering, another research can be conducted about why users still use social media if they know that these companies collect their user’s data and the users feel violated by it. A research can be done on why users think there is a difference with privacy online and IRL, the study should target all users and not only KTH students to get a deeper results.

Another example would be looking into how to change the business model of online services so that the users also get a share of the revenue that is created. Since the users are the ones that provide the information that generates money some may argue that this business model is not that fair towards the users. The platforms such as Facebook, Google and others provide a platform and without the users there would be no business model since they are the ones providing the data for the ads, and the ones that receiving and viewing the ads.
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Appendix 1: Google permissions list

Google Play permission groups [28]
The permissions has been rewritten with a brief summary of what the permissions require from the phone.

In-app purchases
The application has permission to make purchases in the application.

Device & app history
The application will be able to see what apps are currently running on the phone, see you browser bookmarks and your browser history and read sensitive log data. An app can use one or more of the following:

Cellular data settings
The application has the possibility to control the mobile data connection. This means that the app can control the data that is received to the phone.

Identity
If an application needs this permission it can access:
Find/add and modify account on the device
Read and modify you contact card that means read your contact information such as your name and other contact information.

Contacts
The application has the possibility to access your contacts. It can read and modify your contacts.

Calendar
Read/add or modify calendar information. This includes confidential calendar information as well. It can also send emails to guests without your knowledge

Location
The application will have access to your location by different ways
It can use networks to approximate your position, it can us GPS to access where the smartphone is.

SMS
Read, receive edit and send text and multimedia messages.

Phone
Applications will be able to read your phone log and modify the call log as well (such as your call history)
Call without you intervention
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Change your phones state and changes the routes of the outgoing calls from your phone

Photos/Media/Files
Read/modify or delete content on storage (your internal storage, external SD cards)
Format the external storage meaning that it can delete all information on the external storage.

Camera
Record videos and take pictures

Microphone
Use of the microphone, can be used for recording audio.

Wi-Fi connection information
The application will be able to see your Wi-Fi information such as the name of the network, and the names of other devices connected to the network.

Bluetooth connection information
The application will have access to your Bluetooth radio meaning that it can broadcast to other Bluetooth devices or get information about other Bluetooth devices.

Wearable sensors/activity data
Giving permission to read the data from sensors in wearable devices and receive constant updates.

Device ID & call information
The application will be able to read you device ID, the phone number connected to the phone. The application will also be able to read if you talking on the phone with someone and the number of the person that you are talking with.

Other
The application will be able to read and post on some social networks. The application will also be able to use different settings provided by the device manufacturer.
Appendix 2: Survey form regarding privacy

**Thesis - Internet users**

This is a survey for a thesis regarding privacy and data collection on two of the most used Facebook

*Obligatorisk

Which one of these definitions of privacy do you think is the most accurate *

- Privacy is the claim of individuals, groups, or institutions to determine for themselves when, how, and to what extent information about them is communicated to others
- The ability to control interaction, to have options, devices and mechanism to prevent unwanted interaction and to achieve desired interaction
- Obtaining freedom of choice of options to achieve goals, control over what, how and whom a person communicates information amount them selves
- Selective control of access to the self or to one’s group
- A state in which one is not observed or disturbed by other people
- The ability to chose what information to make public to a certain group of people without any other parties being able to intercept or see the information.
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Is there a difference between privacy online and privacy IRL *
- Yes
- No
- They are the same
- No perception

If we look at different platforms online such as Facebook and Google, do you think that they violate your privacy *
- Yes
- No
- Maybe
- No perception

Have you ever been in a situation where your privacy online has been violated *
- Yes
- No
- Maybe

What do you think the largest source of income is for Facebook *
- Sponsorship
- Investors
- They don’t make any money
- Advertising

What do you think the largest source of income is for Google *
- Advertising
- From different applications on different platforms
- Selling of products
- Offering data and phone subscriptions
- Sponsorship
- Investors
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How much does it affect you that online services gathers information about you *

1 2 3 4 5

Very little ○ ○ ○ ○ ○ Alot

What type of data do you think Facebook gathers about you *

○ Personal data such as name, age
○ Persons that i interact with
○ My Facebook friend-list
○ Interests such as persons that i like on Facebook
○ Information posted on my wall
○ All of the above

What type of data do you think Google gathers about you *

○ My online searches
○ My contacts
○ Webpages visited
○ Youtube videos watched
○ All of the above

How do you feel about employers requires information like crime, financial data etc. *

○ It’s ok
○ Not ok
○ It’s ok if I’m aware of it

How would you feel about employers having access to information about you found online *

○ I would be ok with it
○ I would not be ok with it
○ It would be ok if i was told before they gathered the data
Appendix 3: Recruiter interview questions

- Considering the amount of information that can be collected online, e.g. pictures, likes, posts on Facebook. Could this information be in any use in the recruiting process?
- If candidates brings up their hobby project in their CV, let’s say the candidate have built a website for a company, how would you gather this information and would you use Internet sources for this task?
- Have you ever used social media such as Facebook or Google to draw a conclusion on a candidate?
- Will a candidate be more interesting if you would know who or what they are following on twitter, Facebook or Instagram?
- We are building a system that will collect and summarize all data gathered from various social media site, Facebook, Yahoo, Skype, Google just to mention a few. What kind of information would you like to see in this report?
- Every Google user can ask for a complete document with all activity related to their website, such as web searches, YouTube searches, IP address and so on. How would a candidates “surf habits” be in any interest for you?
Appendix 4: Who was responsible for what in the thesis

Ali Sabet
- Abstract English
- Introduction
- Problem definition
- Purpose
- Goals
- Limitations
- Targeted audience
- Structure of the thesis
- Background
- Results
- Data analysis
- Conclusion
- Survey questions and conducting it

Darryl Manalo Cornejo
- Abstract Swedish
- Business plan
- User data section
- Background
- Methodology
- Data collection
- Discussion
- Future work
- Structure of the thesis
- Interview with recruiter's questions
- Survey questions and conducting it
- Formatting the document