Trust & Privacy in e-commerce

Strategies for reducing privacy concern by building trust.

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Management Summary

Building trust online is a challenge a lot of companies face in a growing online world. Without personal interactions it is difficult to build trust and reduce privacy concerns in this online environment.

This study shows that e-commerce is perceived as a personal interaction between two humans, which changes the nature of the design of the online stores. Also, there are some concepts that help build trust online and reduce privacy concerns.

This study showed that there is indeed a way for businesses to build trust with their customers online. This can either be done on social, institutional, or technical aspects of an e-commerce businesses. If businesses are able to be fair in their procedures around the use of personal information, and give users control over their information, this leads to an increased trust in the e-business.

It was found that by building trust, perceived privacy concern can be reduced which helps build the relationship with a customer over time. This study tried to build a model that would help businesses and researchers to further investigate this topic and validate the proposed model.
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1. Introduction

Ever since the revelation through the leaks of Edward Snowden of mass-surveillance by several security agencies, the discussion about user privacy and online and offline tracking has been part of the general public debate. Also, with the rise of personalised marketing and targeting online, privacy is becoming more and more a topic. Data breaches are becoming a serious issue and personal information is by default unsafe (Krajicek, 2014). These trends especially have come to light in the past couple of years. In the scientific literature however, this has been a topic of interest since companies started to sell products online (Ba, Pavlou, 2002; Gefen, 2000).

With the rise of e-commerce, researchers have been increasingly interested in the effects and differences between online retail and offline retail (Mcknight, Choudrey & Kacmar, 2002) Especially the impact of not interacting with a person but with a system has been an important difference between online and offline retail. A few other differences between offline and online retail is the fact that it is very easy to save every part of the interaction in the system to review at a later time. This creates new opportunities for personalisation and recommendations based on previous buying behaviour that are not possible in offline retail.

These characteristics the dimensions in a buyer-seller relationship have changed. Personal conversations were replaced by a system interacting with humans through the internet. Also, the notion that these systems can recommend products to users without asking results in the risk that users perceive this as creepy or intrusive. Naturally, this could change the behaviour of humans and their purchasing intentions in an online environment (Bélanger, Crossler, 2011).

One of the key issues that arise in a human-system interaction is trust (Lee, Turban, 2001). Trust in these systems largely determines the purchasing intentions of a customer (Belanger, Hiller, & Smith, 2002). It is especially important there is trust that personal information is safe in these systems. Several studies have shown this leads to a more positive intention of buying (Gefen, 2000; Liu et al., 2004).

While most of the studies are looking into the relationship between trust and Privacy(Belanger et al., 2002; McKnight, Choudhury, & Kacmar, 2002; H. J. Smith, Milberg, & Burke, 1996; Udo, 2001), few studies have looked into the strategies businesses can implement to increase trust of their consumers in a business and e-commerce environment. This is relevant, because this can help businesses better design their processes of handling personal information and build trust in an online environment, where no human interaction is needed.

In this paper, we focus on the strategies that businesses can implement to build trust in online commerce. The focus of this study will be primarily on e-commerce. Characteristics in mobile commerce or other forms of electronic commerce won’t be discussed. Most studies have looked at the model of trust from an integrated perspective. However, a model that could help businesses and researchers develop trust in an online environment is lacking. There are a few main goals for this study.
Firstly, this study wants to integrate the knowledge that already is present about strategies to build trust and integrate these in one model to show the relationships between the different aspects. Having these aspects in one model can help business and researchers to see the relations between the different aspects and lay the groundworks for developing a framework that help businesses and researchers build trust online.

Secondly, this research wants to investigate the impact of general theories in social interaction and how they can be applied to online commerce. If there is a relationship between these theories and online commerce, this could change how we perceive online interactions and thus how trust can be build online.

The aim of this thesis is that it should give policymakers and consumers an idea of what the important aspects are to keep in mind when developing policies for online transactions. For consumers this should make them aware about the strategies that businesses can use to get the personal data they need for their business interests.

This leads to the following research question:

*From a business perspective, what are the strategies that reduce perceived privacy risk in e-commerce businesses?*

This study could give businesses and researchers a basis on which specific theories can be build that help prevent privacy issues and build trust between a buyer and a seller. Also, this research could bridge the gap between the different aspects of trust and privacy in an online environment. Most of the research has been focussed on one part of the issues that arise, while previous research has shown that there are multiple sides to the problem. This thesis wants to give an understanding of all of these aspects and come up with a model to give researchers and businesses a model that will help them enable their business or help explore the topic in a multi-dimensional approach.

Also, this study tries to define a theoretical model that gives an insight in what strategies can be important to increase trust in an e-commerce business. This should give businesses a scientific guideline in building strategies that are specific to their e-commerce needs and make these a success.

By combining research about privacy issues with research about social interactions, it will try to show the nature of online stores and their relative differences with brick-and-mortar stores. Also, this thesis hopes to come up with recommendations for further research about the topic and give some guidance to businesses and researchers that help them in the future decision making process.

