

Trust building processes on web-based information-sharing platforms

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Abstract

Identified trust building mechanisms varied according to their complexity and acceptability, especially among low e-skilled companies. Appropriate selection and user friendly implementation can enhance trust and liquidity on the web business platforms. In the paper we present results from two European IST projects Seamless and Fluid=Win focused on trust issues on the web B2B platforms. To identify suitable trust building mechanisms and strategies regarding implementation into a SEAMLESS platform, a questionnaire survey was carried out which was focused on trust building mechanism significance and minimum necessity. The results show the significance of the e-skills of the company, which affect the trust perception in more sophisticated mechanisms. Several interesting implications were revealed, e.g. the banks appear as the most trusted partner for escrow services and generally simpler mechanisms in ODR are more trusted than complex ones. The research can help to build effective trust strategy on B2B web based platforms.

Keywords

Trust, trust building, web-based platforms, survey

1 Introduction

According to several studies and proclamations, the trust building begin to be very crucial area for B2B development. This issue was examined also in two European IST projects, „SEAMLESS“ and „FLUID-WIN“.

The SEAMLESS project studies, develops and tests an embryo of the Single European Electronic Market (SEEM) network, where a number of e-registries are started in different countries and sectors. The SEEM vision is towards a web-based marketplace where companies can dynamically collaborate without cultural, fiscal and technological constraints with sufficient level of trust to ensure liquidity of web business platform.

The FLUID-WIN project is the process of implementing an innovative, interdisciplinary and dynamic business model. This model will enable the European manufacturing companies to achieve quick response and competitive prices by integrating their suppliers whether international or domestic. The objective is to develop a means for a B2(B2B) service, adapting services into a complete existing network instead of manually creating individual relations to the network members. The scope of the FLUID-WIN project covers the material flow among a supply network as well as logistic and financial services flows associated with this flow.

In this paper, we present conclusions from research conducting within these two projects focused on trust issues on the B2B platforms.

2 Trust building as a critical factor of eCommerce on web based platforms

Though operating within a closed supply chain system, locally spread information technology destinations (users of manufacturer, suppliers and financial services institutions) need to be linked, which brings up the need for trust, privacy and security. It is to be expected that security is at least of equal importance than in an open system as limitation of access plays a vital role. Trust in the context of web/based platforms operates at various levels and has different aspects. Here, trust refers to the psychological reception of system owners and users. Trust earns its relevance as the integration of manufacturers, suppliers, logistic and financial service providers causes the integration of any company system into the multilayer information technology structure of a platform. So the various audiences need to be sure that transaction are technically secure and performed correctly. This level of trust guarantees increased efficiency in the supply chain because items are only orders and whole chains of events can commence. There are several Trust and Security best practice scattered throughout the Internet and material is constantly updated daily, if not hourly, based on the latest threats and vulnerabilities. Security standards are not “one size fits all.” Responsible, commercially reasonable standards vary, depending on such factors as a company’s size and complexity, industry category, sensitivity of data collected, number of customers served, and use of outside vendors. (see e.g. TRUSTe Security Guidelines 2005, SWAMI 2006). Security standards do exist for several types of transactions conducted, and new one are on the way all the time. A further check list to meet trust and security requirements is to meet local legislation in terms of data protection and privacy regulation. Financial transactions need to meet local and also foreign standards if they are to be accepted by a provider.

In electronic commerce, where the buying and selling of goods or services is conducted online (eMarketServices 2004a), trust has received significant attention, as it is related to growth in this area of business. The Commission of the European Communities noted that, in order to win consumers as well as businesses over to e-commerce, it is necessary to build trust and confidence. In concrete terms, consumers and businesses must feel confident that their transactions will not be intercepted or modified, that both sellers and buyers own the identity they claim, and that the transaction mechanisms are available, secure and legal [eMarketServices 2005].

In an open and unknown market place with a high number of unknown participants, assurance and trust are difficult but very important. There is a growing body of research literature dealing with online trust, in which e-commerce is one prominent application. Several studies contend that e-commerce cannot fulfil its potential without trust [e.g. Jones, Wilikens, Morris, Masera 2000, Farhoomand and Lovelock 2001, Raisch 2001]. Lee and Turban (2001) highlight lack of trust as the most commonly cited reason in market surveys why consumers do not shop online.

