Trust in e-commerce: the moral agency of trustmarks

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Preface

This master thesis is the result of my studying of the program Philosophy of science, technology and society at the University of Twente. This thesis is based on and inspired by the work that I have done during the internship at TNO to study online trust trustmarks as one of the methods to generate online trust. I would like to thank all people who helped me in writing this thesis by motivating me, commenting on my drafts and giving advice: Ellen, Marc, Anne Fleur, Nelly and my colleagues from TNO and friends who kindly agreed to share their online trust building experiences with me.

Summary

This master thesis studies online trust and explores trust building practices shoppers and retailers in e-commerce. It especially focuses on trustmarks as one of the method to increase trustworthiness of online stores. This work is inspired by and linked with the TNO project: EU online Trustmarks: Building Digital Confidence in Europe.

In a narrow sense, trustmark is a seal that is displayed on the webpage of online shop and is believed to increase its trustworthiness. Being designed by trustmark organizations and aimed at shops and shoppers, trustmarks, trustmark organizations, web shops and web shoppers form a network of actors that interact, and during the interaction shape actions of each other.

This thesis uses use actor –network theory to analyse how online trust is build, distributed and shaped by different actors in e-commerce. Politicians and trustmark designers have a lot of expectations from trustmark technology. They believe that it plays an important role in the trust building practices of online shoppers and online shops. This thesis analyses the intentions of the designers of trustmarks to increase trustworthiness of online shopping: it studies the visions of the designers on how their technology is used by the web shops and online retailers, and how trust is constructed in internet shopping. Furthermore this thesis investigates trust building practices of online shoppers that use trustmarks, but it also studies trust building routines of consumers that are not familiar with the trustmark technology. Also this research analyses trust building methods that are used by retailers that operate online.

After the analysis of the design of trustmark technology and its use practices this research concludes about the possibilities and limitations of trustmarks for their users, and ethical meaning of this technology.

Contents

1 Introduction

This is the introduction chapter of this thesis. It discusses the reasons why I chose the topic of e-commerce trust and trustmarks and describes the problem that I saw in the trustmark technology. This chapter also presents the outline of the thesis and scientific and social relevance of this research.

1.1 Motivations and background of the research

The idea of this thesis was born during my internship at TNO[1] where I was working on the project called EU online Trustmarks: Building Digital Confidence in Europe[2]. The project was aimed to study the role of trustmarks in cross-border e-Commerce in the EU and to shape the relevant European policies. This study was initiated by the European commission that had a target to increase the number of EU cross-border online shopping transactions.

In the first stage of the research we identified barriers for cross border e-commerce. Using statistics and various literature we found out that the main barriers for consumers to shop online cross-border are: fear of scams and fraud, lack of confidence, resolutions, complaints handling, and redress, uncertainty about their rights as consumers, lack of foreign language skills, delivery times extra charges, and environmental issues. (Kool at. al, 2012). We showed that some of those barriers are related to the lack of trust in cross border shopping. We described some solutions to overcome those barriers such as price comparison and rating websites, compatible payment methods and trustmarks.

During the second stage of the projects we studied 75 trustmarks schemes operating in Europe, America, and Asia. We conducted a number of interviews with trustmark providers, launched an online survey and did an extensive desk research on trustmarks. In the result, we had an overwhelming picture of existing trustmarks and their business model, certification schemes, legal basis and their subscribers.

In my view, TNO project has some limitations. Being aimed to study the role of trustmarks in cross-border e-Commerce it considered the perspective of trustmark organizations - organizations that designed and operated trustmark schemes. Also we partly included the perspective of online shops by studying distance selling associations. However the way, how consumers use trustmarks was not considered in the TNO project. Online consumers were considered in the literature concerning

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[1] TNO is a Dutch research organization that facilitates Innovation in contemporary society. The research is organized around several themes among which there is the theme of information society. For more information visit TNO website www.tno.nl

[2] The trustmark study is still going on and is done is cooperation with INTRASOFT International. It consists of four stages: the first two were done at TNO and the last ones -are currently being done by INTRASOFT International. I was involved at the stages of the project that were done at TNO, that were aimed to map the barriers of cross-border e-commerce and existing trustmark schemes.

trustmarks as online trust building mechanism. Still, the majority of the scholars looked at the importance of trustmarks for trust building of consumers did not analyze how they interact with this technology.

Based on my own online shopping experience and on the experience of my friends I started to question the role that trustmarks can play to overcome trust related barriers not only in cross border, but also in local e-commerce. Hardly anybody in my social environment used trustmarks. I realised that there is possibly a mismatch in the opinions about importance of trustmarks between online shoppers, trustmark providers and European commission. A first glance at the literature indicated a surprising lack of STS research concerning online trust building. All this motivated me to write this thesis.

1.2 Trust and trustmarks

Trust is a very rich theme that has been studied by philosophers, sociologists, psychologists, computer scientists, and scholars from many other fields. Some of them see trust as a way to deal with risks and uncertainties, others as the willingness to be vulnerable. Still, many scholars underline the importance of trust for the well-being of individuals and society. Chapter 2 of this research gives a detailed conceptualization of trust.

There is lack of trust in e-commerce. Online customers do not always trust web shops: they do not know the people who are behind the web shop, and they also can not touch and feel the products they are buying. There is no single solution that makes a shop trustworthy. Different methods are used by web shops designers to increase trustworthiness of their shops: using professional layout, having users feedback, using advertisement and third party certification - trustmarks.

Trustmarks are designed by trustmark organizations in order to increase consumers trust in e-commerce and protect them from unfair behaviour of the web shops. Trustmark organizations certify online retailers, regularly audit them and resolve disputes arising between shoppers. In doing so they delegate some of their agency to the trustmark technology and the users of this technology. This thesis further investigates the agency delegated to trustmarks to establish trust in online shopping and analyses how this agency is perceived by designers and users of trustmarks.

1.3 Central research question

The aim of this research is to explore how online trust is constructed in e-commerce and also to explore the role trustmarks play in the process of online trust formation. Especially I am interested in the way how different types of users (online shops and online shoppers) use trustmarks in their trust building practices. An STS perspective on trustmarks will allow me to open the blackbox of this technology and to analyse what trustmarks actually do themselves and how they shape the actions of their users.

STS has a number of concepts to analyse the relations between technology, its user and designers. Attributing some of the human qualities like possessing agency to technology, STS scholars describe mutual shaping process of technology and society. Taking such perspective I analyse how trust building in the Internet can be shaped by technology of trustmarks. Because trust has a moral value for our well-being as well, I can formulate the following research question:

What is the moral agency of trustmarks?

1.4 Scientific and social relevance

Trust is an essential element of the well-functioning of our society, it is necessary for the relations between individuals and also for the relation between individual and different institutions. Investigating online trust this thesis contributes to the well-being of online shoppers, and online shops. There are several mechanisms to make website trustworthy, and trustmarks are one of them, however the role of trustmarks in shaping the choices of consumers is not clear. This thesis considers trustmarks adapting ANT perspective as an actor in the network of online shopping, and studies how it can shape the decisions and trust building methods of its users.

The finding of this thesis could be a good addition to the scholarship related the role of trustmarks, and especially for the TNO project on the role of trustmarks in cross border e-commerce. Also, this thesis can be valuable for the STS field, as it analyses trust from the STS perspective (and there is a lack of trust research in STS) and uses STS methods in the analysis how technology can shape trust bulging practices in e-commerce.

1.5 Outline of the paper

This thesis consists of five chapters. This chapter is the introduction chapter. It gives the overview of problems and research questions that are considered in this thesis. It also provides information about the methodology used and the motivations that led to writing this thesis.

In the second chapter the concept of trust is analysed. Based on a literature study it gives an overview of the different conceptualization of trust and it discusses the moral value of trust. More specifically, this chapter will elaborate on online trust and methods to create it. Here I will also address an STS perspective on trust in technology. This perspective concludes that trust should be built in relation to socio technical system rather than only in technological component of this system. The last section of the chapter investigates the literature about trustmarks as one of the methods to build online trust and discusses the limitations of this literature.

The third chapter presents the conceptual framework that is used in this thesis for the analysis of trustmarks. It focuses on the actor network theory, and describes concepts that are used for the trustmarks analysis: ANT, moral agency of technology, delegation of agency, script, inscription, technological mediation. The second part of this chapter describes the methodology that is used to get empirical data.

Chapter four presents the results of empirical research. It studies design and use practises of trustmarks. The design part presents the results of the survey and interviews with trustmark designers and results of the content analysis of their websites. It describes the process of design of trustmarks in the terms of actor network theory. The second part of the chapter focuses on the use of trustmarks. It describes two groups of users: online shops and online shoppers and their use practices. The data presented in this part is mainly the result of the interviews and analysis of the websites of different online shops.

Chapter five discusses the results of empirical research, draws conclusions, and presents the answers to the main research question on how does the moral agency of trustmarks look like, and its sub -questions, focusing on how agency is distributed in the actor network and how users and designers perceive the moral agency of trustmarks.

2   Trust & trustmarks

The aim of this chapter is to conceptualize the notion of trust, especially trust in e-commerce and discuss its moral dimension. This will be further used for the analysis of the moral agency of trustmarks. Also, this chapter reviews the literature of trustmarks and positions this thesis in this field.

The first part of the chapter shows the scholarship concerning the nature of trust in the offline reality. It describes the attributes and the features scholars associate with trust: trustworthiness, risk, morality. The second part of the chapter analyses the literature dedicated to trust in virtual environment. It analyses the obstacles on the way of online trust formation. It especially investigates trust in the process of online shopping and studies the methods to increase consumer trust. The third part focuses on one of the methods of online trust formation, called trustmarks, or third party trust. It defines what trustmarks are and discusses the literature about them.

Due to the amount of available literature concerning trust this literature review cannot be exhaustive and is not aimed to be as such. It rather gives an impression of the most relevant research on trust for this thesis that has been done by scholars from different fields: STS, philosophy, sociology, psychology, marketing and computer sciences.

The search of literature was mainly done with the use of Google Scholar. The key words in the search process were: trust, online trust, consumer trust, risk, moral value of trust, obstacles to trust, third party trust, trust assurance seals and trustmark. The sources of the literature were mainly found in the Internet: the databases of different electronic journals for instance JSTR, and journals concerning e-commerce, computer and human interaction and ethics and technology. Also the electronic library of the university of Twente had an extensive number of relevant literature. Some of the materials were taken from the TNO project folder "EU online Trustmarks: Building Digital Confidence in Europe in TNO".

2.1 Conceptualization of trust

Trust comes up in the literature as a very rich concept. Every discipline has its own approach to trust. Many scholars point at the variety of definitions of trust and the difficulty in finding one universal definition. (A.Beldad, et al., Wang & Emurian 2010, Grabaner-Krauenter & Kalusha 2003, Y.D.Wang, H.H. Emurian, 2005, Corbit et al., 2003, Nissenbaum 2001, Mayer et al., 1995, Weckert 2005). It is difficult to define trust due to several reasons. According to Wang and Emurian, this difficulty to define trust occurs because trust is an abstract and multi-faceted conception that has "cognitive, emotional and behavioral dimensions". (Y.D.Wang, H.H. Emurian, 2005). Palmer, Bailey and Faraj (2000) say that trust is a very rich notion and its definition depends on the context and the discipline of researcher. (Palmer et al., 2000). Trust is also difficult to define because every scientific field assigns its own meaning to it. For instance, McKnight writes (McKnight, 1996), the definitions of

trust in different literature is ranging between personal trait (Rotter, 1980) to a structural phenomenon. (Shapiro 1987).

No matter whether trust is a personal trait, or a structural phenomenon, it does not exist independently but in a context, and trust should be investigated under specific contextual and situational parameters (Lewicki & Bunker, 1995). Thus it is important who trusts, what or who is trusted and what is the subject of trust. Therefore in modern philosophy trust is defined as a relation between the trustor and the trustee, where the trustor trusts the trustee to do certain things. This model was described by Russell Hardin: A trusts B to do X. (Hardin, 2002)

Analyzing the notion of trust many scholars describe different subjects of trust. Helen Nissenbaum (2001) distinguishes individuals, institutions, governments, information, physical things, and systems and many other subjects of trust. McKnigt and Chervany (1996) distinguish three major categories of trust depending on the nature of trustee: namely structural (impersonal), dispositional, and interpersonal (personal) ones.

By structural trust the authors mean that trust is built toward an institution, but not a person. In other words, trustee trusts a structure or a system, that consists of both human and non-human elements that act according to certain rules, let it be employees, law, software, etc. The scholars provide the example of such definition of Shapiro (1987) who referred to trust as a function of the assurances provided by such social structures as banking regulations. (Shapiro, 1987).

Structural trust can also be generated in relation to technological systems. Dealing with a technological system, for instance the plane, passengers develop trust towards the whole institution of aviation that includes technology: engines, navigation device, etc., as well as humans and law that require the pilots to be properly educated and in a good health condition, etc. In this case, technology being socially embedded becomes a part of a structure. And according to Konrad et al., (1996) "it is not only a technical system which is trusted but rather a socio technical including users, business practices and relevant institutions"(p360). To sum it up, impersonal/structural trust is generated in relation to the structure, institution or socio-technical system

The notion of interpersonal trust describes the type of trust that occurs when both parties, trustee and trustor, are persons. So two people or groups of people trust each other in order to do certain things. The way Baier approaches trust can be seen in this perspective. She studies trust between people in a philosophical perspective asking whether such trust can be a virtue or not. (Baier, 1992). Weckert (2005) points out the importance of personal trust in relations such as love and friendship.

By Dispositional trust, McKnigt & Chervany (1996, p7) mean that "trust is based in the personality attributes of the trusting party". This means that trust is a personal trait and is not aimed to any particular subject. The scholars present the example of Erikson who described dispositional trust as "a sense of basic trust, which is a pervasive attitude toward oneself and the world," an "essential trustfulness of others as well as a fundamental sense of one's own trustworthiness" (Erikson, 1968., p96).

For my research both structural and dispositional trust are two most relevant conceptions. Even though in most of the cases online shoppers buying online develop their trust in relation to the whole socio technical system, sometimes they do not determine the subject of their trust, and just

trust. In this case they build dispositional trust. Trustmarks however seem to ensure structural trust, particularly trust in the institution of e-commerce.

2.1.1   Risk and uncertainty as the attributes of trust

Risk is often seen by scholars as an attribute of trust. (e.g. Luhmann 1988, Luhmann 1979, Grabaner-Krauenter & Kalusha, Konrad et al., 1999, Mayer and Davis 1995, Becker 1996, Jones 1999, Lewis & Weigert 1995). Konrad et al (1999) call trust a "risky investment". Luhmann (1988, p. 100) says that "trust is based on a circular relation between risk and action, both being complementary requirements." Lewis & Weigert (1995, p971) define trust as "undertaking a risky course of action on the confident expectation that all persons involved in the action will act competently and dutifully". Similarly Mayer and Davis (1995, p727) refer to trust as to the "willingness to assume a risk" .

Trust is risky because if the trustee is not trustworthy (violates the trust), the trustor becomes vulnerable. Thus for instance, Annette Baier says that "trusting can be betrayed, or at least let down, and not just disappointed"(1986, 235). Hardin (1993, p507) writes that trust is "inherently subject to the risk that the other will abuse the power of discretion." Mayer and Davis (1995, p727) define trust as "the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other party will perform a particular action to the trustor irrespective to the ability to monitor or control that other party".

Trust is needed because there are not only risks but also many uncertainties in our life. Grabaner-Krauenter & Kalusha (2003 p785) write that "trust would not be needed if actions could be undertaken with complete certainty and no risk." Luhmann (1979) perceived trust as the way to help to reduce complexities and uncertainties in situations where people have to cope with uncertainties. According to the scholar, when one trusts, "one engages in action as though there were only certain possibilities about future."(p.20).

It may thus be concluded that risk and uncertainty and trust are on two sides of one coin. In my research I will use the notions of risks and uncertainties to analyze what risk shoppers experience in online environment and whether trust is the way for them to deal with risks.

2.1.2   Trustworthiness as the attribute of trust

Many scholars writing about trust also write about trustworthiness. (i.e. Hardin, 1996, 2002, Jones 1999, Mayer & Davis 1995) Trust and trustworthiness seem to be related to each other: if we trust somebody/something this person/subject should be trustworthy. In other words, when A trusts B it means that B is trustworthy for A. Different scholars approach the nature of trustworthiness differently. Hardin (2002, p53) discusses that trustworthiness can be "compelled by the force of norms". In this way trust becomes part of a social contract. People become trustworthy because there are moral and legal rules and obligations for that, and the violation of those obligations can be dangerous (have consequences) for the trustee. Another approach to the nature of trustworthiness considers it as an act of goodwill. (Baier2002, Frost et al, 1978). This view assumes that the trustee cares about the trustor, has good intentions and is willing to act in a good (fair) way.

Mayer & Davis (1995) discussing what makes a party trustworthy distinguish three factors that constitute trustworthiness: ability, benevolence, and integrity. According to these scholars ability means that the trustee has the necessary skills and competencies in a certain domain. For instance the doctor is trustworthy for me because of his ability to help me due to his education and

experience in medicine. In the view of Mayer & Davis benevolence is the extent to which a trustee believes that the trusted party is willing to act in a good way and does not have egoistic motives. In other words, benevolence means that trustee treats the trustor in a good, positive way (for instance being helpful and polite). Integrity means that both parties, trustor and trustee share the same view on what is good. In other words, the trustor assumes that the trustee will be behave in a good way. All those factors are necessary for the trustee to become trustworthy. Lee and Turban (2001) describe such kind of trust as a reputational one, according to them trustworthiness, ability, benevolence, and integrity can be elements of reputation.

As it can be seen, most scholars elaborated the concept of trustworthiness in the context of interpersonal relations where both trustor and trustee are persons. However, in the context of my research trustworthiness is applied to a socio technological system - online shop. Nevertheless, because online shops are designed and run by individuals, the nature of their trustworthiness – the willingness to be fair can also be described in the terms of ability, benevolence, and integrity.

2.1.3 Moral value of trust

Even though trust is risky, it a is very important component of the well-being of both individuals and society. Trust is an essential attribute of friendship, relations and families, it facilitates communication between individuals makes their relation better. Trust is necessary for the well-functioning of society. Thus, Fukuyama (1999) says trust makes society stronger: "high –trust" societies have stronger economies and networks than societies where the level of trust is low.

According to Fukuyama, even though trust itself is not a moral value, it is rather a side effect that happens when people share the norms of reciprocity in their relations and are willing to maintain a good relation. In his earlier work Fukuyama (1995, p26) gives a definition of trust: "Trust is the expectation that arises within a community of regular, honest, and cooperative behavior, based on commonly shared norms, on the part of other members of the community"

In the ethics and philosophy literature trust and morality often are discussed together. (Baier 2004, 1986, Baron 1999, Jones 1999). Baier (2004, p180) refers to trust as to the "moral value of society". Baron (1999, p 411) considers trust as a virtue. According to him, the virtue of trust is "the tendency to behave as if one believes that others will behave in the right way and the tendency to value such behavior in oneself and others". Jones (1999) has a goodwill view on trustworthiness. This means that a trustee acts out of goodwill towards the trustor. Baier (1986) supports the view of the goodwill nature of trustworthiness. Such view assumes that trust is an act of good will, but also of care (Stanford Encyclopedia of Philosophy).

