

Factors that Promote Trust In Electronic Commerce

A Work in Progress Report

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Abstract

The way Electronic Commerce is changing business and the fundamental problem of how to establish a firm foundation of trust with Internet Enterprises are addressed. Two differing views of trust in the field of Electronic Commerce are examined and aspects that can be used to provide an assessment of trust are reported. Current work is placed within the scope of a wider research project and related areas are outlined. Initial practical investigations that have involved an examination and analysis of the online facilities offered by a selection of banks in the UK and USA are then reported. Finally overall conclusions are presented.

Keywords

Electronic Commerce, Trust, Ethics, Survey, Banking, USA, UK

INTRODUCTION

Electronic commerce is changing the way business is being carried out. Globalisation and disappearing trade barriers means that world-wide commerce can take place without much difficulty. However, there are difficulties in deciding with whom one can trust and safely do business with. Kelman (1998) identifies the new electronic business age with the inevitable deployment of smart cards, digital signatures, digital certificates, trusted third parties and other electronic equivalents to conventional commercial systems. New risks will have to be assessed and understood and trading will no longer be able to rely on conventional trust enhancing mechanisms. New players, consumers and traders will feel vulnerable until they understand the risk factors and see them under some control. Requirements and components of trust will have to be introduced to enable electronic business transactions to be fully trusted. Companies also need trust statements, good commercial policies, and plausible ethical codes backed up by professional practices that will both increase and sustain trust.

Within traditional business situations trust frequently comes from face to face contact with the people who front the organisations. However, in the interactive world of Electronic Commerce the establishment of trust in dealing with people and companies on the Internet takes on a different perspective. Many individuals and companies are joining the Internet to take advantage of the vast array of services and information available. This is creating a "demand-pull" as the greatly increasing choice of content makes businesses and individual consumers want to use the wide range of facilities and electronic commerce components that can be facilitated on the Internet. At an ever-faster pace traditional services and transactions are being duplicated or converted to electronic commerce format. Protocols and mechanisms suitable for

business via the Internet are being developed that should contain appropriate trust promoting elements. These need to be designed to assure users that the transactions they are entering into are trustworthy. Commercial organisations require suitable protocols for transaction processing, and infrastructures that incorporate trust enhancers and traceability mechanisms.

The goal for organisations in the field of electronic commerce should be that they are compliant with established 'Standard Business Practice', paying regard to ethical and trust issues which can be audited by commercial accountants. Moreover many customers need to determine how to evaluate electronic commerce information. They want to be able to identify businesses that are trustworthy and understand mechanisms of privacy before they divulge personal and financial details. Enablers who provide the technology behind transaction networks are the subject of specific scrutiny, as the technology to support trust mechanisms must also be reliable enough to maintain structures that aim to establish identifiable trust. Ethical concepts for trust originate from the precepts of confidence, reliance and dependence. Also Certification Authorities, Digital Certificates and Digital Signatures depend on these precepts to convince us to trust the tools behind the interface. These certification mechanisms of electronic commerce should create levels of trust that are required for safe and reliable commercial contracts and private transactions over the Internet.

In this paper we address the fundamental problem of how to establish a firm foundation of Trust with internet enterprises and we also report some initial survey work on the quality of online banking services. In the following section we examine two differing views of trust in the field of Electronic Commerce and then in the third section we consider a number of aspects that can be used to provide an assessment of trust within the sphere of Electronic Commerce. Following these literature orientated considerations of trust, in the fourth section we outline the overall scope of our current research work and provide outline details of the related areas in which we have already undertaken research and produced publications. We then detail some of the practical work that has been undertaken alongside our literature based investigations. This has involved an examination and analysis of the online facilities offered by a selection of banks in the UK and USA. Following this, in the final section, we provide overall conclusions pertaining to the work covered in this paper.

VIEWS OF TRUST IN ELECTRONIC COMMERCE

In considering trust in Electronic Commerce two differing viewpoints can be identified - customer orientated, and organisational orientated.

The Customer Orientated View

According to Ratnasingham (1998a) trust increases the amount of information sharing between trading partners thus enabling relationships to develop between businesses and customers. She goes on to describe trust as an essential ingredient for electronic commerce that should create loyal satisfied customers. However, she is also concerned with the perception of risk involved in the current electronic commerce environment. In the faceless online-commercial world participants need assurance that risks are reduced to an acceptable level. This could involve objective third parties looking after the interests of consumers. Possibilities that could be considered would be using authenticated seals on web sites and trusted digital certification with web sites subscribing to and adhering to a code of operating principles. These are likely to include the distinct elements:

(i) Business Practice Disclosures

Disclosing company information and stating business practices for online electronic commerce.