On an open consultation on “Trust barriers for B2B e-marketplaces” conducted by the Enterprise DG Expert Group in 2002, several important barriers were identified. From the report we can find that the most important trust barriers are issues regarding the technology (security and protection), trust marks and dispute resolution absence, online payments support, lack of relevant information about partners, products, contract and standardization issues.

A trust building process must be set up to resolve these issues. Trust usually is conceptualized as a cumulative process that builds on several, successful interactions [Nicholson et al. 2001]. Each type of process increases the perceived trustworthiness of the trustee, raising the trustor’s level of trust in the trustee [Chopra and Wallace 2003]. It is not known exactly what trust-building processes are relevant in an ecommerce context. It is suggested that, in this setting, trust-building is based on the processes of prediction, attribution, bonding, reputation and identification [Chopra and Wallace 2003]. Reputation has a very high relevance in a trust-building process on e-commerce markets [e.g. Atif 2002]. According to the Chopra and Wallace classification, identification based trust refers to one party identifying with the other, for example in terms of

shared ethical values [Morgan and Hunt 1994]. Identification builds trust when the parties share common goals, values or identities. In e-commerce, these attributes perhaps may relate to corporate image [Chopra and Wallace 2003] or codes of conduct.

There is also a lack of empirical knowledge about how trust in the e-marketplace impacts on buyer-seller trust [Pavlou 2002, Pavlou et al. 2002]. As an example, the role and importance of institutional arrangements that B2B e-marketplaces offer in order to build buyer-seller trust and increase liquidity is not known [Pavlou et al. 2002]. Although, some investigations [Lancastre & Lages 2006, Kuttainen 2005] conducted later, show several evidences of trust impact.

These results were more focused on trust impact than on factors which build trust. According to several researches, the research on significance and acceptance of trust building mechanisms absences and is necessary for future development in this field. This absence was examined in Seamless project (www.seamless-eu.org).

3 Research methodology

To identify suitable trust building mechanisms and strategies regarding implementation into a SEAMLESS platform, a questionnaire survey was carried out. Type (buyer, seller), size and e-skills of companies and their present level of cross-border collaboration were selected as the factors for results segmentation. Other factors, which are important to examine, are the willingness to pay a fee for more complex services and to accept the publishing of negative ratings of an examined company so that all the ratings are visible for potential partners. According to these factors, we will analyze the business model regarding outsourcing and fees policy and level of benevolence regarding trust definition. In order to gather some additional information regarding trust on P2P e-market based on mediators, we also asked for their opinion on crucial factors of trust to the mediator on e-markets and as an examples, which mediator would be acceptable for them.

Generally, the results we wanted to examine and identify where:

1. How significant is the level of added trust according to a particular trust element or trust building mechanism?
2. Which trust building mechanisms are necessary for joining an e-market?
3. Which types of mediators would be most acceptable?
4. What business model is most acceptable for SMEs regarding fees policy?
5. What differences are there between different sizes of companies and other relevant factors regarding trust perception and acceptance?

The purpose of the analysis was to:

- Identify the most suitable sets of trust mechanisms for a SEAMLESS platform,
- Identify a minimum set of trust mechanisms needed to implement in initial phase,
- Identify future shifts in trust perception, acceptance and requirements according to e-experiences,
- Identify the most frequented patterns regarding the trust model.

The research was carried out in 6 EU countries (5 NMS and 1 western EU country, 103 companies). The questionnaires were sent through email and were supported by phone interviews. In order to achieve a greater understanding of the questions, in every block of related questions, the description of related issues was added.