Uslaner (2002, p18) describes the notion of moralistic trust as "belief that others share your fundamental moral values and therefore should be treated as you would wish to be treated by them." He assumes that people, even strangers should be trustworthy and always fulfill their promises and in this sense make the life of those who trust them better. Fukuyama (1995) describes moralistic trust as the belief that most people share the same fundamental moral values. In other words, moralistic trust is what McKnigt & Chervany (1996) call dispositional trust. It is trust that people behave morally towards other people and that all people share the same moral values.

This literature thus suggests that trust is very important for our well-being and it has moral value for us. Trusting relations are necessary for consumers and retailers, as both of them trust each other to

behave ethically correct. In my research I will use the notion of moral value of trust in order to show that trustmarks have moral functions.

This section considered the notion of trust in the offline environment. After the creation of the Interned, scholars started to question and position online trust and it appeared that many of the elements of offline trusts exist also online. Especially the notion of online trust and the methods of its creation are relevant for this thesis. Those notions will be considered in the following sections.

2.2 Online trust

Even though scientific studies present different aspects of online trust (for instance trust in social networks, etc.) most of the studies in online trust are focused in the area of e-commerce. Usually trust is studied as the relation between the consumer (trustor) and the web retailer (trustee). Thus for instance Lee and Turban (2001, p79) define online trust by adopting the definition of trust from Mayer and Davis (1995) to e-commerce environment: "CTIS (consumer trust in internet shopping) is defined as the willingness of a consumer to be vulnerable to the actions of an Internet merchant in an Internet shopping transaction, based on the expectation that the Internet merchant will behave in certain agreeable ways, irrespective of the ability of the consumer to monitor or control the Internet merchant". Similarly, Shankar et al., (2002) describe trust as reliance of stakeholders on the firm's business practices in the electronic medium, especially its website.

2.2.1 Risks and uncertainties in online trust

There are many obstacles to create online trust. Those obstacles occur because online interactions have more uncertainties and are more risky than offline ones. Nissenbaum (2001) speaks about the reasons why there are many uncertainties online. Those uncertainties are: *missing identities, missing personal characteristics* and finally *inscrutable contexts*. Describing missing identities Nissenbaum states, that often people do not want to identify themselves online, and prefer to stay anonymous:, "in many of their online transactions agents are not compelled to relinquish the identities of their on-line selves" (p 113). The second online uncertainty is missing personal characteristics. By that Nissenbaum means that the online actors don't have to provide full and true information about themselves. There is no/little mechanisms to check whether somebodies' online identity is the same as offline one. The last uncertainty described by Nissenbaum is *inscrutable context.* This means that online world is quite new and not all the experiences that we have, and roles that we perform in the online world take place in the real world. Therefore it is difficult to build trust towards something new, in relation to what we do not have any real experience. Moreover, even if the online experience does have a real counterpart, it still does not remain the same. Nissenbaum says that: "for the roles that have emerged in cyberspace that do not have obvious counterpaerts offline, their duties and responsibilities are even less defined and understood" (Nissenbaum, 2001, p 113)

Those uncertainties that exist in the online environment described by Nissenbaum illustrate that there are more risks and uncertainties in virtual trust compared to the real world trust, and especially in the field of online shopping. (Grabaner-Krauenter & Kalusha 2003, Nissenbaum 2001, Gefen 2000). Thus Wang & Emurian (2005, p111) say that "because of the high complexity and anonymity associated with e-commerce, merchants can behave in an unpredictable manner on the Internet". According to Fridman et al (2000) buying online consumers are vulnerable to loss of money and privacy. Gefen (2002) suggests that consumers risk their personal data to be collected without their consent, misused and distributed.

Grabaner-Krauenter & Kalusha (2003) write that Internet-based transactions can bring several risks. The authors assume that the risk is caused by uncertainties, whose degree in the Internet is higher than in a normal settings. These scholars identify two types of uncertainties in the online environment: system-dependent uncertainty and a transaction dependent one. By *system dependent uncertainty* the authors mean the type of uncertainty that is caused by the events that are beyond the direct influence of actors - environmental uncertainty. In other words it is uncertainty in using technological systems. The risks associated with this kind of uncertainty are dependent of technology, both hardware and software. Those risks, according to Pavlou (2003) can be reduced by the use of encrypted transactions, firewalls, authentication mechanisms and ensuring privacy seals. *By transaction specific uncertainty* Grabaner-Krauenter & Kalusha mean uncertainty caused by the behavior of actors involved in the online transaction. Especially relevant here is the conduct of internet merchant and the quality of products that are sold to the consumers. Following the theory of Luhmann (1979), Grabaner-Krauenter & Kalusha see trust as the way to reduce described uncertainties.

Kim and Benbasad (2003) describe e-commerce risks as possibilities of loss in e-commerce transaction. The scholars identify four of them: (1)getting spam mails because customers provided their e-main addresses, (2)possibility of privacy invasion because of provision shipping information, (3) possibility of credit card fraud if customers provided their credit card information and (4) the possibility that the product will be delivered late and it will be of poor quality and there will be bad service after the purchase.

Online risks and uncertainties described in this section address all the aspects of e-commerce, and take in account technology and human actions. In my research I will analyze whether the same risks and uncertainties are recognized by online consumers. Also, I will investigate if trustmarks address all of them or not.

2.2.2   Creating trustworthiness online

Even though there are many uncertainties and risks in online environment, scholars propose solutions to build online trust in general or how to generate trustworthiness of online retailers particularly. Some of them suggest that the solution should be based on increasing online security (Weckert 2001, Nissenbaum 2005, Konrad et al 1999) but conclude that this is not enough. For instance, Weckert says that: "one solution is to treat on-line trust as a purely technical security issue". (Weckert, 2005, p 20). For example, such solution would help to secure internet connection and in such way secure private information. But Weckert concludes that only security cannot generate online trust. He proposes that there should be "confidence in people" " (Weckert, 2005). In this way, online trust can be achieved if two factors are achieved: there is technically ensured security and some confidence in the identity of online counterparts. Nissenbaum (2001) considers such security solutions as access control, transparency of identity and surveillance. However, later this scholar concludes that "security, or rather, the particular vision of security occupying the mainstream will not as promised, bring about trust" (p121). She argues that bringing trust too closely to security shortens the richness of the concept of trust.

Some scholars have another approach to online trust. They try to analyze factors that influence online trust and build the models that include all those elements. (Lee and Turban 2001, Mayer, Davis & Schoorman 1995, Corbit et al 2003). Trust models developed by these authors include

factors of trustworthiness of the trustee, context of trust (i.e., the experience of trustor, technical security, etc.) , and the risks the trustor takes. For instance, Lee and Turban (2001) describe the most important elements of trust in e-commerce. They develop a model consisting of four groups of antecedents of online trust:

1. *Trustworthiness of an Internet merchant*. The merchants becomes trustworthy if mentioned above ability, integrity, and benevolence in the relations between merchant and customer take place.
2. *Trustworthiness of the Internet shopping medium.* In other words, this is trustworthiness of computer systems and internet technologies. (e.g. reliability, speed, and availability). Trust here is built during the interaction with computerized systems.
3. *Contextual factors*. Context of e-shopping is important for trust building, i.,e the issues of security and privacy ensured by technical means (encryption, SSL protocols) and by third party certification bodies and public key security infrastructure systems such as perceptions of the effectiveness;
4. *Other factors*. For instance, such factors as size of the shop and demographic variables of the customers.

Information system literature has another approach to the elements that build online trust. it focuses on the interaction between users and technology and they analyze the impact of design on user behavior. Therefore this approach is more operational, it analyses the outlook of the website, the way the information is presented, etc. (Kim and Benbasad 2003, Wang & Emurian 2005). For instance, Kim and Benbasad (2003) provide the overview of *trust building strategies f*rom information system literature: providing assuring information reported by others, providing assuring information about the store's policies and practices, utilizing trust transfer, and providing opportunities for interaction and cues for simple examinations.

Providing assuring information reported by others is according to Kim and Benbasad (2003) a trust building strategy based on opinions reported by others: third party certification, other consumers comments, friends advise, news reports, magazines; etc. in other words the trust is based on the reputation of the store ensured by others. *Providing assuring information about the store's policies and practices* is the measure of the web shop to post its privacy policy on the website. The authors refer to the findings of McKnight & Chervany (2001) and Hoffman, Novak, & Peralta (1999) *Utilizing trust transfer* is the trust building strategy when trust is generated when the customer is linked (there is a hyper link) to the online merchant from a trusted website, or when the merchant is recommended to the customer by somebody very close and trusted. This strategy was studied by Steward (1999, 2003.) The last strategy described by Kim and Benbasad (2003) is called *providing opportunities for interaction and cues for simple examinations.* It includes on the one hand good interaction with customers: communication, e-mailing, etc., mainly done by the merchants themselves. On the other hand, this trust building strategy is based on the credibility of the website: its professional and visual design, (Fogg & Tseng 1999, Fogg et al., 2001), the quality of graphic materials and information provided on the website.

To summarize, we have seen that trust online is more complex than trust in the real world. It involves more uncertainties and risks, due to the lack of identities online and inscrutable contexts. Therefore there are many mechanisms designed in order to encourage users to trust online.

Trustmarks are an example of such mechanism. By verifying online shops and putting trustmarks on the pages of such shops trustmark designers intend to create online trust by making the shops look trustworthy for their customers.

2.3 **Trustmarks**

As mentioned above in the review of online trust building strategies made by Kim and Benbasad (2003) trustmarks are one of them. As shown in the Figure1, trustmark technology consists of the seal that it put on the website of the web shop, trustmark certificate and the website of trustmark organizations. A trustmark authority certifies the good practices of the web shop by a seal – trustmark. The shop then positions the trustmark on its webpage. If online shopper wants to check the trustworthiness of a certified shop, he or she can click on the seal and will see the certificate that states that the shop is trustworthy. The certificate contains information about the period of certification, the authority that certified it and the basic rights the customer has in relation to the web shop and goods he or she bought. If the shopper clicks on this certificate he or she is redirected to the customers page of trusted shops organization where all the information about trusted shops activity is presented.
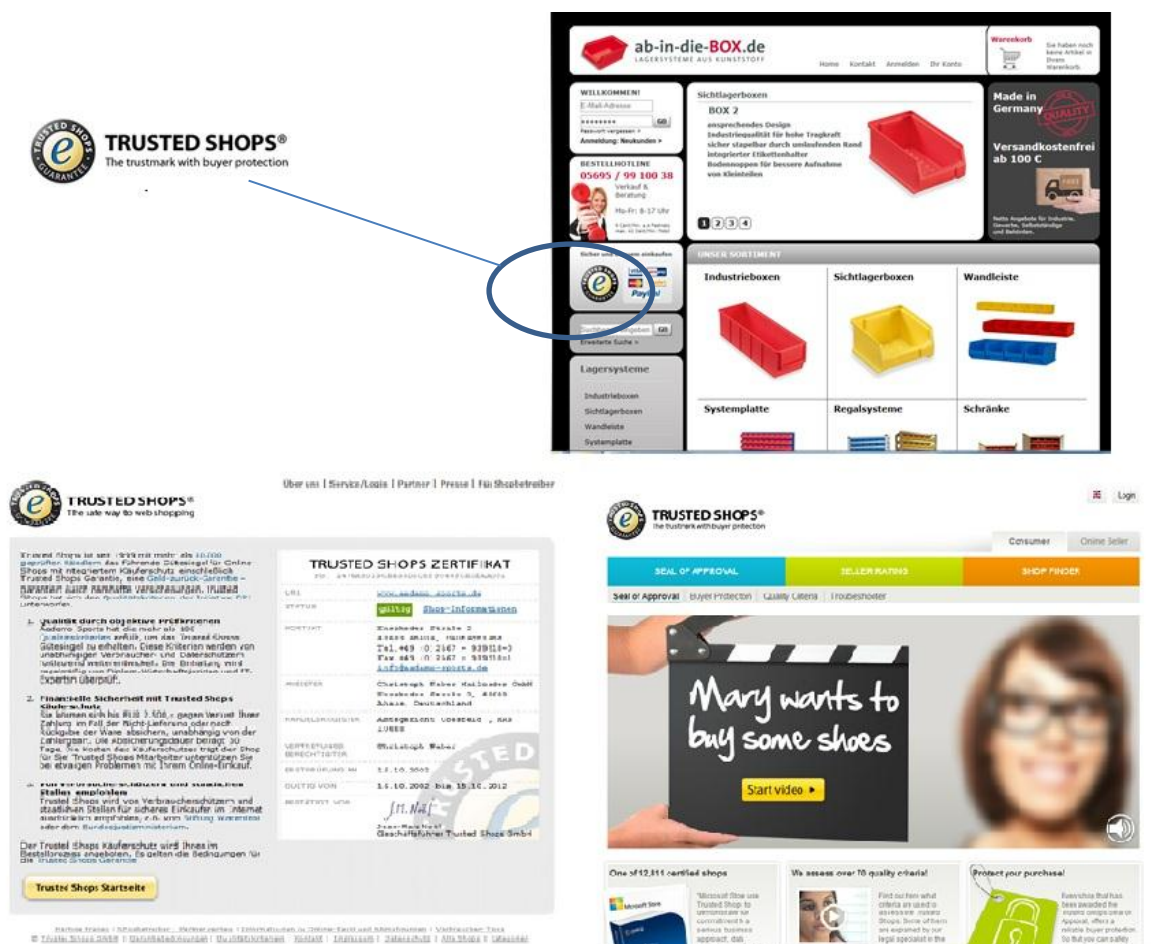

Figure 1: Trustmark technology: trustmark, certificate and the website of trustmark organization

So in a narrow sense a trustmark is a seal that appears on the website of the online retailer and ensures the buyer that the business practices of such shop are done in a due way and the customer

can trust it. In a broader sense a trustmark is more than a seal. It is a network of interacting social and technological actors: online retailers, software, legislation, the seal itself, online customers and trustmark authority. A trustmark authority is an organization that normally owns the trustmarks, certifies online retailers, regularly audits them, resolves disputes arising between shoppers and shop and sometimes provides additional services like users ratings, etc. Trustmarks ensure security of different scopes in online shopping: payment safety, data protection, delivery safety, and also many trustmarks provide dispute resolution.

Trustmarks do not have a long history because e-commerce is relatively a recent development. One of the first successful trustmarks scheme became Webtrader that according to Nannariello (2001) was launched in the beginning of 2000 by the European Commission's Directorate General , and was operated in eight EU states, and also in Switzerland and Argentina. However in 2003 it was abandoned. Nowadays trustmarks operate in many European and Asian countries, US and Canada. An overview of the developed European trustmarks is presented in table 1 in the Annex. Trustmark schemes of different scale are presented in many European countries, ranging from little local ones with less than 50 subscribers (eshops Malta, Trusted Ro) to big international schemes with several thousands of subscribers like Trusted shops presented before and ISIS.

 Normally, trustmarks authorities before giving the seal check several parameters of the retailer: its physical existence (address, registration, etc) and the business practices. (for instance whether the shop is not going to be bankrupt soon etc.) In this way a trustmark indicates that the web shops is trustworthy. Even though most of the trustmarks ensure the things mentioned before, some of the trustmarks only certify a certain parameter. For instance a trustmark like VeriSign only ensures technical security of connection while TRUSTe only certifies the privacy protection of its subscribers. Kimery and McCord (2002) distinguish three types of seals based on their function: privacy assurance (for instance TRUSTe), process assurance (i.,e ISIS, Trusted shops) and technology assurance (for example Verysign). According to Kim et al (2008, p1001) expected use of such trustmark takes place "when Internet customers see the seal on a given site they should perceive less privacy and security risks associated with online transaction with that e-retailer".

2.3.1   Literature on trustmarks

There is a number of papers published about trustmarks (or third party certification) and their role in in the generation of online trust. Third party certification is considered as the feature of institutional trust (Kim et al, 2008). Generally speaking one can discern two strands of studies of trustmarks: the ones that conclude that trustmarks are an important factor for trust in e-commerce and the ones that conclude the opposite. To the first type of research belong for instance studies done by trustmark providers as well as by independent scholars (i.e. VeriSign 2010, Kovar, et al, 2000, Pavlou 2003) . The second type of research underlines the unimportance of trustmarks ((McKnight and Chervany 2001, 2004, Palmer et al 2000, Kimery and McCord 2002). Because trustmark technology has not stabilized yet, there is no agreement (yet) in the literature on the functioning and relevance of trustmarks.

Pavlou (2003) assumes that web retailers can try to reduce system-dependent uncertainty by several means including technical security, such as encrypted transactions, and firewalls, as well by ensuring privacy seals. Similarly Kovar, Burke, and Kovar (2000) found assurance seals to be effective in online

transaction in specific conditions (if consumers are aware of the seals). The same conclusion can be seen in the work of Kim et al (2008) who tested the dependence of use of the seal from the knowledge of the consumer about the seal and concluded that education about trustmarks can influence the awareness of the importance of the seal. Cheskin Research (1999) concludes that trustmarks can increase trust, but the effect of the seal varies depending on consumers' familiarity with the trustmark and the attention they give to the seals.

Like previous scholars both McKnight at. al. (2004) and Kimery and McCord (2002) discuss the importance of the privacy icons and industry seals in the Web. McKnight at. al. develop a two stage model of initial trust in a web business: the first stage is introductory, while the second is the exploratory stage. During the introductory stage the users do not visit the website, they learn about it from different sources. At the exploratory stage users see the website. McKnight at. al. assume that the seal plays a role during the introductory stage of trust formation, and have much less significance during the exploratory stage, actually visiting the website. In their study the scholars present the results of the survey with a total number of 343 respondents that were asked to check the trustworthiness of the information on the websites with and without the TRUSTe seal. The authors of the study conclude that: "the assurance icons, which are signalling devices, had little effect on the level of consumer trust in the web vendor." (McKnight at. al. 2004, p262)

Kimery and McCord (2002) in their study concerning the role of trustmarks in online retailing introduce a model of trust. In their model the scholars consider factors influencing consumer trust: attention to assurance seals, disposition to trust and risk. The authors assume that third party seals will have a positive influence on potential buyers believing in the trustworthiness of the retailer. They also assume that the influence of the seal depends on the attention buyers give to it. The authors test their hypothesis on 164 respondents and conclude that they did not find a correlation between consumers trust in online merchant and consumers seeing a third party assurance seal on the website.

The differences in the views on trustmarks might occur because trustmarks as technology have not stabilized yet. Even though there are several successful trustmark models that operate worldwide, most of the trustmark organizations emerged recently. Moreover the trustmark organizations that emerged and operated in the beginning of 2000s studied by Nannarielo (2001) now do not operate anymore and there are new organizations emerging at the moment.

