

the dark playground

A never ending story of lost information, cons(piracy) and design

by

Katarina Hornwall

2015

ISRN: LUT-DVIDE/ EX--16/50350—SE



LUNDS UNIVERSITET
Lunds Tekniska Högskola

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Degree Project for Master of Fine Arts in Design, Main Field of Study Industrial Design, from Lund University,
School of Industrial Design

Department of Design Sciences

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INTRO

abstract

Based on readings, news and experiments this project is a creative exploration of data collection in the age of Internet. The disclosure of government online surveillance programs in 2013 raised questions about the power of data collection by governments and companies. Although this was big news when it happened, the topic is not as discussed or as acted on as it should be. Has anything changed since? This project is trying to investigate what is going on, why, how and the consequences of the development of the Internet. The result of the exploration is summarized in the end in the form of a board game.

Keywords: data collection, internet, society, surveillance, privacy, board game, education.

introduction

Access to Internet offers education, communication and knowledge to everyone with a dial-up. The Internet creates the possibility for anyone, regardless of class, gender or citizenship, to publish a selfie or get a degree. But the freedom the net initially offered is getting more restricted and controlled by the biggest multinational corporations. Massive amounts of user data is collected by both corporations and governments and are used in ways unknown to citizens.

Sharing is caring?



Figure 1: Toshibe doge (Internet, unknown)

background

WHERE DOES A MASTER PROJECT START?

This report is the execution of a masters thesis. The beginning of the project was a widespread investigation; everything from the Maker's movement with the democratisation of design to participatory processes with the subsequent questions of the 'role of the designer'. Those topics took the investigation, from social projects in Rosengård about creating work for marginalised women all the way to the Maker's-movement in Västra Hamnen and Hacker spaces in Copenhagen. Combining all the information and discussions that surfaced from this initial research, three different themes surfaced; "The 'new' role of the designer", "Makers space 2.0" and "Data awareness".

The first theme "The 'new' role of the designer" was a theme where the result could end up as a theoretical work, discussing how the designer occupation has changed and is changing with the angle of democratisation of design. What are the consequences and future for design as an occupation when everyone can be a designer? With the second theme "Makers space 2.0" I evaluated the arising Maker movement, a movement which has spread all over the world. From local pop-ups in Berlin and Malmö all the way to Afghanistan. Are these movements as inclusive as they want to be? And what would a future Maker's space look like?

In the beginning of the project process, buzzwords such as IoT and Big Data surfaced often and I got curious about the massive "participatory process" that the whole world of Internet users are a part of. What elements and processes does it consist of and who is benefitting? Therefore the theme "Data awareness" surfaced.

I found all three themes worthy of pursuing further in future projects, but I had to set some demarcations to this project and decided on one of the themes. The two first themes seemed straightforward and I saw a solid possibility of implementation, but I choose to proceed with the theme of data awareness. The challenge exploring such complex and complicated theme and implement it in an industrial design project seemed quite the task but also very interesting. I predicted two possible outcomes. Either it could become something a bit interesting or it could fail miserably. One thing design teachers often say is: Embrace uncertainty.

brief

I am with the theme "data awareness" and "participatory processes" exploring data collection on the Internet and how to use Industrial design for creating awareness of the digital footprints we leave behind while participating in our modern society.

- Open source
- Concept usable in a context
- Making the intangible, tangible
- Physical representation
- Balance between control and freedom
- User's choice if participating or not



Figure 3: 3d printed universal adapter (F.A.T. Lab and Sy-La, 2012)

goals & demarcations

GOALS

Explore data collection on the Internet finish the project with a tangible result.

Challenge myself in the sense of embracing the uncertainty of not knowing where the project will end up.

Work with medias not familiar to me, such as working with video material as a way of presentation.

To have fun during the process.

DEMARCATIONS

During the initial process this project had a lot of goals such as “write a paper on the role of the designer” and trying to include as much as possible of concepts such as open source and participatory processes. But after the initial research phase, I had to abandon those aspirations since that would have been more time consuming than my schedule allowed. Although I find those topics very interesting and I would like to remember them in future projects.

METHOD

structure

Since the subject of interest in this project is broad and the answers to the questions are not easily found, to attain the information needed, I had to find knowledgeable persons and make an interviews face-to-face, testing ideas on people and do a lot of readings. Hence, in the research I used semi structured interviews, articles relevant to my theme and a lot of googling and reading the news, trying to keep updated with the subject.

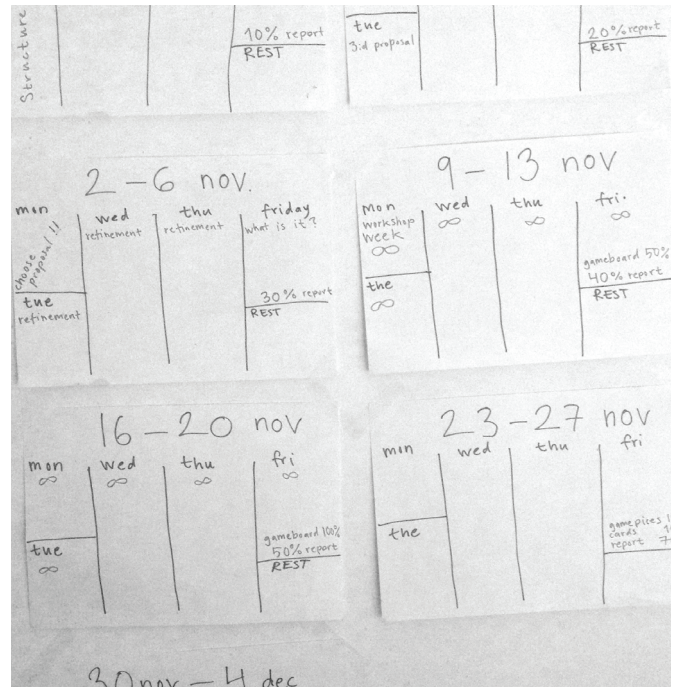
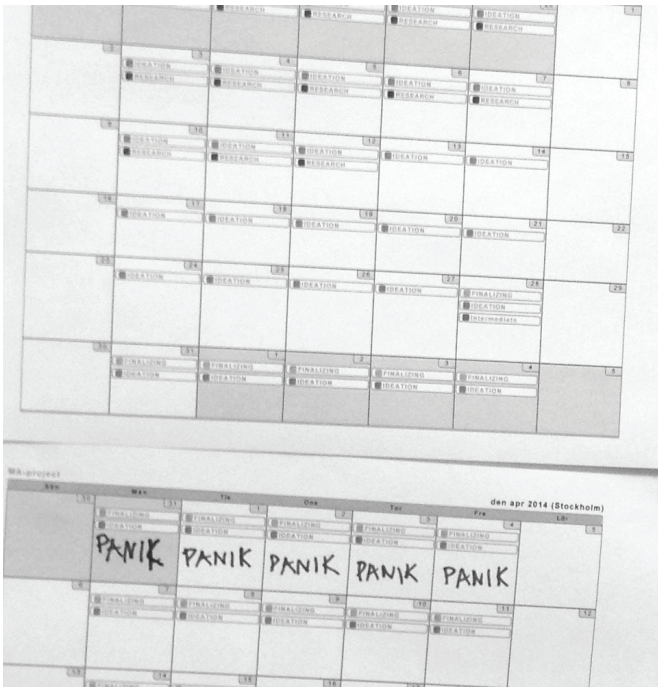
This is an industrial design project, other methods used are those typical to the field of industrial design such as small scale experiments, testing ideas and prototyping.

time overview

TIMEPLANS

During this project there have been a few time schedules, the first two was disregarded during the process and replaced with a new one that became the final one.

	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	W
MON	Make hopf pres Redigera fardigt löptext	3Q meeting				
TUE	Hopf Meeting		40-50 % Presentation			
WED	report structure finish JOB	Claus meeting	Hopf check-up 4/2		Hopf check-up 18/2	
THU						
FRI	MAKE FUCKING DECISION Daniel input				Presentation workshop with Presentationsbyrån	
SAT		Check up with Internet expert				
SUN	20 % report		50 % report		80 % Report	



challenges

BOOKS?

To investigate “internet” is like investigating the topic “books”. What are books? What is written in them? Why do people read them? How to read them? Quite a lot of information! And the complexity of the scope increases rapidly.

And how to translate something that is not physical and of a another “dimension” into something tangible and explainable?

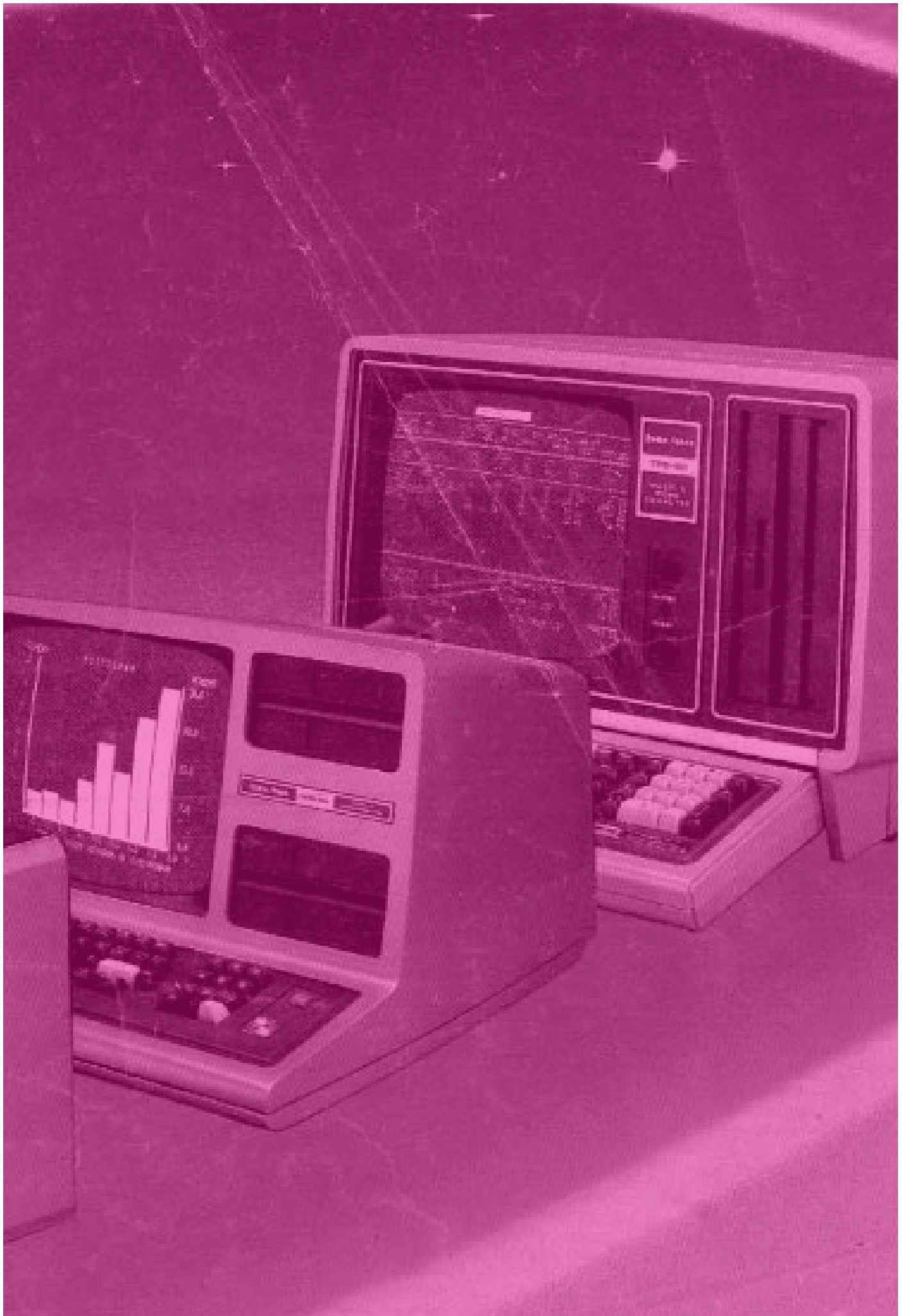
YOUNG FIELD

Research in Internet topics, is a young field and especially to find Internet/Industrial design experts is a challenge in itself.

Determining anything of how “internet” or things relating to it, effects us, is difficult since Internet is such a new phenomena in our history. Therefore in this project I am declaring myself biased. I am describing and commenting on modern phenomena that I myself is already involved in. To say anything about the times we are living in, while we live in them, is a challenge. It is likely that in the end, the result of this project will quickly fall out of date. The questions in this project will be more accurately answered in a generation or two, when we can look back at something that was.

TIME

The theme could without problem become its’ own phd-project. A major challenge in this project was that the time was simply not enough.



RESEARCH

interviews

During this project several interviews and discussions were made with different people. From researchers in various topics such as Co-design and Internet to projects managers. Since the project started with co-creation as a topic I choose to also mention those interviews since they all contributed and were valuable to the project.