4 Trust analysis within European companies

4.1 General information about the company, references and certificates

One of the basic information for initial trust is obtaining quality information about company's background and references, which should be verified in particular manner. Results show that such a kind of information is very important for most of companies. Verified information about company significantly increases trust for approx.80% of all surveyed companies and 80.43% of all companies marked this information as necessary for the joining on the web business platform. Within this area, an interesting point to note is the information about "Size of company" and "Year of foundation". Information about "Size of company" will significantly increase trust for only 19.57% of all companies and for only 21.43% of companies with e-skills. 32.14% of e-skilled companies and 29.35% of all companies consider this question important. For information about "Year of foundation" the percentages are even lower. The 17.39% (all companies) and 17.86% (e-skilled companies) said that this information will significantly increase their trust and this information is necessary for 25% of all companies and for 28.57% of e-skilled companies. Another situation is for "Status of business activity". Except "contact information" companies highlighted this question as important for increasing a platform's trustworthiness. This information will significantly increase trust for 68.48% of all companies and is necessary for 57.80% of them. Companies with e-skills consider that "Status of business" activity will significantly increase trust at the level of 67.86%, and it is necessary for 57.14% of these companies.

Certificates generally significantly increase trust for 58.78% of all companies and were necessary for 52.17% of these companies.

4.2 Reputation mechanisms

Reputation mechanisms could be used as trust building mechanisms. Companies were asked whether mechanisms like feedbacks, discussion forum, historical data and rating will increase trust in the platform. Feedbacks were divided into "Positive only" and "Positive together with negative" feedbacks.

The survey showed that all companies prefer "Positive and negative feedbacks" rather than "Positive only feedbacks". "Positive and negative feedbacks" significantly increase trust for 44.57% of all companies instead of "Positive only feedbacks" with only 22.83%. The need for "Positive and negative feedbacks" was at the level of 39.13% and at the level of 19.57% for "Positive only feedbacks". 50% of e-skilled companies consider that "positive and negative feedbacks" significantly increase trust and necessity for these feedbacks is at the level of 42.86%.

A "Discussion forum" significantly increases trust for 23.91% of all companies and for 35.71% of e-skilled companies. 20.65% of all companies and 28.57% of e-skilled companies consider a discussion forum as necessary. "Aggregated historical data" significantly increases trust for 39.13% of all companies, but 46.43% of e-skilled companies marked this data as significant for trust building. The data is necessary for 39.29% of e-skilled and for 29.35% of all companies. The last question for building the trust through reputation mechanisms was usefulness of "rating presented as a simple symbol". 53.57% of e-skilled and 36.96% of all companies consider that rating will significantly increase trust and also this mechanism was necessary for 50% of e-skilled companies and for 34.78% of all companies, making it the second most popular and trustworthy of presented mechanisms.

4.3 Contract negotiation platform

Contract execution is often difficult for companies and for this reason the contract negotiation platform is a relevant trust building mechanism. "Integration of negotiation outcomes into the contract" significantly increase trust for only 25% of all surveyed companies and is necessary for

only 19.57% of all companies. Companies with electronic skills consider the same level of trust increasing and necessary (35.71%). “Negotiation process tracking and recording” significantly increases trust for 30.43% of all companies and it necessary for 20.65% of them. “Complex contract clauses offered by specialized company” is necessary for 28.26% and significantly increases trust for 30.43% of all companies. For e-skilled companies this mechanism significantly increases trust at the level of 39.29% and is necessary for 35.71% of e-skilled companies. What is Interesting is the information about “Basic contract clauses and templates” together with “Explaining of contract clauses and conditions”.

For companies with electronic skills, both mechanisms significantly increase trust at nearly 54% (53.57%) and both mechanisms are necessary for 50% of surveyed e-skilled companies. 38.04% of all companies consider that “basic contract clauses and templates” significantly increases trust and the same mechanism is necessary for 36.96% of all companies. “Explaining of contract clauses and condition” significantly increases trust for 41.30% and is necessary for 34.78% of all companies.

