

Trust and on-line retailing

Inform me, whether you think that a state, or an army, or a band of robbers and thieves, or any other gang of evil-doers could act at all if they injured one another?

(Plato)

1. Introduction

Starting from the nineties of the last century the importance of internet retail transactions in the highly developed countries is growing constantly. The matter of trust of a trade mark plays an uncommon part in electronic trade - it has been shown by Ernst & Young researches, according to which about 65-72% of the internet users reach the on-line stores in which they do their shopping by using their browsers "favorites" feature [2, pg. 17]. On the other side, the subject and object presentation during the on-line transaction is so abstract, anonymous and enigmatic, that the significance of the trust relation isn't so obvious.

By analyzing the logical and social structure of the trust relation - especially by distinguishing the interpersonal and non-interpersonal relation as well as the importance of non-egoistic micro-motivations – the author of the present article will try to set forth that the importance of trust in electronic trade is changing. The trust's character is beginning to be perceived more and more as non-interpersonal relation rather than interpersonal relation.

2. Two types of trust relation and their significance in wholesale and retail trade.

The idea of trust can be considered as the interpersonal relation (IR) or as the non-interpersonal relation (NR). The idea of trust as a relation between two persons (IR) comes down to the tendency to fund one person's (A) decision concerning undertaking or relinquishing some acts on assumption that the second person (B) is going to act in accordance with person's A notions. Also, the NR situations in which person A is the trust relation's subject, while the object is an institution, office or product's/producer's mark can be considered.

There are tendencies in modern economy, to eliminate the risk connected with IR as well as with the NR trust from the trade relations. This is being done by

strengthening the court and arbitrage's roles and by improving law regulations. The maximal risk decrease mechanisms are also being constructed. These functions as the safeguards determined by the transaction's risk insurance and by recording the methods of accounts clearing (such as letter of credit, which involve the trustworthy institutions' – e.g. banks' – agency) in the contracts.

Law regulations, transactions insuring and complicating of the accounts clearing methods - all these apply mainly to the wholesale transactions between the economic subjects. The significance of IR and NR trust relation is lesser here than in case of retail trade, and plays its part - so to say - in the background. It happens so because the bigger than the retail scale transactions' parties are in definition guided by the maximal risk elimination principle, which means avoiding any trust-depending elements of the contract. The transaction parties are often legal personalities, so the personal trust (IR) towards the negotiator is insignificant, considering the fact that the negotiator acts within the bigger framework (company), from which he can be eliminated anytime. Also, the negotiator's company may act in spite of his intentions. The NR relation has a major significance here; but application of the above mechanisms still minimizes risks in the wholesale trade.

The elimination of risk in the retail trade is considered as social rather than formal and legal activity, and so it is connected much more with the IR trust. In many transactions, the buyer and seller relay themselves information on their expectations concerning the product's price and quality the direct way. They also exchange the product or services - along with the money - directly.

When the product is of relatively low value, satisfies the buyer's basic needs and when its purchase is accompanied with negative motivation (Rossiter-Percy's matrix) – as it is in the case of food purchase – the trust given to seller is lesser in its significance. But if the product has a bigger value and if it is an exclusive product – the seller's part in arousing the buyer's trust is not to be overvalued. Before accomplishing the factual transaction, the buyer “buys” the seller. In case of direct contact, the expertly composed surroundings, altogether with the seller's behavior aim in maximal awakening of the buyer's trust.

Things look quite different in case of electronic trade, where the lack of direct, personal contact with the product, with its surroundings and with the seller sets up a non-overcomeable barrier. In the event of electronic trade the part of the IR as well as the NR trust is changing, and the circumstances of this change are the subject of the present article.