ANNA SERAVALLI
Researcher in Design for Social Innovation,
Malmö University

MOA BJÖRNSSON
Project leader for sustainable urban
development in Rosengård.

KAROLINA ROSENQVIST
Medea, Malmö

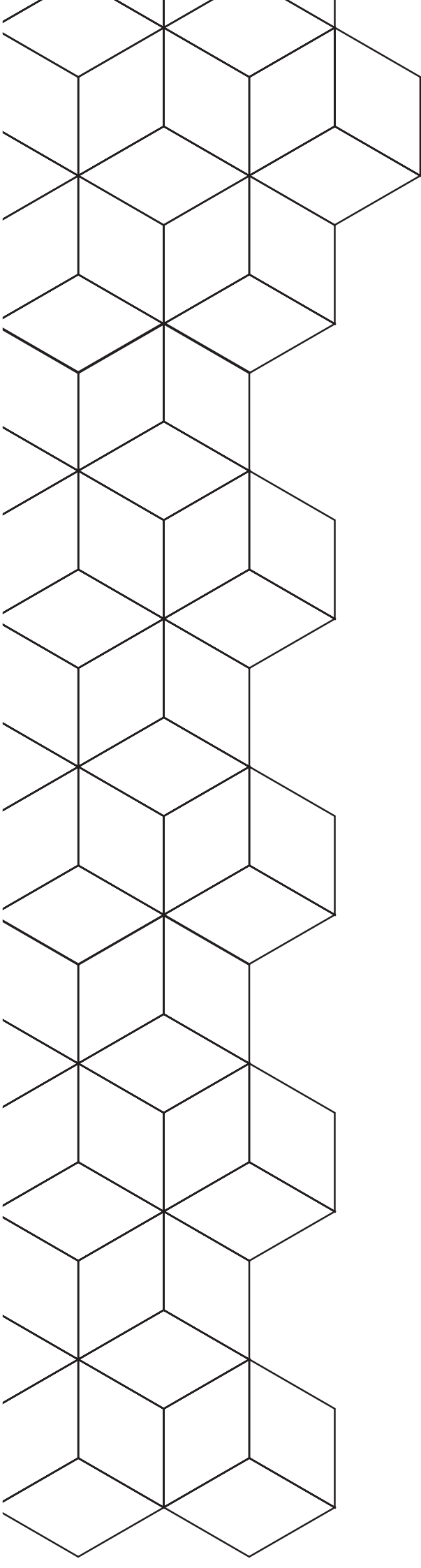
JOAKIM GRINA
Lusic
Lund University

CAROLINE LUNDHOLM
Director of STPLN
Malmö

DESPINA CHRISTOFORIDOU
Researcher Industrial Design
Lund University

STEFAN LARSSON,
Office director
Lund University Internet Institute (LUii)





data collection

WHAT DATA?

In the framework for this project, data can be described as:

1. Individual pieces of information

Content information such as email conversations or voice recordings from phone conversations.

2. Meta data

Data that provides information about other data. Content such as location, time and history.

data collection

DATA DO NOT LIE

Today 40 % of the world population have an internet connection and by 2018, the number of smartphone users is forecasted to reach 2.5 billion (internetlivestats, 2016). In exchange for using the services that smart phones offer, users trade their location, at what time and with whom. Whether they are speeding on the highway, how long they are exercising, and with whom they are sleeping with at night (Schneier, 2015).

Companies does not have to focus on a singular user to get relevant information. Such a seemingly innocent thing as metadata can actually be quite useful. With location data and time information, it possible to derive all kinds of information and knowledge about people.

By making use of metadata, research shows that it is possible to predict where people will be 24 hours later, with a margin of error of 20 meters (Schneier, 2015).

DATA AS CURRENCY

“Data is the new oil.” Ann Winblad

Monitoring the meta data of potentially 2,5 billion people gives tremendous knowledge and insight into humans and how they interact with information on the net. Companies use data to target their markets more effective. By running data through analysing tools it is possible to predict analytics for investment. Not only that, but companies can also sell meta data about their users to other companies. For example can a company earn 40 cent/user/month (Dingledine, 2010).

GOODY DATA

Collecting and analysing data can be a benefit for society, for example when investigating criminal activities. Public healthcare in Sweden have been helped by data collection when mapping the spreading of diseases by monitoring what symptoms people are googling.

Understandable, data collection on a large scale could be of help, by providing basis for research when developing the community and make infrastructure and public transport more effective.

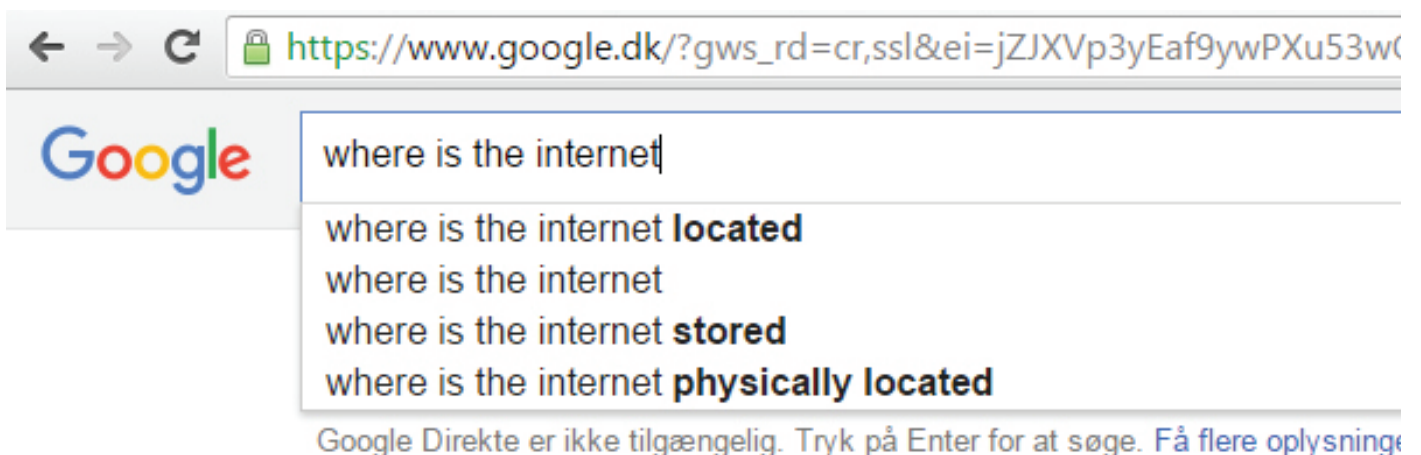
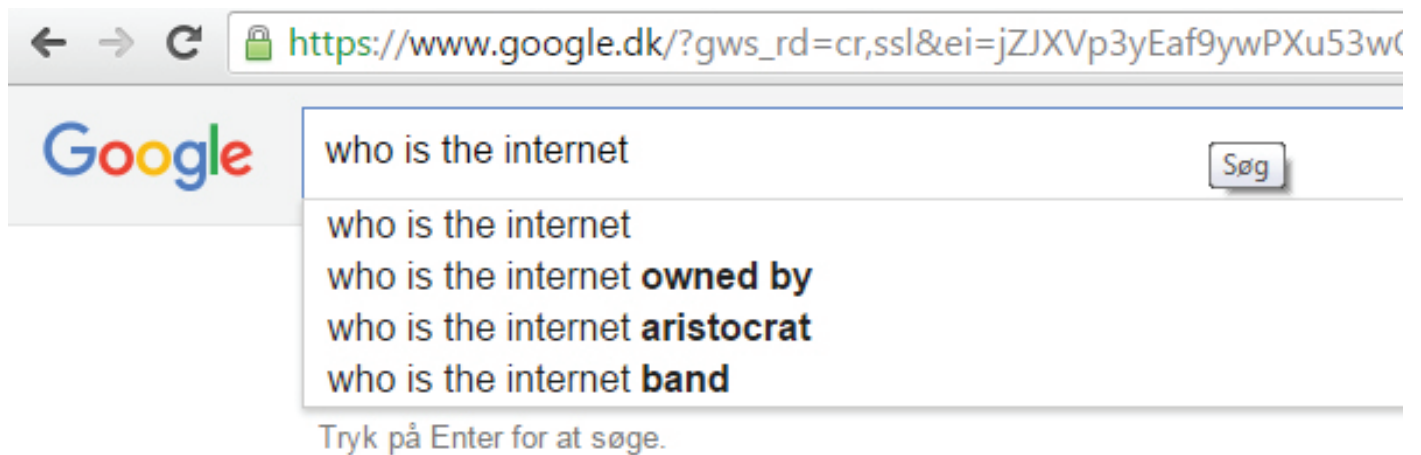
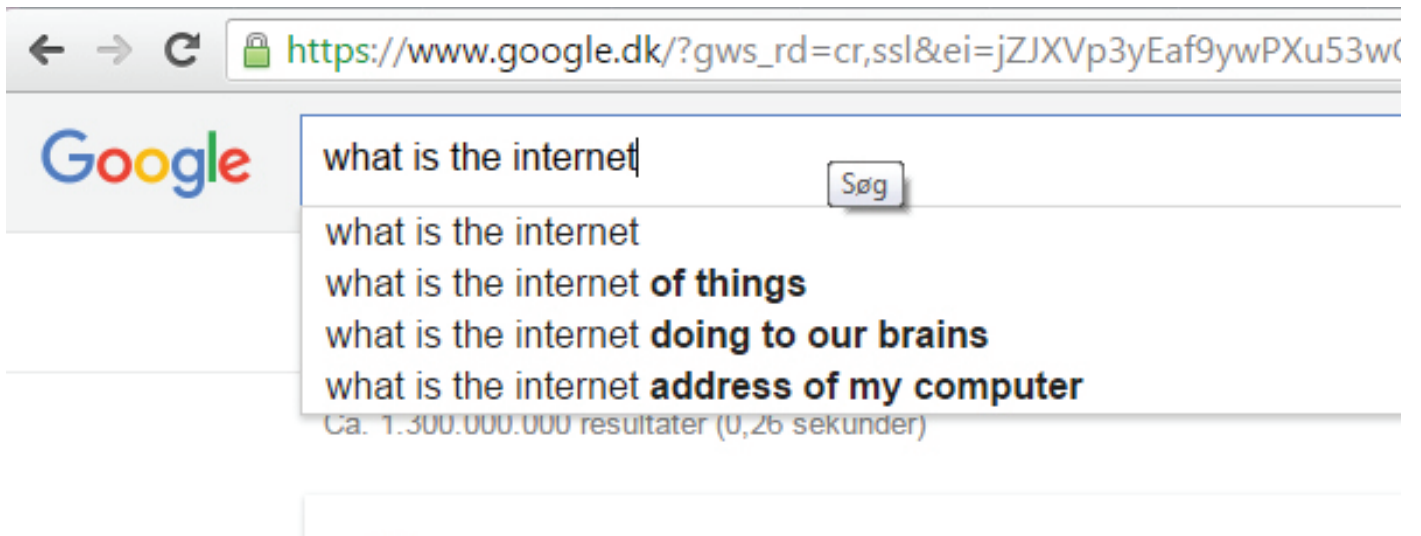


Figure 4: Collage of screenshots from Google (Hornwall, 2015)

what is internet?

THE PHYSICAL NET

“The Internet is a global system of interconnected computer networks that use the standard Internet protocol suite (TCP/IP) to link several billion devices worldwide. It is an international network of networks that consists of millions of private, public, academic, business, and government packet switched networks, linked by a broad array of electronic, wireless, and optical networking technologies.” Wikipedia’s definition of the Internet

Except for 1% of satellite traffic, the internet is physical, made up by underwater fiber optic cables that are buried under the seabed that connect all the continents except Antarctica (Eagleman, 2012). It has been an never-ending construction beginning in 1842 when Samuel Morse submerged some tarred hemp and rubber in the New York Harbour.

These cables are highly valued and quite expensive to construct, therefore considered important both by companies profiting from them and governments that depend on them for the cultivation of their national economies. Threats to the function of these cables are everything from natural disasters such as earthquakes and shark bites to man made disturbances such as anchors and fishing trawlers (Eagleman, 2012).

Although, to intentionally disconnect a whole continent such as North America or Europe would be extremely difficult.