4.4 Online dispute resolution (ODR) and Escrow services

One of the frauds emerging in business relations is the breach of contract or other disputes. On the one hand, buyer could not transfer money after receiving the product; on the other hand, supplier could send no product or product not met the agreed terms. When buyers and sellers don't know each other, they need a third-party they can trust to avoid such a risk. Escrow services reduces the potential risk of fraud by acting as a trusted third party that collects, holds and disburses funds according to buyer and seller instructions. Escrow services are usually provided by a licensed and regulated escrow company. Escrow services begin with an escrow agreement which is a written instrument which by its terms imports a legal obligation. The buyer, seller and the escrow agent all sign the escrow agreement, which states the conditions upon which the deposited items/funds may be distributed. The escrow agreement also stipulates, how, to whom and for which amounts the deposited funds/items will be distributed. The escrow agreement cannot be changed unless all parties agree in writing. The delivery in escrow is without reservation of power to recall, which means that an escrow agent must act according to the agreed-upon escrow conditions and disbursement instructions. Escrow services provide security to both parties to the transaction: the seller retains a property interest to assure payment/performance by the buyer and the buyer obtains security that the property will be his/hers if the conditions in the escrow agreement are met. Because both buyer and seller agree to the escrow terms before the transaction, each party is clear of how the transaction will transpire, and when funds will be distributed and to whom. Present escrow services are providing in different level of complexity and integrate many services within the contractual phases. For example scheduled date, place and time, validate identity of parties, witness execution, acknowledge documents, tracking and recording documents, document preparation and execution support, providing insurance, dispute resolution, etc. Such services are providing for little fee, for example 0.89% of the purchase price on Escrow.com, but depends on business model, purchased price and other conditions. As such a complex and cost effective services improve trust and business for every kind of company, many of e-marketplaces are forced to think about its implementation. As financial services are very sensitive regarding trust building processes and users acceptance, it is necessary to find the appropriate model for trust mechanisms supporting financial flows on online business platforms. Together, ODR mechanisms can effectively help to solve any kind of business problem without necessity to enter the traditional court.

The question regarding ODR was, whether this mechanism is provided by the platform or if it would be better to provide it via an outsourced company. 51.09% of all companies noticed that “Advisory support – recommendation of ODR experts to participants” will significantly increase trust and is necessary for 47.83% of all companies. E-skilled companies consider that advisory

support will significantly increase trust only at the level of 39.29% but advisory support was necessary for 42.86% of e-skilled companies. “Technical support” significantly increases trust for 61.96% of all companies and for 57.14% of e-skilled companies. It is necessary for 48.91% of all companies and for 53.57% of companies with electronic skills. “Limited ODR” – ODR with some level of complexity – significantly increases trust for 31.52% and it is necessary for only 16.30% of all surveyed companies. These levels were almost the same for e-skilled companies. Only the percentage of necessity was higher (21.43%). “Outsourced ODR service provided by specialized company” significantly increases trust for only 23.91% of all companies and it is necessary for 14.13% of them. 28.57% of e-skilled companies noticed that “Outsourced ODR” will significantly increase trust and only 17.86% marked that this mechanism is necessary.

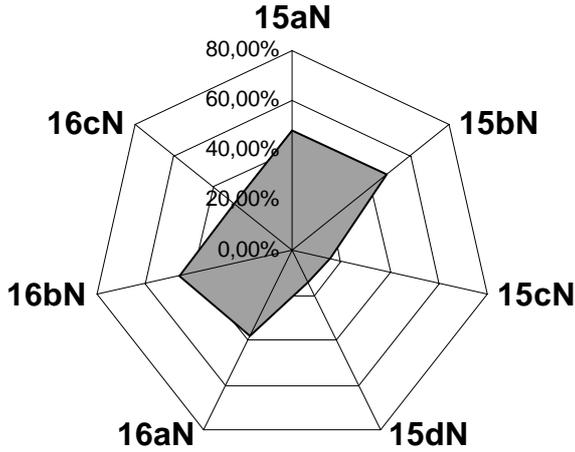
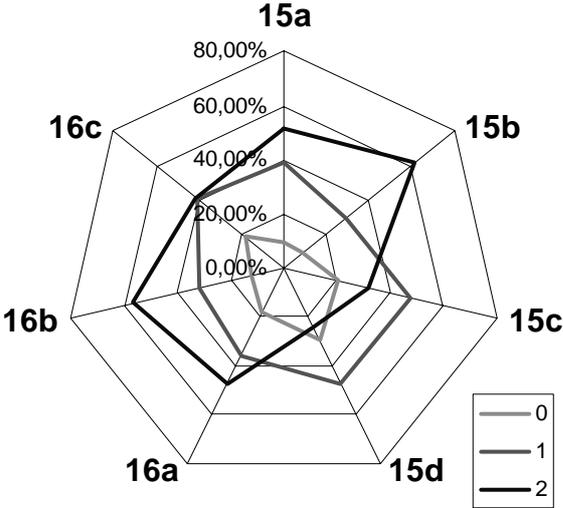