2.3.2   Limitations of the literature

On the one hand, a number of articles have been published about trustmarks, but on the other hand the researchers of third party trust still do not address some of the problems. The discussion is mainly focused on whether trustmarks increase trust or not, and on the awareness of shoppers about the trustmarks. Even though according to Kim et al (2008) third party certification has been considered as a feature of institutional trust, the trustmarks themselves are not considered a part of this institution. In other words, existing studies do not really take into account technology as an independent actor having agency. For example Kimery & McCord (2002) describing the model to research trust in e-commerce, assume that users can pay or not pay attention to the assurance seals and either click on it or not click on it. There is also lack of reflective scholarship about third party trust that could go beyond the questions about the importance or not importance of trustmarks.

Another limitation of the trustmark scholarships is that research in most of the cases is of a statistical nature and is done by means of surveys, and the analysis of survey results. Thus for instance, McKnight and Chervany (2004) conducted a survey with 343 respondents, Bart et al, a survey among 6831 respondents, etc. So there are many quantitative studies of online trust, where respondents are asked specific questions. However there is a lack of qualitative studies of third party trust in ecommerce, where the respondents would share their practices of building trust in e-commerce and using or misusing of the seals.

2.4 Conclusions

This chapter analyzed the literature concerning online and offline trust, and trustmarks (third party trust) as one of the elements of online trust building. It became clear that trust is a very complex notion studied by many scientific fields: psychology, philosophy, management and organization studies. However in STS trust is not a frequently studied. With the exception of the article of Konrad et al. it is very hard to find literature written by STS scholars about trust.

Trustworthiness of trustee can be constructed by three factors: benevolence, ability and integrity. Those three constructs can be easily applied to e-commerce trustworthiness, and especially to the type of trustworthiness that online shops need to generate for their customers and will be used in my research. As it follows from the chapter, being trustworthy is a moral behavior and trust itself is a moral action, and that it improves the well-being both of individuals and society.

Trust is related to risk and uncertainties, and as it appears in the literature, it is the way to deal with uncertainties. Trust is risky as trusting trustors become vulnerable and can be disappointed or even let down. It can be clearly seen that online risks are related to uncertainties in online environment and that there are more uncertainties online than offline. Those uncertainties occur in the Internet because of missing identities, missing personal characteristics and inscrutable context. And as other authors I perceive trust as a way to deal with those uncertainties in online world.

The idea that trust exists at three levels: interpersonal, structural and dispositional is relevant for my research and will be used there. Those levels can exist both in offline and online environment. Applied to online environment and particularly to the e-commerce practices, structural trust describes the type of trust that exists in the system of e-commerce. This kind of trust is generated in relation to the whole institution of e-commerce and reputation of the web shops is important for its creation. Interpersonal trust can occur in the relation between individuals, for example online consultants and the customers, and finally I see dispositional trust as the feature of many contemporary internet transactions. The development of dispositional trust in the Internet can be illustrated with the increasing number of online shops and online shoppers. and good reputation of online shopping.

Trust in online shopping is developed in relation to the socio-technical system that e-commerce is. It consist of both human and non-human elements (consultants, software, etc.) that cannot be separated from each other. Therefore the methods to encourage and ensure such kind of trust should equally address all the components of the socio-technical system. And trustmarks are designed to be the elements of the socio technical system of e-commerce. Being delegated agency they ensure trustworthiness of the web shops they prescribe their users (shops) to behave fairly and shoppers to believe in the fair behavior of the shops.

Most of the literature reflecting on online trust and methods to build it is limited in several aspects. First of all, agency is only seen as a human quality, technology is often black boxed, and even if is opened as in the information systems literature, it is not delegated agency. Also the existing research of online trust is mainly quantitative. Therefore there is a need for developing an STS perspective that qualitatively looks at how agency to ensure trust is delegated to various actors (human and nonhuman) over the network and how trust is actually shaped in this network. This will be done in the following chapters.

3   Theoretical framework

This part discusses the theoretical basis of this research. The first part of this chapter describes the theoretical framework that will be used for further analysis. As I mentioned before, the TNO project did not consider online shoppers to be important for the design of trustmarks, moreover those end users of trustmarks remained silent in all the process of technology design. Their trust building practices also were not taken into account. This chapter considers STS concepts that will be used for the analysis of the possible mismatch between designers and users of trustmarks in how they see its role online the trust building.

As it was shown in previous chapters, online shopping is a socio-technical system, that consists of both human and non-human actors. STS scholars have shown that technological artifacts mediate and shape humans behavior (Latour 1992, Akrich 1992, Oudschoorn & Pinch 2003). The process of online shopping is mediated by different technologies, like software and hardware. Those technologies influence the way we do shopping: the speed of the connection can allow or not allow us to browse many different websites, antivirus programs can block certain websites, our browser may show or not the images of the things we would like to buy. In other words, technology shapes our online shopping behavior. Similarly, the process of online trust formation is mediated and shaped by technology. Technology can make a website look trustworthy, and encourage online shoppers to buy there.

Not only technology shapes the behavior of its users, but also users shape the development of technology. For example this can be seen in the history of safe bicycle. Pinch & Bijker (1984) analyze how different groups of users influenced stabilization of contemporary looking bike as the safe one among many different models that were designed in the beginning of the 20th century. In other words, Pinch & Bijker analyzed how different users constructed technology. Similarly, Oudschoorn & Pinch (2003) focus their attention of the role users play in the development of technology. These scholars argue that there is a process of the co-construction of users and technology.

Actor network theory (ANT) developed by Bruno Latour (1992, 2005) and Michel Callon (1986, 1991) offers useful tools to analyze the co-construction processes of users and technology. Considering human and non-human actors' agencies equally, actor network theory allows to see the active role of technology in shaping users behavior, but also the role of designers and users of technology in its shaping.

I chose ANT as the framework for the analysis as it allows the technological artifact to become an actor that has agency in the network of actors. The aim of this research is to analyze how the moral agency of trustmark looks like. ANT enables me to analyze how trustmarks delegates may embody agency i.e. to act morally, and therefore helps me to answer my main research question. Moreover, ANT enables to describe socio-technical networks and provides concepts for their analysis such as mediation, delegation of power, prescriptions, etc. It also allows me to see e-commerce in this case as the network of designers, users and technology, where technology plays a mediating role and has agency.

The ANT perspective on trustmarks enables me to analyze how e-commerce trust building is shaped by the technology. For this analysis I will use some of the concepts that were discussed in the previous chapter. For example, I will consider the type of trust that is shaped by trustmarks, and analyze whether it is institutional trust, interpersonal trust or dispositional one. Trustmarks seem to mediate trustworthiness of the web shops for the web shoppers, and I am interested in the nature of this trustworthiness. Also, consumers risks and uncertainties in the process of online shopping seem to be shaped by trustmark technology.

I will analyze the process of creation of online trust and the role of trustmarks in this process with the help of actor network theory that provides useful conceptions for this analysis. The notions of ANT that I will use for my analysis are presented below.

3.1 An actor network perspective on trustmarks

The core idea of ANT is that human and non-human actors and their conjunctions should be treated symmetrically in the network of humans and artifacts. Bruno Latour (1992, p236) writes: "you discriminate between the human and the inhuman. I do not hold this bios and see only actors -some human, some non-human, some skilled, some unskilled - that exchange their properties". ANT grants the same properties to human and technological actors, for example the ability to act, have agency, delegate power, interact etc.

According to the ANT, actions are performed by both human and non-human actors. This is possible because ANT assumes that humans can delegate some of their actions and responsibilities to non-humans and because there is a symmetry in the agencies that humans and non-humans can have.

I will further discuss the notions of the actor network theory that I will use for my analysis: script, moral agency and distribution of agency and mediation.

3.1.1   Script

One of the key notions of ANT introduced both by Latour (1992) and Akrich (1992) is the concept of script. It a semiotic concept that embodies presuppositions of designers on how and by whom their technology should be used. According to Akrich (1992), "technological script, like a film script defines a framework of action together with the space where they are supposed to act" (Akrich 1992, p208). Designers of technology not only inscribe their vision of use into the artifact but they also construct user representations. (Akrich, 1995) This means that they have to imagine specific users of their technology and analyze what needs they have. Technologies are then designed in accordance with users representations that were constructed.

Technological scripts preconfigure the relations between the users of technology and the frames where the use should take place. In this way, scripts facilitate the distribution of agency over users and technology. According to Oudschoorn & Pinch (2003) technologies having scripts attribute and delegate competences, actions and responsibilities to users and technological artifacts.

Users interpret the script of the technological artifact differently. In the process of de-scribing the scenario of use of the artifact they assign their own meanings to it. Sometimes they follow the script or in other words use technology according to the script it has. Sometimes users transform or even reject the script of technology. In the latter case, STS scholars say that they become "non-users". (Oudshoorn, et. al., 2005)

Most studies that used the notion of script analyzed technologies with one type of user (Jelsma 2006, Gjoen & Hard, 2002)However, complex technologies can have various groups of users, that have different ways to use such technologies. So the concept of script can be also used to describe the relations between technology and multiple groups of users. For example Oudshoorn, et. al (2005) use the notion of script to analyze the relations between the Baby Watch technology and different groups of its users, such as parents, nurses and babies.

If technology has not stabilized, the designers in their frequent interactions with users and technology describe and make visible the script that they have inscribed into it. (Akrich, 1992). Stabilization of technology means that it the users give to the technology similar meanings and do not interpret it differently. (Pinch & Bijker 1984). However, if technology has stabilized, it becomes a black box. Like a black box, it hides from the users the actors involved in their design and their intentions and prescriptions. Thus, Callon (1986 p. 30) writes that "behind each entity there hides a set of other entities which it more or less effectively draws together".

Usually complicated entities in the actor networks remain black boxes and hide all the actors and their connections inside. Users take the prescriptions that the scripts of such entities have for granted. However, when something in the actor network goes wrong (for example one the actors does not perform the work) the entities in the black box and their links become visible.

The script concept is a useful tool for the analysis of the role and agency technology has in our life. It shows how agency can be delegated and distributed over the actor networks. It also shows how this agencies are perceived both by designers and users of technology. The concept of script is useful in the analysis of distribution of trust and agency in e-commerce, it helps to open the black box of trustmark technology.

3.1.2   Moral agency and mediation

Having scripts, technologies help to shape human actions and perceptions. This phenomena is analyzed by Verbeek (2008, 2005) as technological mediation. Technological mediation is a broad concept that has two directions: pragmatic and hermeneutical. Pragmatic technological mediation takes place when technologies shape the actions of people by having scripts. Hermeneutical technological mediation occurs because technology shapes the perception of reality that people have (Ihde,1990).

The extent to which technologies mediate and shape actions and perception of human depends on how much agency is inscribed into their script and how much power has been delegated to them. If a technological artifact mediates and defines all the actions in the actor network, it is called obligatory point of passage. (Callon, 1986).

Mediating, technologies can shape our perception of morality and our moral behavior. Thus Verbeek (2008, p 92) says that "technologies help to shape the quality of our lives and more important, they help to shape our moral actions and decisions". This specific mediating role of technology can be delegated to them by their designers, that inscribe their morals into the scripts of the technological artifacts:

We have been able to delegate to non-humans not only force as we have known by centuries but also values, duties, and ethics. It is because of this morality that we, humans, behave so ethically, no matter how weak and wicked we feel we are. The sum of morality does not only remain stable but increases enormously by the population of nonhumans (Latour,1992, p232)

So technologies can help to ensure that humans behave ethically, or in other words, shape human moral behavior; and this ability to shape such behavior has been delegated to them by the designers. In this case STS scholars say that technologies exercise moral agency. The notion of moral agency comes from the ethical theory, where possessing moral agency means that several conditions are met, for example that: (1) the agents should cause a real event, (2)the agents should have freedom of action, and intentions and (3) they should harm or help people (Johnson, 2005). According to Johnson (2005), technological artifacts cannot possess moral agency because they do not meet all the requirements listed above, and namely cannot have intentions. However, in post phenomenology technological artifacts are considered to have specific form of the intentionality:

The intentionality of the artifacts is to be found in their directing role in the actions and experiences of human beings. Technological mediation, therefore, can be seen as specific material form of intentionality. (Verbeek 2008, p. 95)

According to ANT, technological artifacts can have agency and if this agency affects the quality of humans life, one can say that technological artifacts exercise moral agency. This is possible because having script that embodies the moral prescriptions of their designers, technological artifacts shape moral behavior of their users. In the result of technological mediation human actors can benefit or visa verse, can be harmed.

To sum up, technologies mediate moral actions of humans. In the process of mediation technological artifacts also shape those actions. This shaping takes place because technological artifacts are delegated moral agency and have scripts.

3.1.3 Distribution of agency in socio-technical system of e-commerce

In ANT, agency does not initially belong to a particular actor, but is the result of interactions of the actors in the actor network. In other words, agency is distributed between those actors. Technological artifacts distributing the agencies between the actors of the network can delegate agency to some of their users and not to others. (Oudshoorn at. al.,2005) The notion of distributed agency helps to understand how technological artifacts can delegate agency to other actors and vice versa, take away the agency of other actors.

Trustmarks, shops, shoppers and trustmark organizations form an actor network, and different agencies are distributed between the actors of this network. Theoretically the relations and actions of the actants in the network are shown in the scheme below.
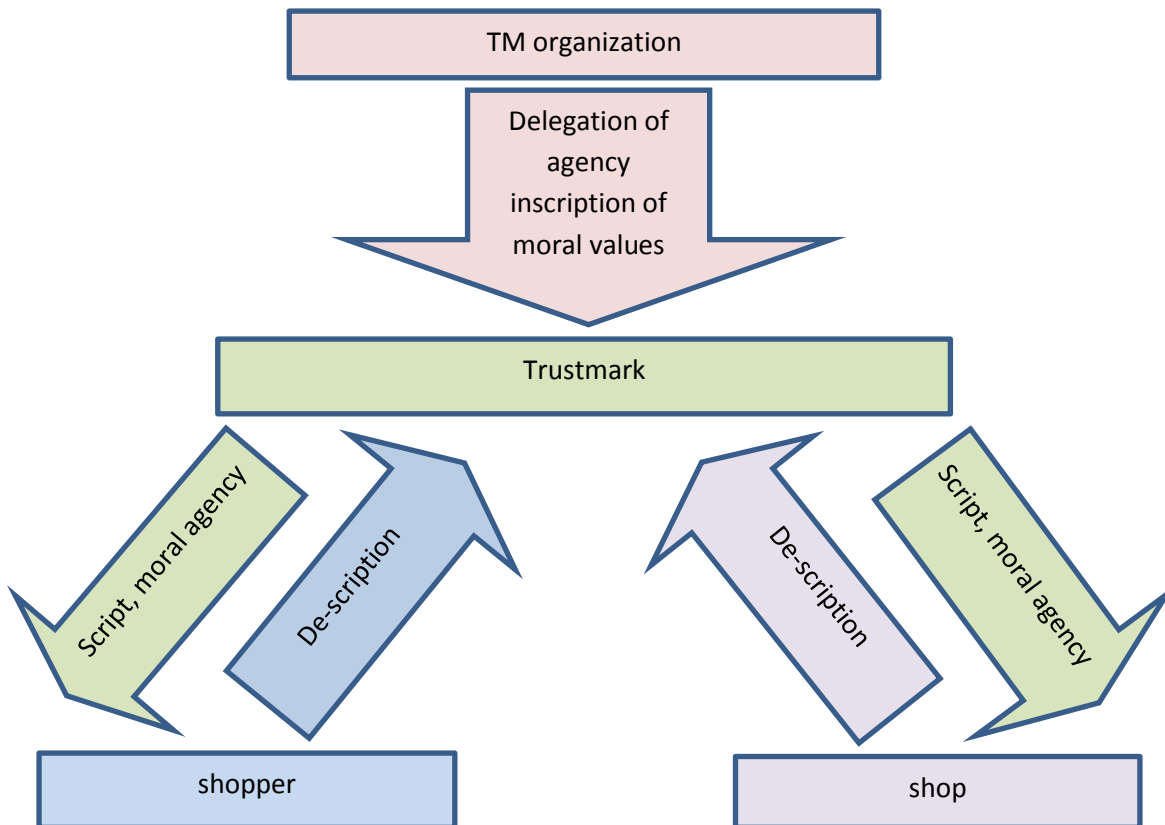
Figure 2: Actor network of distribution of trust in e-commerce

Trustmark organizations are the designers of trustmarks. They first define who will be the users of this technology and how it will be used. In order to do that they first construct user representations, and analyze how different groups of users (shops and shopper) will use trustmarks. By developing the script of this technology, trustmark organizations aim to increase trust in e-commerce and ensure that online shops are doing their business in a good way. They inscribe those concerns into trustmarks, and delegate trustmarks the power to ensure them.

By having a script, trustmarks mediate the actions and decisions of users. They can shape the decisions of customers to trust and also shape their trust building practices and actions. Trustmarks can also shape the behavior of the shops, by prescribing them to act fairly and mediate their relations with online shoppers by making their webpages look trustworthy. By shaping moral and ethical actions and decisions of both groups of users trustmarks can exercise moral agency.

Trustmarks have two kinds of users: web shoppers and web shops. All users give their meanings to it and de-scribe the script of trustmarks. Online shoppers either recognize or do not recognize the moral agency of trustmarks and include or not trustmarks in their online shopping practices. Online shops in their turn, either follow or do not follow the script of trustmarks. The relation between web shops and web shoppers are mediated by trustmarks, that have moral agency to ensure that all users behave ethically and morally correct. Trustmarks should ensure that trust is generated and distributed between the users of trustmarks.

The text and the model above presented the ANT perspective on the relations between trustmark technology, its designers and users. In theory, those relations should be as they are described above. However, in reality, they might be different. In the next chapter I will present the results of empirical study and will see whether the connections between the actors of this actor network are the same as I described here.

3.2 Elaborated research questions

My main research question is: "what is the moral agency of trustmarks"? After I have presented the conceptualization of trust and theoretical framework that I will use for my analysis I am able to formulate more specific sub questions for my research:

1. *What moral values and what kind of behavior do trustmark organizations inscribe into the trustmarks?* In order to answer this question I need to analyze user representations that the designers constructed. Also I need to analyze the script of trustmarks and open the black box of this technology.
2. *How does trustmark shape the behavior of its users?* To answer this question I will study trust building practices of the users of trustmark and analyze what agency trustmarks have in shaping their moral actions and decisions to trust.

Both of the questions will be answered by analyzing empirical data. The methods of data collection are described in the following section of this chapter. Having answered listed above questions I will be able to understand how trustmark shape the moral behavior of its users and what role it plays in their trust building practices in e-commerce.

3.3 Research methodology

The aim of this research is to explore what is the role of trustmarks in encouraging trust in e-commerce. To answer my research questions I have to study the relations between all the actors in the network described before. In order to do that I will use qualitative methodology, that includes semi-structured interviews with shop owners, shoppers, and trustmark organizations. Moreover, I will use the findings of the TNO project concerning to the organizational and operational details of different trustmarks.

I conducted qualitative interviews with respondents from three different groups of actors that participate in the actor network described before: online consumers, online stores and trustmark providers. The interviews had a semi structure character, as such interviews allow to get necessary for me depth of information of the process of trustbuilding for my qualitative research. According to DiCicco-Bloom and Blackwell (2006:315), "Semi-structured in-depth interviews are the most widely used interviewing format for qualitative research and can occur either with an individual or in groups".