DATA FLOWS

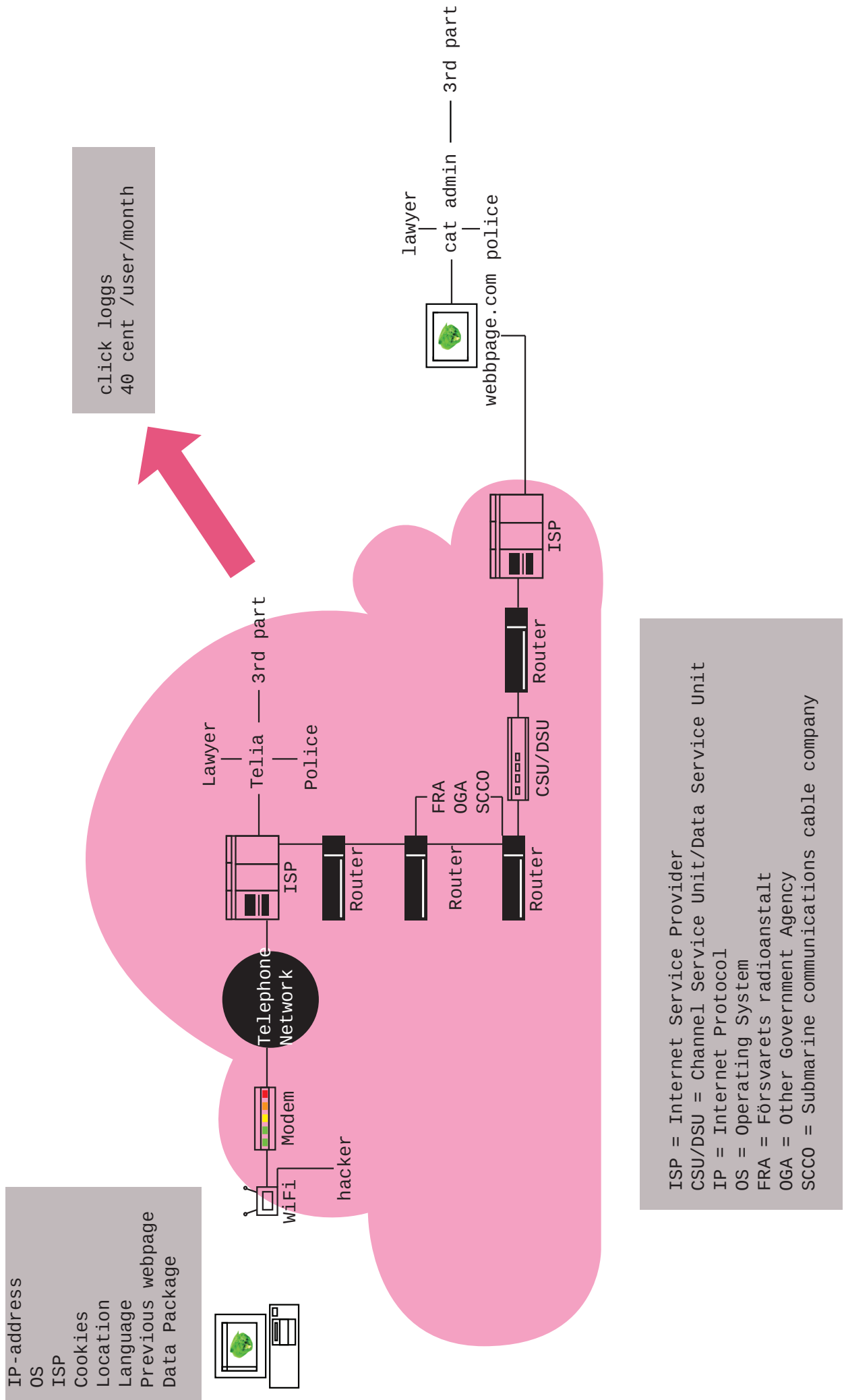


Figure 6: Data flows (Hornwall, 2015)

who is the net?

THE COMPANIES

“If you have something that you don’t want anyone to know, maybe you shouldn’t be doing it in the first place.” Google CEO Eric Schmidt (CNBC, 2009)

The Internet today is today dominated by Google, Apple, Facebook, Microsoft and Amazon. (Nordström, 2015). They are the net’s equivalent to the biggest five predators of the savanna. They are the 5 main forces to decide the evolution of the net and they are currently quietly operating without any laws of competition.

When looking at these companies acquisitions and investments it is not difficult to start imagining a future like that of Kubrick’s 2001: A Space Odyssey. Especially when reading Google’s transparency report (Google, 2015) with its lack of transparency, concerning the issues of data collection.

The BIG 5



Mac OS X	Kindle	Internet explorer	Gmail
Safari	IMDb	Hotmail	Google Chrome
iPhone	Audible	Skype	Google maps
iMac	GoodReads	Nokia	Google +
iPod	Diapers.com	Lionhead Studios	Google Scholar
iPad	Soap.com	Visio Corporation	Google Translate
Apple Watch	zappos.com	Windows Phone	AdSense
<i>Acquired</i>			AdWords
Beats Electronics		<i>Newly Acquired</i>	Ad Planner
Emagic		MOJANG	Android
Siri			Picasa
PrimeSense (3D motion tracking)		<i>High stake in</i>	Youtube
Topsy (social analytics)		At&T Inc	Blogger
		Comcast	Chromecast
		Telewest Communications	
		Barnes & Noble	Nexus
			Google driverless car
			Google Glass
			Chromebook
			<i>Newly Acquired</i>
			Nest Labs (sensors)
			DeepMind Technologies (AI)
			Boston Dynamics (Robotics developer)

Figure 7: The big 5 (Hornwall, 2015)

who is the net?

THE GOVERNMENTS

From an international perspective both *NSA* - National Security Agency and *GCHQ* - Government Communications Headquarters are names to keep in mind. In Sweden we have our own, *FRA* - Försvarets radioanstalt. All these institutions are extensions of the governments in which country they exist. In 2013 Edward Snowden leaked documents that revealed that all these institutions since 9-11 have secretly conducted mass surveillance of the population of the world, other government officials and dissidents, with the help of companies such as Apple and Google (Applebaum, 2013).

That dictatorships such as Uzbekistan have been mass surveilled their citizens or that China have built their own virtual great wall (Dingledine, 2010) should hardly be a surprise. But what democratic and open societies also have been doing against their own citizens should be considered highly problematic.



Figure 8: NSA-headquarters Fort Meade



Figure 9: GCHQ - The Doughnut

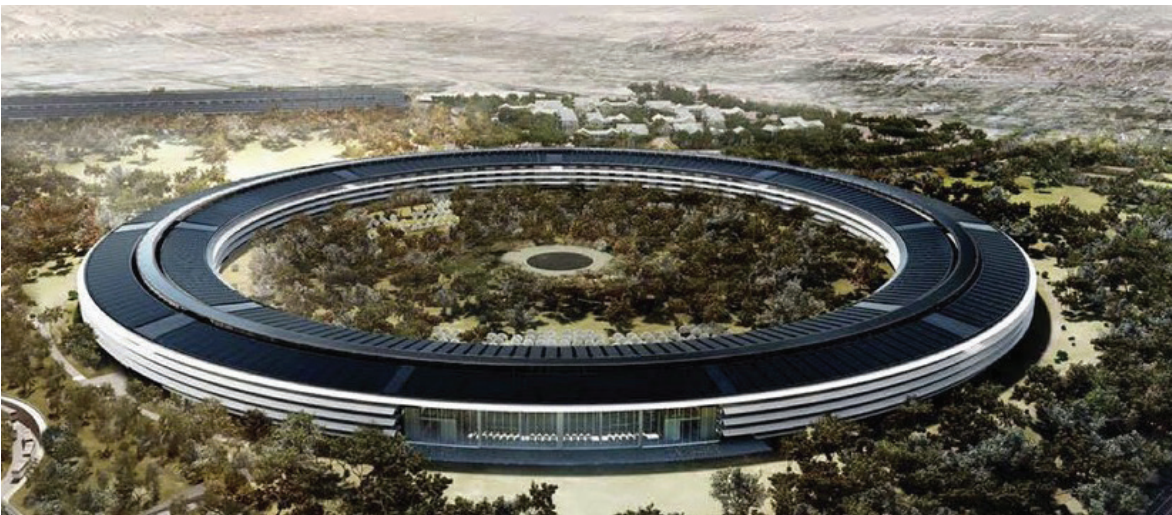


Figure 10: Apple's proposed new headquarters

who is the net?

THE USERS

“Data is the pollution problem of the information age, and protecting privacy is the environmental challenge.”

(Schneier, 2015, p 129)

Not only does this comparison to environmental pollution by Schneier adequately describe just how complex the issue of data collection is, but it is also applicable when guessing the psychology behind it.

OUT OF SIGHT OUT OF MIND

Abstract concepts such as famine or giant plastic islands in the middle of the ocean are difficult to grasp when not confronted directly. The issue of data collection is in comparison even more abstract since the consequences are not as visible or as “newsworthy”.

BUSINESS AS USUAL

Humans are short-sighted. Our brains have been evolved in an environment where threats come sudden - with a fight or flight behaviour as the response. There has been no need for humans to take note of problems that develop slowly (Du Nann Winter & Koger, 2004). And of course it is depressing to read bad news that get worse. It is easier to turn our attention to other daily activities, such as family, friends or work. Daily activities that to an extent is conducted online in some ways, thus reinforcing the behaviour. Daily behaviour that is difficult to place in an environmental context. When logging into Facebook or sending an email from Gmail, how many people are actually thinking of the data that is being collected?

DOPAMINE

Studies also show that social media platforms such as Facebook stimulates the release of chemicals in our bodies that make us feel good (Ritvo, 2012). Many of these platforms attract users by using the novelty of the content and anticipation of knowing what is going on in our social circles. Social behaviour that our brain reward.

Claus-Christian Eckhardt



Lund University »
 Location: Germany
 Studied industrial design at the Braunschweig University of Art (HBK) Worked as interior designer ...

Claus-Christian is friendly, inventive, and loves long, thoughtful conversation, but has a natural tendency to multi-task.

- Tweet this sentence
- Save screenshot
- View relationship

Accuracy confidence: 52%



We found limited data for Claus-Christian, but enough to analyze.
 Where does this come from?

Overview

When speaking to Claus-Christian...



- Interrupt them if the conversation is going too long
- Use colorful descriptions
- Don't trust that they will follow specific verbal instructions
- Don't bore them with something they has heard before

When emailing Claus-Christian...



- Appeal to their feelings to drive them to action
- Send lots of extra information (like links and attachments)
- Don't use a formal greeting and closing
- Don't get to the bottom line before introducing yourself

When working with Claus-Christian...



- Spend time exploring new ideas
- Surprise them to get their attention
- Don't get frustrated if they is a few minutes late

Do you Christ

You can accurat



Claus-cowor



Answer questio

Claus-Christian's coworkers:

- Dan-E Nilsson
- Katarina Skjold
- Fanny Andre Bjørndalen
- Helene Vogt

View all »

View full profile »

Example tem



Andreas Hopf

Würzburg, Germany Wrong person?

Communicating with Andreas is all about **creating a relationship**, so make sure you sound **trustworthy, sincere, and friendly**.

Best greeting: **Hi Andreas**, [View more »](#)

What to say:

- "I would love your support"
- "How's it going?"
- "How can I help"
- "I understand how you feel..."
- "the consensus is..."
- "I appreciate you for..."
- "Reminds me of the time when..."
- "Let's chat"
- "How do you feel about..."
- Personal questions

What to avoid:

- "Use your best judgement"
- "That's incorrect."
- Challenging questions
- "The #1 ____"
- "revolutionary"

Figure 11: Screenshots from Crystal Knows(Crystal Knows, 2015)

why should we care?

Privacy in the digital age is no longer a ‘social norm’
Mark Zuckerberg (Johnson, The Guardian, 2010)

When discussing these issues people usually say “I have nothing to hide“ and use that as an argument that validates governments and companies collecting their data. But I would argue that whether someone has something to hide or not is not really relevant. The issue goes deeper than that. When exploring the consequences of data collection alarming issues arises. In the following pages a few of these issues will be illuminated.

However, it is clear that Zuckerberg himself, despite his statement that privacy is not a social norm, values his own privacy greatly which he proved when buying the four adjacent properties to his own home (Greenwald, 2014).

PSYCHOLOGY OF POWER

When you give a person, a company or a government the possibility to listen and keep tabs on you without consequences, it is just a matter of time before they do. Why even let that be a possibility?

TRUST

How much do we trust that these players have our best interest at heart? What happens when political players that *I* didn't vote for get power? Or companies that holds the keys to our communications gets hacked and their data is leaked? Why should we place our trust in companies?

“Privacy is about control. When your health records are sold to a pharmaceutical company without your permission; when a social-networking site changes your privacy settings to make what used to be visible only to your friends visible to everyone; when the NSA eavesdrops on everyone’s e-mail conversations — your loss of control over that information is the issue. We may not mind sharing our personal lives and thoughts, but we want to control how, where and with whom. A privacy failure is a control failure.” *Bruce Schneier*

(Schneier, 2010, blog)

conformity

GOVERNMENT PROGRAMS

Privacy is relational. It depends on your audience. You don't want your employer to know you're job hunting. You don't spill all about your love life to your mom, or your kids. You don't tell trade secrets to your rivals... Everyone has something to hide. (Greenwald, 2014, p 119).