In the following chapters this thesis want to discuss the relevant literature, come up with propositions, and based on these propositions we want to create a model that helps understand the relationship between trust, privacy and strategies for businesses to build trust and reduce privacy concerns.
2. Theory

In this section we discuss the relevant literature and develop answers to the research question as proposed in the introduction. First, we define the relevant constructs and concepts, starting with the primary concepts of trust and privacy, then we want to dig deeper into the relevant theory, define propositions and finally come up with a model for the problem presented in the introduction.

First, When looking at the definition of privacy, there is no one clear definition. Belanger (Bélanger & Crossler, 2011) gives an overview of the different definitions that are used in the existing literature. One of the definitions that has come up often is from the same article and states: “Privacy is one’s ability to control information about oneself” (Bélanger & Crossler, 2011). This definition covers both the nature of privacy being personal but also the side of privacy being a control measure against outside forces.

Other definitions cover different aspects of privacy, like its private nature. This has to do with the broad range of fields that study privacy. From social studies to legal, mathematics and IT, most fields have researched privacy in some form.

The second main concept that has been identified is trust. Trust is more difficult to define, since it such an intangible concept. When looking at privacy, it is difficult to see this without a trust-relationship between the buyer and seller. Very often trust determines the decision to buy a product from the seller. In multiple studies this has been argued and is seen as common knowledge. For this thesis, the definition of Weisberg (2013) is the one that is used. His definition derives from the definition that is used in cross-discipline studies about the definition of trust (Rousseau, Sitkin, Burt, & Camerer, 1998).

The definition thus is: “… a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behaviour of another.” (Weisberg et al., 2013)

What is the role of trust in this relationship, and what does it achieve? Trust is a tool to reduce uncertainty by factors in an environment. These factors can be humans, artefacts, policies. The impact of trust in a buyer-seller relationship has been a well-researched topic, especially in sociology (Blau, 1964). Trust is seen as a bonding in a relationship for humans. It also serves as bonding material with systems. This makes trust a very complex concept that is, since it is in essence a way to reduce vulnerability, seemingly easy to influence.

So far, we have defined trust and privacy for this thesis, the third component that needs some more introduction is e-commerce. Electronic commerce is defined by many as a transaction between a buyer (consumer) and an electronic system. This can be a website, a mobile application or any other electronic system. In this study, we define e-commerce as any transaction between a human and an electronic system. Since most theory has been developed for traditional websites that are viewed on a desktop, there are some limitations to the scope of conclusions.
Before we go into more detail about the actual theories that lay the groundwork for the propositions and model, it is important to recognise two aspects that have to be regarded when looking into the theory. First, the principal agent problem and secondly the gap between stated preference and actual behaviour in privacy research. These two theories give an overview of the characteristics of e-commerce transactions and what the gaps are and argue what the issue of trust arises in transactions in general.

2.0.1 Principal Agent Theory
One of the most important theories on a transaction between two persons is the agency theory (Laffont & Martimort, 2009). The agency theory states that there are two parties in a transactional relationship, the agent and the principal. Both parties have their own interest in fulfilling the transactional relationship. For the principal this is an issue since he orders the agent to fulfil its interest in the best possible way without having access to all the information. This leads to a tension between the two parties, especially when their interests are very different. It is a challenge for the principal to make sure the agent does what he wants him to do. Since there is an information gap, this is very difficult for the principal to manage. This gap leads to the central issue of this thesis, trust. Without perfect information for both parties, trust is not an issue, since there is equality in the risks that are taken in a relationship.

This theory has also been found present in interaction between users and computers or a website (Li, 2012). An e-commerce business can say they will not use your data in any other way, but there is no way for the user, the principal, to check if this is indeed the case. This theory is one of the important origins of Privacy concerns.

2.0.2 Stated preference vs Actual Behaviour
An interesting part of the perceived privacy concerns is the phenomenon of stated preference versus actual behaviour (Berendt et al., 2005). Multiple studies found that there is a discrepancy between what people say and how they act when it comes to privacy. Interestingly, users disclose information when presented in the right setting then they initially say they are. This can be seen as an advantage for companies doing business and using this data, however this could potentially backfire when these users are confronted with the use of the unintended data sharing. What also was found is that when the privacy risks are low, a privacy policy that is presented to the user does not have a significant impact on the willingness to share personal information. When the privacy risk is high, a privacy policy does influence the willingness to share information (Pan & Zinkhan, 2006).

When further investigating the impact of privacy policies, it is interesting that an aesthetically pleasing and easy to understand Privacy Policy negatively impacts the willingness to share information, especially when there is a low perceived privacy risk. These findings pose challenges in how to make sure a company gets the data it needs and shows it needs to assess how to handle their policies in a manner that is aligned with how they do business (Pan & Zinkhan, 2006). This discrepancy is important to keep in mind when making conclusions about how to build trust in an online environment. Especially survey studies are less relevant because of the gap between stated preference and actual behaviour.
2.1 Literature review

This paper defined three main concepts that are of importance, privacy, trust, and e-commerce. In the following paragraphs we want to go into more detail about the literature and primary theories that have been developed. First we determine the role and the relationship between e-commerce and trust. After we have shown the relationship we will specify the specific factors that influence trust in an e-commerce environment.