A second empirical method used in this research is the content analysis of several online shops and the websites of trustmark organizations. The information on the websites of trustmark organizations (texts and videos) was studied and analyzed to find user representations constructed by trustmark designers, and moral values the use practices that the designers inscribed into their technology. The outlook of online shops was analyzed in terms of trust mechanisms that are used: the position of trustmarks, payment signs, contact information and general layout.

Along with the desk research of trustmarks, in order to give more information about trustmark organization, I use online survey (launched during the TNO project), that has been filled out by 30 trustmark organizations which provides a more precise view on how trustmarks are operated, and what services they provide.

To sum it up, different methods of getting empirical data are used in this thesis. These methods include semi-structured interviews of consumers, web shop employees/owners and trustmark organization employees, as well as online survey filled in by trustmark organizations and the content analysis of the web pages of trustmark organizations and the web shops.

3.3.1   Users Interviews and the selection of respondents

As mentioned previously there are three groups of human actors in the actor network, therefore there are three sampling groups: consumer, shops and trustmark authorities. As this research has an explorative character I am not aiming to provide a precise picture of what is happening in case with particular trustmarks, shops and consumers. I rather try to develop an understanding how trustmarks as technological artifacts influence shopping and celling practices of consumers and online stores respectively. The lists of all interviewees can be found in the Annex 3.

Ten consumers with different shopping practices were selected for the interview. The sampling method used for the selection of the online shoppers is convenience sampling (Schonlau at.al., 2002) and in my case it means that I interviewed colleagues and several friends. The main criteria for selection is e-shopping experience, that varies from once in 2 month up to 8 - 10 times a month. All interviewees are highly educated and are experienced Internet users. As during the TNO project we studied trustmarks in many different countries the nationality of the interviewees varies: there are Dutch, Italian, Lithuanian, and Polish consumers. Consumers that I interview are both male and female and their age ranges from 23 to 38 years old. Half of consumers (five) selected for the interviews are aware of trustmarks and the other half not. Consumer interviews thus were conducted with the users of various age, nationality, and online shopping practices.

The aim of these interviews is to get an overall picture of how consumers build their online trust, and whether they use and need any third party in this process. Therefore consumers were not asked about their relations with concrete trustmarks, but rather were encouraged to share their way of building trust and reflect on their relations with trustmarks if such relations existed.

Therefore interviews consisted of two parts: in the first part consumers were asked how they choose online shops and how they understand that the shop is trustworthy, and in the next part they were asked if they are familiar with any of trustmarks, and were encouraged to tell about their relations with trustmarks. In case when consumers did not know about trustmarks they were familiarized them and asked if those marks could have importance for them. All consumers interviews were done face to face, lasted 10-15 minutes, and the answers of the interviewees were recorded and then sent to them to validate.

The aim of the shops interviews was to understand what methods they use to make their website trustworthy, what relations with the trustmark they have and what is the meaning of trustmark for them. The main sampling criteria for the shops is the place where they display the seal. There were two phone interviews with the web shops (Andela pharma, Fonq) that lasted 10-15 minutes and the interviewees answers were written down and sent to them for validation. One of the interviews was

done via e-mail (Creamsupplier) online shop was sent the list with questions and some of them were answered.

3.3.2 Selection of the trustmarks for content analysis and interviews

In this thesis I analyze trustmarks that originated both in EU and US and are of different scopes: SSL, Privacy and general scope trustmarks. In this thesis I use trustmark provides interviews that we did during the TNO project. In total sixteen different European and US trustmarks with different certification schemes were selected in order to get a full understanding how different trustmarks schemes operated. The list of the interviewed trustmark organizations can be found in the Annex 3. Trustmark providers were asked about their operational and legal base, certification criteria, and details about their subscribers. Interviewed trustmark organizations are influential in their countries and sometimes all over the world, have different certification schemes, and different scopes of action. Those differences in the trustmarks that I study make my research more objective and help to analyze trustmarks as technological artifacts.

For the content analysis I selected three trustmarks: Norton secured, Trusted shops and TRUSTe because, according Kool at.al (2012), they are the most influential trustmarks of their type. Norton Secured (by Symantec) is one of the biggest organizations that sells SSL trustmarks is used all over the word and according to its designers is the most widely recognized trustmark on the web. Trusted Shops is an example of a general scope trustmark. It originated in Germany in 2000 and has over 12 000 subscribers. TRUSTe is the most famous privacy trustmark. It is used in more than 70 countries and mainly insures the privacy of the customers.

3.3.3 Limitations

This study has several limitations mostly due to its explorative character and time frames of this research. Overall, there too many different trustmarks all over the world and it is not possible to include them all in this research.

There are some consumers that use trustmarks actively and ask trustmark organizations to help them if they experience problems in their shopping process. However, it was impossible to find such consumers for the interview. Online shoppers that were interviewed either don't know trustmarks, or know very little about one of them- Thuiswinkel Waarborg (NL). This happens because all interviews even though come from different countries live currently in the Netherlands.

The amount of shops' interviews is limited to only three: Andela pharma, Fonq and Creamsuppliers. However, they have use trustmark differently, so the interviews provide a wide picture of the meanings of trustmarks for the shops.

3.4 Conclusion

This chapter presented the framework that is used for the analysis of the moral agency of trustmarks. In order to answer the main question of this thesis, namely how the moral agency of trustmarks looks like, a number of STS concepts is used. Thus trustmarks are considered not as independent agents, but they are analyzed within the whole actor network that exists around them, and that they are a part of. The actors in such networks are both human and non-human that shape and mediate actions of each other. Those actors are consumers, shops, trustmark authorities and trustmarks themselves. In ANT terms, trustmark authorities design trustmarks. By doing that they inscribe a program of action into them. The users of trustmarks describe this program of action and

develop their use practices of this technology. Trustmarks mediate the relations between the human actors and mediating, they also have moral agency in relation to them. This is my theoretical model, that describes the relation between the actors in this network and it can be seen on the picture above.

The next chapter will analyze the empirical data to improve and enrich the theoretical model. By interviewing different actors I will clarify their relations with the trustmarks and the human actors in this actor network. I also analyze what script TMs have (both by interviews and desk research) , and what moral agency they have in relation to human actors.

4   <u>Research results</u>

This chapter analyses the empirical data concerning online trust, trust building and design and use of trustmarks. It consists of two parts: the first part focuses on the design of trustmarks. It analyses the reasons why trustmarks were introduces, the representations of users that trustmark designers constructed, and the script that this technology has. The second part of the chapter focuses on the users of trustmarks. It considers trust building practices of both types of trustmark users: online consumers and online shops and investigates the way they use trustmarks. This part of the chapter also analyses trust building methods that non-users of trustmark have. The last section of the chapter focuses on the risks and uncertainties that online consumers have.

4.1 Design of trustmarks

This part of the chapter focuses on design of trustmarks. It investigates who are the designers of trustmarks, what were the reasons for the design of this technology, and what scripts trustmarks have. It also analyzes user representations constructed by designers when they inscribed images of users into trustmarks and how they agency was distributed between designers and users.

4.1.1   Trustmark designers

TNO survey showed that trustmarks are designed and operated by different kind of organizations. The majority of trustmarks in Europe are run by industry organizations. Such industry organizations are for instance the associations of e-commerce actors, mostly consisting of web-shops representatives. Industry associations are in most of the cases non-profit organizations, and even if they ask the shops to pay for trustmarks, they do not make profit on it. The examples of such industry organizations that run trustmarks are Thuiswinkel Waarborg in the Netherlands and E-handel in Norway. Such trustmarks normally operate within one country, and do not have many subscribers, the amount of the shops that have their trustmarks usually does not exceed 1000.

Also, many of trustmarks are designed and operated by private companies. Such companies make their profit from operating trustmarks and actively lobby their product. The examples of such trustmarks are Norton Secured (US), Trusted Shops (DE) and TRUSTe (US). Such trustmarks normally have more subscribers, so they are displayed on more websites, and are also used internationally, in many countries. Some of such trustmarks are present on thousands of sites all over the world.

4.1.2   The reasons for design of trustmarks

Initially trustmark were designed mainly because e-commerce actors: trustmark organizations, the e-commerce actors, and also governments saw the lack of trust between online shoppers and online shops, and wanted to encourage people to shop more online. In other words, they wanted to increase institutional trust: trust in the institution of e-commerce. Industry associations wanted to establish their standards of e-commerce between their members and did it with the help of trustmarks. By certifying online shops trustmark organizations give their customers assurance that the shop exists and behaves morally correctly, and that in case if the shop does not behave correctly, than the shopper will still be taken care of – therefore the majority of trustmarks have dispute resolution mechanisms. In the interviews trustmark designers explained the reasons to design their trustmarks:

The trustmark was set up to provide proof of existence of e-shops because of the amount of crime which happened in e-commerce in the recent 2-3 years. (Interview with Lithuanian Eshops)

The objective of the association is to support the distance selling industry and the members of the association in establishing a good and trusting relationship with consumers, suppliers, media, the authorities and governmental institutions. Several years ago the association underwent through some changes and as the result of those changes the trustmark was set up. (Interview with Distansehandel , Norway)

The market of e-commerce is growing very fast, especially in recent two years – therefore there was a need in a trustmark. The trustmark was initially funded by the government at the time when it was set up 10 years ago. (Interview with Danish e-handel)

Trustmark was developed in 1999 by the association for e-commerce businesses the initial aim of the trustmark was to make customers believe in e-shopping. (Interview with APEK, Poland)

As it can be seen, different actors: government, the associations of distance selling and saw the need to make online shopping more trustworthy, and to encourage shoppers to trust online web shops. There was the lack of consumer trust in the web shops, and lack of regulations within the area of e-commerce they designed their product in order to fill those gaps. All those actors contributed to the proliferation of trustmarks. So the initiative to develop trustmarks came from the top (the government and industry associations saw the need for it) to the bottom: the customers did not develop the technology themselves.

4.1.3   User representations

Trustmark organizations design their technology for two types of users: online shoppers and online shops. Constructing representations of shoppers trustmark authorities imagined shoppers who are conscious about their privacy in e-shopping (privacy trustmarks), who are aware that their connection should be safe (SSL[3] trustmarks) and who need guarantees that the shop they are buying at exist and will not mistreat them (General scope trustmarks). Such shoppers behave like Mary from the video on trusted Shops webpage:

This is Mary. Mary loves shoes. Today she wants to order some shoes on the Internet. That is why she is looking for a great offer. Wow, so many shops are offering her shoes! Mary has no idea which site to choose. Unfortunately, Mary cannot check out all the traders. But as trusted shops we do! Because Trusted shops checks out online shops against more than 100 criteria. And therefore knows whether a shop is good. So that Mary knows whether a shop is good we mark shops that pass our check with trusted shops seal of approval (website of Trusted Shops, Germany)

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[3] SSL technology - Secure Sockets Layer is security technology for establishing an encrypted link between a web server and a browser. This link ensures that all data passed between the web server and browsers remain private and integral

In the user representations of trustmark designers like Mary, users are expected to know all the quality criteria against which trustmark organization checks the web shops. In other words the users are expected to open the black box of trustmarks in their shopping practices.

According to the survey results, constructing user representations of the second group of users, trustmark designers focused on small and medium business (SME). They assumed that trustmarks will make them more trustworthy and therefore help them to attract more new customers. That is why trustmark organizations have such information on their websites:

> *The certification and seal make it clear to consumers that you are trustworthy. If customers trust your shop more, you will improve your conversion rate and your sales will increase.* (Trusted Shops website)

> *TRUSTe online privacy seals can have direct impact on consumer decisions. TRUSTe's online privacy services can help your business increase conversions, order value, and customer engagement. Your customers feel more confident to click, play and shop online (*TRUSTe website)

On the other hand, trustmark designers aimed also at bigger shops with brand names in order to keep complied with industry standards:

> *Our trustmark was designed for not that famous web shops (the seal is the means to create trust and to increase customer base and for big famous companies (for them the seal is rather the means to avoid any problems as well as create TRUSTe with users) (Interview with TRUSTe, US)*

To sum this up, trustmark designers constructed two kinds of users representations. The first one is the representation of online consumers that do not know what web shops to trust and cannot check it themselves. Such consumers, like "Mary" are supposed to open up the black box of trustmarks and know what is behind the seal. To the second group of users representations belong SME retailers, that need to get their customers base and need to be trusted, but also well-known retailers that need to avoid problems in case of a dispute.

4.1.4   Script of trustmarks

In accordance with the users representations trustmark organizations inscribed their visions of online trust construction into them. They delegated some of their agencies, competences and responsibilities to the trustmarks by inscribing them into trustmarks. The trustmarks are delegated the agency to : (1) to make the shops look trustworthy for the customers, (2) to make the shops comply with the industry standards and (3) to protect customers if something goes wrong with their purchase.

TM organizations designed several types of trustmarks, some general scope, some specific scope. Thus different competences and agencies can be delegated to different types of trustmarks: SSL trustmarks, privacy trustmarks and general scope trustmarks. SSL trustmarks show that the connection is technically secured. This means that there is special software installed (SSL) that ensures that the data of the customer during the transaction is secured. Privacy trustmarks ensure that personal information of the customer is well protected by the shop. General scope trustmarks ensure that certified web shop is doing well and has fair commerce practices.

Because there are two groups of users of trustmarks -online shoppers and online shops, trustmarks contain two different kinds of scripts of trustmarks. Those kinds of scripts differ in terms of users they are aimed at: online shoppers and online shops.

4.1.4.1 Script aimed at online shoppers

Script of trustmarks aimed at consumers shapes their e-commerce practices and also their decisions to trust or not to trust. It facilitates distribution of agency in the actor network of e-commerce by granting some agency to consumers and taking away some of their agencies.

Figure 3: Different trustmark seals

Trustmarks encourage the shoppers to trust the web sops that have trustmarks on their pages. This is embodied in the outlook of the seals (Figure 3) , that contain the words like trust, security, certification.

Taking away consumers agency

The script of trustmarks related to online shoppers is incorporated into the layout of trustmarks. Encouraging consumers to trust the shop when they see trustmarks on the webpage, it takes away consumers agency to check online shops themselves and use other methods to construct their trust. In this section I consider scripts embodied in the layout of the three trustmarks: Norton Secured, TRUSTe and Trusted shops.

Trusted shops general scope trustmark

Trusted shops trustmark ensures that online byer is protected by trusted shops trustmarks. When the customers click on this seal they see the certificate. (Figure 4). The certificate prescribes shoppers to trust the shop by saying that the web shop has been verified by trusted shops, the customers are protected and if something goes wrong, the customers will always get their money back. It also contains information about the term of certification and invites the customers to go to trusted shops webpage. In other words, trustmark certificate embodies the inscription of the visions of trustmark designers about the construction of   institutional trust.

Figure 4: Trusted shops certificate

From the page showing the certificate users are directed to the starting page of trusted shops. The webpage of the trustmark (Figure 5) has two sections: one of them is designed for consumers and the other for the shops.

The consumer section invites online shoppers to watch a video which tells a story about a woman that wants to buy shoes online but does not know what shops she can trust. This video visualizes the script of the trustmark: consumers look at the seal, and trust certified shop. Furthermore, there are several more videos that tell consumers what trusted shops certifies and what guarantees the customers have. The website has a section called troubleshooter where customers are encouraged to complain about their problems in online shopping. The starting webpage also has a link to the list of all the certified shops. However, there is no search function there and no hyperlinks: even if the customer wants to buy in the trusted shop he or she has to Google the name of it in order to get the link to this shop.

The script of this trustmark tries to create trust in website where it is displayed. This takes away the agency of consumers to build online trust themselves and to choose their shops where they want.

TRUSTe privacy trustmark

TRUSTe is an American trustmark organization, whose trustmarks can be found on the pages of the web shops in 70 countries around the world. TRUSTe trustmarks ensure that privacy policy of the website can be trusted. The seals of this organization prescribe their users to click on the trustmark by bearing the words: click to verify. When consumers click on the seal they are shown the certificate.
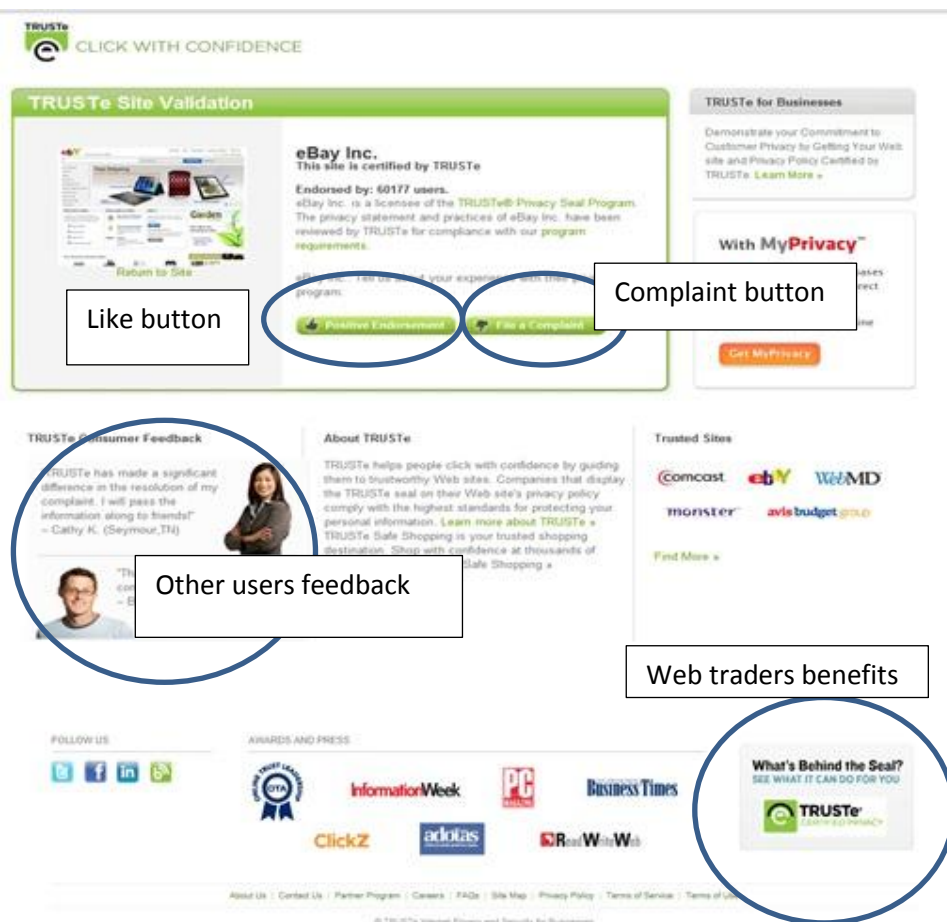

Figure 6 TRUSTe certificate

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The certificate of this trustmarks embodies many prescriptions: it invites users to share their opinion about the trustmark. It prescribes to trust the shops with the seal containing the following words:

> *This site is certified by TRUSTe Endorsed by: x number of users. www.xxx.comis a licensee of the TRUSTe® Privacy Seal Program. The privacy statement and practices of www.xxx.comhave been reviewed by TRUSTe for compliance with our program requirements. (TRUSTe website)*

The script of this trustmark gives users the agency to share their opinion about the website that has the trustmark. Furthermore, at the same webpage customers see other consumers feedback on how helpful this trustmark is for them. This certificate prescribes the customers to trust the websites with the seal:

> *TRUSTe helps people click with confidence by guiding them to trustworthy Web sites. Companies that display the TRUSTe seal on their Web site's privacy policy comply with the highest standards for protecting your personal information(TRUSTe website)*

If the customers want to discover more about TrustE they are invited to click on the "learn more"button about TRUSTe button and find themselves on the starting page of the trustmark. However, this page is designed for online retailers. It contains the information about the benefits the retailers will get if they have the seal.