The Panopticon (Wikipedia, 2016) is an example of an institutional building designed by the English philosopher Jeremy Bentham in the 18th century. The concept is to only let one guard watch over all the inmates, but the inmates never know when they are observed by the guard. In this way the behaviour of the inmates are controlled.

People change their behaviour if they think they are being observed. Example: When I'm out running I will run better if I pass people, since I don't want to be a wimp. I sharpen my pace.

People often change their behaviour when they are alone versus when other people are present.

A population that think they are watched are a population that is easily conformed, therefore a good population in the opinion of the government.

What kind of society do we want to live in? Isn't the possibility to secretly or openly criticise the state, without fear of being placed in a register or worse case a prison, a fundamental principal of democracy?

MATHS

The beginning of mass surveillance programs were created mainly with the excuse of preventing terrorist attacks in the west. So far no terrorist arrests has been made due to mass surveillance. Not only that but by using logician Thomas Bayes "Bayes' Theorem" (Boone, 2016) you come to the conclusion that it is a probabilistic impossibility to find terrorists this way. Even with improbable low misidentification rates and very high accuracy rates of a fictional super surveillance program, the number of suspects will be to high to manage and still many people will be mislabelled.

Terrorist arrests are made with information by informants, public observations and police work. Not with the help of mass surveillance.

Why does the governments still think it is a good idea to invest taxpayer money in these programs? To turn the freedom the Internet initially offered into a tool of control and oppression?

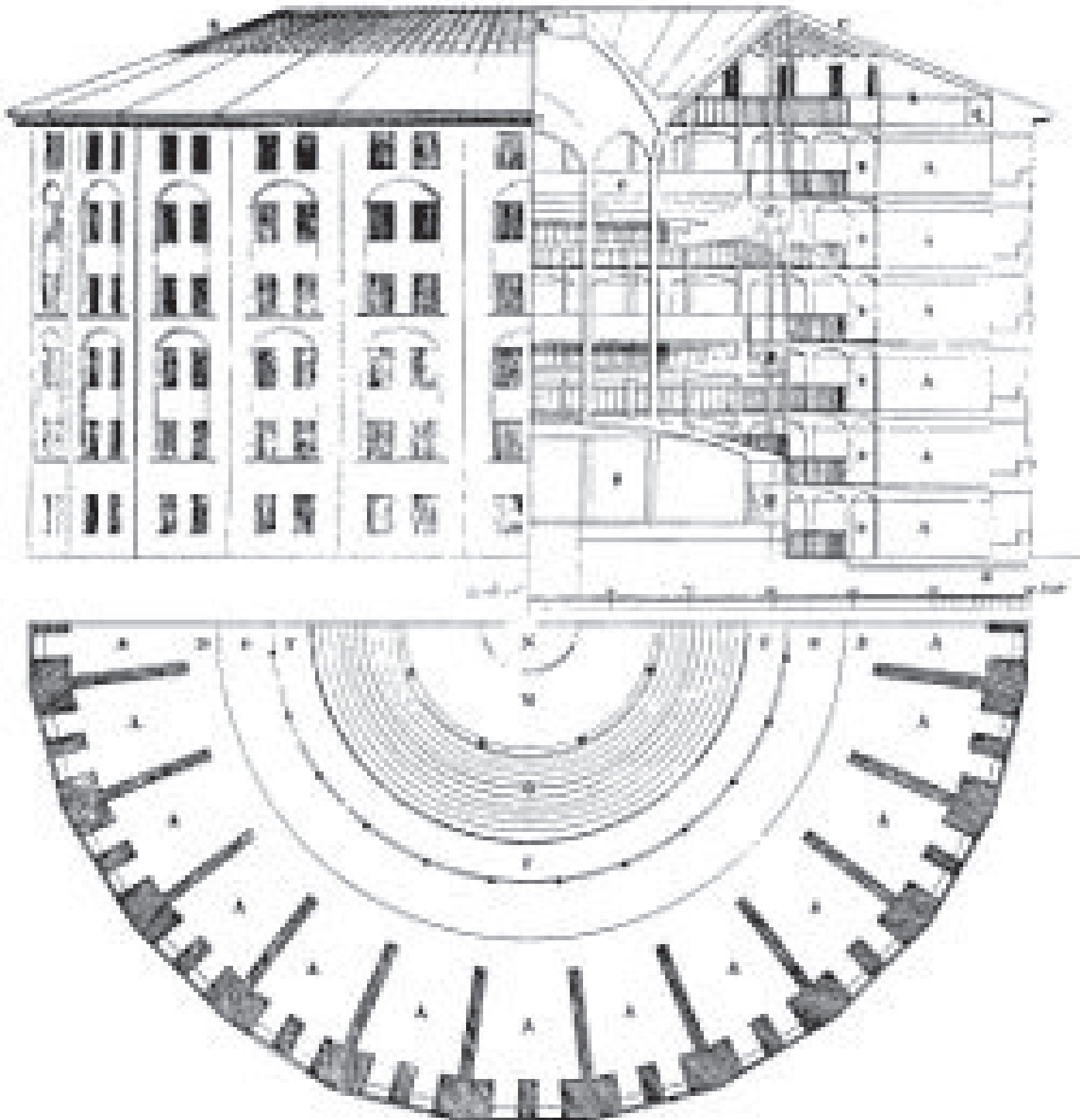


Figure 12: Panopticon (Bentham, 1791)

$$\frac{a \cdot b}{(a \cdot b) + (c \cdot d)} = \text{probability of catching terrorists}$$

Use 'Bayes Theorem' to calculate the probability that a mass surveillance system can find terrorists in Sweden.

a = Accuracy of the system. Rate between 0 - 1.

0 means 0 % accuracy and 1 means 100% accuracy.

Assume that some terrorists are actually trying to hide so the system can't catch them all.

b = Rate of terrorists in Sweden. Example 1 per every million = 0,001% 0,000001

c = Rate of none-terrorists. The rest of the population.

Example 1 - 0,00001 (terrorist rate)

d = Misidentification number.

No system is flawless and some people will be thought to be terrorists by the system.

An improbably good system --> Low misidentification

Under 1 %. Example 0,01 % = 0,0001. That is 950 suspects of terrorism.

Put your own numbers into the equation.

a society divided

THE CUSTOMIZATION OF THE NET

Your browser is biased. When googling, using social media or net-shopping clothes the output is based on your previous input (Honan, 2014). In the 1990s the net-experience was not a individualization of your preferences (Larsson, 2014). Search result were based solely on how your search-words matched the content in descending order. In other words, the reality you perceive today is a prejudice of your future choices based on your history.

Example 1: I ‘like’ nationalistic parties on Facebook, Facebook will customize my future feed based on this ‘like’ with similar things that Facebook think I will probably ‘like’. My feed is a compilation of ads, people and groups. My customized feed of people, ads and groups will be based on what I like and things that I don’t “like” will be excluded. Facebook’s guess is that I will probably like my feed even more than I did, because of relevancy.

The consequence is that individualised search result is also a limited search result. The result is a homogeneous social media flow that is repeatedly confirming your own view of the world, thus disabling the representation of diversity in opinions and likes, thus reaffirming that people think in similar ways as themselves.

Example 2: Depending on my browser history, location and interests I will get different results. One person googling *Malmö* will get results about cars burning in Rosengård and another person will get pictures of Turning Torso.

The tools of the internet, that are meant to connect us, has become the tools that in the end disconnect us and are widening social gaps.

Furthermore, millions of Facebook users are not even aware of that they are using the internet. In surveys people are stating that they are using Facebook but not the internet. These people are seldom clicking on links that direct them out from the controlled environment of the social media platform (Malm, 2015). Facebook offers a nice and controlled environment.

Even if we are connected to the whole world, we stay in our own worlds.

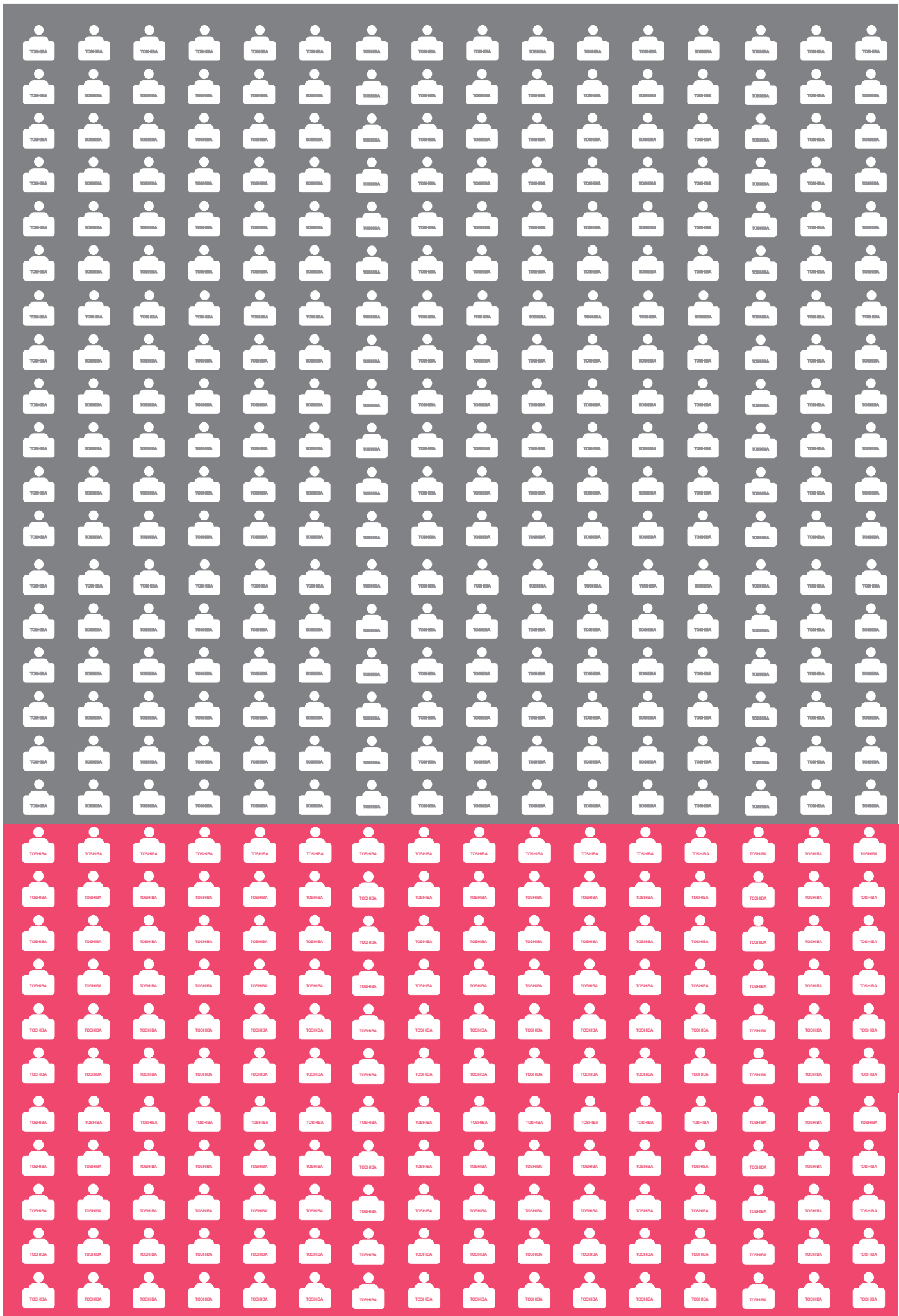




Figure 13: Facebook (Kuczynski 2013)

the paranoia

GETTING A BIT WORKED UP

When experiencing the world, and surfing the net, the human brain is programmed to constantly search for patterns and to put them in a context. Usually, because of the massive amounts of data the brain has to process, this means that the brain is constantly jumping to conclusions as a method to make the world understandable. Everyone have this cognitive bias, and some people have it more than others (Wiklund, 2014).

The question is, in this cases of multinational companies, governments and Internet, is there any legitimacy to getting a bit paranoid?

Operation names such as *PRISM - collect it all* and *X-KEYSCORE* (NSA, 2012), could have been borrowed from a dystopian sci-fi about the end of the world and that is not helping to ease this paranoia. With these names the consignor is literally begging for a dark interpretation of the intent behind.

DISCONNECT?

If you are concerned about the players of the net getting hold over your data and the paranoia is creeping up on you, would it help to disconnect and take a lifetime hiatus to a secluded spot on Greenland? Probably not. Facebook have the technology to map and collect data from people without them even ever joining the site. Research shows that a computer program can draw accurate conclusions about a person just by mapping data about the person's contacts instead and therefore getting the data it needs to plot unregistered users (Horvat *et al.*, 2012).

Facebook have also been proved to track non-Facebook users' browser activity for two years after visiting a Facebook page (Acar & Van Alsenoy *et al.*, 2015).

News articles also describe how Google's browser Chrome have been secretly put audio recording software on computers that run the browser, meaning that Google can listen in on activities going on in the room where the computer with the software is located (Falkvinge, 2015).