Also, we introduced the important theories exceptions to keep in mind when looking at the theory in the field of trust and privacy. In the following section we want to discuss the relevant concepts, give an overview of their role. This chapter has been structured along the concepts that are used in the theoretical model. We introduce the topics, and in the theoretical framework we will elaborate on the different relationships between the theories.

2.1.1 Analysing Trust theories

A key area of research is the role of trust in an e-commerce environment. One of the best known models about trust and privacy in e-commerce describes how trust leads to a higher intention of purchasing with a vendor (Gefen, 2000). When you derive the nature of trust you could say that trust is ruling out unanticipated actions. For example, the misuse of personal information to send email you did not want to receive, or to sell users buying behaviour to advertising agencies.

There are a few other concepts closely related to the characteristics of trust. One is that trust is not something that is present, it needs to be built through several interactions (Gefen, 2000). Just like you get to know someone, trust is not build immediately. It comes over time, just like for example friendship. This is a challenge for e-commerce parties, since there is no easy way to start a relationship with a customer that does not involve a transaction between buyer and seller. This leads to a threshold for consumers to start building a trust relationship with an e-commerce party. This can be seen as a problem for e-commerce parties.

When looking at trust in an e-commerce environment, trust can be split into four concepts, together forming e-trust, or trust in e-commerce (Gefen & Straub, 2004). This study uses the two most important factors in relation to privacy. The concept of integrity is a very important concept in building trust and has been found to have the strongest relationship to trust in multiple studies (Chen & Dhillon, 2003; Gefen & Straub, 2004). Integrity is mostly seen as to what degree companies behave in an orderly and in an expected way without surprises that may harm the consumer.

Ability is the second concept that is also seen to be very important. However where integrity has a growing impact during a relationship in trust, the impact of ability on trust reduces over time, since integrity has more impact, research found. Ability, since then is seen to be less important. However, ability is closely related to a more important concept that is competence (Chen & Dhillon, 2003; Gefen & Straub, 2004). Competence is seen as how well a company can fulfil its promises to its clients in the way it promised. Gefen (2004) described this as the ability, but in essence only the naming is different.
We have seen that trust is a bonding tool for people that is build over time in a relationship. Also, there are four important concepts driving online trust, called e-trust, two of which are integrity and ability.

2.1.2 Privacy

One of the more prominent research topics is the concern and impact of these concerns on information privacy (Bélanger & Crossler, 2011). These concerns are how users perceive how their data is going to be used. In the field of information privacy, two instruments have been developed in past 20 years that are important for the research in the field if Information Privacy. The model bests explains the influence is the model of Internet users Information Privacy Concerns (IUIPC) as developed in 2004 (Malhotra, Kim, & Agarwal, 2004). We want to discuss this models since most of the theory used is based on the concepts developed in IUIPC.

The model of IUIPC defines three major categories that shape the users IUIPC in a transaction or relationship. First, there is the collection of the data, legal or illegal. In the collection it is found that customers want to limit the amount of data they share with marketers, limiting their ability to make a profile of the consumers behaviour. It is thus important to give the consumer value from giving up some of their personal details, making an exchange possible (Malhotra et al., 2004).

Secondly, Malhotra et al. (2004) state that control is also an important factor. Data provided to a company needs to stay in control and is closely related to the concerns people have. Being able to retract or delete data is very beneficial for their concerns. Which seems logical, giving something very personal but staying in control feels that there is some mutual trust, since the other party lets you control your data. Showing that you will not intend to do them harm.

Finally in the model of IUIPC there is awareness. The concept of awareness is primarily about the user being aware of where the data is used for and where not. This awareness is also closely related to the concept of IUIPC.

One of the relations between privacy and other constructs is trust. Multiple studies have found that perceived privacy risk and trust are two constructs that are closely related, and influence each other. One of the more comprehensive models states that trust and privacy concerns have a two-way relationship and influence each other (H. J. Smith, Dinev, & Xu, 2011).

Besides the two-way effect Smith described, other relations between privacy and trust have been found too. When there is a degree of privacy in shopping this leads to trust in the vendor, which in turn leads to a consumer that is more inclined to buy a good or service online (Liu et al., 2004).

2.1.3 Procedural fairness

In the field of privacy and trust research we can identify some important theories on obtaining and gaining trust in relation to privacy. One of the issues that has been identified is the handling of the personal
information and in what regard this can be seen as fair by the user. This fairness is an important factor in the willingness of a user to share the information with an e-business (Culnan & Armstrong, 1999).

