A framework for the analysis of socio-economic aspects of Electronic Markets

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A framework for the analysis of socio-economic aspects of Electronic Markets

The Internet still lacks global acceptance of being a platform for user-friendly, trustworthy Electronic Commerce. Latest research in the field of Electronic Markets shows that there are, without any doubt, a number of socio-economic (social, psychological as well as economic) criteria which represent critical success factors for the global breakthrough of electronic shopping applications. Usually, forecasts on Electronic Commerce development focus on technical aspects, such as telecommunication infrastructure, security and speed. The following paper presents a theoretical framework for the evaluation of the socio-economic aspects to which all electronic business relations are also subject. The empirical results stem from the business case of the Electronic Mall Bodensee (EMB), an existing mall with more than 400 partners, companies as well as organisations, and universities, in the Lake Constance region (Switzerland, Germany, Austria).

1. Introduction

The Internet will, undoubtedly, play an important role for the dissemination of Electronic Commerce (EC). A lot of trading can be performed via electronic networks and, as in the case of information services or software delivery, be settled online. So far, electronic shopping has not reached a real breakthrough and therefore a lot of companies are hesitant to invest large amounts of money into the new medium Internet.

Today, a lot of research on Electronic Commerce is done in the field of technological aspects of EC platforms and applications. Global telecommunication infrastructure companies are rapidly expanding their business. The predominant question is how to conduct business over the Internet and, consequently, how to make money. There are two different sectors of business relations each of them following their specific rules: the business-to-business and the business-to-consumer sector.

1.1 The nature of Electronic Commerce

From a business-to-business perspective Internet technology allows, for the first time in IT-history, to build up efficient Intranets within one single organisation as well as to use the same technology for communication with business partners. Thus, undoubtedly, World Wide Web technology proves to be efficient and profitable for inter-organisational relationships.

Understanding business relationships between vendor and end consumer (business-to-consumer) is a more complex attempt. Consumers' behaviour is subject to a variety of social and economic aspects which differ a lot depending on individuals' characteristics such as age, education, social status, etc. The paper explores the underlying success factors as well as hindrances and pitfalls which influence the eventual mutual benefits of Electronic Commerce in the end consumer sector.

Forecasts on the development of Internet Commerce are quite optimistic. „By the year 2000, consumers, businesses, governments, and educational institutions world-wide will use electronic cash (E-cash) for 9 billion payment transactions. By 2005, E-cash transactions will escalate to almost 30 billion. The impact of E-cash will be widespread on both banking and commerce," says Michael Killen, president of a market research firm. The CEO of PerfectData stated in an announcement in November 1996: „Internet currency transactions will exceed $20 billion annually by the year 2000.".

1.2 Definition of notions

Electronic Markets

Electronic Markets can be defined as the entirety of economic relations between members of a group of business partners with equal rights who voluntarily perform institutionalised business transactions. The co-ordination is realised via processes of pricing and competition (Zbornik 96, Schmid 93).

The Internet

Looking at the Internet from a mere technological perspective does not do justice to this global complex social system formed by a union of different actors (individuals, companies, groups, etc.). The author thus argues that due to its genuine nature, understanding business transactions on the Internet requires an in-depth analysis of the underlying social relationships and their implications on Electronic Commerce.

Socio-economic environment

Electronic Markets are embedded into a social as well as an economic environment. To obtain a valid prognosis on the future of EC it is thus crucial to analyse both aspects. Social Informatics is a relatively new term that can serve as a banner for a new research branch within the information systems science which best relates to the study of the social perspective. The Journal of the American Society of Information Science (JASIS)[1] defines it as follows: "Social Informatics (SI) refers to the body of research and study that examines social aspects of computerization - including the roles of information technology in social and organizational change, the uses of information technologies in social contexts, and the ways that the social organization of information technologies is influenced by social forces and social practices. SI studies are often cognizant of the ways that people and organizations act in support of differing social values and beliefs, and have different positions of power in their various relationships."

1.3 Outline of the paper

In the first section, a description of the methodology is given. The following section draws up a framework for the analysis of socio-economic aspects and depicts the empirical background from which the results were derived. The fourth chapter deals with the contents of possible research areas and gives a first rough insight into some important aspects. The last section contains the conclusions and gives an outlook into further research in the field of Electronic Markets and their social implications.