TILL DEATH DO US APART

Not even death can help you escape. Your online presence is not easily deleted. It is extremely difficult for relatives to close down a deceased person's accounts on social media platforms (Nudelman, 2015). Considering that an alive person's data is exclusively not their own, it is not without merit to draw the conclusion that a dead one's is not more so.



Figure 15: Iphone in aluminum foil (Hornwall, 2105)



Figure 16: Tin can telephone (Hornwall, 2015)

1. Don't panic
2. Ask the 'Investigatory Powers Tribunal' if GCHQ has spied on you
3. Ask SIUN if FRA has spied on you.
4. Get a document with signature saying that they didn't spy on you.
5. Relax.

Begäran om kontroll

Siun ska, enligt 10 a § lag (2008:717) om signalspaning i försvarsunderrättelseverksamhet, på begäran från enskild kontrollera om hans eller hennes meddelande varit utsatta för signalspaning. Även företag eller organisationer kan begära kontroll.

Efter kontroll kommer den som begärt undersökningen att få besked om det förekommit någon otillbörlig signalspaning eller inte.

Om Siun finner belägg för otillbörlig signalspaning ska utöver information till den enskilda detta även anmälas till de myndigheter som ansvarar för den fråga som är aktuell, exempelvis Datainspektionen, Justitiekanslern eller Riksåklagaren.

En begäran om kontroll ska ske skriftligt och vara undertecknad av den vars meddelande kontrollen avser. Kontrollen ska ske med utgångspunkt från de uppgifter som den enskilde förser Siun och som gör det möjligt att identifiera den enskildes kommunikation, t.ex. telefonnummer och e-postadresser. Begäran skickas till:

Statens inspektion för försvarsunderrättelseverksamheten
Box 1140
164 22 Kista

Statens inspektion för försvarsunderrättelseverksamheten, Box 1140, 164 22 KISTA
Telefon: 08-555 045 50, Fax: 08-555 045 60, E-post: registrator@siun.se, Org.nr: 202100-6214

Figure 17: Screenshot of Statens inspektion för försvarsunderrättelseverksamheten (SIUN, 2015)

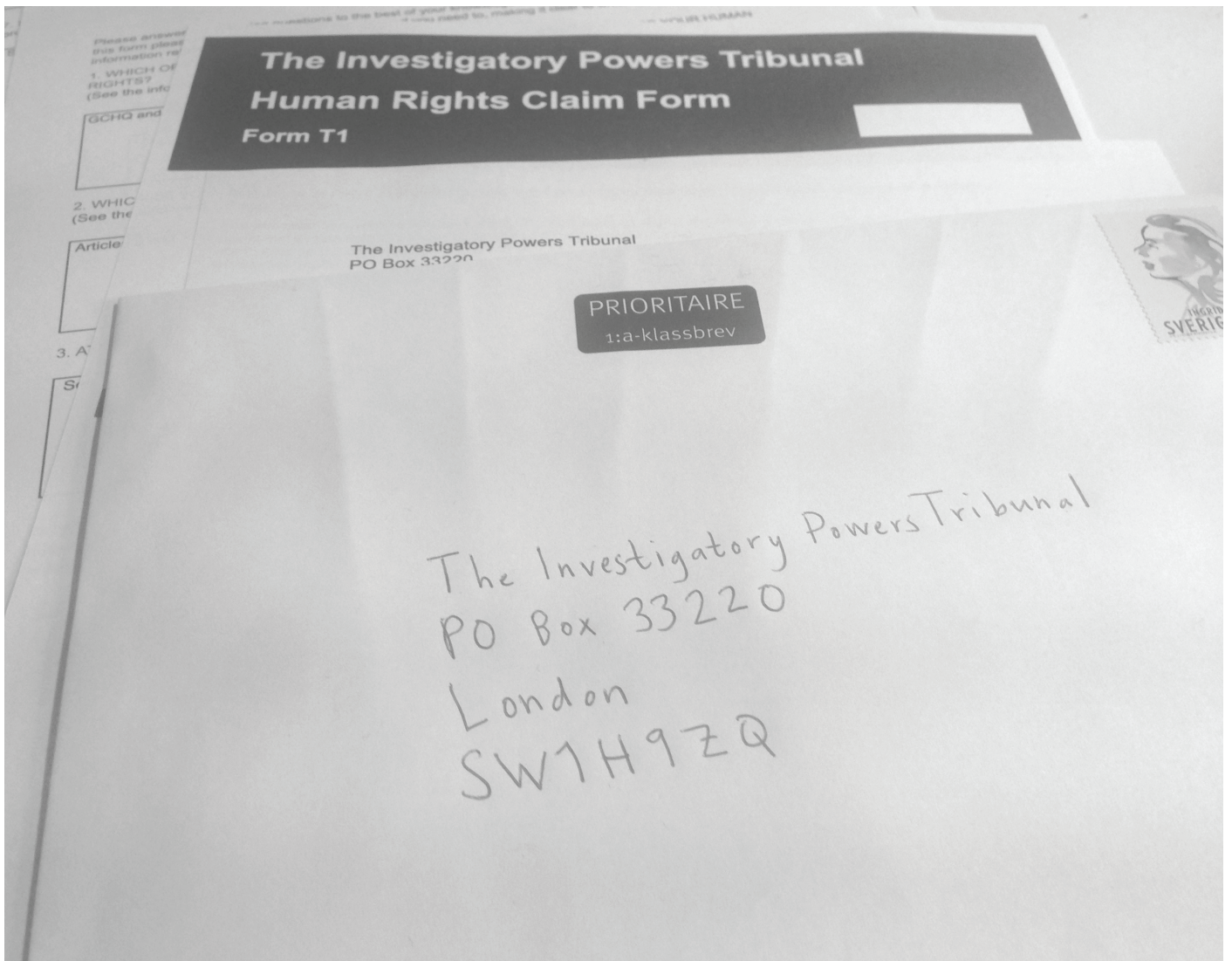


Figure 18: Photo of documents sent to The investigatory Powers Tribunal (Hornwall, 2015)

existing projects

1. Conversnitch' is lamp with integrated microphone, listening in on private conversations and publishing them on the net (Greenberg, 2014).

2. Ellen Sundh wanted to get tangible reward in connection with the thumbs up on Facebook. So she hacked a candy vending machine (Englund, 2014).

3. Anti google glasses. Glasses that emits UV light when a camera takes a photo, thus obscuring the face behind the glasses (Bates, 2013).

4 . A 3d printed dress that reveals your body as you reveal data (Franco, 2014).



3



4



*RESEARCH
CONCLUSIONS*

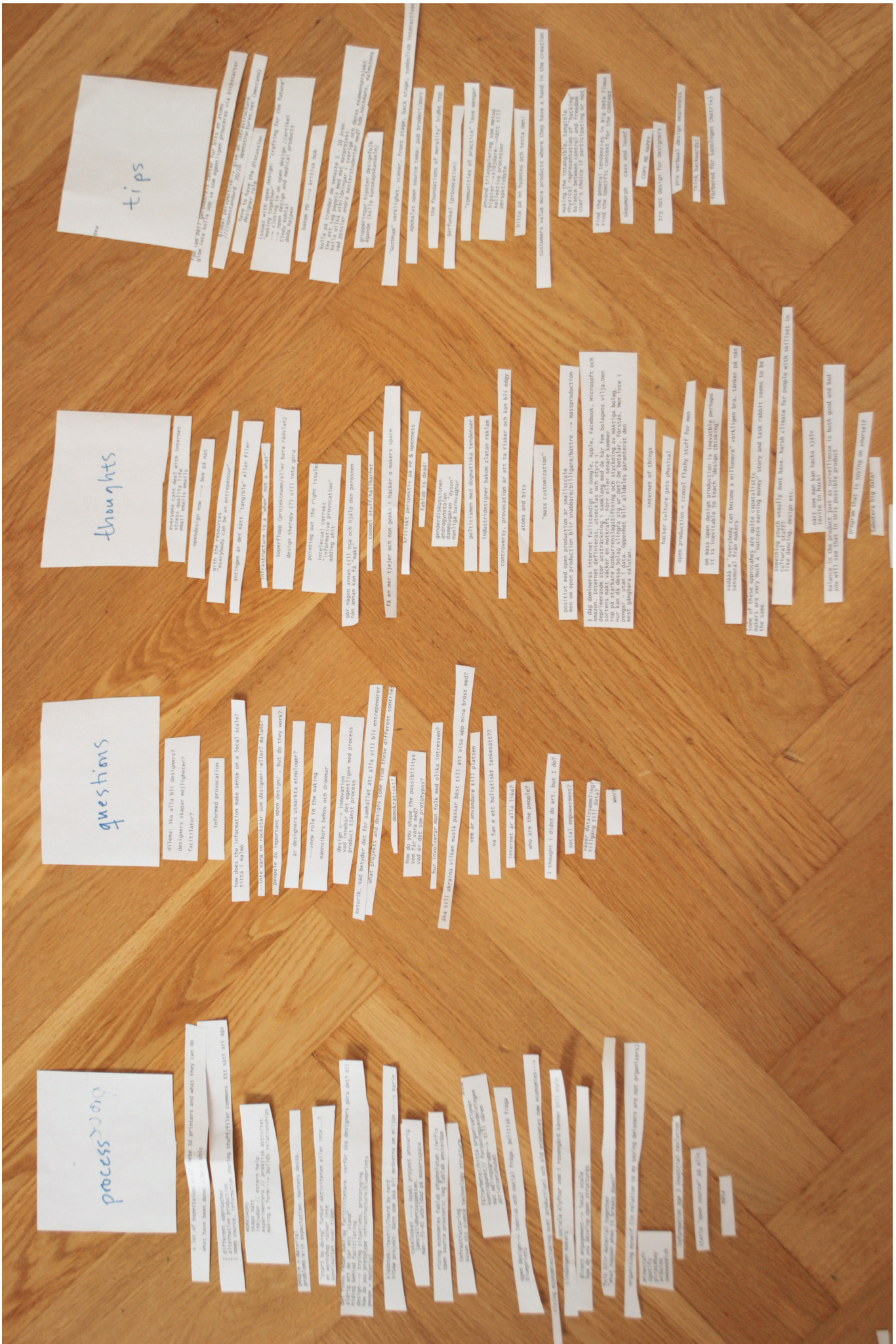


Figure 19: Photo of research collage (Homwall, 2015)



Figure 20: Photo of open source experiment (Hornwall, 2015)



Figure 21: Photo of a sticker "CCTV" under a webcam (Hornwall, 2015)

thoughts

SPY-PROJECT

Product that is spying on yourself

Balance in the product just as surveillance is both good and bad.

INVITE TO HACK

I invite you to hack me! A product which is inviting for getting hacked.

FOOLING GOOGLE

Tell google lies and sabotage data. Mask these activities.

ANTI INTERNET STRESS

Internet is very stressful. Calm down!

OPEN SOURCE MILK

Physical open source products

CCTV-awareness

There are cameras everywhere in your home. Who is watching?

research conclusions

TECHNOLOGY

If we draw the conclusion that you do not want to participate in data collection there are solutions, but many of the software programs for the best anonymity are not always user friendly if you are not acquainted and interested in computers and security. Surfing the net and not really engaging in Youtube and Facebook or Google is quite difficult. Technology in it self is also something that constantly develops, and data collection algorithms gets more and more sophisticated. Therefore, to say that these problems can be solved by technology, is not accurate. I would argue that it is the behaviour and psychology behind the technology that is the root but also the solution to these issues.

PITFALLS

Some of the creative approaches of products that comment on data collection are not very inclusive. Both my own ideas and some ideas that I came upon during my research. They are not actually involving people but rather just proclaiming something in a general direction to them. I think that political awareness-projects that have the aim of being provocative, have a challenge of involving anyone except for the group of people that have the social codes to understand what it is about. One example is graffiti-art. A provocative genre of art who's culture is embraced by creative young people to high-end art galleries.

But what about the rest? In the name of provocation I think audiences easily get automatically excluded. I find this problematic. Who do I want to create awareness to and by what means?

CONCLUSIONS

These issues are important and how we react to the development of all things data collection, will shape the society we live in. Privacy is not only important for users, but should be equally important for police, journalists and government officials.

There is a lot of pressure on the user to be the one responsible for security and anonymity on the net. Methods such as fooling Google by putting in fake searches is time consuming and in the end probably not feasible when the algorithms that analyse this data gets more advanced. But that begs the question, on whom should the responsibility lie? The users? The companies? The government?

Historically in Sweden, the population have a lot of trust in the government and that the government will take care of you and protect your rights. The problem with data collection however, is an international problem and most companies are not ruled by Swedish laws and can do what they want with data that passes through their server, even if it is a swede's data.

The behaviour of data collection is driven by personal and political forces and it is also with personal and political forces that those behaviours can be changed.