(ii) Transaction Integrity

The entities that are designed to maintain effective controls over customer orders to ensure they are billed and delivered as agreed.

(iii) Information Protection

Ensures that private customer information is protected, from uses unrelated to the business transactions with which they have undertaken with a particular Electronic Commerce company.

The Organisational Orientated View

McCullagh (1998) considers that trust inspires confidence, but confidence in Electronic Commerce is not yet established, as he believes that "Trust" as a concept is often misunderstood. He considers that trust relating to electronic commerce has 4 major components:

- Technology Trust
- Behavioural Trust
- Product Trust
- Legal Trust

Technology Trust

Establishing trust in technology would be likely to involve assessment and understanding of computer systems and the security mechanisms present. This may result in trusting the outcome created by the process. Technology trust involves the use of fundamental Trusted Computing Security Evaluation Criteria, which as identified by McCullagh (1998) has six requirements:

(i) Security Policy

There must be a well-defined and explicit security policy, which is enforced by the system.

(ii) Marking

Labelled access control, which must be associated with objects.

(iii) Identification

Identification of individual users must be specific.

(iv) Accountability

A reliable system able to trace actions affecting security to responsible parties, incorporating selectively kept audit information that is protected.

(v) Assurance

Hardware and software mechanisms contained in computer systems that enforce the security requirements must have enough assurance and be capable of being independently evaluated.

(vi) Continuous Protection

Continuous protection of trusted mechanisms must be in place to prevent tampering such as unauthorised changes.

Behavioural Trust

Different types of societies have different attitudes to trust. According to McCullagh (1998) the Chinese, French and Italians have low trust cultures, where as, the USA, UK and Japan

have high trust cultures. This is likely to affect electronic commerce in several ways through: legislative mechanisms, statutory bodies or third parties, and enforcement functions that assure that information is accurate, true, and complete. Information about the performance of an electronic commerce company and its ownership will effect the establishment of trust in different societies. For example, trust in state owned organisations might be higher in China than in Italy or France. However, high trust may be placed in well-established multinationals in the USA, UK or Japan but they may not be as trusted in China, France or Italy where a strong familistic (high trust only inside family) culture exists. For successful advancement of electronic commerce in low trust countries a better understanding of their low trust culture is desirable.

Product Trust

Trust is dependent on goodwill in relation to brand loyalty where the consumer trusts the name/brand of the product and establishes an emotional trust-bond with that company or its products. McCullagh (1998) states that the brand is the trust mechanism. Where a brand establishes good positive qualities it is positively trusted, although consumer trust can soon lost if the brand is tarnished by, for example, negative publicity. The protection of the consumer in this area is usually governed by consumer protection either in law or consumer bodies. However, when we consider the immense global network available to electronic commerce companies and the diverse country to country standards for consumer protection we can see that product trust is likely to be problematic. Establishing consumer trust is not always easy or straightforward and can be very hard to maintain.

Legal Trust

McCullagh (1998) supports the case that there will not be a sufficient amount of trust established in electronic commerce without an adequate legal framework. He further states that it is not possible to reach absolute trust on the Internet. The problem with global electronic commerce is the enactment of legislation that provides assurance. Assurance through legislation will always be questionable and what is likely to happen is a balance of established trust and enacted legislation. The latter will need to be designed so that it will encourage people to take advantage of electronic commerce both domestically and globally. However, it is unlikely that there will be legal conformity across the globe on any one issue. Therefore the reliance on information provided by web-sites for specific country legislative issues will be paramount in establishing global electronic commerce trust from the consumer's perspective.

AN ASSESSMENT OF TRUST WITHIN ELECTRONIC COMMERCE

The circumstances of interaction and reliance on the varied components may vary greatly affecting the assessment of trust. McCullagh (1998) states that to successfully establish trust in electronic commerce a hierarchy of Certification Authorities/Trusted Third Parties is a key element and must be established in the online electronic commerce environment. However, the electronic commerce consumer may find it difficult to rely on a third party, as they may not be in a position to make a feasible assessment due to a lack of appropriate knowledge. A better understanding of the area can be obtained by consideration of trust with regard to:

- Types,
- Barriers, and difficulties relating to development, and
- Trust promoting mechanisms.

Types of Trust

Ratnasingham (1998b) looks at types of trust where one form of trust leads to another form of trust also implying that there are 3 basic forms of trust:

(i) Deterrence Based Trust

This deals with the threat of punishment, which could be a stronger motivator than promises of reward. It is not entirely based on punishment but on the rewards gained from not violating trust. An example of this is the preservation of trading reputation, which has been built up, by trading partners behaving in a trustworthy manner. This links the willingness to trust to the threat of resultant consequences.