The socio-economic aspects of Electronic Markets as depicted in the paper were derived from experiences with the Electronic Mall Bodensee (EMB) as an example of an existing electronic marketplace as well as from literary studies in the field of Social Informatics.

2. Methodology

2.1 Motivation

As argued before the working out of a prognosis model for the success of Electronic Commerce requires a preceding examination of social aspects. Subjects of analysis are social instances (individuals, companies, as well as the government) who show certain characteristics such as e.g. apprehensions

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[1] Origin of the term Social Informatics: http://www-slis.lib.indiana.edu/SI/

and a resulting need for trust and security. Social implications, for example the changing social structures (dissolution of the core family, tendency to increased individualism) must be examined.

Research in the field of Electronic Markets has so far predominantly focused on the nature of network relations, system architecture and market mechanisms. The authors of papers submitted to the important conferences on Information Systems (ICIS, ECIS, HICSS, etc.) have paid little attention to the social aspects of Electronic Commerce.

Since it is not possible to expand on the entirety of social aspects within one single paper this paper draws up a framework as a starting point for further research in specialised areas.

2.2 Core statements

The paper is based on three fundamental core statements which were derived from experiences with the Electronic Mall Bodensee (see following chapter) and from 8 year of research in the Competence Center Electronic Markets. The statements will be supported by the descriptions of the Electronic Mall Bodensee.

Hypothesis 1:
Electronic Markets are framed into a socio-economic context and its related social interaction patterns and cannot be analysed from a mere technical point of view.

Hypothesis 2:
Human beings and their corresponding social interactions are shaped by a need for security and trust which leads us to the conclusion that there cannot be any electronic business transaction without a minimum of confidence in the partner as well as in the supporting technology (a phenomenon also observed in traditional trading).

Hypothesis 3:
Applications for Electronic Commerce must meet strong requirements for user acceptance. There are several factors which influence the degree of confidence. The main aspects are:
- Integration of logistics services
- Matching of payment preferences (e.g. via a payment manager, see Himmelspach/Zimmermann 96)
- Reliability
- Customer-vendor relationship (anonymous, identified, personally known, etc.)
- Image (e.g. brand name, well-known company)
- Exclusivity (e.g. closed user group)

The business case of the Electronic Mall Bodensee as described in the following chapter gives empirical evidence for socio-economic problems with language, currency/ payment, logistics and the real-life shopping experience.

3. The framework

3.1 Players and market transactions

The socio-economic environment of Electronic Commerce is shaped by a number of different players (interest groups). Figure 1 depicts the three phases of a market transaction (Schmid 93, Schmid 96). Electronic Commerce Applications must meet the requirements of all users. Every phase implies a

number of specific social prerequisites. The information phase has, in a way, the fewest social implications because usually transactions are only unidirectional towards the customer. Due to the "anonymous" nature of the business relation throughout the first phase, user acceptance of the electronic medium is most likely to be higher than compared to the other two. Coming to an agreement (contracting) requires an identified business relationship between the two partners thus arousing the issue of privacy, security and trust (equivalent to an overall acceptance). Studies of the agreement phase will most probably lead to a couple of social implications. Today, most Internet Applications have a strong focus on supplying the customer with information (advertising, company information, product information) thus supporting only the first phase.
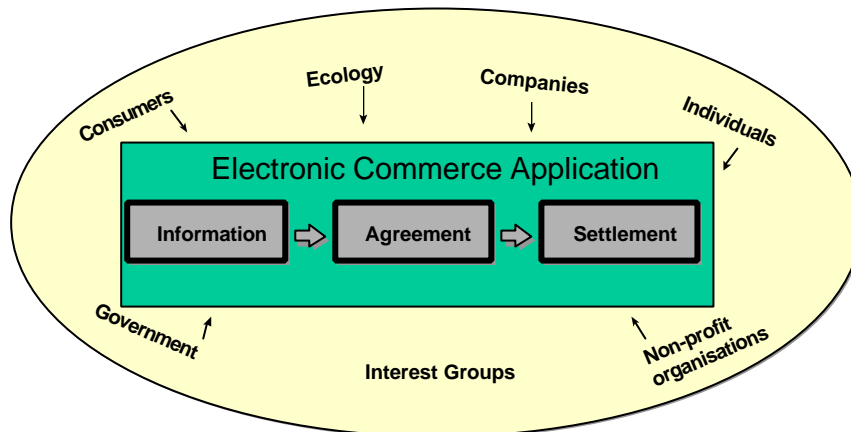
Figure 1: Interest groups of Electronic Commerce

