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FACTORS AFFECTING CREDIBILITY OF E-SHOPS IN POLAND

This paper presents main problems concerning e-commerce development in Poland and in other countries of Eastern Europe, in particular, links between a consumer's trust and the cultural background in the region. The first results of a pilot study being a part of the author's research project are presented in the paper. As they show, factors affecting credibility of e-shops are strictly related to usability, reliability, functionality and efficiency of the websites – the crucial issues of user interface quality models.

Key words: Internet, e-commerce, trust, credibility, user interface quality, usability.

1. INTRODUCTION

In the last decade, dynamic development of the Internet has been strongly stimulating its use in business areas. However, business activity in the Internet still encounters many obstacles.

For example, the results of research conducted by InterCommerce Corporation [4] showed that in the United States (being the country of origin of the most Internet users) the e-commerce stood at 0.8% of the total retail trade in 1999 and increased to 1.2% until 2002 [7]. Besides, according to Taylor Nelson Sofres (TNS) report [6], the percentage of Internet users that buy on-line grew from 27% in 2000 to 33% in 2001, but in the next year the same value stood only at 32%.

On the one hand, in the United States we observe 50%-growth of trade activity in the Internet (in years 1999-2002), but on the other hand, it is relatively marginal.

One of the reasons of e-business slowdown in the beginning of the 21st century was a slump on the Internet market. It was partly a consequence of the forecasts

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from the late nineties that overestimated general interest in e-commerce. The forecasts were prepared by well-known and recognised consulting corporations (e.g. Arthur Andersen or Merrill Lynch), and therefore, were treated as very probable [8].

However, one of the major barriers in the development of electronic business all over the world seems to be consumers' lack of trust [2, 6] that results from:
− Lack of direct contact between consumers and vendors or bank assistants,
− Fear of transaction security violation,
− Fear of personal data security violation,
− A shortage of information regarding a second party and its reputation.

These issues have crucial impact on retail websites credibility perceived by consumers, and affect economical efficiency growth of the Internet suppliers.

2. PROBLEMS OF E-COMMERCE DEVELOPMENT IN POLAND

In Poland, business activity in the Internet seems to be much weaker than in the United States and other developed countries. For example, in 2002 the percentage of the Internet shopping on-line user was more than three times less than in the United States in the same year. Similar situation takes place in other East European countries [6].

Some additional barriers that result in lower popularity of e-commerce in Poland, caused mainly by the previous political and economic system can be distinguished:
− Poorly developed IT infrastructure and, consequently, low percentage of the Internet users and limited access to net services,
− Lack of appropriate legislative regulations that on one hand facilitate IT infrastructure development and, on the other hand, improve security of electronic transactions,
− Low level of users' knowledge of security technologies and mechanisms applied in the Internet transactions.

A final solution to these problems requires time and depends on financial abilities and legislative efficiency of the state. Therefore, this paper focuses rather on building the Internet users' trust, as a first step towards solving the problems of e-commerce development in Poland, and, possibly, in other East European countries.

3. PREVIOUS RESEARCH PROJECTS

Factors affecting the Internet users' trust and credibility of websites are a subject of many research projects carried out in recent years (e.g. Egger [2], BJ Fogg et al [3]). BJ Fogg's team conducted one of the most remarkable research. They found out that website credibility is a multidimensional function of such groups ('dimensions') of factors, as:

− Real-world feeling,
− Ease of use,
− Expertise,
− Tailoring,
− Amateurism,
− Trustworthiness,
− Commercial implications.

Noteworthy is the explanation that 'the trustworthiness dimension of credibility captures the perceived goodness or morality of the source' and 'is defined by the terms *well-intentioned*, *truthful*, *unbiased*, and so on'. This notice is very important for describing meanings and ranges of both concepts: 'credibility' and 'trustworthiness' that in many languages (such as Polish) have almost the same or exactly the same meaning[1].

The BJ Fogg's team conducted research among the Internet users from the USA and Finland. Both countries are treated as developed and with high level of *social trust*[2], which significantly impacts trusty behaviours in general. Therefore, there is no evidence that these factors influence website credibility in the same way in transition economies (where social trust level is usually rather low).

Moreover, the team was interested in factors impacting credibility of all the types of websites, not only the retail ones. For those reasons, a new investigation focused on the Polish users and retail websites was needed.