My conclusion of the research is that it is important to help raise the these questions and help people to get interested and reflective about these issues. In the end these are questions that we want our politicians to take a stand in. In the end this is a question about law and democracy. We need to demand more transparency in companies and governments.

PROCESS

a game

From the conclusions of the research I revised the initial brief

REVISED BRIEF

Creating awareness of digital information flows

~~Open source~~

Concept usable in a context

Making the intangible, tangible

Physical representation of “hacking”

Balance between control and freedom

User’s choice if participating or not

Interactive

Inclusive

In the beginning of the project I had the goal of making the intangible, tangible. To have a physical representation as a comment on the research I had made in the project.

I found that to prototype a game would be the comment that corresponded the best to the brief and research conclusions.

WHY

Create awareness of our digital life and our digital footprints

WHAT

An analog game about digital life

HOW

By education in the context of entertainment. Playing the game raises discussion among the players

FOR WHOM

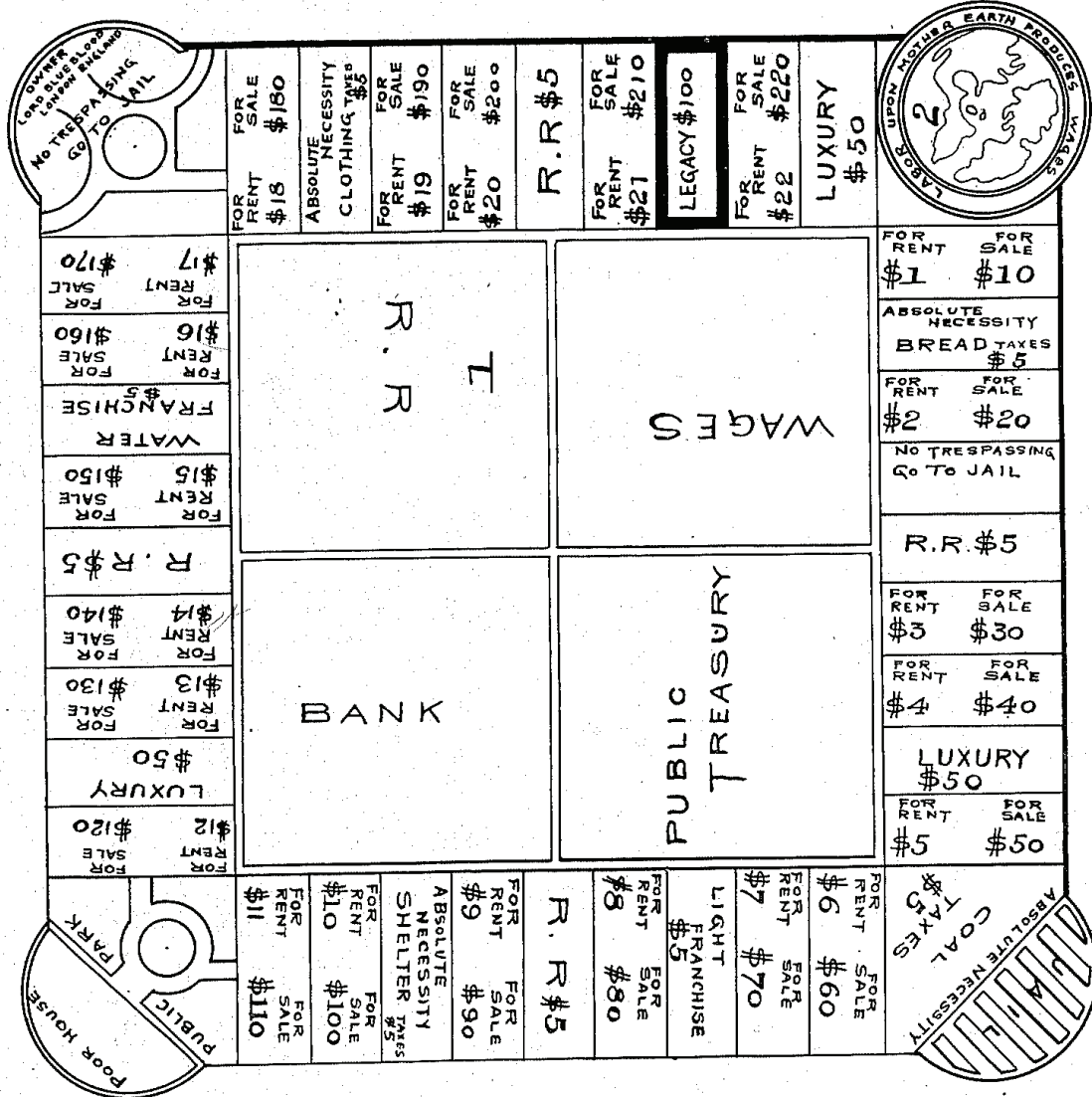
Anyone able to roll a dice and read

L. J. MAGIE.
GAME BOARD.

APPLICATION FILED MAR. 23, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

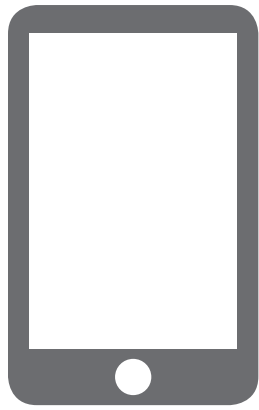


Witnesses
F. L. Ourand
M. H. Ourand

Fig. 1.

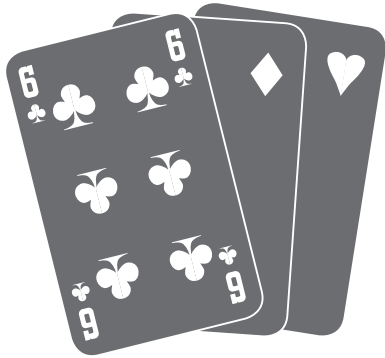
Inventor
Lizzie J. Magie
by John A. Paul
Attorney





Digital game

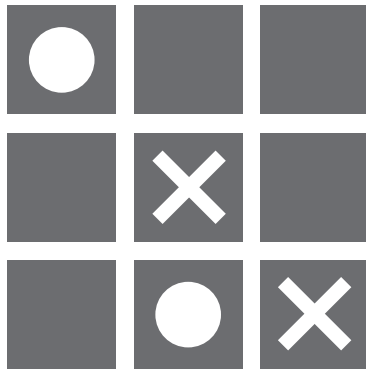
cons: contribute to data collection. Big no no.



Card game

pros: Simplistic, graphic potential

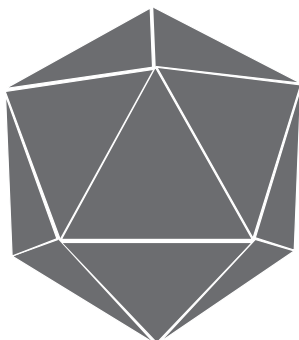
cons: complicated and hard to understand for first time users.



Noughts & Crosses

pros: Simplistic easy to play-

cons: too simple, possibility of the issues not being discussed.



D & D

pros: Entertaining, storytelling

cons: too complicated, geeky



Monopoly

pros: Simple and easy to understand. issues

sketching

MATERIAL

I choose to work with wood since that creates a contrast to the topic of data collection discussed in the research. Wood is down to earth and solid, whereas data collection is hi-tech and goes on in the virtual world.

METHOD

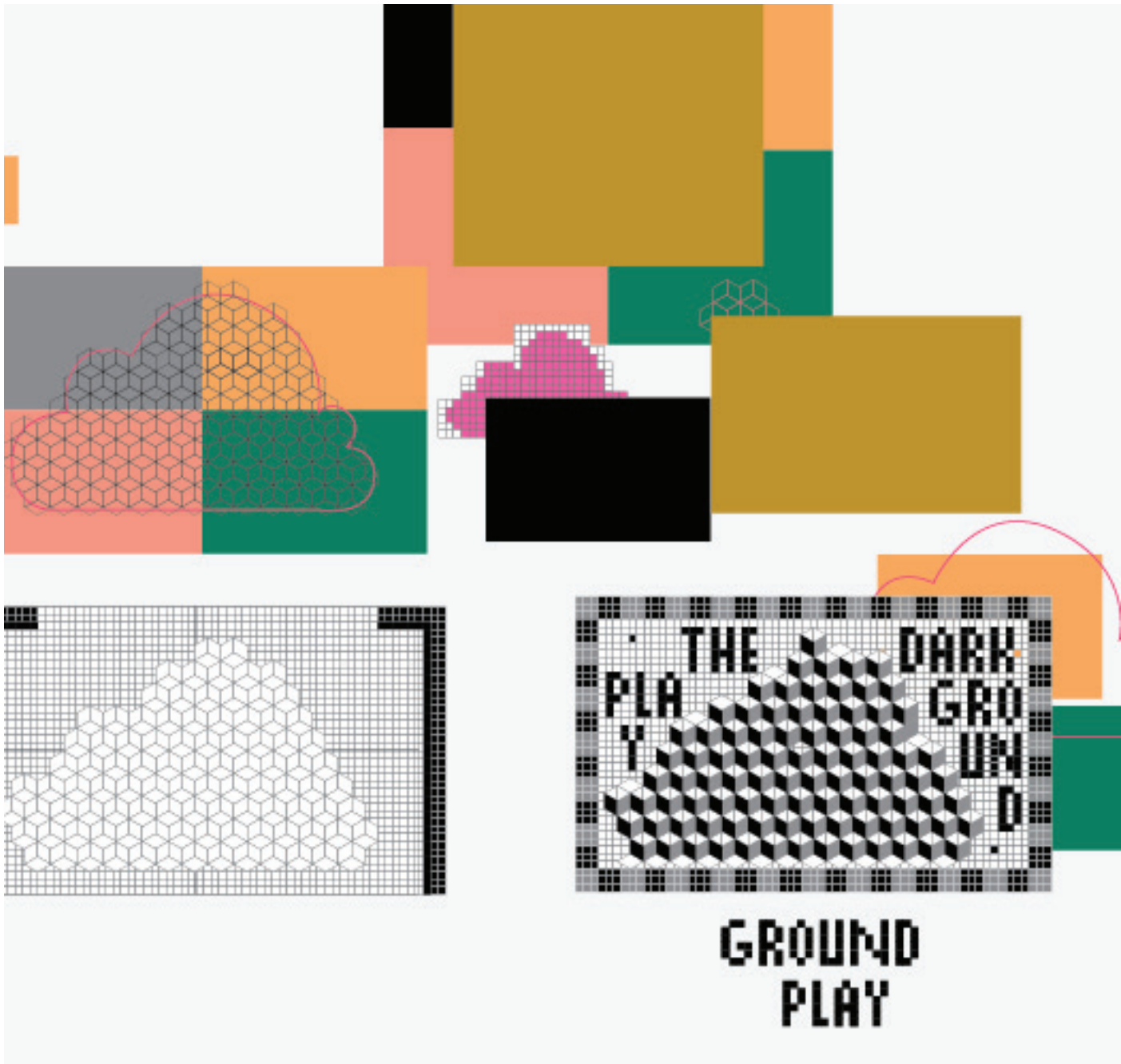
I choose to incorporate intarsia into the board game, since the intarsia method creates a detailed wood decoration. It also creates a contrast to the technological issues of the research.