The promotion of an integrated Electronic Shopping Application which covers all three phases will largely depend on user acceptance. In this context, the predominant question is: what are the main factors which influence a customer to really do shopping over the Internet? The author suggests that there are a lot of social influences such as general attitudes towards the electronic medium, shopping patterns, the lack of social interaction in electronic relations, social situation (family member or single), work hours and a lot more which need to be studied beforehand.

3.2   Social aspects and research areas derived

An in-depth literature study of social implications of the Internet leads to a research landscape as depicted in figure 2. The areas proposed are a first approach to tackle the problem of social relations of Electronic Commerce and are subjects to future integration of additional aspects.
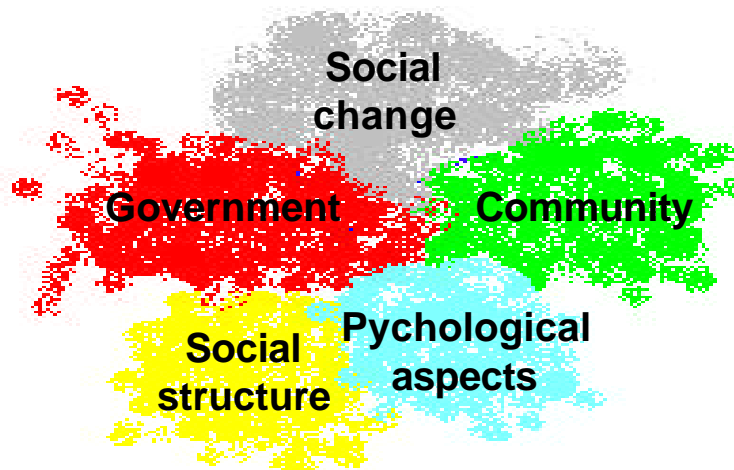
Figure 2: Landscape of related research areas

3.3 *The business case of the Electronic Mall Bodensee (EMB)*

The Electronic Mall Bodensee (emb.net) project was launched in January 1995 to develop and implement a regional, electronic marketplace in the region around the Lake Constance based on the vision of the „Bodenseeleitbild" (IBK, 1994). One major goal is to strengthen the economic power of the region, utilising the potentials of the new telematic infrastructures of the information age. The Electronic Mall Bodensee (EMB) is a regional, but multinational project that realises an open electronic marketplace for a specific region - the Lake Constance region, that covers part of Austria, Germany and Switzerland - in the heart of Europe. It is based on Internet technology.

The example of the EMB serves as a source for observation of business transactions between different partners on a regional scale. A two-year experience in Electronic Commerce has conveyed a number of important aspects especially for the judgement of the prevailing socio-economic impediments which are still imposed upon electronic market platforms. The EMB offers a number of technically mature shopping possibilities. Nevertheless, there has not been a real breakthrough of Electronic Shopping throughout the last two years. Although the EMB, on principle, enables world-wide access, the business is rather regionally limited. Part of the restrictions are due to the fact that some shops offer their products only in German. Another big obstacle to an efficient trading is currency. When it comes to payment, vendors accept only their local currency (in this case Swiss Francs, Deutsche Mark or Shillings). Payment settlement becomes very expensive for the buyer as banks charge high transfer and exchange fees. The introduction of the Euro (the future European currency) will help to overcome some of the problems, at least as long as the Bodensee region is concerned. Trading on a global scale will still be subject to the implementation of a user-friendly system for payment settlement. Beside language and payment problems, logistics play an important part in business on the Internet. The Web serves as an ideal channel for the distribution of digital goods. Vendors of tangible goods, on the other hand, face the same problems as does the mail-order business (transportation, insurance, import/ export regulations, postal fees, etc.). The example of a regional vendor of wine[2] led to another interesting experience supporting the hypothesis that customers still seek the personal contact as well as a real-life shopping experience. Many clients reported that their attention to the wine shop had been called surfing in the Electronic Mall Bodensee but instead of ordering via the Internet application they decided to personally visit the shop in St. Gallen.