Norton secured SSL trustmark

When customers click on the Norton secured seal, they also see a certificate. However, the content of the certificate differs from the previous one. It has less text and more actively prescribes the users to complain about misuse of the seal and to go to the starting page of the trustmark (Figure 7). The text in the certificate stays the following:

> *This website can secure your private information using a SSL Certificate. Information exchanged with any address beginning with https is encrypted using SSL before transmission. Identity Verified: [WWW.xxx.com](WWW.xxx.com) has been verified as the owner or operator of the website located at www.symantec.com. Official records confirm [WWW.xxx.com](WWW.xxx.com)as a valid business. (Symantec website)*
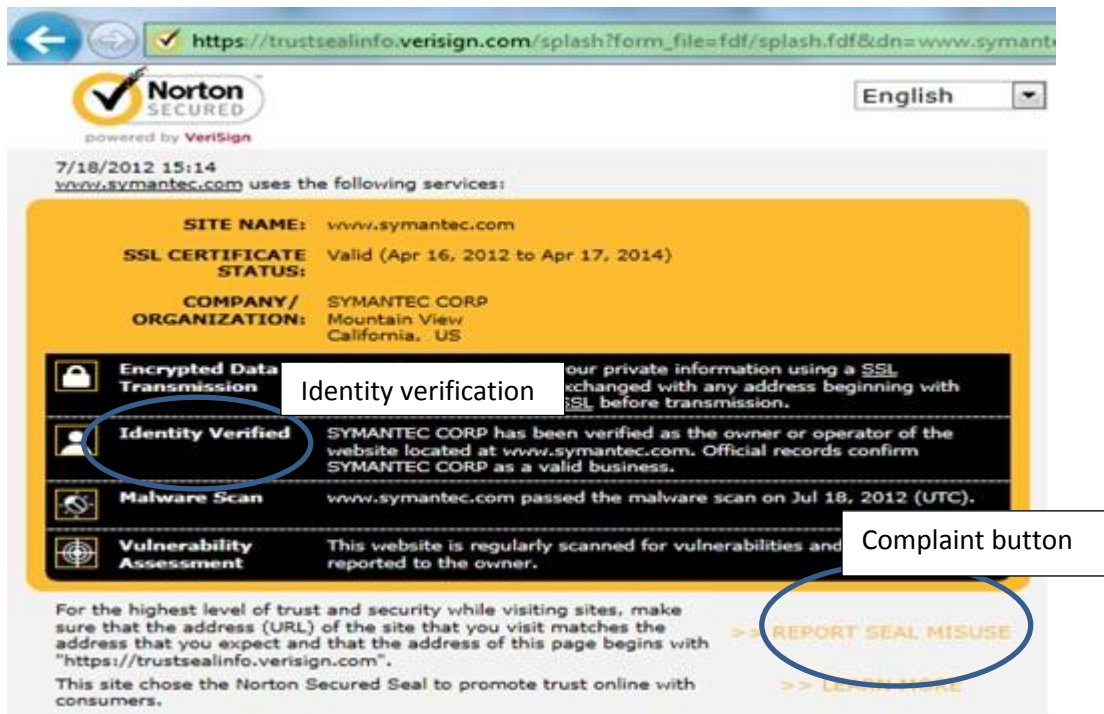
Figure 7 Norton secured certificate

So the consumers are not encouraged to read information about the guarantees of the seal, but are familiarized with SSL technology. They also are told that the shop they buy at exists and is valid. However, if they want to know more about the seal, the trustmark does not prescribe them to do it. When the customers click on link in the certificate they are directed to the page that shows the benefits of having this trustmark for the online shops. So this page is only designed for online retailers, and contains all the information necessary for them in order to buy SSL trustmark: the statistics of recognition of the trustmark, and other advantages of having it.

To sum this part up, I showed that script of trustmark technology aimed at online consumers is embodied in the layout of this technology. It encourages online consumers to behave in accordance with the user representations constructed by trustmark designers. The script of trustmark can take away consumers agency to use their own methods to construct trust and their ability to check web traders tem selves. Instead, shoppers are prescribed to trust the web shop when they see the seal. However, script of trustmark not only takes away consumers agency but also delegates them agency, and what kind of agency is delegated to consumers is shown in the next section.

Delegating agency to consumers

Script of trustmarks delegates agency to consumers to monitor the misuse of the seal and to start dispute resolution (problem solving), auditing (re-certification of the shop) and revocation (cancelling subscription) procedures. If online customers are not happy with the way how the shops treat them - for instance if the goods are not delivered on time, or if the shop does not take the purchase back, or in any other similar situation, consumers can exercise their agency by clicking on the button: *complain about misuse of the seal* that is inscribed into the design of most of the trustmarks. (see for example the figures 6, 7)

The agency to resolve the disputes is delegated to the designers of trustmarks. The amount of disputes resolved per year by different trustmarks varies from several thousands 47000 (Trusted shops DE), several hundered - 120 (Thusiwinkel, NL), and sometimes is almost zero, for example Trygg e-Handel (NO) that resolved 9 disputes last year, or there are no disputes at all, (Confianca Online, Portugal). Dispute resolution usually has a very high rate of success. According to the survey results, this rate is around 90%. So trustmark designers act as moral agents by ensuring that the dispute is resolved and both users of their trustmarks (shop and shoppers) are satisfied:

> *Normally there are 3-5 customers complains a year which are mainly some misunderstandings that are easily solved by the means of the discussion and finding a common solution. (Interview of APEK, Poland)*

> *As soon as a consumer delivers a complaint, BeCommerce makes sure that it will be resolved. This is important because as a label 'you are responsible for your members' (Interview of BeCommerce, Belgium)*

> *Dispute resolution cannot be unsuccessful as the trustmark is interested in good reputation and is promoting itself in the social and mass media. (Interview of Distansehandel, Norway)*

> *Dispute resolution is done the foundation. The effectiveness of the mechanism is 100% (E-mark, Denmark)*

Sometimes trustmarks have an additional service, that is called money back guarantee. This implies that customers automatically get their money back, if they are unhappy about the way the shop treated them.

The agency to trigger the audit procedure is shared between consumers and trustmark organizations. Usually trustmark organizations audit certified shops once a year. But in case of the dispute audit can be triggered by online shopper. Consumers can have their agencies to start the audit in two ways: the first way is to directly complain about the misuse of the seal, pressing the complaint button on the trustmark webpage or on the trustmark certificate. The second way is to write on social networks, in blogs, or in forums about negative experience with the certified shops. Some of trustmark organization monitor such websites for users complaints:

> *Auditing is done yearly and on the daily basis, there are daily scans of the news, blogs, customer reviews. If the employees of the foundation find a negative complaint about the sealed shop, the lawyers of the company undertake action, if this does not help then the online shop is revoked. Revocation list is not published on the website but the press release about the shops can be made (Interview of e-mark Denmark)*

> *Auditing is done daily: every trustmark holder is checked daily for the economic stability and changes with respect to ownership. Revocation can take place if a company receives complains they do not follow up properly, is not economically stable any more or due after the results of mystery shopping. (Interview of Distansehandel Norway)*

If the dispute cannot be resolved, and the shop does not follow the prescriptions of the trustmark, and the audit shows that trustmark organization has the agency to revoke the seal. In this case trustmark does not have any agency for the users anymore.

If it is impossible to resolve the dispute internally between the costumer and the seal holder, then TRUSTe uses Watchdog Dispute Resolution program. TRUSTe checks the seal holder and if it does not comply with its regulation the seal is withdrawn. (Interview of TRUSTe, US)

The Trustmark advises the merchant to maintain the relationship and to seek a satisfactory solution for the customer. Revocation rules are clearly set. When a dispute cannot be settled, the accreditation is withdrawn. ISIS Replaces the accreditation logo with the logo of the revoked trustmark. (Interview of ISIS, Germany).

Now revocation can take place if for instance the shops refuses redress of the purchase or in any other way breaks the rules of the trustmark. In this case the information about such shops is published on the users reviews websites and also on the Facebook page of the trustmark. (Interview of eShops, Lithuania)

In order to protect their customers, trustmark organizations sometimes publish the list of revoked shops on their websites. If the shop still shows the seal, when customers click on it, they will see that the trustmark certificate is not valid anymore. (See figure 8)
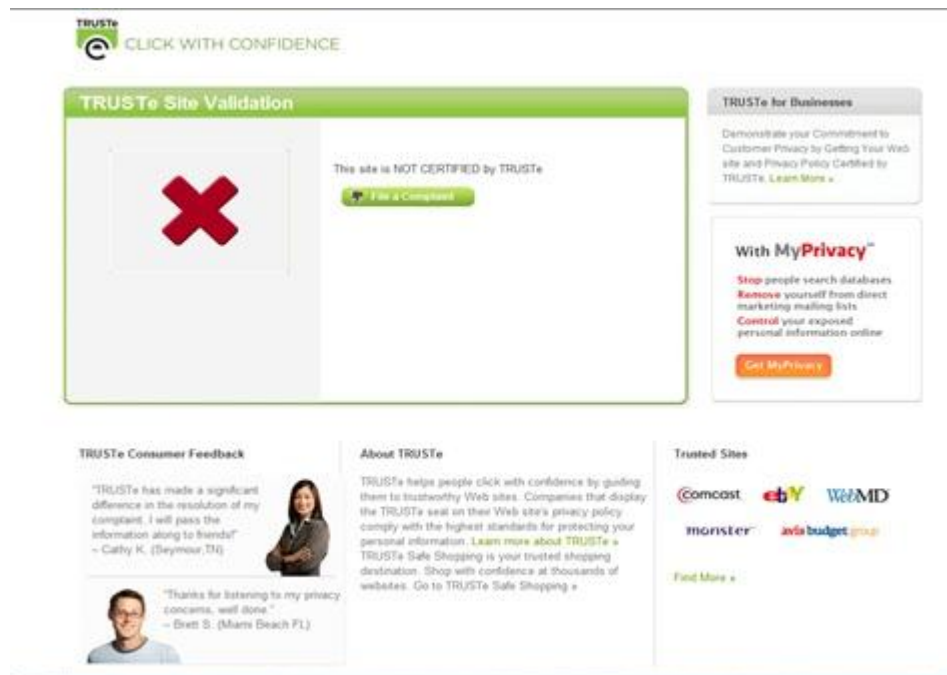

Figure 8 Invalid certificate

To conclude, I showed in this part that trustmark organizations by inscribing prescriptions of trustworthy online shopping into their technology (aimed at consumers) facilitate the distribution of agency in the actor network of e-commerce. The script of trustmarks delegate consumers the agency to control trustmarks, but takes away their agency to use their own methods to construct their online trust.

4.1.4.2 Script aimed at shops

The script of trustmarks that defines the actions of the shops and prescribes them to follow the standards of the e-commerce industry. This is mainly done during the certification process. Trustmark organizations inscribe into trustmark their visions on how e-commerce should be done. In

order to do that they set up a number of criteria, according to which the shops are prescribed to act. Those criteria are written down in the code of conduct. The prescriptions of trustmarks have a binding force: in case retailers violate the code of conduct the trustmark organization has the agency to start the revocation procedure.

Most of the trustmarks base their script on the consumer protection and distance celling legislation. Thus E-shops Lithuania certification criteria are based both on Lithuanian State Data Protection Inspectorate and experience of Easter European trustmarks, as Lithuanian legislation does not fully cover all the aspects of e-commerce. (Interview e-shops, Lithuania) For trustmarks, active internationally the certification criteria are adopted for specific national legislation criteria. Euro - label trustmarks set their certification requirement s in the European code of conduct based on European law (Euro-label interview). So trustmark script is based on law, and it has the agency to enforce that law.

In case of SSL trustmark the script is based on the criteria that are related to software safety. For example according to VeriSign, merchants who purchase their security seal need to have their web site secure: they should use SSL certificates, regularly performed a vulnerability scan , the website should be checked for malware (this happens almost real-time). An example is a check of whether information that is filled out in a web form is checked rather than that database queries can be filled out that lead to customer information leaks. The trustmark technology checks their subscribers every day, and if the shops do not meet the criteria (follow the script) the trustmark has the agency to abandon (disappear) from the website of such shop. This agency is delegated to automatic software technology:

> *If the daily scan shows that the website does not meet Symantec requirements then the seal is immediately withdrawn from the website. The business can make some amendments and apply for the seal again.* (Interview of VeriSign, US)

If a trustmark is a privacy seal, so that it ensures the safety and privacy of data, the script would specify the criteria towards the data treatment on the retailers websites. Such trustmarks are for instance Europrise and TrustE presented above.

> *If the company is revoked than the seal is either withdrawn from the site or when the costumer clicks on the seal the certificate says that it is not valid any more (TRUSTe hosts the seals, so can withdraw the seal or – at least – block the link between the seal and the TRUSTe register). Consumers can always check the online register of TRUSTe, to see if an online retailer/firm is listed. (*Interview of TRUSTe)

Different trustmarks have different number of certification criteria in their scripts: some of them prescribe the shops to follow up to hundred different criteria. For instance the script of EHI Euro - label (DE) defines 200 certification criteria, Trusted Shops (DE) - 130, while BeCommerce (BE) prescribes the shops to follow 40 certification criteria. In general, criteria inscribed into trustmarks are more or less the same for studied trustmarks, only SSL trustmarks and privacy seals have more specific criteria.

In most of the cases the script of the trustmarks prescribes the shops to fulfill two types of criteria: to have clear identification and good business practices. Clear identification means that trustmark

authorities prescribe the shops to have physical address, landline phone number, registration in the chamber of commerce. Good business practices are related to financial stability of the business, also trustmark checks the way retailer treats minors (there should be minors protection policy), if the terms and conditions of the shop are clear for the customers, and whether the description of the good is precise and prices are correct and delivery terms are clearly stated on the website.

Trustmark organizations make sure that the shops follow the script of trustmarks by the means of documentation study - they study the code of conduct, check registration of e-shop, look at financial reports and other relevant documents. They also research of the layout of the websites: the information available on the website: description of the goods, privacy, shopping cart, etc., take interviews and use mystery shopping.

The process of inscription of all the moral behavior described above is done in two steps: the first one is application and the second one is optimization. In the first step trustmark organization has the agency to collect of the documentation from the shop and check if it complies with the prescriptions that this trustmark organization inscribed into their trustmark. After the checks trustmark provides make recommendation to the shop what changes should be made and sometimes assists to make the improvements:

> *Our trustmark now offers a number of cervices for the subscribers aimed to increase the quality of their work, thus for instance the lawyers of the trustmark organization consult the trustmark holders (especially SMEs) on how to improve the terms and conditions for their customers.* (Interview of APEK, Poland)

During the next step (optimization) of the application the retailer implements the prescriptions of trustmark organization , submits the report to it and then the next round of checks begins. If the trustmark organization finds the changes made by the retailer sufficient trustmark is displaced on the website of the retailer. In case with SSL certification, next to the standard procedure special software is used for checks, for instance malware checks and vulnerability scans.

No matter, if trustmark designers are industry associations, or private companies, they do not give their seal for free, but set up fees for certification, and also annual fees. In other words, the designers of trustmark inscribe the value in their seals, and this encourages the shops that have such seals to follow the prescriptions of the seals carefully. Usually the annual price of having the seal is different for little and big shops, and usually is determined depending on their size or turnover. The lowest price is 50 euros per year (eshops Malta) and the highest is taken from e-shops with a very big turnover and can be up to 20 000 euros per year. (Kool at al., 2012)

Compared with the script of consumers, in case with online shops the script of trustmarks thus has a more strict character. The shops have to follow the prescriptions of moral behavior embodied in the code of conduct that trustmark organizations set up. If they violate those prescription, both online shoppers and trustmark organization have the agency to start dispute resolution, audit and revocation procedure. The agency to carry this procedure belongs to trustmark organizations.

The prescriptions of three trustmarks considered above aimed at online shops acts differently. No agencies seem to be granted to the shops if they decide to have a trustmarks. Online shops are

prescribed to comply with industry standards and as the result they benefit by having more customers

This part of the thesis reflected on the designers vision of the role of their technology in the socio technical system of e-commerce. It is clear that trustmark organizations inscribe their visions of the use of trustmarks into them, but also their moral values, which is especially relevant for the web sops. Those inscriptions are embodied in the layout of trustmark technology: the seal certificate, website and also in the code of conduct for online shops.

Trustmarks were designed to increase trustworthiness of online shops and encourage online consumers to trust. Therefore they embody the visions of trustmark organizations on how trust is constructed in online environment. By verifying the identity of online merchants trustmarks deal with uncertainties (lack of identification and lack of personal characteristics) that exist in the Internet. By verifying business practices of online merchants trustmarks contribute to the creation of institutional trust. Trustmarks being displayed on the page of the web shops were designed to mediate trust building relations between shoppers and shops. In the process of mediation they are designed to shape the decision of consumers to trust. However the shaping only takes part when trustmarks are recognized and trusted themselves. Therefore trustmark organizations delegate the agency to control the shops to trustmark technology (in case with SSL) or to online consumers by inscribing this agency into the layout of the trustmark. The next part of this chapter describes how users trust online, how they approach trustmarks, how they interpret the designers intentions, what value and agency trustmark have for them.

4.2 Use of trustmarks

This part of the chapter focuses on the use of trustmarks. It describes two main groups of users (shops and shoppers) and their use practices of trustmarks and also the way they construct their trust in the online environment.

All over the world there are thousands of the shops that have the seal. In Europe, trustmarks are quite popular, and there trustmarks almost in every European country. However, in the counties where e-commerce is not well developed, not many shops have trustmarks. For instance, in Lithuania, there are 100 shops that bear Lithuanian eshops trustmark. Euro-label trustmark in Poland is also not really vide spread, and has around 200 subscribers. Thuiswinkel in the Netherlands has certified more shops: its seal is displayed on around 1500 online stores in this country. Trusted Shops after merging with ISIS together have 12 000 subscribers. According to Norton Secured (VeriSign) organization, their seal is displayed 650 million times per day, and is recognized by 77% of consumers (according to Symantec research), so it is used by many shops as well as shoppers.