Not only does an e-business needs to have this fairness embedded into their policies, important is that businesses are sharing these policies and being open towards the user. This part has been found to build trust and reduces the difference in privacy preference to sharing personal information with an e-business (Culnan & Armstrong, 1999; Li, 2012). We can define three important institutional theories that relate to trust and privacy in e-commerce

2.1.4 Social Exchange Theory
The first important aspect of sharing personal information with any business is the nature that it has be perceived as an exchange. This exchange can be seen as giving up privacy in exchange for money, or some social reward (Premazzi, Castaldo, Grosso, & Raman, 2010). Although people are not saying they disclose information in exchange for some incentive, it has been shown that this is indeed the case and when an incentive is present, users are more willing to share information with an e-business (Berendt et al., 2005; Premazzi et al., 2010).

Interestingly, other studies found that when there is a reward offered in exchange for information, the concern for disclosure of personal information increased (Andrade, Kaltcheva, & Weitz, 2002). The same study showed that the reputation of a company and a complete privacy policy decrease the concern for self-disclosure.

2.1.5 Social Presence & Social Response
Secondly, an important factor in privacy disclosure in an e-commerce business to user transaction is the theory of social presence. This theory, that originates in the social studies, states that in any form of electronic communications, a sense of social presence has to be created to trust the conversations and the interaction. In an e-commerce environment this social presence has been found to mediate the trust and intention to purchase online (Aljukhadar, Senecal, & Ouellette, 2010).

The final institutional theory, as described by Li(2012), is the social response theory. This theory states that instead what may seem natural, a computer is an actor instead of a channel and is perceived by humans as another person, even though they are aware of the fact that a computer does not have feelings (Moon, 2010). To be more specific, a relationship between two humans can be perceived the same as a relationship between a human and a computer in the way humans act. What was found is that when computers act in a socially accepted way of asking for personal information, people are more inclined to share this information, also sharing some personal information themselves results in a higher willingness to share information.
These findings impact the way an interaction between a human and an e-commerce business has to be perceived. What was found is that how the computer acts, has to be in line with how users view this relationship. A computer has to share information just like in real relationships about itself with the other person to build this relationship, and this relationship is something that has to be built over time (Moon, 2010).

2.1.6 Design and technical website theory

One of the other aspects that comes into play is the technical side and appearance quality of the website a consumer is shopping. Some research already has been done on the purchasing intention related to website and service quality.

In practice, the use of privacy seals and trust certificates is commonplace to show the use of personal information is according to common standards.

However, the theory on these seals is very limited, and findings have not been universal about its effects (McKnight, Kacmar, & Choudhury, 2004; Miyazaki & Krishnamurthy, 2002; Rifon, Larose, & choi, 2005). Some say there is an effect that helps users become more privacy aware and trust an e-commerce business more, while others find there is some relationship, but no research has found significant measures that these seals have any effect on trust, purchasing behaviour or privacy concern.

There is however a relationship between design and trust in an e-commerce website. What has been found especially is that users build trust in several ways. On the technical side we mentioned the impact of privacy seals and studies show that this is something that is not entirely confirmed. When looking at design, three components can be identified: visual, information and navigation design (Cyr, 2008).

The first aspect is visual design. Visual design can be seen as how the website looks. This is purely what you see and how it looks. Things like visual presentation, font, colours, photographs, gradients and other aspects need to be considered.

Secondly there is information design, the information that is displayed on the site (e.g. product information). Also the content of the website is of importance. Not only correctness, but also the way information is displayed is of importance. Information design is often seen as a smaller concept that is part of the general term usability. This is how the website works and how usable it is for users. Familiarity with the design, structure and especially presentation of information is important, studies show. (Cyr, 2008)

Finally there is the navigation design. This component is closely related to information design and is all about how users find the information and how they navigate the website. So searching, placement of categories and discovery tools are all part of the navigation design.

All these three concepts, visual, information, and navigation design, primarily relate to trust in an online vendor (Cyr, 2008; Flavían, Guinaliu, & Gurrea, 2006). Also on a higher level usability seems to have a catalyst on trust. Increasing trust but also increasing other factors that again influence trust (Liao et al., 2006).
One other factor that is important to note is that the impact of repurchasing behaviour in an online environment, design and usability also play a role. While website design is a trigger for repurchasing behaviour, what is more important is something called service quality. This concept is not directly related to website design, but is also a more technical concept.

Service quality is a very well-research concept in the SERVQUAL model. In this model there are five components that define the service level and their quality of a business. In an online environment, four components are especially important, reliability, responsiveness, assurance and empathy (Zhou, Lu, & Bin Wang, 2009). What was found was that the service quality is closely related to both trust and satisfaction. Also, satisfaction influences trust in a positive, but very small, way.

2.2 Recap

In this section we want to give a broad overview of what has been discussed so far. In the next section we want to develop propositions that ultimately lead to a theoretical model.

Privacy and trust are two very related topics. Trust is seen as a way to reduce complexity in a relationship. We also saw the role a website has in a transaction, being perceived as an endpoint instead of a channel. Also, the theory on social response shows that websites need to incorporate some sort of social response in the interactions with customers to build trust.