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[2] Wein Martel: http://www.martel.ch

An in-depth discussion of different aspects of regional marketplaces, its relation to the emerging global infrastructure and the EMB can be found in (Zimmermann, 1996).

The following chapter deals with some possible social restrictions which can be derived from the EMB experience as well as from selected literature on network relationships.

4. Research areas

The following chapter is dedicated to the five research areas which relate to the socio-economic aspects of Electronic Commerce. These are the composition of society (social structure), the ongoing change in social patterns (social change), the phenomenon of new social formations of people (communities, genres), psychological aspects and the allocation of power on the basis of access to information (government and world politics).

4.1 Social structure

Information technology has a strong impact on the patterns of worklife as well as community life. Vice versa, the current state of a society determines the speed of the dissemination of new electronic media. "Modern" societies, such as e.g. the American and the European, tend to be less hesitant towards new technologies than those which are on a lower level of technological progress (e.g. Taiwan, see Wu 97). Especially in the field of communication infrastructure, there seems to be an increasing thirst after latest devices as we can see from the sales figures of handies and modems.

The Internet makes the world smaller. The world-wide network connects people from hundreds of different countries and as much distinct cultures. It is not going to destroy social patterns but it will alter them like the steam engine, electricity and TV did some centuries ago. What are the implications for the way we live? Today, an increasing number of people live alone. Examples for indicators are the demand of single room flats and frozen foods in small quantities. In the mentioned "modern" societies there is an evident trend toward the dissolution of the core family. People become more and more individualistic, they leave home earlier not only to marry but to live alone.

This development goes hand in hand with the increased flexibility in work hours and mobility of work place. Being successful at work often means travelling a lot and changing residence from time to time, a big family being a hindrance to a business career. For many people living alone, the Internet offers a great opportunity to stay in contact with the outside world even if only electronically. There are social groups who profit from an improved communication infrastructure. Examples are disabled people or persons living in rural areas. For these groups the Internet often offers the sole access to information.

The discussion of closing times of shops in Germany is another proof for a change in social structures. There are opinions that the Sunday should stay the day for the family thus rejecting the liberalisation of shopping hours. The Internet evades this discussion - there are no closing times for Internet shops.

4.2 Social change

The research field of Information Systems is characterised by short planning horizons and ever decreasing innovation and software cycles. Although current research on Electronic Markets is strongly looking ahead it might be helpful - in many ways - to examine the history of information science especially the social changes which do always accompany technological development. In her book „The New Revolution - The Impact of Computers on Society" Barrie Sherman depicts the influences of the first mainframe computers - by then still a quite unknown phenomenon for the majority of society - on societal aspects such as social change, time spending, jobs, social contacts, and so on.

Sherman argues in her book that society has always taken the main impulses of change from great inventions.

> *„Change has always been a feature of human society and much of it has been caused by technolgies and technical innovations.*
> *(Sherman, 1995, p5).*

She predicts that computer technology will be the most influential „Change Agent" for the end of the 20th century. Her ideas correspond strongly with Shoshana Zuboff's view of social change: „The choices for the future cannot be deduced from economic data or from abstract measure of organizational functioning. They are embedded in the living detail of daily life at work as ordinary people confront the dilemmas raised by the transformational qualities of new information technology" (Zuboff, 1988, p12). Reality has shown, that information technology, indeed, has had and still increasingly has a major influence on the social system. Communication patterns of both, individuals and companies, changed due to new communication infrastructure. Recent business concepts, such as Business Process Reengineering, new organisational forms like e.g. virtual companies have only become possible due to latest computer technology. Usually, change comes slower than predicted. There are often time delays between technological maturity and responsiveness of people. The Internet is a very good example for this phenomenon. Originally it was inhabited and used by some odd computer freaks but owing to the emergence of the World Wide Web it has become a medium for just everybody, individuals as well as companies.

Before 1985, some media heralded that society was about to change overnight which did not become true. Sherman sought possible explanations in the limitations of mainframes which could not fulfil what people had expected (ease of use, artificial intelligence, and so on). Not long ago, Electronic Commerce in the Internet seemed to be the most promising investment but lately scepticism has been growing. Again, people had expected much more than technology could offer. There are still a lot of limitations to a joyful shopping experience in the World Wide Web.