3. Technology and human in on-line retail trade

The electronic commerce stands at the present day for 1,2% of retail trade in the world's leading, American¹ economy and its value on this market stands for more than 10 billion dollars in 2Q of 2002. Nothing seems to indicate, that the consulting companies' bold forecasts concerning the raising of American market's internet retail sale in 2003 up to two and half times the actual value (that is up to 100 billion dollars

¹ American Department of Trade estimates, that in the second quarter of 2002 the Internet, Extranet, EDI (Electronic Data Interchange) and other electronic systems' sale of goods and services (excluding food) reached total amount of 10 billion dollars [7].

in 1-4Q of 2003 [1, pg. 12]), would fulfill – still, this phenomenon is resolutely ceasing from being a marginal one. As it is estimated, that the internet sale in Poland has reached the level of 245 million zł in 2001, and that it is to reach 320 million zlotys in 2002 [3, pg. 106], what also speaks well for the fact, that the pervading of the internet medium into the trade relations discontinues to be a second-rate phenomenon.

The trend of embodying the Internet into the world economy in the field of retail transactions has a multi-layered character. We can particularly observe the two contesting tendencies. This competition causes that, despite the very optimistic forecasts concerning the Internet trade expansion formulated in the nineties of the last century, Internet retail trade remains in the same initial stadium. The analysts' bold prognosis mentioned in the previous paragraph did not fulfill.

The referred tendencies are, in reduction, the clashing of technology (TT) and human (HT). That's why this matter should not be examined using only the economy's (understood as the social science of economical relations) point of view, but also with help from other, sometimes very distant, fields of science – such as informatics, anthropology, philosophy of technology or ethics.

Within a framework of the first tendency, based on technology (TT), we can point out the following components speaking in advocacy of developing the applications of Internet in economic exchange:

- **Propagation of information** – global breakthrough of time and space limits concerning the transfer of information – both on the demand and the supply sides;
- **Mass customization** – connected with the shortening of the information transfer channels and enabling suppliers satisfy consumers' individual needs;
- **Personalization** – individual identification of the clients so far having mass character
- **Interactivity** – causing the information exchange to have a “conversational” character, even since it is performed through technologically advanced tools.

In accordance to the opposite second tendency, based on the matter of human (HT), the following problem restraining the Internet trade development can be indicated:

- **"Abstractiveness"**, that is, the **"schematism"**, **anonymousness** and **"enigmatism"** of the transaction sides – these reasons eliminate the possibility of full-scale trust relation emergence on the ground of Internet retail transaction.

The potential – often ascribed to the internet retail trade – of leveling the flow of the products and capital between the supply and demand sides and braking the time and space limits in the global scale, encounters human psyche and habits resistance; resistance, in which the factor of trust relation plays a non-trivial part. This relation - both IR and NR – has been unsettled on the Internet ground.

4. **"Abstractiveness", anonymousness and "enigmatism" in Internet retail trade.**

The "abstractiveness" of the product presentation (object) and transaction subjects in electronic trade consists in the fact, that the medium makes the direct contact between the buyer and the person representing the seller, along with the bought object, impossible. Consistently, the seller do not contact directly with the buyer. In exchange, both of the subjects deal with the impersonal interface of the web site displayed on their personal computers' monitors.

Presently, there are following forms of Internet retail trade.

- **Store** – an Internet service managed usually by the subject selling his own products, or – by mediating – regular suppliers' products. The Internet stores run a high-touch e-commerce. The most important and common features of such a shop are: a constant price, product's description together with the illustration, shopping cart and a few payment methods.
- **Auction** – an Internet service managed by one subject, who mediates between unlimited number of suppliers (known as "seller") and bidders (known as "buyer"). Internet auctions are characterized by non-fixed prices, which are liable to one-side auctions; usually using the rules of "English auction", less often "Dutch auction". The auctions usually charge some kinds of small commissions from the buyers and/or sellers.
- **Passage** – an Internet service managed by the subject mediating between a limited number of suppliers and clients. Trading passages run a low-touch e-commerce. The most important and common features of such a passage are: a commonplace store-builder, collecting constant charges or commissions from the sellers, and the usual on-line store's features with the exception of shopping cart and payment procedure, which are common to all the shops gathered in the passage.
- **Group buying** – a rare Internet service, managed by one subject mediating between an unlimited number of suppliers and clients. The group shopping is managed with the use of demand aggregation method – the price for a given product is not constant, and is lowered together with the raise of a number of buyers interested in the transaction.
- **Vortal** – the services functioning independently or as a part of web portals, selling specific services or goods. **Tourist services**, selling trips, tickets, hotel reservations, etc., are the web's most popular. The runners up are building industries services (offering ready projects) and financial services (mediation in setting the accounts, investments, contracting insurances or credits)
- **Comprehensive shopping sites** – web sites, which have not yet expanded greatly. They collect a maximal number of Internet offers concerning chosen product, irrespective of the information source (on-line store or auction, etc). They operate as the commercial catalogues and web-searchers.
- **On-line banking** – banks' Internet departments, where every transaction and retail customer service are carried on through Internet.