(ii) Knowledge Based Trust

A type of trust linked to how much is known about a trading partner. The trustor is able to understand and predict the behaviour of the other trading partner (the trustee). This is likely to be derived over time as a trading relationship develops and the reliability of behaviour can be predicted.

(iii) Identification Based Trust

Based on common values, this type of trust involves common tasks not on individual intimations from trading partners. This is likely to be in the form of standard processes developed over time and where one party takes on the needs and desires of others as policy, which would also include joint gains for both parties.

Barriers and Difficulties Relating to the Development of Trust in Electronic Commerce

While stating that trust is an essential component in electronic commerce Ratnasingham (1998b) highlights 3 major barriers to trust in virtual commerce:

(i) The virtual and global context of Electronic Commerce hinders trust from developing.

(ii) Technology alone is not enough. "Virtuality" requires trust to make it work.

(iii) It is very difficult to observe and measure trust.

These are very apparent difficulties which are most prevalent where there is no prior familiarity, shared past experience or no expectation of a common future. There are also other concerns relating to trust support components that need to be considered. How well the security mechanisms and resulting trust components work and how long will environments remain secure? Trading partners and the consumer must be able to trust the security and integrity of electronic commerce systems. They should also be able to have complete reliance in a company to treat information with confidentiality. Companies need to adopt best trust policy trading using business ethics principles to gain the benefits of consumer loyalty, trust and continued patronage. The assumption that trust will play an important part in the continued growth of electronic commerce is likely to be correct. However, Backhouse (1998) sums up the difficulties that may occur even if the requirements and components of trust as stated above are present, working and maintained. Trust is essentially a human element and the mechanisms supporting it are only as good as the way they are designed and used. Security mechanisms and trust promoting policies designed using professional computer ethics and incorporating social responsibility may go a long way to help in establishing trust concepts and promoting trust in Electronic Commerce.

Trust Promoting Mechanisms for Electronic Commerce

In their position statement on Electronic Commerce the Council of European Professional Informatics Societies (CEPIS, 1998) have some poignant things to say about trust that reflect the concerns addressed in this paper. They give validity to the term trust stating that it is an essential part of electronic commerce networks and that the way information is handled at both ends is essential to the enhancement of trust. In many cases if the benefits outweigh the risk people will accept limited trust. However, non-experts who want to deal with trusted networks, but are not willing or able to do detailed checks, would find it important to have a high degree of trust present. Some credit card companies, banks and mail order companies have often accepted the risk of insecure orders just to gain customers. This type of behaviour is likely to increase as the electronic commerce market expands and competition becomes fiercer. CEPIS state that the public has a common lack of understanding of Electronic Commerce and therefore finds it difficult to distinguish between the hype and the truth. This situation may lead to restriction in public/customer acceptance. Therefore trust enhancers need to be incorporated into new models for electronic business. These will act as confidence builders for participants in electronic commerce. It is important to recognise the differences between traditional and electronic models for business and the new mechanisms, which can be used to promote trust in the latter.

To operate an electronic commerce business there needs to be in place a business infrastructure that people understand and trust. Trust enhancing mechanisms as stated by Steunauer et al (1997) are: Traceability, Technical Mechanisms, Identification, Authentication, Access Control, Protection, Confidentiality and Integrity. These are all tangible components. However, Meyer (1998) has made clear that much of what participants in electronic commerce will have to believe in, count on, and use cannot always be seen. He argues that trust will be with the company not the Internet itself. Trust will be earned by giving good products and services. Established traditional companies taking on an electronic commerce format should be able to build on existing trust through reputation. Others may need to join organisations that audit companies and then award them Seals of Approval to increase the trust new customers may need before deciding to do business with them.

CURRENT RESEARCH

Context and Overall Scope

The research that is reported in this paper is part of a larger project concerned with a detailed study of ethics and professionalism with regard Ethical Trust in Electronic Commerce. It is intended that this work will help identify aspects of education and training that should promote ethical and socially responsible behaviour and practice by computer professionals who are working in the Electronic Commerce sector. It is also the intention that by investigating ethical trust mechanisms in Electronic Commerce it will be possible to establish concepts that should promote practices for the software industry that are both ethically and socially acceptable.

The work, in addition to carrying out a detailed investigation into concepts associated with trust, as summarised in the preceding sections, has involved investigative undertakings in the areas of:

- Electronic Commerce Businesses – to enable us to place our research within a practical context.
- Security and Privacy – so that we can understand what mechanisms are available to the industry and be able to appraise alternative approaches.