4.2.1   Use by Online shops

Trustmarks were designed for online shops and were delegated agency to increase their trustworthiness and therefore to bring them more customers. However, online shops see the agency not only of trustmarks to make their websites trustworthy. They also delegate this agency to the design of the website, and other marks, like the ones indicating different payment methods, or delivery service. In other words, the agency to make their website trustworthy is distributed between different actors:

We have Thuiswinkel Waarborg. (Trustmark) And my sister is a pharmacist, that is trustworthy, we also use good quality pictures , and the color of the website is blue, that is a medical color, and is trustworthy. The brands that we sell are the most important factor for being trustworthy. Also, we use post.nl for delivery , it is trustworthy and different payment methods that customers can see on the top of our page. (Interview of Andela Pharma, Netherlands)

*We have different payment mechanisms like iDeal, Visa, and we ship things with post.nl. Also we have SSL certificates, as you can see there is a lock on the button of the page. We also have the contact information (telephone and address) on the top of the page. (*Interview of Fonq, Netherlands)

I have always attempted to create websites which attempt to convey an environment that is safe and where they are valued. The ISIS Seal, The MacAffee Scan and the Versign SSL with extended verification (as was) are all attempts to do this. As are the nice blue colours of the website! (Interview of Creamsupplies, UK)

Depending on how online shop describe the script of trustmarks – whether the see it only as the way to make them comply with the industry standards, or whether they use them to attract new customers, online shops position the trustmark on their page (see Annex 3 for the screenshots of webpages in the intervened shops) In most of the cases the shops usually display trustmark on their webpages next to the payment methods. Sometimes, however, big brand shops, like H&M do not display trustmark at all.

For example Andela Pharma mostly described the trustmark as the way to comply with the industry standards.

It was not easy for us to get the trustmark. They required technical details for the shop and certificates for the payments…. Thuiswinkel waarborg is best mark in the Netherlands, I did not feel to have any other. We have invitations for meeting from thuiswinkel, newsletter, they keep us up to date.(Interview of Andela Pharma)

Andela Pharma does not believe that trustmark have agency to make their website trustworthy for their customers and does not use it for this purpose. Therefore trustmarks is not intended to be eye catching, even though it is visible on the website. Answering the question why the trustmark is located there the interviewee answered:

We did not really intend to make it eye catching, because it is ugly! It is more like if they (customers) do not trust us, they will be able to find it, but I think we are trustworthy enough may be without it…Only few customers click on the trustmark, it almost never happens. We don't know what is the advantage to have trustmark. We always have it and we cannot measure whether it helped us or not. Trust is also a feeling, so it is difficult to measure! (Interview of Andela Pharma, Netherlands)

Unlike Andela Pharma, Fonq describes trustmarks in two ways they use it both to comply with the industry standards and to make their website look trustworthy. The trustmark, however, is displayed in a smaller scale than in the previous case, but website designers find it eye catching enough.

It is an industry standard, we are sort of obliged to use it (to comply with the industry standard.) We subscribed for it because it has the real certification procedure that other trustmarks do not have, it has real requirements and it is the main industry standard ...I think it is visible throughout the website. And customers can see it. I don't think many users click on it, but there are some that even check our registration number, but I think there are not many of them. We had some usability tests recently, asked some customers to reflect on trustmark, and some said that it was not important. I however believe that a trustmark helps our customers to build their trust. (Interview of Fonq, Netherlands)

As it can be seen from the interviews, the meaning of trustmarks for different web shops varies. For some of them, like Creamsupplies in the UK, it is very important to have the trustmarks, and therefore it has even 3 of them. In this case, the shop describes the script of trustmarks in two ways and uses them both to comply with industry standards and also to make the website more trustworthy. In this case, the shops grants a lot of agency to trustmarks, and makes them eye catching and visible through all the website.

In contrast, there are also shops that do not grant much agency to the trustmarks. Instead, they use other mediators of trust - such as design of the webpage, payment methods and people working there as it is in the case with Andela Pharma. Agency to make customers trust is thus distributed between all those actors. However, such shops still use trustmarks to comply with the industry standards, so in this way follow the scrip of them. So in the view of online shops not only trustmarks generate trust but also other technological artifacts like payment methods and the layout.

4.2.2   Use by Online shoppers

Online shoppers are seen by the designers of trustmarks as the second category of users of their technology. Trustmark organizations created the scripts of trustmarks, that prescribe them to trust websites where they see the seal and also complain about the misuse of the seal. So trustmarks are delegated agency to ensure the customers that the websites where they are present are trustworthy.

Half (five) of online shoppers interviewed for my research are aware of trustmarks and use them in their shopping practices, and the other half has never heard of trustmarks and therefore are non-users of this technology. The following two sections analyze trust building practices of both users and non-users of trustmarks.

4.2.2.1 Trust building practices by online shopper that know trustmarks

Five of the interviewed inline shoppers use trustmarks in their shopping practices in order to understand whether it is trustworthy. However, they did not name trustmarks as the first trust building method they use, but rater it is additional to the other ones.

Guus, who buys different goods (sometimes books, but also equipment) in Dutch online shops several times a year, uses many tools to construct trust. Those tools are user's comparison websites and trustmarks. But trustmark has agency to make him trust only if it is displayed on the comparison website and not on the website of the online shop itself. So for Guus, the agency of trustmarks is similar to the agency of the consumer protection law that exists in the Netherlands.

> *So these are mostly three things that I look at those community websites: how many users reviewed the website, what is their score (how many stars they gave to it) and whether there is Thuiswinkel mark. Actually I know very little about this. I know that on every comparison site I google they mostly have this Waarborg, but I never checked what organization is behind it. But I think I read somewhere – I am not sure that it is about thuiswinkel that as a website you have to comply with some things –like that return policy. But also this is already arranged by law in the Netherlands. But I also remember, couple of month ago there was a big fraud with the web shop that also had a TM, but I am not sure which TM it was. So that they did not comply but still had the sign and organization behind the sign did not check. ..*
> *(Guus,30 Netherlands)*

Olga comes from Russia, but she lives in the Netherlands for a long time and buys online in many Dutch shops. She does not need many trust building mechanisms. She knows many shops that she trusts because she buys there a lot. But if she needs to buy something in an unknown shop for her, she would also check a trustmark. So in her shopping practices, Olga describes the script of trustmark in the way how the designers saw it and recognizes the agency of it. She even follows the script of trustmark, she clicks on the seal and checks what is the organization behind it and its certification criteria:

> *I google where I can buy things I need, and then look what shops have those goods, and then I see whether I like some of them, I also check whether the shop it has a TM... In the Netherlands I look for Thuiswinkel waarborg. Long time ago I looked at the certification criteria. But I have not checked it for a long time. As far as I understand now, it is an organization that controls the shops and you can complain about the shop to them if something goes wrong (Olga, 34, Russia)*

Like Olga, Juul also buys online a lot in the Netherlands (she purchases clothes, gifts and even furniture), and does her web shopping every week. For her, trustmark has agency to ensure trustworthiness, but this agency is also shared with other agents like the professional look of the website.

> *Not consciously, sometimes I see it and I think OK, but I do not look for it every time, no. I never follow up on it by clicking on the trustmark. But if there is a site I am doubting about, I will look whether there is a trustmark (just to see it), then I would think shopping is OK. No, no, it is just intuitively, if I see this thuiswinkel sign, I think it should be ok, but I do not check the content. But the trustmark for me is not the key element for my choice, the professional look of the website gives me the feeling that the company has invested in the design of it. Furthermore, everything should be up to date (refreshed often), this gives me a feeling that it is a trustworthy website. But when the design is not that good, I rather shop somewhere else, except when I can only find the product of my choice at this particular webshop. Then I would look for the trustmarkt to see whether I would go ahead. (Juul, 38 Netherlands)*

Annelieke, who lives in the Netherlands does online shopping a few times a month, she mostly buys books and not expensive things online and is more careful in her trust building practices. She normally buys in few shops that she knows well and trusts them because of their reputation. She is the only interviewee who delegates trust ensuring agency primary to the trustmark, even though other trust building agents are also important for her.:

I always see if the shop is connected to online shopping mark, like thuiswinkel.org I click on the seal sometimes. But I do not go to this Thuiswinkel.org and search there. Mainly this is because I always choose the same stores, for example I will never buy in this shop you showed me as I have no idea what this brand is. It would help to decide to buy. But I also will look at the other things, like design, address, delivery terms. But yes, if there will also be a TM I would buy there. But it also depends on the price of the product. if it is cheap, it is ok, but before buying something expensive, it is different. Then you will also check the experiences of other clients. (Annelieke 36, Netherlands)

Annelieke not only follows the script of trustmark to trust the shops but she would also complain about the misuse of the seal of she would have such experience

But at least you know that there is some sort of organization that you can complain. I know that this organization is there for already a long time, they are now for online shopping but they used to be for all kinds of shopping organizations. So I am not in their entire processes and offers, etc., and conditions, I don't know. But I consider it as something that is OK. (Annelieke 36, Netherlands)

Merel is a Dutch shopper who buys online rarely: only once in two or three month, she mostly purchases books, DVDs and also food for her cat from Dutch online retailers. Even though she is aware of trustmarks, she does not recognize their agency and does not use them. She sees the trust building agency performed by other technological artifacts:

If it is a nicely designed website, that looks professionally , with the phone number, etc., I would not necessarily need a TM. I think maybe you need TMs more if you are buying something very expensive, I never buy expensive tings, I never bought electrical equipment, etc online. Then it becomes more of a problem whether the website is trustworthy or not. Then I would probably look more into it and may be indeed buy at a shop that has a TM. But if it is just a DVD I would take the risk if it looks ok. (Merel, 23 Netherlands)

Shopping practices of online consumers that are aware about trustmarks thus show that some of them describe trustmarks in the way trustmark organizations intended. In rare cases the users trust a website if they see the seal on it. This means that the trustmarks has agency for them to make them trust. Moreover, for some of the consumers would also delegate the trustmark the agency to resolve their disputes if they would have one. However, most of consumers who use trustmarks, use them together with other trust generation technologies, like the design of the websites, contact information displayed on the webpage, and the opinions of other users as well as the well-known shop name for them. So for them the agency to make the web shops trustworthy is distributed between other agents.

The agency of trustmarks can be seen as moral because they make the web shops act fairly and in a good way, in other words comply with the legislation and the industry standards. If the shops do not behave like that they can harm their customers and decrease their quality of life. Online consumers , that are aware of trustmarks, sometimes recognize this moral agency that the trustmarks have:

I would think that the shops themselves contact trustmark that they want to be part of, as it could be beneficial for them…and then may be TM looks whether it suits their

objectives…that delivery is on time, that there is contact data, that they have a clear overview of what they have in store.. I would imagine those things, but I have no idea whether it's true. I would like to investigate more I guess. (Merel, 23, Netherlands)

But in some of the cases online shoppers even if use trustmarks to decide whether the shops is trustworthy or not, are not aware of its agency to make online shops to comply with the industry standards. Moreover, they do not open the black box of trustmarks and do not want to know what is behind the seal:

I click on the seal sometimes. But I do not go to this Thuiswinkel.org and search there No, not really. I know that this organization is there for already a long time, they are now for online shopping but they used to be for all kinds of shopping organizations. So I am not in their entire processes and offers, etc., and conditions, I don't know. But I consider it as something that is OK. (Annelieke,36, Netherlands)

If I see this thuiswinkel sign, I think it should be ok, but I do not check the content I never follow up on it by clicking on the trustmark (Juul,38, Netherlands)

I know this Thuiswinkel Waarborg (trustmark)… so if I see it adds to how trustworthy the web shop is... And even if I don't know what organization is behind it, it still works all right for me.. this is how it works! I do not click on the seal (Guus, 30, Netherlands)

To sum this up, online shoppers that use trustmarks have different shopping practices: some of them shop every week, some of them buy things online only few times a year. The way they build online trust and differs and they use various technologies for it, and trustmark is among those technologies. However, for most of them trustmarks do not act as independent agents to ensure trustworthiness of the web shops, but their agency is usually shared with several other actors. The agency to control online shops that have the seal is not recognized by online consumers whose behavior was studied in this research. In their use practices considered web shoppers do not open the black box of trustmark technology: they are not aware of regulations according to which trustmark secure trust, and of the checks that trustmark organizations do.

4.2.2.2 Trust building practices by online shoppers that do not know trustmarks
Half of the online shoppers that I interviewed do not know about trustmarks at all and therefore do not use them in their trust building practices. However, those practices are similar to those that previous group of consumers.

Miriam buys online quite a lot- approximately once a month. She is from Poland, but she buys online mostly from the UK retailers. Normally she buys clothes and accessories. Those things she finds in the fashion blogs, that are popular among many users, and therefore she trust shops that are advertised in such blogs:

Faction blogs often have advertisement of different shops. So I click on them, and if I like the clothing, I buy it. I usually chose the one, for instance this site lookbook, that has 2000 followers and I believe that if it is advertised in such a site with so many followers it has to be trustworthy.. (Miriam 23, Poland)

Dainius comes from Lithuania, but now he lives in the Netherlands and he only buys online here, purchasing his goods from Dutch online retailers. He can buy everything online: clothing, shoes, and once he even bought a fridge online. When he moved to the Netherlands, he asked his Dutch friends which shops he can trust.

> *I only buy online in the Netherlands, I never did it before. Usually I trust the popular web sites in the Netherlands. I asked my Dutch colleagues which shops they use and then I started to use the same. So they recommended me. Also there is this website http://www.kieskeurig.nl/ (user reviews website) if you want something, can see where the item is available and the where it is the cheapest and then I buy it (Dainius, Lithuania, 27)*

Francesco comes from Italy, but he buys in different online shops like Amazon, ebay, but also others, the ones offering the cheapest price for the things he needs. He does his shopping 8-10 times per month and buys almost everything - tickets, books, cloth, like accessories and music equipment. He does not really need many trust building mechanisms as he does not see many risks, and also because he knows if his money is stolen, his bank will pay them back:

> *I just try cheap offers, I am trustful, until now I did not have had bad experiences. If the website does not look trustworthy, I check its reviews Shops website should be well-developed. I paid once with the credit card, my money was stolen but I got the money back, as my bank has insurance, so it paid me back. I only buy cheap things, so I risk only 20-30 euros (Francesco, 23 Italy)*

Jinxue comes from the Netherlands. Once a month she purchases from Dutch retailers household things, and also clothing. She does not always buy at the same shops, but looks for new shops that offer her the best price. For her the design of the website has the main trust building agency:

> *First, I look at the lay out of the website, if it looks fancy, I can trust it, and if it looks crappy, then I Google it to get other users reviews. It is important for me that I can pay via pay pal and iDeal, than I trust it. (Jinxue, 26 Netherlands)*

Francesco F. comes from Italy but also buys online from different shops: both Italian and international ones. He likes to buy something expensive, that he can find online cheaper than in a normal shop. Francesco is a very trusting person – he doesn't look for many trustbuilding mechanisms. However, for him it is very important to establish personal contact with the shop consultants, and then he will believe in their trustworthiness.

> *Basically I trust people and I think that they will not cheat me, because they have a kind of reputation and they cannot disappoint me. Usually I try to contact the shops with e-mail before. When they reply and I see there is kind of relationship between us, I trust. So for me the possibility to contact them is very important, if not, may be other users comments could be useful, others feedback (Francesco F., 26 Italy)*

This part of the chapter considered the practices of online trust formation of consumers that do not use trustmarks. In general, those consumers are younger than in the previous group and build their trust more easily. In the interviews most of them indicated that they do not need any other mediator between them and online shop additional to the ones they use. Trustmarks do not have agency in relation to such consumers because they are not aware of them. However, after being told

about this technology one of them told that she will use trustmarks in the future. However most of the respondents still did not see any agency of trustmarks and even did not want to know about this technology and its script. The main reason for it is that they are satisfied with their own strategies for trust generation and do not need any extra strategies. Also this unwillingness to learn about trustmarks occurs because some of consumers easily accept risk and are not harmed if loose little amount of money.

To sum it up online consumers that do not use the trustmark in the decision whether to trust or not, use other methods for that and the agency to ensure trustworthiness is distributed between them. And those methods can include interaction both with technological actors like web design, but also human actors – other consumers, or the consultants of the web shops. In the next section I will elaborate more on the trust building methods that online consumers use.

4.2.2.3 Distribution of agency and trust

As it can be seen from the interviews online retailers see the need to make their websites trustworthy. Online consumers also need to build their trust in the institution of e-commerce. Both retailers and consumers recognize several actors that mediate their trust building practices and decisions. A trustmark is one of these actors, but it does not have overall agency to ensure trustworthiness. Rather, this agency is distributed between those actors. In some cases, however, there is no technological mediation of trust construction between shoppers and shops, such online shoppers exercise dispositional trust.

The table below presents various human and non-human actors that shape trust building behavior and decisions of consumers and the way consumers perceive their agency:

Actor	User opinion
Trustmark	- I would not trust this waarborg on this site. I would only trust it on those users comparison websites, as it is more objective because there should be an organization behind it which checks it.. (Guus) - I would not necessarily need a TM. I think maybe you need TMs more if you are buying something very expensive, I never buy expensive tings, I never bought electrical equipment, etc online. Now I am looking at TM. But I don't think that it is eye-catching , it is not something you immediately see..i don't know, it would help. (Merel) - I google where I can buy things I need, and then look what shops have those goods, and then I see whether I like some of them, I also check whether the shop it has a trustmark. In the Netherlands I look for Thuiswinkel waarborg (Olga) - I always see if the shop is connected to online shopping mark, like thuiswinkel.org, (Anelieke) - sometimes I see it and I think OK, but I do not look for it every time. But if there is a site I am doubting about, I will look whether there is a trustmark (just to see it), then I would think shopping is OK. (Juul)
Website design	I always first look at the design of the website, as good shops have professionally made websites, and then I look for the TM. If the website does not look professional, I will never buy there. The key criteria for me are Design, TM, availability of contact information and terms and conditions; terms of delivery shall be there as well No, as I

	think if the shop does not spend enough money for the design of the website, the quality of its services won't be good. (Olga) • First I always look how the website is build, whether it looks professional or not. (Annelieke) • First, I look at the lay out of the website, if it looks fancy, I can trust it (Jinxue) • The first impression is really important, whether it looks professional, are there good pictures, etc., and before I order something I always check the conditions – whether I can return things and how many days delivery takes. (Juul)
Other users' reviews	• So these are mostly three things that I look at those community websites: how many users reviewed the website, what is their score (how many stars they gave to it) (Guus) • I usually chose the one, for instance this site lookbook, that has 2000 followers and I believe that if it is advertised in such a site with so many followers it has to be trustworthy (Miriam) • I would not trust it, does not look trustworthy, I would check what others say about it. (Francesco) • If the website looks crappy, then I Google it to get other users reviews (Jinxue) • But if you buy in different shops –in this case I use feedback. But not only concerning the web shop but also concerning the product. (Francesco F.)
Brand name/well known website	• Usually I trust the popular web sites in the Netherlands. Here it is so popular and the real shops are so limited, there is no choice there, and online I can chose Popular ones are the ones used by many people, so I asked my Dutch colleagues which shops they use and then I started to use the same. So they recommended me. (Dainius) • Amazon and e-bay are big names (Francesco) • I also bought in big brands, like Zara, I trust them (Miriam) • In case with bol.com it is widely known, many people buy there, so it is trustworthy (Merel) • And I trust the bigger companies more than the smaller ones. I rather buy something at bol.com than at a small shop, even if the price is cheaper in the last one. (Annelieke)
Offline shop	• Also, if there is an offline shop, I will trust such online shop, as I can go there and "kick their ass" (Guus) • I also trust online shops if they have offline shop as well. Than I can trust it. And also at the website of producers (Olga) • And if there is offline shop, I will also trust more their online department (Annelieke) • If you buy something from the shop that also exist offline, you don't have to trust it. (Francesco F.)