4. MODELLING CREDIBILITY OF E-SHOPS

The main assumption of the author's research was that the factors affecting a website credibility could be divided into the following groups:

− Informational factors – concerning the informational content of a website;
− References – from media and other customers, from real environment and the Internet, as well as certificates from trusty institutions or societies;

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[1] In the author's opinion, e-shop credibility perceived subjectively by a customer is the reflection of his/her trust to the e-shop.

[2] Simplifying, in sociology, *social trust* means general tendency to trust other people.

- Cultural factors – referring to customer's social origin, mentality, customs, inclinations and general attitude to trust;
- Usability factors – ergonomic and technical characteristics that influence user's effectiveness, efficiency and satisfaction in a specified context of use[3], concerning a website design, its GUI, and its compatibility with the Internet access devices (e.g. webpage resolution matching a monitor screen abilities to avoid scrolling).

Figure 1 illustrates how the foregoing groups of factors affect consumer's trust to e-shops and individually perceived a website credibility.
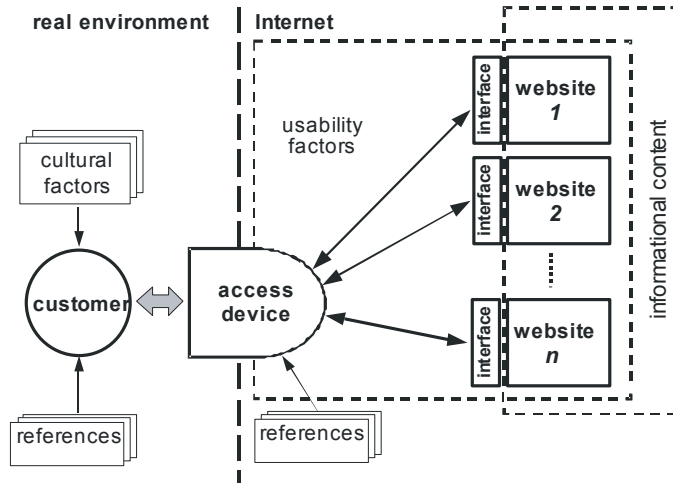

Fig. 1. Main factors affecting Internet user's trust to e-shops

One can see that consumer's trust depends on factors stemming from real environment, as well as from the Internet.

It is significant that references reach a customer from both environments. However, they can be transferred between both separate 'worlds'. References can also be shared in a formal, as well as in an informal way (e.g. from media or directly from other customers).

On the other hand, cultural factors (in the meaning described above) occur only in reality, and they cannot be transferred directly into virtual environment. However, relevant knowledge about cultural factors can be used for designing a website interface by matching the language, appearance and way of interaction with a customer's expectations and background.

In the author's view, a suitable combination of cultural factors and informational content should partly compensate the negative influence of the low trust level. This statement will be one of the issues to be validated in the author's current research.

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[3] Refer to the definition in: Bevan [1], chapter 3.

5. THE RESEARCH SCHEDULE AND ITS FIRST RESULTS

The research outcomes should answer two crucial questions:
- Which particular factors do affect e-shop credibility and how they do so?
- How much is the e-shop credibility important for a customer's decision process?

The separate investigations are planned for each question. Recently, the first part of the research has been conducted in five stages. While this article is being written the third stage is almost over which enables some results to be published.

5.1. The 1st Stage: Identifying Credibility Factors

In the first stage, three groups of students (14, 12 and 22 per group) were asked to surf across three different retail web services and choose the most credible one. To obtain maximum varied and numerous set of variables (main factors components) each group had a different task and different set of websites to review.

Then the students had to point out the factors that had influenced website credibility (in both ways: negatively and positively). They also had to assess importance of each factor (in a 3-level scale).

The students identified 361 variables that were, in turn, grouped into 12 categories. The most frequently pointed ones belong to the following criteria: 'product description', 'usability', 'information about supplier' and 'e-shop functionality'.

Surprisingly, the least frequently factors mentioned by respondents concern transaction and data security (!).

Table 1. presents a structure of credibility variables divided into groups and categories. The last column in the table shows the number of factors and the number of their indications in each category.

None of the respondents pointed out cultural factors. However, in the author's opinion, these factors could not be omitted (the results of the next stage partly proved that) and were to be taken into consideration in the further stages.

On the other hand, the respondents pointed out the factors that could not be numbered among five earlier assumed groups, but exemplify very important quality issues such as e-shop functionality and technical quality.