We discussed the impact of procedural fairness on trust and privacy and argued that this can enable businesses to build trust. There was a discrepancy in what the impact of privacy policies was on perceived trust. Different studies concluded different effects, so evidence is inconclusive. However, the model of IUIPC provides a good starting point to research privacy concern and shows that control over personal information is important in building trust online (Malhotra et al, 2004).

Finally, we looked at technical aspects that build trust. We discussed the impact of design, especially the impact of visual, navigation, and information design and the impact on trust. Also we discussed the impact of trust certificates, but its evidence is limited.

With these findings in mind, we will try to build a theoretical framework to help businesses build trust in an online environment.
3. Theoretical Framework

Based on the previously described theory, we can come up with propositions about what the strategies are to build trust and reduce privacy concern in an online environment.

When looking at the general theory of trust in relationship to privacy a few important factors can be defined. From propositions we build a model that helps businesses understand this theory.

3.1 Social measures to build trust

**Proposition 1**: Social presence and social factors influence the perceived trust in a positive way for e-commerce businesses.

Social presence and trust are two related topics. We have discussed the theory of social presence and the impact of these factors on perceived trust in e-commerce.

Gefen (2000) describes the importance of trust in an e-commerce relationship in a very extensive way. Gefen (2000) argues that in interactions with other, unknown people there is a great deal of complexity. There is no way to fully understand the persons personality in one single interaction and thus such interaction can become very complicated.

This complexity can be solved by a universally known concept called trust. Trust is the glue that makes such an interaction work. Trust is a cross-discipline concept that has been widely researched, but has shown to be very important in any interaction. Trust can be used in multiple ways, but the following describes it best for this research (Gefen, 2000):

“Trust, in a broad sense, is the confidence a person has in his or her favourable expectations of what other people will do, based, in many cases, on previous interactions.”

This definition covers the important factors that trust has on interactions. It is a way to decrease complexity, in any interaction between humans.

Subsequently, you could argue that a website is not the same as a human interaction, leading to entirely different theories on trust and these interactions. However it was found that humans perceive a website interacting with them the same as a human interaction, leading to the conclusion that a website is not a channel but an interaction partner (Li, 2012; Moon, 2010).

These findings change the way we perceive computers and research trust. It enables to use the theoretical findings from human interaction models on a computer-user research. To determine the factors that influence social presence and social factors it is important to keep in mind the possible social interactions and the limitations of a website-user interaction. A website cannot talk, and lives by the willingness of a user to hand over information. It can only send and not directly respond to feedback given by the user. Although users see the computer as a personal interaction, the nature of this interaction is quite different.
This different nature poses challenges on building trust. One of the important aspects of building trust is the social interaction (Gefen & Straub, 2004).

One of the important theories in this field of generating trust in an e-commerce field is the social presence theory. This theory states that trust is based on the human factor a website can display. Research has shown that the acceptance of technology like e-commerces is of less importance than the presence of social interaction (Gefen & Straub, 2004). This leads to the assumption that a social presence indeed increases trust since it increases the perceived state of the interaction, making it more like a human interaction, making more human-like concepts important.

To summarise, the concept of social presence is well-researched and has many ties to trust in a privacy setting. However, the connection between social presence and the perceived status of a website is of interest, since this changes how e-commerces has to be perceived and opens up new ways of doing research on the basis of social studies. This study shows that a social presence and social interactions help build trust online.

3.2 Privacy and its relationship to trust

One other important factor that was discussed is the relationship between perceived privacy concern and trust in an online vendor.

It is obvious these two components are somehow related, but how exactly is a lot more complicated to determine. What factors make that these two are related, and in what relationship they are related?

The current research is not clear about what the exact relationship between trust and privacy concerns is. What has been found is that the two are related, but the exact relationship is unclear (H. J. Smith et al., 2011). This study proposes, based on previous literature the following proposition:

**Proposition 2**: Building trust with consumers reduces consumers’ information privacy concerns.

While the research is not conclusive of the exact relationship between privacy and trust, a few conclusions can be made based on the research that has been done.

Firstly, there is a relationship between trustworthiness and information privacy concern. It has been found in multiple instances that when a company, marketeer or other institution has build a trustworthy relationship with a consumer, the Information privacy concern is less present (Belanger et al., 2002; H. J. Smith et al., 2011).

Information privacy concern, and specifically privacy, is a concept that has had multiple definitions proposed over the years, all with their own focus. To name a few, “the right to be left alone”, which is one of the first definitions from the field of law (H. J. Smith et al., 2011). However, there is much confusion, since privacy as a concept is closely related to concepts like anonymity, secrecy and transparency. All these concepts define a part of privacy and show how difficult it is to define one general definition for privacy concerns.
Trust however has a more clear definition and is primarily a concept to decrease complexity in social interactions, as we have seen previously. When looking at the literature, privacy concerns can be seen as a complexity in a personal interaction. Since e-commerce has been found to be perceived the same as a human being in an interaction, this is applicable. When combining these two findings, you could argue that trust can reduce the concern for information privacy since you have built a relationship with the person and thus gained some mutual trust.