As early as in 1985, there was an observable trend of people spending more of their time in the home rather than at work or outside. Sherman predicted that in turn this would have major repercussions on family life and the composition of the family, on transport provision, on home and office building, and on the development of cities, suburbs, and rural areas. Reality has proved her to be right when she suggested that the amount of leisure time available would increase (a fact that nowadays provides an important prerequisite for the success of domestic Electronic Shopping applications).

We are currently in the transition from an industrial society to an information society (Schmid 96a). The phenomena going along with the social change are similar to those of the change from an agricultural society into the industrial society, 150 years ago. Then, the transition was stimulated by infrastructures such as railways, the upcoming of power supply and later by automobiles and highways. Today, local computer systems plugged into global networks provide the stimulating infrastructure. The observed time lack of the old days is also prevalent in today's process of change: there are problems and frictions and change does not happen overnight. People first have to get accustomed to the new media.

There are several changes in daily life which could be observed over the last years. Major changes have happened in the attitude towards work. The concept of the life-long job has disappeared. Permanent training on and off the job is necessary to maintain a good chance of employment. This implies higher demands, an increased stress level, and a decreased sensation of job security. New organisa-

tional types of work such as telework result into an ever increasing isolation. Mobility demands towards employees form an additional barrier to traditional family structures. The matching of a professional career and personal relationships tends to be more complicated.

The more everything changes the more it stays the same is a well-known view of the world. But is it still applicable to our times? After the examination of the impact of the first computers on social structures, Sherman stated: „Things are no longer the same in any respect. Attitudes to work, money, goods, information and other people have all changed, and continue to do so, even faster today.“ (Sherman 85, p. 386, 387) „The use of computer technology has had an appreciable, if not overwhelming impact on the way that people interact with each other.“ (Sherman 85, p. 387)

What does this all mean for Electronic Commerce? Theoretically, an increasing number of individuals living alone and the loosening of personal relationships (growing isolation) seems to be a welcomed social development for Electronic Shopping. As people spend more time alone, they are more likely to indulge in the electronic shopping world. The Internet, nowadays, has become an important source for communication and it is seen as an interface to the outside world. This is also true for individuals living in rural areas or at the outskirts of towns.

The question is: where is society going? Is the trend to increased individualism going to last or are we soon turning around and changing our minds towards a new sense of real-world community and a revival of the importance of the family as suggested by Clifford Stoll (Stoll 95, Stoll 96)? The notion of community leads us to another major research topic namely the question of virtual communities and genres.

4.3 Community and genre

The concept of "Community" as discussed in this paper is a special case of social structures, a shaping of social formations of people and deserves, as the following comments will illustrate, to be treated as a dedicated research field within the studies of socio-economic aspects of Electronic Commerce.

The concept of network communities has already been discussed in a couple of recent literature (e.g. Turkle 95, Schuler 96). Sociologists have discovered the Internet as a new sociological research field. Sherry Turkle illustrates in her book Life on the Screen the rules and dynamics of virtual communities such as MUDs (Multi-User Dungeons), the IRC or Newsgroups. She expands on the issue of a new virtual identity where members of a community interactively create their own world. (A related concept is the notion of "narrative identity, see: Brothers 96). They participate in virtual, text-based realities where they become authors of themselves and their surroundings. These virtual rooms serve as laboratories for experimenting with one's identity. Lately it has become possible to self-construct three-dimensional virtual rooms. The graphical representation of the own self loosens the limitations of the text-based MUDs, adding the possibility of slipping into a so called "avatar", a symbol or character often in the form of beasts or figures from comic strips.

Thomas Erickson states that the term virtual communities is often misused referring to long term, computer-mediated conversations amongst large groups. He proposes to better make use of the notion "genre" rather than talking about community (Erickson 97). In his opinion, the term genre shifts the focus from a mere relationship focus to the issue of why people communicate on a regular basis describing the institutional, social, and technological forces which underlie those regularities.