E-shop functionality (by analogy to software functionality) means a capability to provide service functions that meet a customer's needs. E-shop functionality concerns, inter alia, ordering and delivery flexibility, range of payment methods acceptance (e.g. credit cards, e-cards, by bank transfer, cash), and contact methods diversity (e.g. by phone, e-mail, chat, etc.).

Technical quality of IT product is precisely defined in ISO 9126 standard and decomposed into 6 dimensions: functionality, reliability, usability, efficiency, maintainability, and portability. Undoubtedly, e-shop's website is a kind of IT product, however some of technical quality characteristics, such as maintainability and partly portability, are out of user's perception[4].

On the other hand, ISO 9241 standard defines usability as an ergonomic characteristic. Therefore, in the recent research, usability is considered as a separate dimension excluded from the technical quality area. Thereby, technical quality issues, considered in the research, concern mainly a website's reliability, technical functionality and efficiency.

Table 1

Credibility factors structure

Main group of factors	Category	Number of variables / number of indications
Informational factors	Information about supplier	40/147
	Product description	67/222
	Information content features (topicality, reliability, completeness, clarity, transparency)	29/67
	Marketing issues (Advertisements, customer-supplier relationship maintenance, loyalty programs, etc.)	16/59
	Information about placing orders	24/87
	Information about delivery	25/67
	Information about data and transaction security	6/9
References	References (customers' and experts' opinions, product tests, brand and manufacturer reputation, etc.)	15/109
Usability factors	Website usability (ease of use, efficiency, effectiveness, learnability, clarity, flexibility, acceptance)	57/172
Quality issues	Technical quality (reliability, functionality, efficiency)	25/85
	E-shop functionality (service flexibility, payment methods acceptance range, contact with the personnel)	33/127
	Overall impression	24/74

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[4] If a user uses only one type of access device (e.g. PC) he/she doesn't care about accessibility of website in another device (e.g. mobile phone).

Website usability is described by such criteria as: ease of use, efficiency (achieved effects in relation to spent effort), effectiveness (accuracy and completeness of specified goals), interface learnability and clearability (clear design and information presentation), system flexibility, and user's acceptance for the website (including user's satisfaction)[5].

The list of identified variables needed formalizing, because the students described the variables with the informal language. Moreover, frequently, different descriptions were used for the same item. The students also gave the example of the same factor both in positive and negative light (e.g. 'complete product description' as a factor positively influencing credibility, and 'incomplete product description' as a negative one). As a result of list formalizing, a number of variables could be reduced more than three times.

5.2. The 2nd Stage: Design and Validation of Paper Pilot Survey

Relying on the results from the 1st stage, a paper pilot survey was designed. The survey included 114 statements corresponding to the earlier identified variables. Five additional statements were also included concerning cultural factors (e.g. lifestyle, user's jargon, matching with user's inclinations). Moreover, two open questions were put in the survey concerning factors, disregarded by the author, in respondent's opinion, and a general opinion about the survey.

25 students participated in that stage. The students had to tick each statement using a 7-point Likert-type scale (from '+3', representing a strongly strengthened credibility expression, through neutral point to '-3' representing a strongly weakened credibility expression).

The outcomes showed that the number of statements was too large. It was easy to predict, however, that allowed indicating the statements that were ambiguous, incomprehensible or redundant. It was signalized by the students and also resulted from data analysis, e.g. high dispersion of answers and/or answer's character (positive/negative) which did not correspond with the author's intention.

5.3. The 3rd Stage: Design and Validation of On-line Pilot Survey

The experience gained during the paper pilot survey enabled to design a new on-line one.

The number of statements was reduced to 58 and incomprehensible statements were redone. The same 7-point Likert-type scale, as in the paper survey, was used.

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[5] Refer to Bevan [1] and Sikorski [5].

The survey was also expanded with the second part including questions of demographic data, which might correlate with respondents' opinions. In this case, the survey was completely anonymous so collecting demographic data was indispensable.

The respondents were recruited by using a 'snowball' method: a link to the survey's website was sent to familiar persons who were asked to forward the link to other persons, etc. In a one-month period (from June 20th to August 16th 2005) the site was visited 158 times, but only 73 questionnaires were completed.