What we have seen so far is that an interaction between two people is based on trust. We showed that privacy concerns can be reduced by trust and also that trust reduces complexity. These relationships can also be applied in an e-commerce environment since we have shown that consumer perceive e-commerce as an interaction between them and another human being.

3.3 Institutional measures to build trust

In the following paragraph, this paper discusses the primary theories of mitigating privacy concern through trust on an institutional level. We define the institutional level and discuss the primary theories that apply.

Besides the technical aspect of e-commerce, there is always a business that supports the website, with people, processes, and a reputation. What is underestimated is that this business can have a big impact on the trust the website has with its customers. These institutional measures are especially present in the process of ordering and the corporate image. This study proposes the following:

**Proposition 3:** Institutional measures like Procedural Fairness are means for companies to improve trust in an e-commerce environment.

There are a few institutional measures a business can take to build trust. Most of them are based on theories that are also applied in other parts of science, mostly social sciences. But these theories found to apply to these types of businesses as well.

Firstly there is the procedural fairness theory (Culnan & Armstrong, 1999). As we discussed earlier, procedural fairness is about the fairness and fair use of data that has been collected by the other party in a transaction. If a person knows there is a fair use of their data and information, they trust the other party more.

In this study we focus on the procedural fairness in personal information gathering by e-commerce parties. The theory can be applied much broader. For example on disputes about shipping, other processes in hiring, recruiting or the delivery of orders.

In theory of procedural fairness a few key concepts play a role. Before this study determines the concepts that are contained within procedural fairness, it is important to know that the user voluntarily hands over data to the business for use that is specified upfront. This is different from involuntary gathering, since this does not apply.

The first concept is notice. An e-commerce business needs to tell the person that they are going to use the data, and also what they are going to do with the data. With the rise of concerns of privacy, notice is
becoming increasingly important. Especially if afterwards a user finds out the personal data has been used in ways they did not want it to be used (Culnan & Armstrong, 1999).

Secondly there is consent. When the notice is given, it is important to make sure the user consents with the use of the data as specified by the business. Both of these concepts define a fair information policy. Also, it is important to note that control over personal information is very important in the perceived trust of users.

To conclude, in the procedural fairness theory there are two important concepts that need to be regarded, notice and consent. If these two concepts, combined with control over the data and a perceived fairness of use of the data procedural fairness can be achieved (Culnan & Armstrong, 1999; Li, 2012).

The importance of control is further stated by Malhotra et al(2004) in the model of IUIPC. We previously saw that control is one of the important factors that shape the IUIPC of a user. When the user is handed control over their data, this greatly benefits the trust in the business and reduces their IUIPC.

Another important factor in the institutional part is the openness of the company. If a company is open about its procedures you could argue this leads to more trust since there is more known about the people behind the company. This closely relates to the social response theory.

Before we argue the social response theory in relation to the proposition, it is important to mention the nature of computers in these relationships. In earlier research and other fields, computers are seen as a channel to communicate with other humans. However, with e-commerce websites this is somewhat different. Research has found that users perceive a website in the same way as a human and expects this website to behave like humans do (Moon, 2010).

Keeping in mind the way people perceive computers in an e-commerce environment, the social response theory could be applied here as well. Since this theory is about two persons interacting, it can give some insights into how websites need to address their users.

Social response theory states that users are more willing to give information to an institution, company or other person when they get some sort of equal exchange and the other person discloses information as well. Since computers are perceived the same as users, this theory applies for e-commerce businesses as well and defines how they should design their process of gathering personal information.

This response to disclosure can also be seen as being open in the relationship you build with a company. In this way company culture and institutional measures need to be aligned with the response and disclosure of personal information to get the information needed.

The final institutional policy a company could apply is the presence of privacy policies. Although evidence is very limited and inconsistent, a few things can be taken into account.

First, the relationship between readability and the privacy policy has been researched on multiple occasions (Andrade et al., 2002). What has been found is that a privacy policy on its own is reducing the privacy concerns present with users. However, readability does not impact the effects on this concern. Also, studies
reveal that there are two categories of personal information. With a high perceived value and with a low value. Within these two groups a privacy policy has the most effect on the high risk of disclosing the information. Interestingly, when a privacy policy is more readable, when there is low risk to disclose the information, the trust in the company is actually lower (Pan & Zinkhan, 2006).

To conclude, institutional ways of building trust can be done in three ways. By being fair in procedures, especially on handling personal information through consent and notice. Also being open and creating a relation with your customer is important, exchanging information and gaining trust. Lastly, it is important to give users control over their data.

3.4 Practical and technological implementations

The final part of theory has already been partly mentioned, and talks about the technical and design aspects of a website. Also the practical implementation of communications and the impact on the relationship between the website and user come into play.

This leads to the following proposition:

**Proposition 4:** Website design is an important factor building trust for e-commerce businesses

We have seen the effect of information, visual and navigation design on perceived trust in a commercial business earlier in this thesis. Especially information and navigation design were of importance when building trust online.

One aspect that has not been discussed in depth was the influence of chat and other on-site communications tools, making a personal connection. From what we saw before, this personal connection is very important in building trust (Li, 2012; Moon, 2010).