The on-line trade services common features contributing to the changes of the notion of trust significance, are as follows:

- **"Abstractiveness"** – the subjects of the transaction never contact each other directly, only dealing with the other person's nickname visible as the sell/purchase offer's signature. Similarly, the parties do not deal with the object of the transaction – it is merely described by it's specification and

images or drawings. Both the parties and the transaction object are very general in their character, and require some mental effort to understand, that the several sentences which are very likely to disappear from the monitor in a while, may be the guarantee of getting respectively money and merchandise.

- **"Anonimousness" and "enigmatism"** – the parties, while transacting, do not know each other personally, and only in exceptional circumstances stop being anonymous.

When an individual introducing himself only as “makar78” submits an offer of selling a certain mobile phone – an offer devoid of description, or any photo, only providing with the phone’s make – then, such information is not only abstract, anonymous and enigmatic, but should simply discourage from a transaction. The interpersonal relation (IR) undergoes an essential change in the matter of on-line retail trade. Even if somebody wants to accomplish a repeated purchase from “makar78”, he can never be sure if he is not dealing with a band of swindlers. Still, he may have such certainty when buying an ordinary book in an ordinary bookstore.

The concept of the IR trust in internet can be related to vehicle traffic situation, where the two cars are about to pass each other at high speed – the driver A trusts the driver of an oncoming car B not to cause any danger. The driver A trusts the driver B, although each one is abstract, anonymous and enigmatic to one another.

These three terms causes the situation of the car drivers, as well as the on-line transaction parties to be the subject of analysis within the framework of games theory.

5. Trust as a motivating factor in cooperation and the theory of games

The analysis of trust as a type of motivation in cooperation based on the games theory has been presented in 1998 by B.Williams [8, pg. 3-13] The author refers one of most known non-zero resulting game, that is a game, in which the winning of the one player does not necessarily entails the loss of the other player. The game’s name is The Prisoner Dilemma².

The players are two arrested persons – imprisoned and interrogated in two different places – suspected of committing a crime jointly. Each one has been given the following proposal by the prosecutor:

- If the one of them (player A) confesses, while the other (player B) does not, then the “teller” gets an acquittal and the “silent one” is severely sentenced.
- If they both confess, they both get mild sentences
- If neither of them confesses, they both are freed because of the lack of evidences of guilt.

The presented game has a non-zero character due to the fact that both players can simultaneously win greatly or a bit, depending on how do they act, or how much they trust each other to act the same way.

² More on mathematical theory of games and Prisoner Dillema [6].

Aside from Williams' detailed analysis of different behavior variants and preferences, it's enough to say that in the situation of cooperation³ there can occur, as the author points out, following generalized motivation types [8, pg. 9-11].

- **Egoistic macro-motivations** – the motivations arising from man's egoistic nature; underlying man's acts in the Hobbes' way (*homo homini lupus est*), and inclining the collaboration in anxiety of - for example – social sanctions.
- **Non-egoistic macro-motivations** – the motivations in ethical sense. Propelled by loyalty or somebody's sense of duty. In this case, any motivation arising from religious belief, when accompanied by desire of reward or punishment, is egoistic.
- **Egoistic micro-motivations** – every motivation not arising from man's egoistic nature (in Hobbes' sense), but from immediate benefits perceived as connected with the undertaking of cooperation.
- **Non-egoistic micro-motivations** – occasional motivations. A personal sympathy to cooperator, for example.