- Software Engineering and Quality – to enable us to understand best industrial practices and the ways in which quality can be built into software based systems as well as seeing how it can be assessed and measured.
- Computer Ethics, Computer Ethics Education and Software Engineering Professionalism – these areas are all relevant to us being able to take a “people orientated view” within our work.
- Web Site and Electronic Commerce Business Performance and Management of Internet Business – in this area we are attempting to carry out practical investigations that will enable us to judge the quality of sites and whether they demonstrate features that will promote customer trust.

Publications detailing the results of our investigations in the first four of the above areas has already been published (e.g. Storey, Thompson, and Bokma, 1999a, Storey and Thompson, 1999, Storey, Thompson, and Bokma, 1999b, and Storey, Thompson, and Bokma, 2000). The remainder of this paper is concerned with work we are undertaking in the fifth area. We have started to carryout a series of practical investigations into the quality of web sites. As we have explained in the earlier sections of this paper there are many different facets to trust and it is both difficult to observe and measure trust directly. However, we believe that if we investigate the quality of web sites we should be able to determine whether or not a particular site would or would not promote a feeling of trust in those who used them. The argument is simply that if the quality of a sit is low people are less likely to trust the business behind the site and vice versa. The operation and results of the first of these practical investigations, which has been directed at the banking sector, are reported in the following subsections.

An Internet Survey of Online Banking Services

The aim of the survey was to compare the online services offered by UK banks with online banking services in the US. The survey also aimed to look at these sites purely from a consumer perspective. It is recognised that access speed may vary due to the time of day or other factors such as modem speed. However, consumers are likely to access web sites when they feel the need to do so, at any time. Therefore it was not considered relevant to look at this factor in detail. We deal mainly with general access and what would be considered general consumer behaviour, which is to access sites on demand and have an efficient, productive visit resulting in customer satisfaction and hence a reinforcement of trust. The scoring criteria, deal with the quality of each web site, information availability, and the range of services being offered. UK banks were chosen from a list at [<http://www.mylesrix.demon.co.uk/banking/index.html>] and US online banks from [<http://www.onlinebankingreport.com/resources/>].

Information was obtained during March and April 2000 by testing the services available as much as possible without opening actual accounts. Each web site was scrutinised for approximately 15 minutes while a search was undertaken to look for information and product availability. If information could be not found within the 15 minutes, it was assumed no service or information was readily available for the particular topics under scrutiny. Results for the first section of the survey have been converted to average scores for the two countries and are shown in Figure 1 along with the scoring criteria. Analysis dealing with product availability is shown in Figure 2. The sites were also measured against what could be considered a full banking service, where such a service was defined for this investigation as being able to apply for all services and products listed in Figures 1 and 2 online. The results of these investigations are also given in Figure 1. A search was also made for information that indicated application

decisions would be made and returned to customers online in real time. The results of these evaluations are also presented in Figure 2.

Analysis of the Survey Results

Figure 2 columns 1 to 8 show average scores out of a possible total of 5. In the scoring approach a value of 4 was considered good and the US scored the most 4 ratings. Speed of access and navigation, availability of product/services information and viewability was relatively the same in both countries and they both scored reasonably in these categories. There was little difference between the percentages of possible maximum score; the UK average of 54% almost matched the US at 55%.

US sites scored lowest in the categories regarding display of full contact and corporate information. For customer service the UK scoring was much lower at 50% less than the US. Neither country managed a high rating for Scale of Full-Online-Banking but the UK score was lower. Despite some category differences, overall these average scores indicate that both countries need to improve, with the UK needing to pay more attention to the availability of products/services information and viewability of their web sites. Full contact and corporate information was lacking in both countries and when it was there it was not always easy to find.

The difference between the two countries was greater in regard to being able to apply for products online and availability of credit decisions online. Figure 2 shows that from the 5 products sought only 54% of them were available online in the UK banks. With the US banks scoring at 86%, this indicates 32% lower availability of online banking products in the UK.

Applying for and getting insurance quotes entirely online scored low in both countries. Also there is 50% difference between the UK and US in regard to applying for a mortgage or other loan online, 10 of the 12 banks surveyed in the US offered online mortgages/loans as opposed to 5 out of 12 in the UK. Only 7 of the banks in the UK offered online credit card applications as opposed to 11 out of 12 in the US. Average scores for the total availability of the 5 products from all banks would indicate that US banks have more to offer on the Internet than UK banks.