Besides these static ways of design, three other components can be integrated in a website to increase trust. The concept of guanxi is introduced and has everything to do with building a personal and close relationship. The term Guanxi originates from china and can be seen as having a close relationship with someone. Previously this concept only existed in social face-to-face meetings and was not researched in a setting of websites. But since websites can be perceived the same as a face-to-face meeting, like we concluded previously, this research contributed to making this guanxi more concrete for websites (Ou, Pavlou, & Davison, 2014).

What Ou et al.(2014) found was that trust can be build through these swift guanxi, even when this is with a website. Also they developed tools that would benefit this swift guanxi and enables websites to actually build swift guanxi. Ou et al.(2014) define three types of interaction that, mediated by Interactivity and Presence, build trust and ultimately swift guanxi.
These three types can all be embedded on a website. The first one is effective use of instant messaging. If you are able to chat with a person that can guide you through the process this will enable a personal relationship with the business. This chat is becoming more present, especially with service oriented websites that enable the possibility to chat simply with the click of a button (i.e., Netflix, Bol.com, T-mobile).

The second form of communications is a message box that enables to ask specific questions about products. This enables a tradition conversation you would have in retail shop where you could ask questions. It is argues this could either be public or private, both types seem to work as a way of getting the information needed from a product.

Third, a feedback system to give feedback on the process enhances the trust in an e-commerce party, since people can leave comments that they then can improve. This way of communication also gives a sense of being heard. Since not only the buyer, but also the seller can rate the process this is a form of two-way communication increasing trust and credibility.

These three systems can be implemented and lead to trust in a technical sense. Combined with design this forms the technical aspect of building trust and reducing privacy concern of this study.

3.4 Towards a model for building trust and reducing privacy concern

This study showed the relationship between trust, privacy and three categories of building trust. The important part of this thesis is the relationship between trust and perceived privacy concern. What was shown is that information privacy concern can be reduced by building trust. This study defines three main categories of which trust can be build, and privacy concerns can be mitigated.

There are the social strategies. Most important the theory of social presence support these types of strategies. Being socially present builds trust and generates the reputation of the company. Secondly, we see that being able to create a social interaction on a website trough several systems like chat, messaging or other systems can help build trust from a social standpoint.

There is the category of institutional strategies. These strategies are not especially related to the website but more about the company behind the website. Three key aspects can be addressed, firstly procedural fairness. If a company is fair in its procedures of gathering data, this positively affects the trust consumers have in the supplier. Secondly, there is openness. Social response theory states that when giving information in exchange for information, people build trust. Finally we see that control over ones personal information is important in building trust. Being in control over ones personal data helps build data.

To conclude, there are technical strategies. These have everything to do with the website. Two factors are important and can generate trust. First there is design, especially navigation design and information design. Secondly there are communication tools like a feedback system and IM to chat with people. All these tools can build trust in from a technical standpoint.
Putting all this in a model leads to the following model.

Figure 1. Theoretical Model

P = proposition
4. Discussion & conclusion

This study found that three distinct categories can be used to build trust: technological, institutional and social strategies. These can help build trust online. In the following paragraphs we want to give a broad overview of the findings, some practical and scientific relevance and finally come up with the limitations and suggestions for further research.

This study proposed a model for building trust and mitigating privacy concerns in a B2C e-commerce environment. It was found that there are some factors important in building trust and reducing privacy concern. Firstly, it was found that users perceive online shopping that same as a human interaction, instead what has been seen previously where online retail is perceived as a channel instead of an interaction with an endpoint.

This finding leads to the second finding which makes it possible to apply social theory in a model of trust and privacy concern in an online environment. It was found that social exchange theory plays a role in the trust that is build between consumer and businesses. It was found that when there is an exchange of personal information this increases trust for the consumer, since there is a trust relationship build.

Thirdly, besides the social aspects this study found that institutional policies have an impact on trust and privacy. The theory of procedural fairness can influence how users perceive a business and its practices of disclosing personal information, handling complaints and other procedures. This naturally is very important when handling personal information. It was found that being open about the use of personal information, especially in an online environment, helps build trust. This openness should be present alongside the possibility of users to be in control of their data. Which is a second component of openness and procedural fairness that this study has found.

Finally, it is found to recognise the importance of design and other tools to make websites more social. Navigation design and information design influence the perceived trust a consumer has in an online vendor. Another technical aspects that was found is the importance of IM, messaging and feedback systems to help build trust and create an interaction. This is in line with the more theoretical finding of social response and social exchange.

This study proposed a model that could help researchers to better identify the relationships between the different aspects of privacy concerns and trust. These relationships and different aspects have not been identified in one integrated model before. Also, this study identified the gap between stated preference versus actual behaviour that is present in privacy research.