In this sample of respondents:
- The average age of respondents is between 31 and 35 (Figure 2.);
- The average education level is university with technical profile,
- The average income declared by the respondents is 2000-3000 PLZ per month (that is the average income in Poland),
- The average total amount of Internet transactions is 5 in on-line auctions, and 4 in e-shops,
- 33 respondents use e-banking in full-service range and 31 only for paying fees,
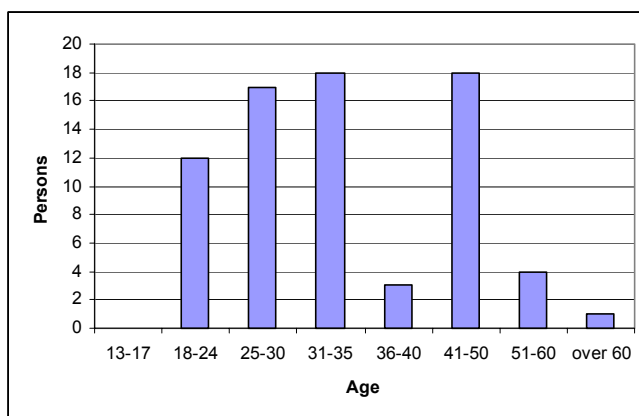- Most of the respondents declare moderate trust to the Internet transactions.

Fig. 2. Respondents' age structure

The results of the survey are presented in Figure 3. The bars shown on the chart mean the average absolute values of e-shop credibility variables in each category (maximum level = 3).
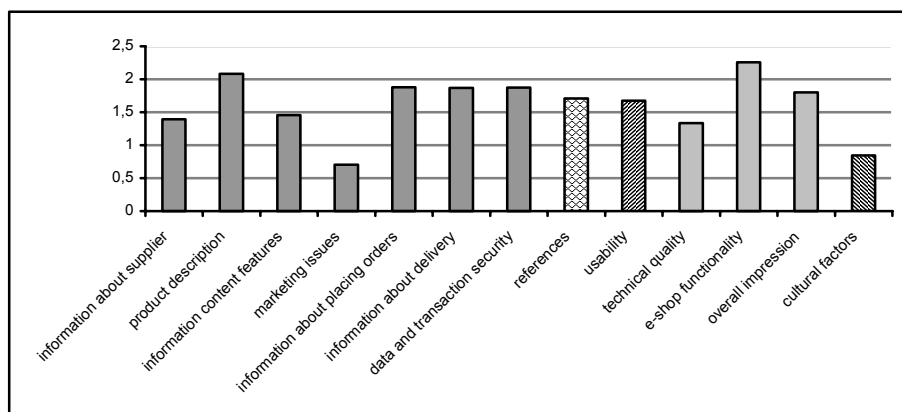
Fig. 3. Factors' impact on e-shop credibility

In respondents' opinion 'information topicality' and 'data security' have the most positive impact on e-shop's credibility. Such factors as: 'good and quick contact with e-shop personnel', 'varied paying methods' are important.

Usability factors are also perceived as highly significant. This group of factors became the most numerous after statements' number reduction. The highest assessed factors are 'website clearability and readability' and 'ease of finding information within a website'.

Such factors as: 'personnel incompetence', 'lack of product price information' and 'false links on an e-shops website' are negatively perceived.

For the respondents 'website design' and 'date of establishing e-shop' seem unimportant.

The group of respondents is too small to find clear correlations between data obtained from the first and the second parts of the survey, thus the presented outcomes could be treated only as estimated. However, the main goal of this stage was to validate the survey and to check whether the survey data collecting system used in the website worked properly. In the author's opinion the results, which have been obtained so far showed that the goal has been achieved entirely.

5.4. Stages 4th and 5th: Launching the On-Line Survey and Data Analysis

The next steps after pilot survey closure will be the launching a new on-line survey and statistical analysis of the collected data.

Participants' recruitment is planned to be completed in a more effective way than for the pilot survey: a link to the survey's website will be placed on the sites of two largest Internet portals in Poland.

6. CONCLUSION

The results obtained so far allow noticing that there are many similarities between credibility of a website and the quality of its user interface. The same factors – usability, functionality and reliability – influence the quality as well as the credibility.

Despite the differences between both concepts (e.g. informational content and references), one can suggest that methods used to measure and improve the quality of websites may be useful for their credibility as well.

The outcomes of current research should give more details about factors – including the quality items – that crucially impact on e-shops credibility perceived by the Internet users, particularly with reference to the Polish citizens.

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