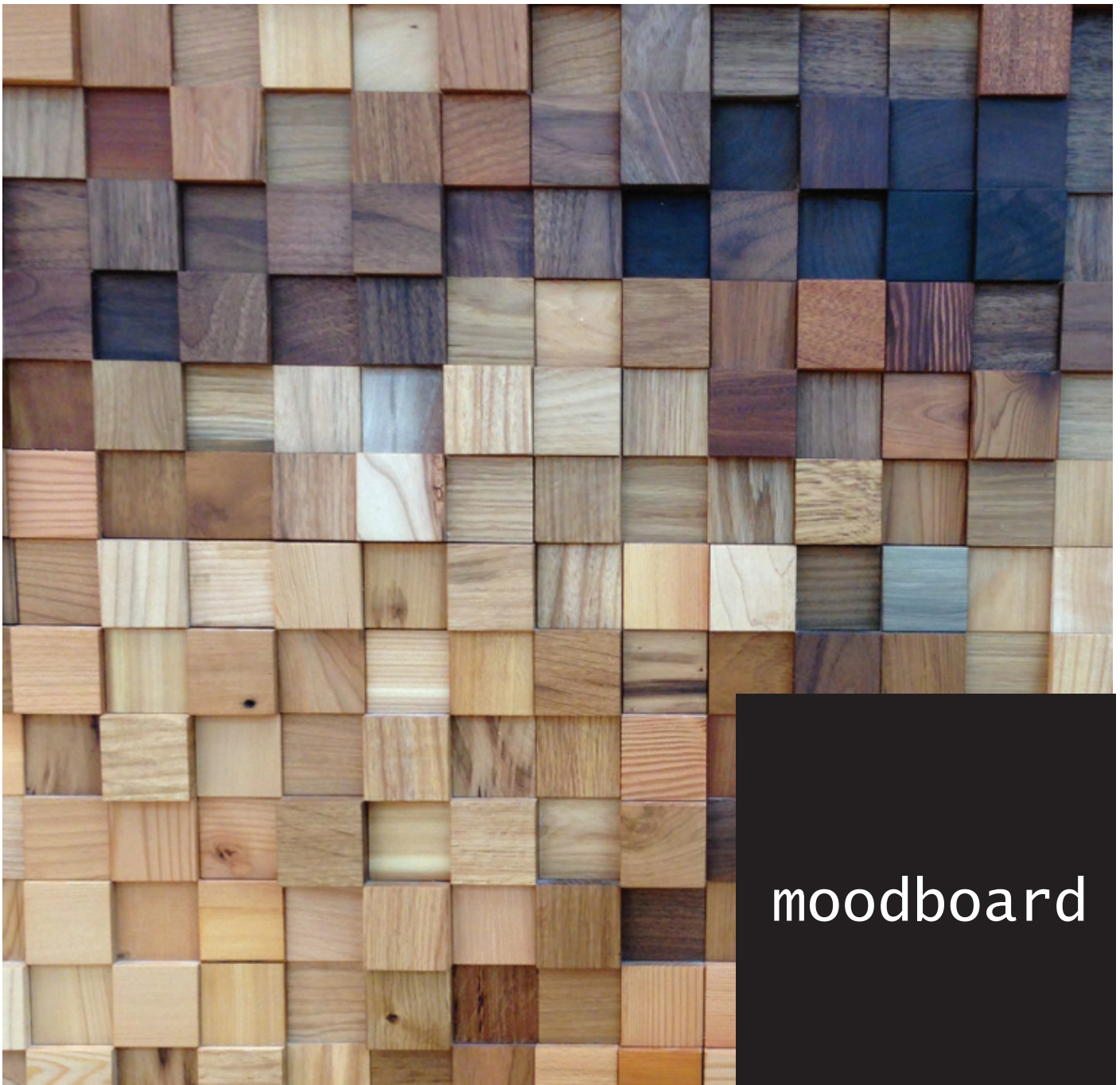
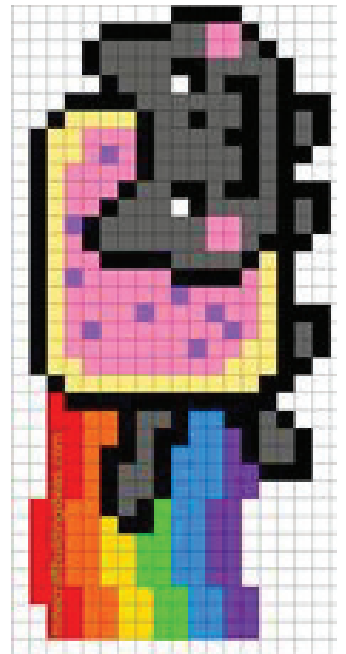
GRAPHICS

I asked myself how to visualize data and a very literal translation would be just a cube. Playing on the common explanation of a bit - a square with a one or a zero in it. The graphics and game pieces are variations of this theme. Squares in different sizes and perspective.

GAME DESIGN

I wanted to keep the game design as simple as possible. To visually enhance the square design, but also to put focus on the questions and the characters for driving the issues and create discussion amongst the players. The questions and discussion cards in the game are derived from the research in this project. The characters are arche types of the net, twisted a bit to fit into the game and create an entertainment factor.





moodboard

game prototype

the dark playground is a game about surfing the net.

Beginning of the game

Choose a character. doge, the troll, anonymous, her majesty the queen or edward snowden

Choose a color from the tokens.

Divide the data-cubes evenly between the characters.

Start the game

Every character rolls the dice. The highest number starts.

Start wherever you want on the board.

Roll the dice. Go clockwise.

During the game

On a *dark* patch. Take a activity card and follow the instructions

On a *light* patch take a situation card. The rest of the players choose one of two options that they agree with the most.

If the character chooses the first option the character turns their token with metallic-side up.

Different characters loses different amount of data depending on the options they chose.

Give the lost data to the board.

Next character rolls the dice.

End of the game

When everyone is out of data the game is over.

tokens

Data

characters



Example

Character: Doge
Computer: Toshiba
Software : Chrome
Likes: Facebook, Google, Instagram, Kik
Activities: Selfies, Youtube-cats
“Wow, much internet, so amaze!”

questions

Example

After an intense social media exposition you are feeling a bit tired of Facebook, nobody is posting anything fun and you read in the news that Facebook collect your private information.

Options

1. Delete your facebook account due to privacy reasons.
2. You keep your facebook and post a funny story.

Key

1. (-1) 2. (-1) Doge (-0)

Even if you delete Facebook, research shows that Facebook still can collect your data. Even if you never had Facebook.



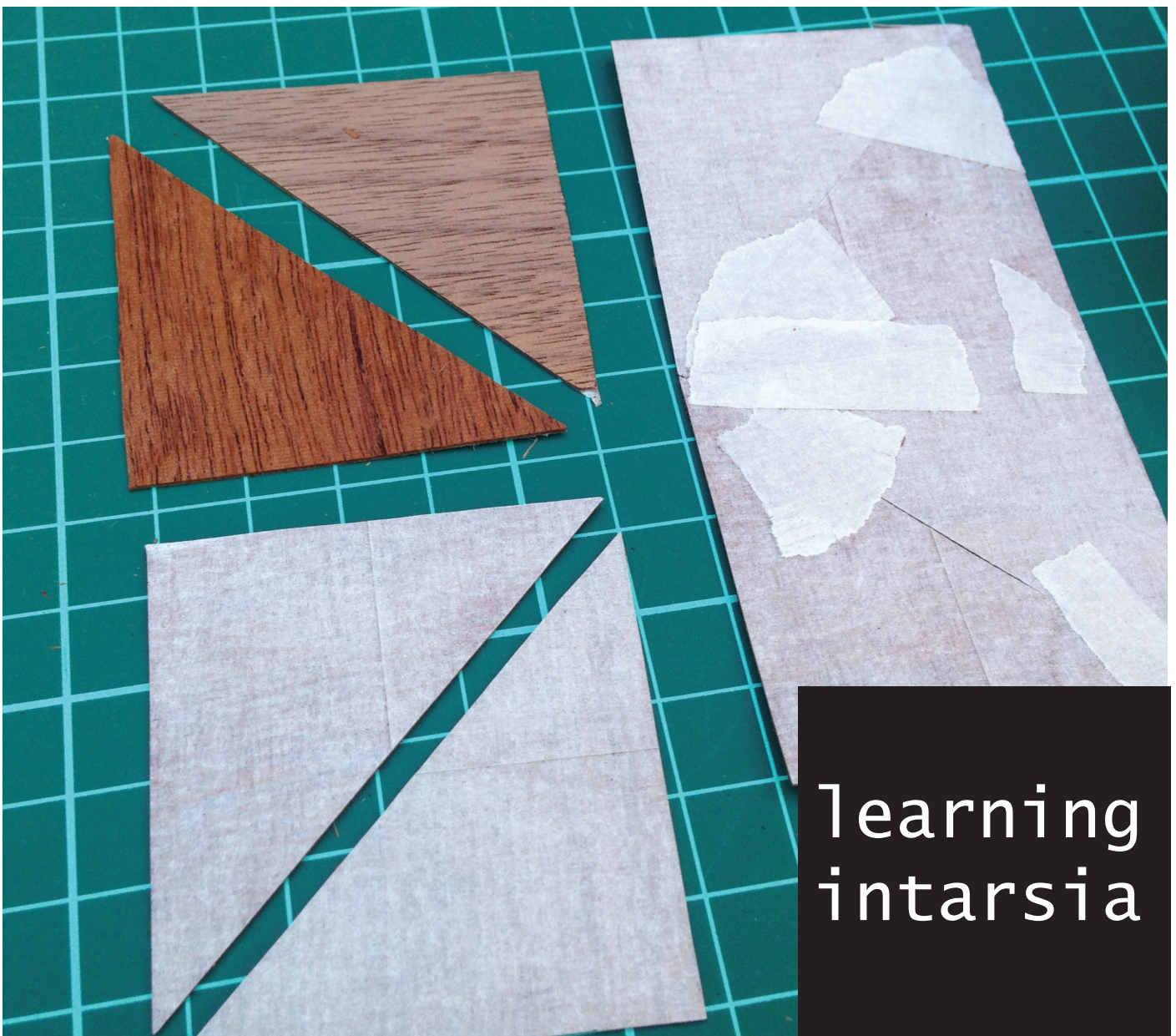
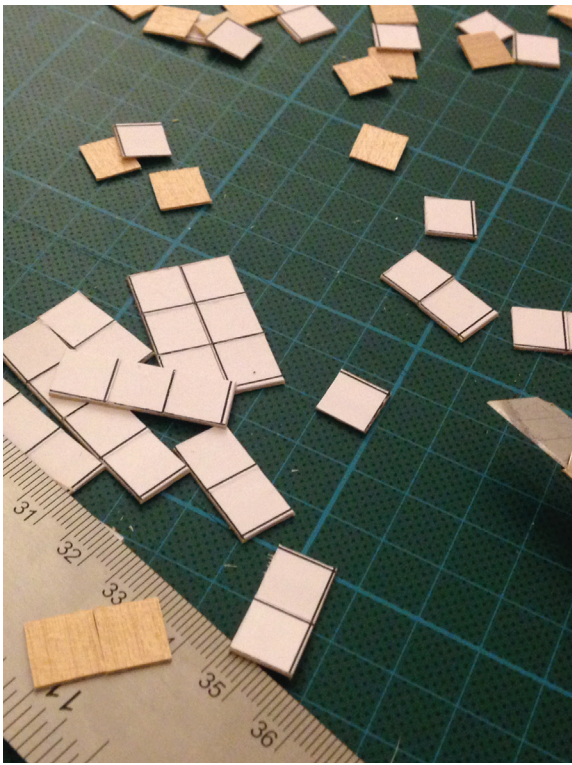
incentive

Playing as a character is rewarding with less loss of data

activities

Example

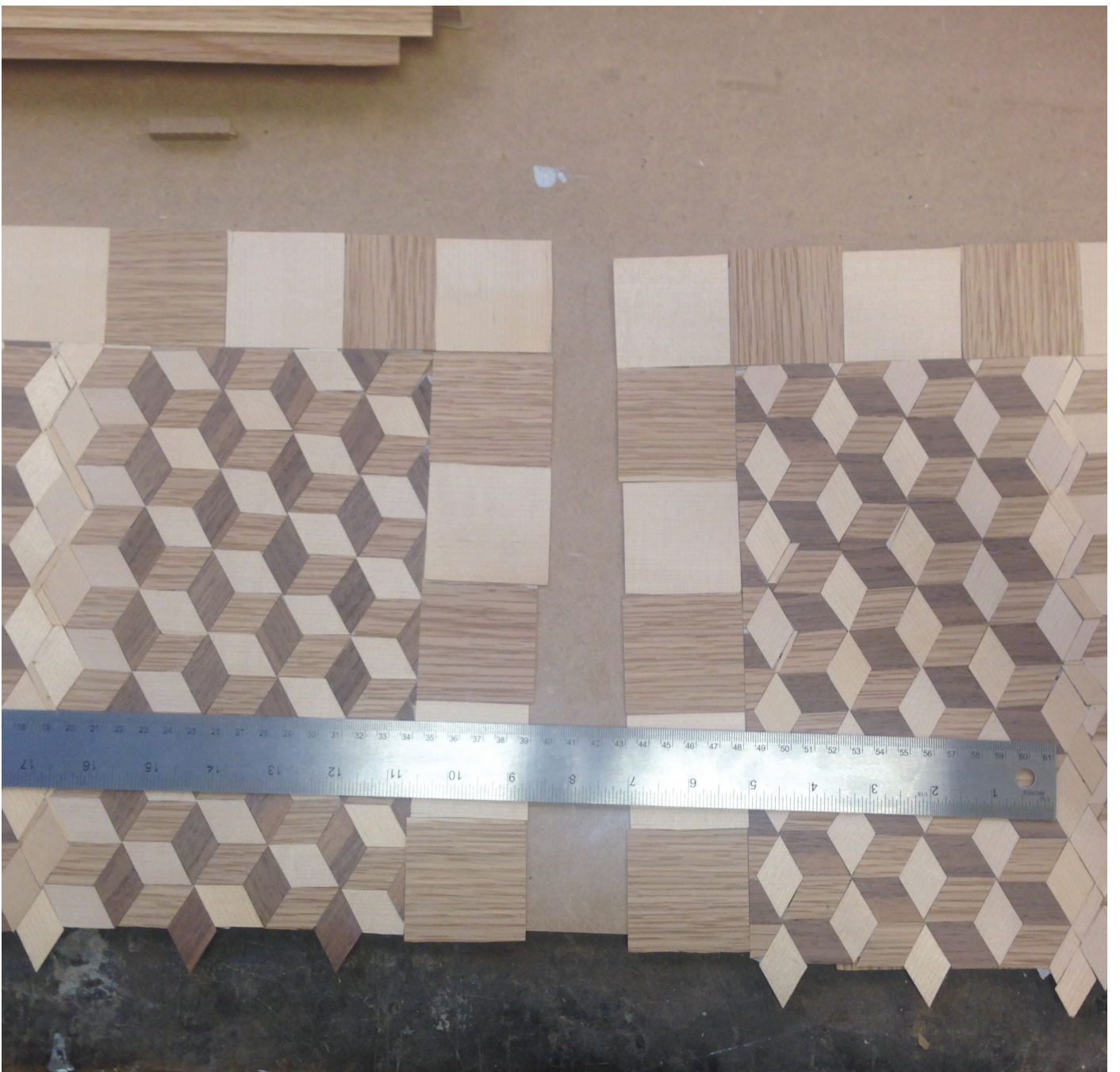
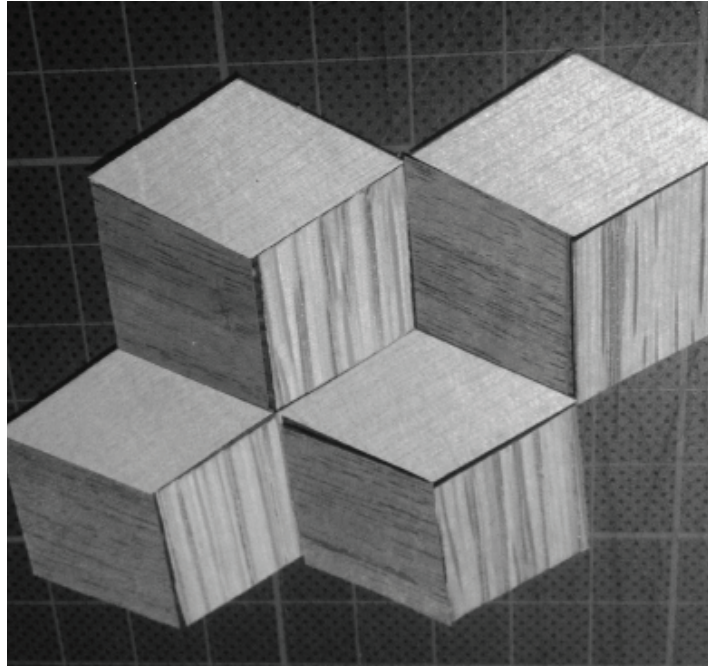
interactive and things to discuss