These relationships are important for researchers because trust has been found to be a complex concept with multiple dimensions and perspectives. By trying to create an integrated model for one specific case, this helps understand the concepts that are related to trust and privacy in a very focussed environment, e-commerce. This can help understand what is important in this environment and help understand the complex concepts of trust better.
For businesses this study has a few contributions that can help build strategies for trust and privacy online. First, this study creates a model that can help businesses determine their strategies for running an online business. Especially traditional businesses that venture into the online world can benefit from the model of building trust and privacy online. By giving businesses a framework to develop strategies for online privacy it enables them to design and structure the online organisation according to the right principles that drive trust online.

### 4.1 Scientific contribution

This thesis found a few important things that can contribute to further research. Firstly, it is important to note that in the field of privacy and trust research there is big gap between stated preference and actual behaviour. Where in some research people would state privacy is very important, at the same time they were not more resilient to sharing personal information when tested in real life. This poses some interesting avenues for further research when investigation privacy concerns and shows that a survey is interesting to understand peoples reasoning, but is not sufficient when behavioural predictions are to be made, since there is a gap between what users say and what they do concerning privacy. This stated preference versus actual behaviour has been shown already, but the specific effects have not been researched. This could be an avenue for further research.

Secondly this study showed that there are possibilities to reduce the privacy concerns by increasing trust through three main categories. These categories are mostly based on social studies and other studies focussed on personal connections. However this study found that, in an e-commerce setting, people perceive the website they interact with as a personal connection.

This study contributed to the scientific community by creating an overview of the relevant literature that has been written about privacy in relationship to trust, especially giving a model combining several fields of study to define three main categories to mitigate privacy concern through building trust for e-commerce parties. There was not one model that could be build upon, and this study tries to create an initial model that can be further tested and be build upon.

### 4.2 Managerial contribution

In practice, this model gives some very practical guidelines that can be applied in an e-commerce environment when trying to reduce privacy and increase trust in the vendor. It is important to understand that the three different aspects are not a checklist, but are an integrated model where the different concepts are closely related to each other. Focussing on one of the aspects does not necessarily help build trust, but using this model as a guideline in the entire design process of an e-commerce business and its website is recommended.

Other practical implications are that this model integrates both the business side and the technical side in one model for e-commercences to use. Previously, these were not combined in one single model, which did not
highlight the interaction between the two sides of e-commerce. This model tries to combine these two and give one integrated model that can help businesses make better decisions for their e-commerce business line.

4.3 Limitations

This study also has some limitations that need to be considered. This thesis focused its research on a Business to Consumer relationship, which made the scope of the model rather small and limits the applicability of the findings to a specific. More research in other relationships (B2B, C2C) could enhance the significance of the model and broaden the scope of the conclusions found.

Also, from what has been researched, it could be that the current model is not yet complete since this study reviewed present literature. There could be more factors in play, more research is needed for this.

While mentioned, it is also important to note the significance of the concepts that are on the consumer side of the relationship. This study limited itself to strategies that businesses can implement to build trust online. Individual factors that influence their inclined trust are not mentioned but might have an influence on the trust build.

One of the factors that is not entirely clear and could use some more research is the exact relationship between trust and privacy concerns. Previous research has found that there is a relationship and they influence each other, but the exact relationship and the reasoning behind the relationship is still unclear. More research on this topic could clarify this gap.

4.4 Further Research

In terms of further research this model as a whole needs a lot more testing and research, especially by doing experiments in a controlled setting. Also a broadening of the model and a more in-depth analysis of the literature is something that could greatly benefit the quality of the current model. Especially validating the current model in a real-world test.

Another factor that could be of interest is how this model holds in newer ways of online business. Mobile commerce, apps and other new ways of buying have different characteristics that might be of interest in regard to the proposed model. More research is needed on this.

In all, organisations should consider this model when building their e-commerce businesses. It has shown that there is something that can be done about privacy concerns in a very practical, but also in more theoretical ways. Combining these strategies leads to increased trust and reduced privacy concerns.

4.5 Advice for organisations

For organisations that want to use these findings in their specific situation it is important to consider the following aspects. This study has been done specifically for e-commerce businesses and can help as a guideline for building and improving their trust with users.
It is important to see these recommendations embedded within their organisation. There is no way these can be seen separately from a culture that is present in physical retail stores. For existing companies it is thus recommended to first focus on the technical aspects of building trust and try to incorporate other more institutional measures with a company-wide initiative to make these commonplace everywhere if e-commerce is going to be the primary focus.

For new companies in the business however it is important to start immediately incorporating the institutional measures in company culture. These measures provide the most long-lasting trust, since design is subject to rapid change. When these foundations are laid the details can be built-in.

Also, it is important to see these recommendations in perspective of other research. This still needs to be further researched in a quantitative or qualitative study.

4.6 Concluding Remarks

This study proposed a model for increasing trust and reducing privacy in an e-commerce environment by coming up with three categories based on previous literature. It also tried to give a first suggestion for a model that can help businesses create trust in an online environment, and give researchers a suggestion to test a model that could help Businesses and Researchers combining different theories into one more practical model that is very easy to implement and use in the real life. Because if trust can be built online, real relationships can start to be build and that could make online retail the same as physical retail.
5. References


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