Contact with the shop	• The web shop should have phone number, so you should be able to get in touch with them if something goes wrong (Merel) • There should be phone number, you can call (Jinxue) • Yes, when there's an address and phone number. Websites without that I do not trust (Juul) • Usually I try to contact the shops with e-mail before. When they reply and I see there is kind of relationship between us, I trust. . (Francesco F.)
Payment method	• If the shop is new for me I try to pay with the credit card as I have insurance, and can get my money back. If the price in more than 30 euros (Olga) • I also look if they have various payment methods. I am always iDeal, if there is only pay pal, the website is already gone for me, I will not buy there (Annelieke) • it is important for me that I can pay via pay pal and iDeal, than I trust it (Jinxue)
Nothing	• Just try cheap offers, I am trustful, until now I did not have had bad experiences (Francesco) • Basically I trust people and I think that they will not cheat me, because they have a kind of reputation and they cannot disappoint me (Francesco F.)

Table 1: actors that have agency to shape trust building decisions

This part of the chapter showed that there cases when trustmarks are used by the consumers, and there cases when non-use of trustmarks occurs. When consumers are aware of trustmarks, they follow the scrip of trustmarks without opening their black box and knowing what this technological artifacts do: only few users had some ideas of what is inside the black box. According to ANT, technologies open their black boxes when something goes wrong. And trustmarks are delegated the agency to do the same. However, according to the consumers, they rely on other human and non-human actors to help them: opinions of other users, contact with the shops consultants, trustmarks, various payment methods, professional website design, brand names and existence of offline shops. All those mediators are equally important. Sometimes shoppers do not need any mediators between them and the shop, and just trust the shop.

Most of the trust mediators mentioned by consumers and presented in table above are hidden inside the black box of trustmarks: during the certification process trustmark organizations check most of those parameters. However, customers do not know that and for them trustmark remains black boxed.

4.3 Risks and uncertainties in online shopping

Trustmarks are designed to reduce uncertainties and risks in online shopping. By verifying the identities of the web traders, checking their registration, address and other details trustmarks deal with uncertainties existing in the internet. By ensuring the business practices of the web shops trustmarks and offering dispute resolution trustmarks reduce the risks described in section 2.3.1 of this report. Delegating the agency to control the web shops to consumers trustmarks reduce the risks of being misused.

Online shoppers perceive the risks in online shopping similar to the perceptions of trustmark designers. All categories of online shoppers, no matter if they use trustmarks or not named more or

less similar risks: that their purchase will not be delivered, it will be difficult to return the goods, if they do not like them, and the risk that the money will be stolen. However, customers are willing to take the risks, because the goods in the internet are cheaper and because they do not risk to lose much money, as the price of most of the online purchases indicted by the interviewees does not exceed 20 euros.

> *Money, but also your own data, as you provide them with lots of personal data (Interview of Annelieke)*

> *May be you don't get the product that you expected, or it is difficult to return it or they don't accept it, there is a small risk that you won't get anything, but I don't really believe in it. (Interview of Jinxue)*

> *That I order something and I have to pay in advance, and I use iDeal or credit card, it could take me some time before I could get my money back. Also if delivery can take too long...Sometimes they promise to keep my data safe, but I don't really look for this promise. (Interview of Juul)*

> *May be when you fill out your personal information... So that you will be called for advertisement. (Interview of Merel)*

> *I rather pay through pay pal, not my credit card. On pay pal I don't have so much money (Interview of Miriam)*

> *I buy from the account where I do not have much money, so whatever happens it is ok, if I lose something, it is only 200 euros. I ask to deliver things to my work, so am not worried that my address will be known to someone (Interview of Dainius)*

> *Because you never know what exactly you are buying. In the end you could be disappointed. But if your aim is to save money you cannot complain that the quality is not that high. There is this risk but it is very low. May be this could happen if you buy really a lot. May be one in 100 is thief. But I don't buy of them, so the possibility is very low. (Interview of Francesco F)*

It can be seen that some of the shoppers are willing to accept the risks if they risk little sum of money. Also, they are willing to risk the quality of products because often they search for the cheapest option.

From the interviews it became clear that online shoppers do not connect trustmarks and online risks that they named. By this I mean that most of online consumers aware of what is inside the black box of trustmarks and do not know what exactly they ensure. Only one of the interviewees could guess what kind of risks trustmarks ensure. That is why users and non-users of trustmarks named the same risks that they see in their web shopping. Consumers did not really express their concerns regarding online uncertainties. All of the interviews told that they do not believe that the web shop does not exist, they are rather are concerned about the quality of its cervices and see their risks there.

To sum up, the script of trustmarks deals with uncertainties in e-commerce and reduces risks by exercising and delegating agency to consumers. However, users of trustmarks do not connect the risks that they experience and the agency of trustmarks that remain black box form them.

4.4 Conclusion

In this chapter I showed that designers inscribe into trustmarks their visions of its use and moral rules according to which e-commerce should be done, and also their visions on how trust should be formed online. Online retailers usually follow the script of trustmarks, otherwise the trustmark is withdrawn from their webpage. They interpret the trust building agency differently, some of online retailers recognize the role of trustmarks in making them trustworthy, others have trustmark in order to comply with the standards, the e-commerce requires them to do. Half of the interviewed consumers were aware of trustmarks and trustmarks to some extent shape their trust building behavior and decisions, however, the other half of online consumers are not aware of trustmarks and trustmarks do not mediate their relations with online shops. Nevertheless, even if consumers use trustmarks, and follow their scripts, trustmarks for them do not have enough agency to be independent actors, but need to be used together with other actors. And the agency of trustmarks to shape consumers trust building behavior is shared with other agents, that are shown in the Figure 9.
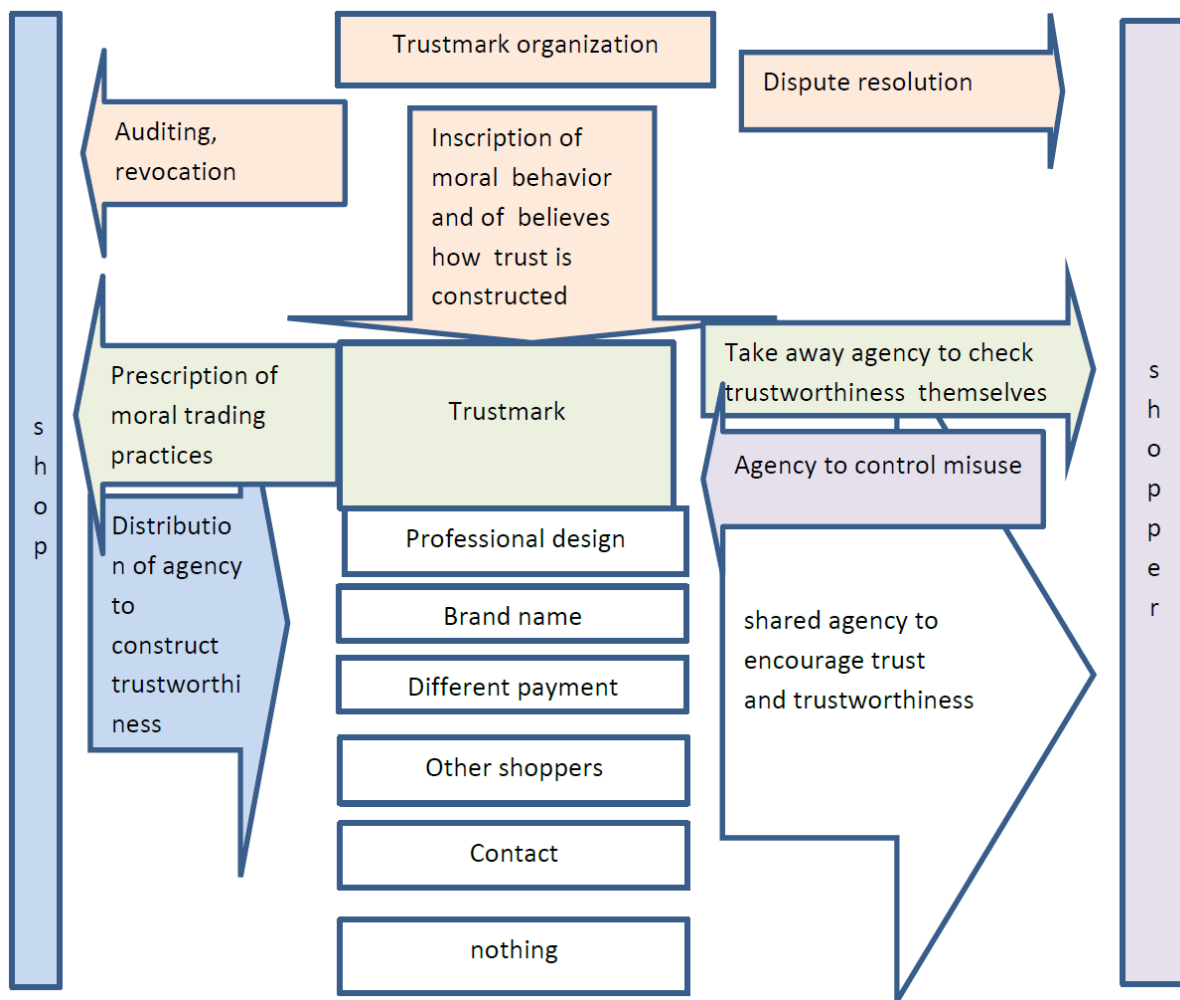
Figure 9: Actor-network of e-commerce as it appears for the users

Trustmark designers inscribe into trustmarks their perception of risks and uncertainties in online environment. Online shoppers, both users and non-users of trustmarks recognize only risks, but not uncertainties in online shopping. Users of trustmarks do not see the agency of trustmarks to protect them from those particular risks. Rather, they see trustmarks as the sign that they can trust without opening the black box of trustmarks and knowing how exactly this technology reduces their risks.

Consumers trust in e-commerce is built with the help of several actors, human and non-human that mediate the relation between customers and shops, and mediating shape them. Online consumers find equally important for their trust building practices both human actors and technological ones and could not distinguish the one most important for them. Trustmarks do have agency in trust building of their users but this agency is not absolute and independent. So trust in e-commerce is not a matter of trustmarks but rather has a more heterogeneous nature. This nature of trust should be considered when trust building technologies are developed.

5 Conclusions and discussion

This is the last chapter of this thesis. It consists of two parts. First I draw the main conclusions of this research. In the second part I discuss the finding of this thesis, and compare them with the findings of different scholars, whose work is considered in the Chapter 2 of this research.

The aim of this research was to analyze the moral agency of trustmark technology. In order to do that I first analyzed the moral values and behavior rules that trustmark designers inscribe into the their technology. It appeared that trustmark organization prescribe the web shops to comply with the customer protection legislation, display information correctly, and have valid businesses. In relation to online shoppers, trustmarks prescribe them to trust certified shops. After the analysis of the design of trustmarks I studied the use practices of this technology. I showed that trustmarks if they are recognized by their users shape their trust building behavior, however the trust building practices of the users of trustmarks are shaped also by other technologies.

5.1 Conclusions

Trustmark organizations, web shops, web shoppers and trustmarks form an actor network, in which online trust in constructed. Agency is distributed between various actors in the network. On the one hand trustmarks are delegated by their designers the agency to mediate and shape trustworthiness of online shops by ensuring their identities and the their fair business practices. On the other hand trustmark technology was delegated the agency to shape trust building behavior and decisions of online shoppers. Facilitating construction of trust in e-commerce by shaping the behavior of both types of their users trustmarks are designed to contribute to the well-being of online consumers and web traders.

Trustmark organizations designed trustmarks because they saw the lack of trust between online shoppers and online shops and wanted to encourage shoppers to trust online retailers. Therefore they inscribed into trustmarks the agency: (1) to make the shops look trustworthy for the customers,

(2) to make the shops comply with the industry standards and (3) to protect customers if something goes wrong with their purchase.

The scripts of trustmarks enforce this agency: the layout of trustmarks and their webpages encourage consumers to trust, the certification criteria defined for the shops in order to get the seal are based on consumer protection legislation and dispute resolution mechanisms are created and the link to them is inscribed into the seal. The agency to start dispute resolution and auditing was delegated to the shoppers.

Online shops that use trustmarks follow the prescriptions of the designers: they undergo certifications and follow the recommendations on improvements. They also put the seal on the website in order to make it look trustworthy. However, unlike trustmark designers they do not delegate all the agency to make the website look trustworthy only to the trustmarks but also use other methods like professional design of their page.

There are online shoppers that use trustmark, and there are some that do not use it in their trust building practices. Even though there are some users that follow all the prescriptions of the trustmarks, i.e. complain about misuse of the seal, etc., due to the limitations in the amount of the interviews they are out of the scope of this research. In this research online shoppers did not recognize and therefore exercise their agency to control the shops that misuse trustmarks. Users that were interviewed still use trustmarks to build their trust, but they see their agency shared together with the agencies of other actors, like professional deign, payment methods and advice of other shoppers. Non-users of trustmarks also divide the agency to build their trust between various actors.

This research showed that technology can mediate and shape the behavior and decisions of its users. Being inscribed the moral values of its designers and delegated the agency to encourage both types of its users to behave ethically it prescribes the shops to behave according the law and be trustworthy and shoppers to trust such web shops. And this is how moral agency of trustmarks looks like in theory. However, in practice users not always recognize this moral agency of trustmark technology, and use also other technologies in their trust building routines.

Thus we can conclude that trustmarks do have moral agency to shape trust building practices of their users but this agency is not absolute and independent. Trust in e-commerce is therefore not a matter of trustmarks but rather has a more heterogenic nature. This nature of trust should be considered when trust building technologies are developed as well as when the policy to foster such technologies is implemented.

5.2 Discussion

This research shows that the designers of trustmarks and the users of this technology see differently the role of trustmarks in e-commerce. So the mismatch between designers and users that I expected to exist in the beginning of this research indeed exists. This mismatch implies that there is no single perception of trust and risks in e-commerce. Different types of trust appeared to be constructed in this socio-technical system. E-commerce is a relatively new activity, and the risks estimation by its actors, as well as their trust building practices have not stabilized jet.

Risks that online shoppers described during the interviews are in line with the finding of Kim and Benbasad (2003). Uncertainties mentioned by some of the consumers are in line with the theory of Nissenbaum (2001) regarding the lack of identities, personal characteristics and inscrutable contexts. Thus some of the shoppers in order to create their trust had to overcome the uncertainty caused by the lack of identification of the web retailers: establish personal contact with them, and also use the trustmark for this purpose. The uncertainties caused by inscrutable contexts, however were not mentioned by the interviewees. This is possibly happening because online shopping is an frequent and well known activity for all 10 consumers, whose shopping practices are analyzed in this research.

Dealing with online uncertainties, shoppers need to trust online shops in order to buy there. They trust that the shops will treat them fairly, in accordance with consumer legislations - their goods will be delivered on time, they will have the right to return them back, but also that their payment will be safe etc. The type of trust that is constructed varies in different cases: it can be institutional trust(trust in the institution of e-commerce), interpersonal and dispositional types of trust. Institutional trust is developed by asking other users, looking at trustmarks, etc. Interpersonal trust is developed in case when the consumers told about the importance of personal contact with the shops consultants before the purchase is made. Dispositional trust is developed without the help of any other actors.

Constructing trust in the institution of e-commerce, the customers do not distinguish between the technical and social components of this institution. For them, to trust web shops means to trust the whole socio technical system of that this web shop is. And this is in line with the findings of Konrad at al., (1999). Construction of dispositional trust can be seen when users say that they do not need any mediators between them and the shop, because they just trust it. Such type of trust formation can be seen by young interviewees, whose age is below 27. Young online shoppers have a long online shopping experience, and tend not to consider online shopping as inscrutable context as for them online shopping became a part of their online routines. Construction of interpersonal trust can be explained by the lack of personal information and identification online. That is why interviewees told about the importance of the personal contact with the web traders that was their way to deal with identification uncertainty. Construction of such trust is in line with the findings of Nissenbaum (2001) who analyses such uncertainties.

E-commerce institutional trust can be mediated by many technologies: layout of the websites, payment methods etc. (see table 1). Interpersonal trust can be mediated by communication technologies, such as e-mail, Skype and other. Dispositional trust, however cannot be mediated by technologies as it is a personal feeling of an individual not attached to any subject. Trustmarks therefore could have agency to shape the formation of institutional trust and to some extent of interpersonal trust, however they do not have agency to shape dispositional trust formation. And because there is a tendency for the development of dispositional trust among young online shoppers, trustmarks might not be effective trust building mechanism anymore.

Various trust building methods became part of consumers' internet shopping routine. Their decision whether to trust or not is mediated and shaped by different technologies. In order to decide that consumers normally take several actions – google web shop to learn about the reviews, look at its the design, click on the contact information and sometimes check whether it has a trustmarks.

Thus using trustmarks is part of the trust building routines of their users. Being designed for this purpose, trustmarks embody the perceptions of online risks, visions ethical commerce practices of their designers and their perceptions of consumers trust building methods. Trustmark designers constructed user representations of two types of users: the web shops that need to be trusted and web shoppers that need to construct their trust.

 In accordance with those representations they inscribed into trustmarks their moral visions, and delegated to them their agency to ensure that morality. In the result of this inscriptions the scripts of trustmarks distribute agency and trust in the network of e-commerce. The agencies to monitor the misuse of the seals, and the agency to open the black of trustmarks are delegated to the shoppers, while the agency to resolve the disputes and construct trust themselves is taken from consumers away. The scripts of trustmarks inscribe trustworthiness into online merchants by having the agency to ensure ability (to sell things), integrity (compliance with consumer legislation) and benevolence (willingness to treat customers in the best way) of online retailers.

The user representations, constructed by designers partly appeared to be in line with the real users. Nevertheless, the behavior of online shoppers is more complex than for example of the "Mary" presented by the Trusted shops. Moreover, describing the risks of online shopping both the users and non-users of trustmarks, almost did not talk about the risks of their privacy, so they do not behave in the way TRUSTe saw it. Also, online shoppers that I interviewed did not look whether the website have SSL certificates.

Unlike the user representations constructed by trustmark organizations real users, both shops and shoppers, normally have several methods of trust construction, that are mediated and shaped by several technologies sometimes including trustmarks. Moreover, online shoppers that were interviewed for this research do not open the black box of the trustmark technology as it is expected by the designers of the trustmarks. Experiencing the problem with their purchase the interviewees seek for the other methods to solve it without using the trustmark. Similarly, using the trustmarks for the trust construction the shoppers do not open the black box of trustmarks, as it is prescribed by the designers, and only see the seal, but do not know what is behind it.

Even though most of the online shoppers familiar with trustmarks neither open the black box of this technology, nor recognize the agency to monitor the use of trustmarks, they still use them in their trust building practices. So trustmarks have the agency to ensure trustworthiness of the web shops for them. This is in line with the conclusions of Cheskin Research (1999) and the research of Kovar at al. (2000).