Afterwards, by analyzing what kind of motivations does the society need for cooperation to function (and by finding out, if these are the motivations „by themselves”), Williams states, that if a motivation does not come „by itself”, it has to be a non-egoistic micro-motivation, being some kind of trust (*a thick trust*).

The modern world and society, as, from the other side, Williams notices, is based on egoistic micro-motivation to cooperation. Does then a straightforward trust, consisting in non-egoistic macro-motivation, decays from modern world, in the times of informational society?

The trust relation, coming down, in logical interpretation, to the tendency to fund one person's (A) decision concerning undertaking or relinquishing some acts on assumption that the second person (B) is going to act in accordance with person's A notions, should be enriched with a non-egoistic micro-motivation accompanying the trust. The prisoner in the Prisoner Dilemma, acting in accordance with the trust coming from comrade's solidarity, instead of interested calculation, would in all probability choose to remain silent and not to confess.

The Socrates' speech directed to Trasimachus, and quoted as this article's motto assumes a new meaning in this context. „(...) *Inform me, whether you think that a state, or an army, or a band of robbers and thieves, or any other gang of evil-doers could act at all if they injured one another?*” [5, 351e].

6. Internet retailing security

As it has been mentioned before, the "abstractiveness", "enigmatism" and anonymousness of subjects and object during the on-line transaction can be compared to the relation of two drivers passing each other at high speed on the road.

One can quite probably exclude a non-egoistic micro-motivation from such relation. The drivers do not even establish an eye contact; it's hard for them to get „friendly” then. The very same goes for on-line transaction parties.

³ Cooperation, in opposite to dependence, is a symmetrical relation – that is to say, when X cooperates with Y, Y cooperates with X; Williams [8, pg. 7].

If it has been accepted, that interpersonal trust, besides the logical relation, shall contain the psychological (emotional, motivational) aspect, one can exclude trust as the constitutional factor from Internet retail transactions. As a consequence, the lack of such factor slows down the global evolution of electronic trade within the framework of human tendency (HT), as it has been pointed out above. The question remaining is – is there a non-interpersonal relation (NR) in on-line retailing?

The Internet services managements try in every way to counterbalance the lack of trust relation by implementing transaction security mechanisms. For instance, there are several safeguards in on-line auctioning:

- ESCROW – a kind of letter of credit,
- An assessment and comment systems,
- Buyers insurance,
- Sellers addresses data verification.

The trust relation in Internet auctions is transferred from IR to NR by developing the trust to the Internet auction service [4, pg. 641].

The matter of transaction security is one of the most important in on-line trading – both as an aspect of legal protection of personal details, and transaction data, or subject's payment devices. In order to build up their NR trustworthy likeness, the internet services develop more and more technologically advanced solutions, by: implementation of ciphered protocols, intruder detection and reaction systems (IDS&R), firewalls, antiviral programs, or data archiving and hardware redundancy.

While it is quite easy to protect the buyer from the seller's swindle, it is much more difficult to protect the transaction systems from web crimes, such as hacking or virus and bug spreading. J. W. Wójcik introduces the systematics of crime acts encountering both the transaction subjects and internet services providing such transactions: destruction of data, implementing of trojans, the salami method usage, superzapping, door opening, logical bombs, asynchronic attacks, wiping out, data leakage, role playing, computer eavesdropping [9, pg. 67-68].

Although the crimes are also a threat to non-electronic transactions, the internet companies have – for the sake of IR trust limited function - much bigger problems in rising the NR trust referring to their own name and service. In this context, the scientific and technical field of electronic transaction and informatics systems' security acquires a new meaning. The NR trust development seems to be the only realizable in on-line retailing.

7. Summary

The referring to the mathematical theory of games in trust relation analysis paradoxally indicates the necessity to supplement this logical relation with emotional components. Particularly, non-egoistic micro-motivations – such as sympathy – play an uncommon part in raising the trust on a social scale.

Such trust in an interpersonal relation (IR) cannot effectively and naturally evolve in retail trade, so the endeavours of transaction services owners are directed to developing the trust in non-interpersonal relation by ensuring the transaction's

security. Therefore, in the information-society the function of trust is being transferred onto technological plane – also in the case of on-line retailing.

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