Figure 1: Different level of trust in general information by non e-skilled companies

Figure 2: Necessity of relevant elements of trust building mechanism by non e-skilled companies

Comments:
 15a Advisory support - recommendation of ODR experts to users; 15b Technical support; 15c Limited ODR;
 15d Outsourced ODR service by specialized company; 16a Internal escrow service; 16b Bank will be the mediator;
 16c Trusted Third Party

The “escrow services” is a mechanism that could be proposed by the platform as an “internal service”, or by the “Bank as the mediator” or by a “Trusted third party” as specialized escrow company. What is interesting, for all companies the “Bank as the mediator” significantly increases trust (56.52%), the second being “escrow services” as the “Internal service” at the level of 45.74%. “Trusted third party” significantly increases trust in only 41.30% (compared to other mechanisms) of all companies and this mechanism is necessary for 29.35% of all companies. The most necessary is “Bank as the mediator” for escrow services, 45.65% and escrow as “internal service” is necessary for 38.04%. Another is the situation among companies with electronic skills. “Bank as the mediator” significantly increases trust for 67.86% of them but the second most significant increase is registered in “Trusted third party” (50%). Also, the necessity of “Bank as a mediator” is at the level of 50% and necessity of “Trusted third party” at the level of 42.86%. 35.71% of companies with electronic skills consider that “Internal escrow service” will significantly increase trust and 28.57% of these companies feel the need for an internal escrow service.

4.5 Standardization

“Multilingual support with standard terms” would significantly increase trust for 64.13% of all companies and nearly for same number of e-skilled companies. Support is necessary for 54.34%

of all companies and for 57.14% of companies with electronic skills. “Code of conduct” is necessary for 61.96% of all companies and necessary for 75% of e-skilled companies. “Code of conduct” significantly increases trust for 71.74% of all companies and 78.57% of e-skilled companies remarked that “Code of conduct” will significantly increase trust.

5 Implication from research

Basic implications from conducted research are as follows:

- Information about company size is not important and will not significantly increase trust.
- A combination of positive and negative feedback is more trusted and requested than positive only feedback.
- A discussion forum will not significantly increase trust, although it can serve as an explanation negative feedbacks.
- The integration of negotiated data into contract proposal will not increase trust, companies in that case prefer that the data in the contract proposal be correct.
- Simpler mechanisms in ODR are more trusted than complex ones. The level of increased trust is higher for e-skilled companies.
- Companies prefer the bank as an escrow service provider.
- Generally, companies prefer limited trusted services for low fee or free of charge. Acceptance of comprehensive specialized solution for the fee increases by increased e-skills.
- Most companies will accept the model, where access to negative feedback is needed in order to accept the publishing of their negative feedbacks.
- Companies do not tend to view as necessary the mechanisms with automation or where outsourced specialized company is proposed. Again, the critical factor for accepting is e-skills.
- Generally, the higher the e-skills of the company, the higher the trust in more sophisticated mechanisms.

From mentioned analyses and results from both projects, the bank as a dominant financial institution play a significant role also on web based business platform for B2B relations. Although, for the initial phase of some e-marketplace, where most participant have low skills in electronic commerce, the internal model where known mediator provide escrow services is appropriate. The main benefit against other models is maximum acceptance of e-marketplace participant by such a mediator. After achieving some level of skills, participants tend to trust and require more bank or specialized company as a trusted third party for escrow services. These results together with positive stance of banks on potential B2(B2B) networks, integration and automation shows future best practice scenario in the field of escrow services on B2B networks.

Other results and concepts on trust building issues are presented on official web pages of relevant projects (esp. deliverable D1.2 on www.seamless-eu.org).

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