It can be seen that trustmark technology to ensure trust has not stabilized yet, but it has already stabilized as the technology that ensures that online shops comply with industry standards. In order to stabilize, it needs to be interpreted similarly and recognized and used more by its end users, online consumers. In my view one of the solutions how to make trustmarks used by more online customers is to incorporate trustmarks in their trust building practices. For that, designers need to delegate trustmarks more agencies to mediate the actions of all consumers, and all shops and thus become obligatory point of passage. For example if possessing a trustmark would be necessary for the web traders be able to operate legally and the customers would know about it, then trustmark would become such obligatory point of passage. Another option to increase the role of trustmarks to create online trust would imply to delegate more agency to trustmarks, so that the script of this

technology would make it impossible for the consumers to neglect trustmarks. For example this could be done by showing trustmarks in a very big scale on the webpage of the web shops.

Trustmark emerged together with the emergence of e-commerce in the beginning of 2000s. The perception of risks and trust building routines of the consumers have changed a lot since that time. For the young shoppers, whose age is below 27 online shopping has become a part of their online routines and there is possibly no need in extra tool to encourage their trust as many of them tend to develop dispositional trust in their local online environment.

However, in the cross — border online shopping trustmarks can still be a useful tool to encourage trust as many of the trust building mechanisms described by online customers in this research or are more difficult to be used or even cannot be used cross-border. Moreover, the development of the dispositional trust can be complicated as well as the website in the foreign language can be meaningless for the consumers. The actors of e-commerce that have trust building agencies locally, might not be able to exercise those agencies internationally. For example, other users reviews often cannot be used because they are written a different language, and comparison websites are not known to foreign consumers. Thus the development of all kinds of trust, whether interpersonal, dispositional or institutional thus is a more complicated process in such cross border environment and the trustmark technology could have more trust building agency there.

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Annex 1: Trustmarks in Europe and US

Source: Kool L., Veenstra, A.F.,Rumpf, G., Chernovcih E., (2012) *EU online Trustmarks: Building Digital Confidence in Europe SMART 2011/0022* Unpublished report, TNO, Netherlands

Country	Name	URL	Logo
Austria	Guetezeichen (Euro-label Austria)	https://www.guetezeichen.at/	
	Sicher Einkaufen	http://www.sicher-einkaufen.at/	
Belgium	BeCommerce	http://www.becommerce.be/nl	
Czech Republic	Certified shops (APEK)	http://www.apek.cz/	
	SOAP	http://www.spotrebitele.info/sluzbypropodnikatele/saop.html	
Denmark	e-Mark	http://www.emaerket.dk/	
Finland	ASML's trustmark : Reilun Pelin Jäsen	http://www.asml.fi/en/rules_and_regulations/	
France	Fia-net	http://www.fia-net.com/	
	Fevad (Charte Qualité)	http://www.fevad.com/reglementation/charte-de-qualite	
Germany	TrustedShops	http://www.trustedshops.com/	

	Internet Privacy Standards	https://www.european-privacy-seal.eu/	
	Tuev Sued Safer Shopping	http://www.safer-shopping.de/	
	EHI Geprufter Online-Shop (Euro-label Germany)	http://www.shopinfo.net/	
	EHI bhv label		
Greece	Epam	http://www.enepam.gr/	
Hungary	Áruküldők	http://www.arukuldok.hu/	
Ireland	EIQA W-mark (certification body)	http://www.eiqa.com/	
	Segala trustmark	http://segala.com/	
Lithuania	--	http://www.eshops.lt/	
Malta	Euro-label Malta	http://eshop.mca.org.mt/	
The Netherlands	Thuiswinkel Waarborg	http://www.thuiswinkel.org/leden	
	Qshops	https://www.qshops.org/	
	MKB OK (since 2005)	http://www.mkbok.org/index.htm	
	Webshop Keurmerk	http://www.keurmerk.info/	

Norway	Trygg e -handel	http://www.tryggehandel.no/	
Poland	E-Commerce ILim Certyfikat (Euro-label Poland)	http://www.ilim.poznan.pl/en/index.php http://www.euro-label.com.pl/	
	Trusted Store	http://www.sklepy24.pl/	
Portugal	Confianza Online set up in 2009	http://www.acepi.pt/index.php	
Romania	Trusted Ro	http://www.trusted.ro/	
Spain	Confianza Online	http://www.protectia-consumatorilor.ro/	
Sweden	Trygg e -handel.	http://www.tryggehandel.se/	
	E-handelscertifiering	http://www.ehandelscertifiering.se/	
UK	SafeBuy	http://www.safebuy.org.uk/	
United States	BBBOnline	http://www.bbb.org/online/	
United States	Truste	http://www.truste.com	

United States	VeriSign, renamed into Norton Secured, owned by Symantec	http://www.verisign.com	
United States	CPA Webtrust	http://www.webtrust.org	
United States	McAfee	http://www.mcafeesecure.com/	
United States	Comodo	http://www.comodo.com/	
United States	Trustwave	https://www.trustwave.com/	
United States	BuySafe	http://www.buysafe.com/index.html	
United States	GeoTrust	http://www.geotrust.com/	

Annex 2: Interview questions

Web shops

- What trust-building mechanisms do you use on your website?
- Why do you have a trustmark?
- Why did you chose particular trustmark?
- Do you think trustmark is important for your customers?
- Do you think that your clients click on the trustmark and check the certificate?
- Why did you place trustmark on the place where it is, and in this little scale?
- What do you think, How many of your customers look at the trustmark?
- Was it difficult for you to get this trustmark?

Online shoppers

- How old are you?
- How often do you shop online?
- What do you buy?
- Do you have particular shop you buy in?
- How do you choose the shop?
- How do you understand that the shop is trustworthy?
- Sample shop: would you trust it, why yes, why not?
- What kind of risks do you assume buying online if any?
- Did you know about TMs before this interview?
- If you would have to buy something on the new website, would TM be a sign for you?
- Are you aware of the things that TMs ensure?

Trustmark organizations

Source: Kool L., Veenstra, A.F.,Rumpf, G., Chernovcih E., (2012) *EU online Trustmarks: Building Digital Confidence in Europe SMART 2011/0022* Unpublished report, TNO, Netherlands

- What are the main type of users?
- Is the trustmark used in different countries?
- Do you intend to offer it in other countries in the future?
- If present, how is this Assurance policy implemented?
- Who is involved in the dispute resolution (any third parties)?
- Which guarantees do you provide to the consumer?
- Does it also involve the consumer getting his money back?
- Why are the subscription costs the way they are?
- Which legal basis is covered by the TM?
- How is this translated into the code of conduct?
- What is the 'business model' of the TM?
- Which stakeholders are involved and why?
- Why is the certification performed in this way?
- Which checks are performed and on which (legal) basis?

- Which criteria are used and on what are they based? Privacy? Legal requirements? Redress? Subscription Chamber of commerce? How does the certification take place? Self-assessment? Official certification?
- When and why is a trustmark revoked and how often does this happen?
- What are the growth perspectives for the trustmark?

Annex 3: List of interviews

Consumers

Interviews with non-users of trustmarks

Name	Age	Nationality	Frequency of online shopping	Place and date of interview
Miriam,	22	Poland	Once, twice every 2 month	Delft, 07.2012
Dainuis	27	Lithuania	Once per 2 month	Delft, 07.2012
Francesco	23	Italy	8-10 times per month	Delft, 07.2012
Jinxue	26	Netherlands	Once a month	Delft, 07.2012
Francesco F.	26	Italy	Once in 2 month	Delft, 07.2012

Interviews with the users of trustmarks

Name	Age	Nationality	Frequency of online shopping	Place and date of interview
Guus	30	Netherlands	Six times a year	Delft, 07.2012
Merel	23	Netherlands	Once every 2-3 month	Delft, 07.2012
Olga	34	Russia	Once a week	Delft, 07.2012
Annelieke	36	Netherlands	Few times a month	Delft, 07.2012
Juul	38	Netherlands	Every week	Delft, 07.2012

Shops

Name	Link	Place and date
Andela Pharma (NL)	http://andelapharma.nl/	Delft, 07.2012, by phone
Fonq (NL)	http://www.alessi-by-fonq.nl/	Delft, 07.2012, by phone
Creamsuppliers (UK)	http://www.creamsupplies.co.uk/	e-mail interview

Trustmark organizations

Source: Kool L., Veenstra, A.F.,Rumpf, G., Chernovcih E., (2012) *EU online Trustmarks: Building Digital Confidence in Europe SMART 2011/0022* Unpublished report, TNO, Netherlands

	Geographical spread	Is the TM working cross-border?	Business model	The state of development (based on certification and disputer resolution schemes)	Date
ISIS	UK	Yes	Industry organization	Very well developed	04.2012
e-Maerket	Denmark	No	Foundation	Well developed	04.2012
EHI geprufter / Euro-label Germany	Germany	Yes	Scientific institute for the retail industry	Well developed	04.2012
TrustedShops	Germany	Yes	Private firm	Very well developed	04.2012

EuroPrise	Germany	Yes	Governmental institute	Developed	04.2012
Guetezeichen/ Euro-label Austria	Austria	Yes	Industry organization	Very well developed	04.2012
Thuiswinkel Waarborg	Netherlands	No	Foundation	Well developed	04.2012
BeCommerce	Belgium	No	Foundation	Well developed	04.2012
APEK	Czech Republic	No	Foundation	Developed	04.2012
eShops	Lithuania	No	Private firm	Just started, but developing quickly	04.2012
Confianza Online	Spain	No	Nonprofit organization	Well developed	04.2012
eShop	Malta	No	Government institute	Just started	04.2012
Trygg eHandel	Norway	No	Industry organization	Just started	04.2012
TrustE	US	Yes	Private firm	Very well developed	04.2012
VerySign (Norton Secured)	US	Yes	Private firm	Very well developed	04.2012
Online Shopping Trust	Japan	No	Industry organization	Developed	04.2012

Annex 3: Trustmarks on the pages of interviewed web shops

ISIS, McAfee, Norton Secured
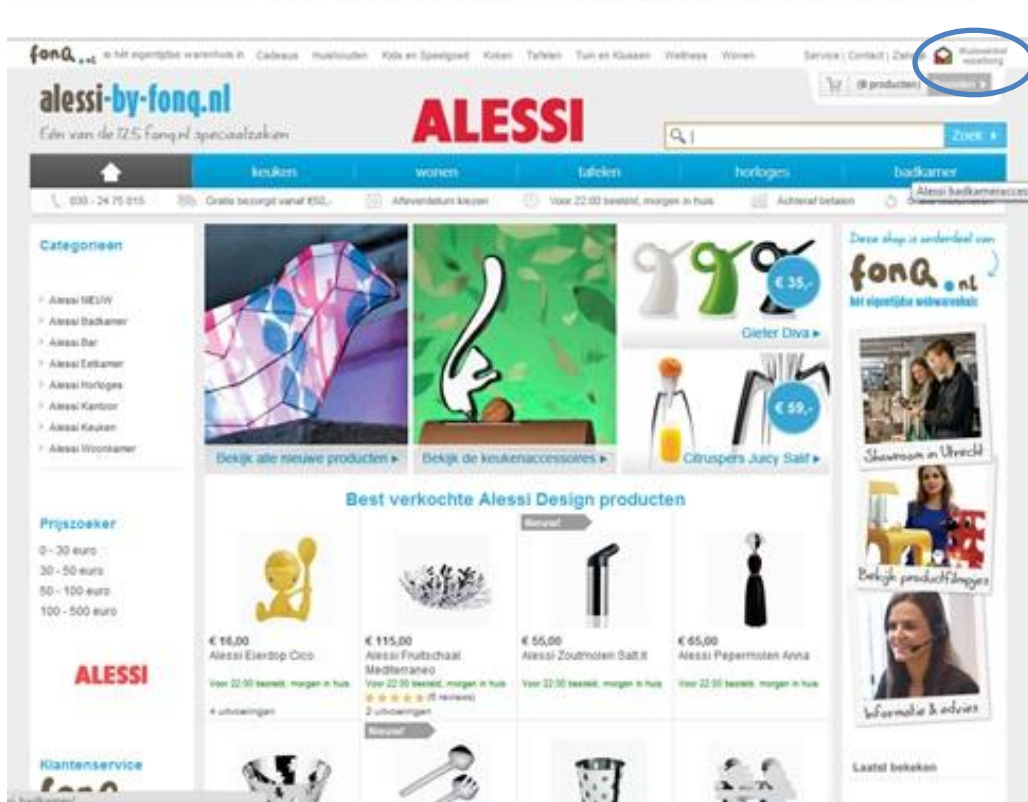
Thuiswinkel Waarborg

Thuiswinkel
Waarborg

Annex 4: Survey questions

Source: Kool L., Veenstra, A.F.,Rumpf, G., Chernovcih E., (2012) *EU online Trustmarks: Building Digital Confidence in Europe SMART 2011/0022* Unpublished report, TNO, Netherlands

1. What is the name of your trustmark?
2. In what country did your trustmark originate?
3. In how many countries is your trustmark used?
4. What are the main marketing/unique selling points of your trustmark? (multiple answers are possible)
   - Safety of payment processes (ensured by technical means)
   - Safety of personal data transfer and storage (ensured by technical means)
   - After-sales services (ensured by trustmark criteria)
   - Delivery mechanisms (ensured by trustmark criteria
   - Redress mechanisms (ensured by trustmark criteria
   - Other (please specify)
5. Are there any online payment methods linked to your trustmark scheme? (multiple answers possible)
   - Yes - mobile payment methods (via SMS, NFC, direct mobile billing, mobile web payments)

- Yes - both online and mobile payment methods
- Yes - online payment methods such as electronic wallets, e-cash, iDeal, Giropay etc.
- No online payment systems linked to trustmark scheme

6. Please indicate which mobile payment method is linked to your trustmark scheme (multiple answers possible
   - SMS (payment via SMS text message which is applied to their mobile phone bill or online wallet)
   - Near Field Communication (payment via mobile phones equipped with NFC)
   - Direct mobile billing (payment via consumer's mobile operator)
   - Mobile web payments (payment via web pages or applications installed on mobile phone)
   - Other (please specify)

7. Does your trustmark offer any of the following added services? (multiple answers possible)
   - Assurance policies
   - Dispute resolution
   - Customer ratings and reviews of the sales process
   - Price comparison tools
   - Money back guarantee
   - Other (please specify)
   - No added services

8. What kind of assurance policies does your trustmark offer for your subscribers? (multiple answers possible)
   - Delivery assurance
   - Payment assurance
   - Quality of the products assurance
   - Other (please specify)

9. Please indicate how many transactions in 2011 required the use of your dispute resolution mechanism (in case your trustmark has a dispute resolution mechanism)
   - As absolute number:
   - As share of total transactions:

10. How many disputes were resolved successfully by means of your dispute resolution mechanism in 2011? (in case your trustmark has a dispute resolution mechanism)
    - As absolute number:
    - As share of total transactions where dispute resolution was used:

11. Please indicate the size of your customer base (the number of businesses that make use of your trustmark) over the last five years

	2007	2008	2009	2010	2011
Trustmark did not exist yet	☐	☐	☐	☐	☐
< 50	☐	☐	☐	☐	☐
50 - 100	☐	☐	☐	☐	☐
100 - 500	☐	☐	☐	☐	☐
500 - 1.000	☐	☐	☐	☐	☐
1.000 - 5.000	☐	☐	☐	☐	☐
> 5.000	☐	☐	☐	☐	☐

12. Do you offer different packages or subscription costs for your trustmark? (multiple answers possible)
- No - there is no differentiation (there is one subscription package and price)
- Yes - by size/turnover of the subscribers
- Yes - by offering different added services for additional costs
- Yes - by differentiating subscription criteria for different packages

13. Please indicate the legal or regulatory base of your trustmark (multiple answers possible)
- Self-regulation guidelines (joint agreements or standards)
- National legal obligations
- EU legal obligations
- Other (please specify)

14. Is your trustmark a legal property of your organization?
- Yes
- No

15. Please specify the kind of organization that owns your trustmark
- Industry organization
- Government institute
- Private firm
- Foundation
- Other (please specify)

16. What stakeholders are (or have been) involved in the set-up of the conditions for your trustmark? (multiple answers possible)
- No other stakeholders are involved
- Consumer organizations
- Government
- Other (please specify)

17. How many full-time equivalent employees (FTE's) or professionals on average per year run the trustmark?
- Number of FTE's at present:
- Average annual growth rate of FTE's in last five years:

18. What is the certification and accreditation model of your trustmark?
- Self-specified
- Regulation-based
- Other (please specify)

19. Does your trustmark have a procedure that audits subscribers for compliance with your trustmark conditions?
- Yes
- No

20. How often does the audit procedure take place? (multiple answers possible)
- Yearly
- On irregular basis
- Incident triggered
- Other (please specify)

21. Does the policy of your trustmark clearly specify the terms of revocation?
    - Yes
    - No
22. Can the revoked party appeal against the decision made?
    - Yes
    - No
23. Do you publish a revocation list?
    - Yes
    - No
24. Please indicate how many subscribers were revoked in 2011:
25. In your opinion, how does your trustmark impact the sales of your subscribers?
    - Positive, but marginally (maintenance of market position or limited growth)
    - Positive, but substantial (more than limited growth attributed to the use of the trustmark)
    - Extension of business activities (more kinds of services offered)
    - Extension of business coverage (cross-border)
    - Other (please specify)
26. Are you aware of any impact of your trustmark outside your domestic market? (multiple answers possible)
    - No interest was expressed/don't know
    - Requests by foreign vendors for subscription
    - Request for extension of your trustmark scheme to other domains
    - Request for information about your trustmark scheme and the business process behind your trustmark scheme
    - Other (please specify)
27. Do you collect data on consumers' recognition of your trustmark?
    - Yes
    - No
28. In case you have any comments about this survey or if you miss important issues that should be addressed by our study, please provide them in the text box below

Annex 5: Trustmark organizations that participated in the survey

Adjusted version from Source: Kool L., Veenstra, A.F.,Rumpf, G., Chernovcih E., (2012) *EU online Trustmarks: Building Digital Confidence in Europe SMART 2011/0022* Unpublished report, TNO, Netherlands

Austria	E-Commerce Quality Gütesiegel, Euro-Label Austria
Belgium	BeCommerce
Czech Republic	APEK Certifikovany obchod (APEK Certificated shop)
Czech Republic	Consumer Terms and Conditions Audit
Denmark	e-mærket
Poland	Euro-Label Bezpieczne Zakupy
Germany	Euro-Label Germany / EHI Geprüfter Online-Shop, TÜV SÜD s@fer-shopping, Trusted Shops
Germany, project consortium form 8 EU countries	EuroPriSe - European Privacy Seal
Japan	Online Shopping Trust
Lithuania	Saugu Pirkti / eShops
Malta	eShop
Netherlands	Safe2Shop, Qshops keurmerk
Norway	Trygg E-handel
Portugal	Confiança Online
Romania	Trusted.ro, Euro-Label trustmark Romania
Spain	Confianza Online
Sweden	Certifierad E-handel
Switzerland	VSV-Garantie
The Netherlands	Thuiswinkel Waarborg
UK	SafeBuy, ISIS
United States and Canada	WebTrust, SysTrust, WebTrust for Certification and Related Marks, SOC3
USA	Norton Secured Seal, TRUSTe Certified Privacy Seal