Thinking about Electronic Commerce it becomes obvious that in a world where people (consumers) are anonymous and empowered to create an own, deliberately chosen identity, rules for classical trading prove not to be effective. Marketers of Electronic Commerce must thus keep socio-economic aspects in mind because they can help them to understand the underlying concepts of beneficial selling over electronic channels. The most important issue is to raise consumers' attention and guarantee their

acceptance thus stimulation long term relationships. Understanding his/her personal attitude, taste and habits is the key. Due to the shared beliefs and values of the group's collective identity, the building of communities generates a certain trust among the members (Iacono/Weisband 97, Armstrong/Hagel 96) thus stimulating the ideal environment for Electronic Commerce in accordance with the above mentioned prerequisites.

The authors (Spar/Bussang 96) discuss the absence of established rules in the Internet resulting into insecurity of business behaviour of the opposite party. They do not propagate the implementation of governmental laws but they grant companies a big chance to establish areas for trustworthy Electronic Commerce building up virtual communities who follow accepted rules thus generating confidence in the business partner. In this context, they speak of „Trusted Intermediaries" who guarantee generic services such as contracting, payment, logistics and security and who serve as an entity transforming the anonymity and anarchy of the Internet into a market with identifiable customers and recordable transactions.

4.4 Psychological aspects

The first steps into the era of Artificial Intelligence generated a high expectation of what computers could accomplish along with a certain fear of their power of replacing the uniqueness of human thinking. Today, small expert systems are implemented into a large number of electronic devices without anybody noticing them. So far, machines have not reached a level of artificial intelligence at which they can replace human intuition and „emotional intelligence" (see Dreyfus/Dreyfus 86, Goleman 96).

Today, as children grow up using computers as toys the fear is already overcome in the early childhood. Historically, it have been the older generations who had difficulties in adapting to new technological circumstances. Seen from this point of view, apprehension of Electronic Commerce could gradually disappear with new generations advancing.

There is a growing number of Internet addicts reporting that they cannot live without „The Net" any longer. The seduction of electronic communication has turned out to be as dangerous as drugs and alcohol. A related problem exists in the possible misuse of customer profiles. Vendors are increasingly collecting personal information on Internet Surfers (taste, habits, etc.). Once they have an idea of a potential customer they can take advantage of their knowledge tempting people to buy products they do not really need.

4.5 Government and world politics

In ongoing discussions, some experts argue that the Internet and its related access to Information could additionally widen the gap between rich and poor, reinforcing the existing injustices. Others forecast that the Internet serves as a development aid, speeding up the progress in underdeveloped countries. This could result into a so-called „leap frogging" with Information Technology leading to a fairer allocation of resources (Negroponte 95). Electronic Commerce could, indeed, stimulate trading exports provided that there are preceding investments into education and infrastructure enabling those countries to build up competitive EC Web Sites.

According to (Afemann 96) there is one aspect which should not be neglected when evaluating the dissemination of the Internet and other computer networks in Third World Countries: the danger of an accompanying deterioration of the gap between poor and rich *within* these countries. Already today the differences are essentially bigger than in the industrial nations.

The underlying question is: should governments foster the dissemination of Electronic Commerce or should they rely on economic market mechanisms at the same time restricting themselves to mere su-

pervisors? It is most likely that governments must soon face the question of how to define their role in Electronic Commerce. An in-depth study for the Swiss economy can be found in (Schmid 96a).

The Internet could serve as an interface between citizen and government, providing means for a more direct democracy (Geser 96). The traditional communication relationships is one-to-many (government-to-citizen). The Internet provides the infrastructure for a many-to-many communication, supplying residents with the possibility of giving their statement on politics readable for peer citizens as well as for representatives of the state. One good example for the governmental usage of the Internet was the last American election campaign where people had the chance to directly pose questions on the candidates. The Clinton regime lately decided to supply all 12-years-old with an Internet access by the year 2000 attributing a great importance on the prospects of telematic infrastructures in schools.

5. Conclusions and further research

The paper supplies a framework for different socio-economic aspects on a high aggregation level where still a lot of work has to be done. Future steps will comprise a drill down into single research areas on a more detailed basis. The final goal is the general evaluation of socio-economic behavioural patterns of customers as well as vendors enabling us to build up an ideal Electronic Market Platform which solves the majority of before-mentioned, still existing problems. An interesting aspect will be the study of user acceptance and the underlying question if consumers will soon be ready for Electronic Commerce. The real breakthrough can only be achieved if customers perceive a real added-value and are willing to buy via the electronic medium.

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