Learning
intarsia

making a game





RESULT

RULES

1. **Preparation:** Each player is given a game board and a set of tokens.



2. **Gameplay:** Players take turns rolling the dice and moving their pieces on the board. The player with the highest number of pieces on the board wins.

3. **End of game:** The player with the most pieces on the board wins.

4. **Objective:** The goal of the game is to be the first player to get all their pieces on the board.

5. **Rules:** Players must follow the rules of the game and cannot cheat.

6. **Winning:** The player with the most pieces on the board wins.

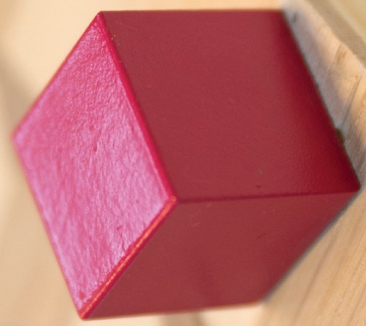
7. **Loss:** The player with the fewest pieces on the board loses.



Get to www.khanacademy.org



the front
Computer 20
Likes: Youtube, Applian
Software, Applian
Activities
"I'm r





After an intense social media explosion you are feeling a bit tired of Facebook, nobody is posting anything fun and you read in the news that Facebook collect your private information.

1. Delete your facebook account due to privacy reasons.
2. You keep your facebook and post a funny story.

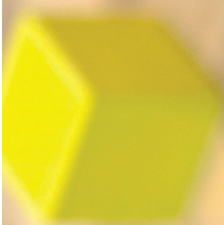
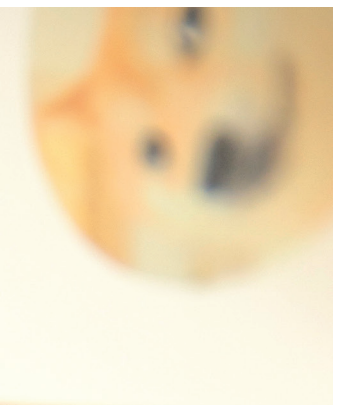
Key:

B / C / D / E / F

These items define the correct answer. There is only one right answer!

Mr. Brown: I'm sorry, I don't have any money for you. I'm sorry, I don't have any money for you. I'm sorry, I don't have any money for you. I'm sorry, I don't have any money for you.

You play as long as they or her majesty the queen (C)





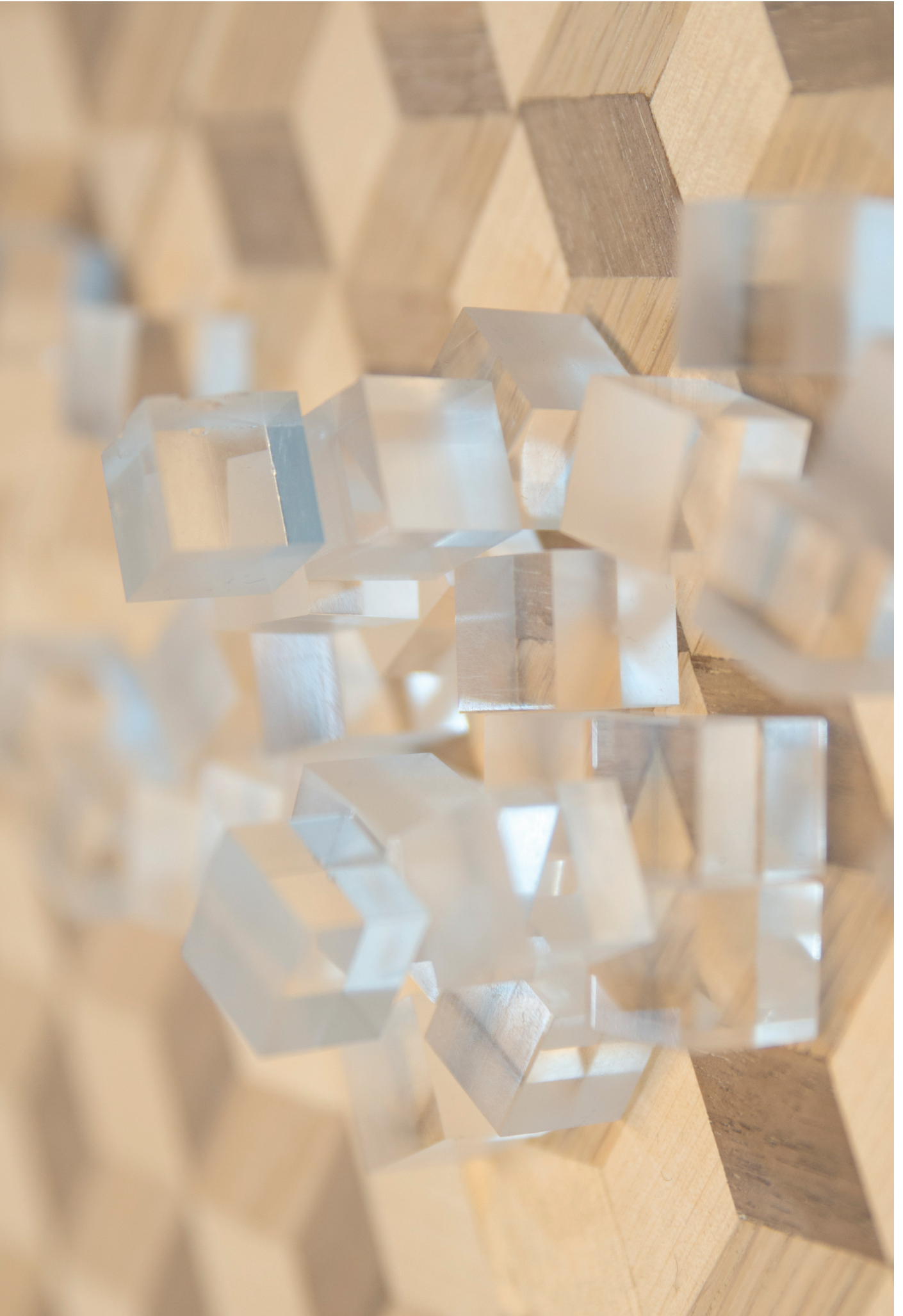
Business card with text, partially obscured and blurry.



Business card with a logo and text, including the name "MARTIN LUTHER KING, JR." and "MEMORIAL FOUNDATION".

11
Social media explosion you are feeling a bit
Why is posting anything fun and your result is
Direct your private information
Just to private someone
A funny story





Watch the movie

▶ <https://vimeo.com/163022386>



DISCUSSION

discussion

THE END

My conclusion of the research was that it is important to help raise these questions and help people to get interested and reflective about these issues. In the end these are questions that we want our politicians to take a stand in. In the end this is a question about law and democracy. We need to demand more transparency in companies and governments.

In the end the game is just a comment on the issues of the modern phenomena.

Yep, this is what it became and I ask myself if this, in the end, will affect anything?

SUCCESS & SELF REFLECTION

The research allowed for a lot of possible outcomes of this project. A huge challenge was to decide on where to take the project. I admit that in the end I choose to visualise the issues in the project as something I thought would be fun and educational.

A challenge in this project was that I had a too broad target group. In the name of inclusiveness and not trying to scare users off, I think that I just did that.

FORCING PEOPLE

A main reason for choosing a game as a way of summarising the project, is that gaming is a successful method of educating people. I wanted to avoid “forcing” people to discuss the issues of data collection. So I choose the path of an educational game instead of doing a more “provocative” end result. Although you could argue that a game is also to “force” people. Anyone having being caught in a trivial-pursuit game-night will probably agree.

A game is a nuanced way of education, but it also puts a lot of responsibility and trust in the players to understand it.

But just as with the process of this project, I had to let go lecturing and create free conversation.

META

To evolve the game into a commercial product, would be a capitalistic approach about something that is a bit “anticapitalistic” in the sense that the game is criticising an already existing system.

Making an analog board game was a way of trying to get away from internet and personal data being collect when interacting with a game. But I also choose to film and publish this on the internet, so the hypocrisy is on my by surveying people in a topic that is about personal privacy.

the future

THE FUTURE

The role of the designer is constantly changing and many industrial designers are in positions to do a lot that benefit society environmentally and socially.

There is no doubt that making use of data collection on a large scale can develop technologies and improve our quality of life.

I propose that, just as designers in design educations get taught to save the world by having the environment in mind, that designers also should have the personal privacy for users in mind when designing new products and services for companies or governments.

To ask ourselves; Do we need to measure everything? What systems we are reinforcing when we do it?

SECOND CHANCES

This project have in it's various stages been "all over the place". That is of course a benefit of being able to decide for your self what a Master's project should include and that creates a joyful approach. But it can also be a challenge and cause some stress trying to tie everything together.

If I were doing this project again I would try demarcate my research phase, involve politicians earlier in the process and I would also narrow the target group down.

WE ARE FUCKED

Unfortunately, just as with environmental pollution, it is the psychology and causes of the behaviours behind that are the challenge, not the symptoms themself. In my mind the changes that need to happen to uphold privacy and protect personal data, are such a funadamental part of human behaviour that to change them we would have to change our very nature.

I tried to involve my local politicians in this project, but in the end they fell through due to scheduling.

APPENDIX

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Images

Figure 1 - page 7

Internet, date unknown, Toshiba doge, digital image
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Hornwall, 2014, Process of project, digital artwork

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Hornwall, 2015, Collage of screenshots from Google, digital artwork

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Hornwall, 2015, The physical net, digital artwork based on TeleGeography data

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Hornwall, 2015 Dataflows, artwork based on information Tor-project

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Hornwall, 2015, The big 5, artwork based on company data from Wikipedia

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NSA-headquarters Fort Meade, photo
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Figure 9 - page 30

GCHQ - The Doughnut, photo
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Hornwall, 2015, Iphone in aluminum foil, photo

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Hornwall, 2015, Tin can telephone, photo

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SIUN, 2015, Screenshot of Statens inspektion för försvarsunderrättelseverksamheten, digital picture

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Hornwall, 2015, Photo of documents sent to The investigatory Powers Tribunal, photo

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Hornwall, 2015, Photo of research collage, photo

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Hornwall, 2015, Photo of open source experiment, photo

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Hornwall, 2015, Photo of a sticker "CCTV" under a webcam, photo

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