Credit decisions were assessed in terms of the bank indicating on the web site that they offered this facility. Some of the UK banks were followed through to test if they actually did perform this service. One bank Firtse, did give an online decision but only for a preliminary account. To fully activate the account they want the client to post-mail two utility bills and a photocopy of the applicant's passport. Smile bank also said they offered decisions on line and they do but it takes from 4 to 7 days to activate the account. Similar tests were not carried out with US banks as most only offered accounts to US citizens. Some did offer international banking but all application procedures for this were paper based.

	1	2	3	4	5	6	7	8	9	10
	Total site access speed	Speed and ease of navigation	Availability of relevant information	Customer Service rating	Look of web site (Viewability)	Full contact details easily available	Corporate information easily available	Scale of Full online banking service (score 5 = Full)	Overall Service Score	% of Possible Maximum Service Score
US Average	3	4	4	4	4	2	1	3	22	54%
UK Average	4	4	3	2	3	3	3	2	22	55%
In columns 1 to 3 and 6 to 7 scoring is determined by the amount of time taken to access services or information. The longer it took the lower the score. If Column 1 & 2 access was below 7 seconds = high score, up to 35 seconds = medium score, between 36 - 75 seconds = low score.										
Column 4 is rated on how helpful the available information appeared to be; poor quality of available information, lack of helpful information or hard to find information resulted in low score.										
Column 8 (Scale of full online banking service) was rated by the number of services and products available but was heavily influenced by the availability of online applications and credit decisions being made online. The lower the number of online services resulted in low score.										

Figure 1: UK and US Bank Web Site Service Rating

	1	2	3	4	5	6	7	8
	Apply for current account online	Apply for savings account online	Apply for mortgage or loan online	Apply for insurance online	Apply for credit card online	Products Available Score	% of Products Available from the 5 sought	Credit decisions online
US Score Totals	10	10	10	5	11	43	86%	12
UK Score Totals	6	6	5	3	7	27	54%	4
Scores in columns 1 to 6 and column 8 are out of 12, which relates to the 12 banks that were surveyed								

Figure 2: UK and US Bank Web Site Product Availability Rating

If we now consider these results with regard to some of the concepts associated with trust that we detailed in the earlier sections of the paper we can deduce the following:

- In the case of the type of sector covered here (i.e. banking) there is likely to be a level of trust simply because of the nature of the sector.
- However, these results represent a new worldwide sector. US banks may not be recognised by name in the UK and vice versa. People may be more untrusting of a “foreign” service provider no matter how competent their web offerings may be.
- With regard to facilities offered by the US banks compared to those in the UK, the US is clearly ahead. The US banks may be regarded as much more mature in their Electronic Commerce offerings and thus may be regarded as more likely to offer a more trustworthy service.

- The overall service scores are nearly the same for country and are in fact quite low (around 55%). Since levels of service can be equated with levels of customer satisfaction and hence should lead to an increase in customer confidence and trust we can see that with regard to this area the banking sector both in the UK and US have quite a way to go.

This initial survey work has just touched on some of the aspects associated with trust. In many cases it is simply raising further questions rather than producing useful answers. We now intend to extend much further our practical investigations and try and gain measures against many more of the criteria covered in the earlier sections of this paper. In particular we wish to pursue those criteria identified by Steinauer et al (1998). Also we intend to look at several other sectors in Electronic Commerce in addition to banking.

CONCLUSIONS

The unique nature of the Internet often requires it to have special rules, and for many purposes these can be developed from existing conventional business rules. Trust enhancing mechanisms and protocols for online trading are no exception. The measurement of trust is never likely to be an easily defined science and Internet commerce has too much momentum now to fail through lack of trust. However, conditions of business online would be greatly enhanced by the existence of workable trust orientated protocols that have ethics and professionalism at their core. Trust online has more than one facet as many will trust in the name of a well-known respected company and trust may develop in those companies displaying an assurance or trust seal. Trust seals on web sites need to be issued by professional organisations and be easily authenticated.

Any organisation using its web site to gain and maintain a profitable business presence on the Internet must have high quality security software and user trusted transaction mechanism. The aim should be to replace the chaos of today's Internet with an environment that allows secure communications and transactions. This should include ways of easily checking the trustworthiness of web sites and the companies behind them. Consumer concerns are likely to dominate as more electronic commerce is conducted from home based interaction mechanism such as digital televisions and Internet telephones. Despite cultural differences in the perception of trust familiarity through active use should build consumer trust in electronic commerce.

Further commercial trust is likely to grow as many organisations behind trusted professions offer trust authentication services amalgamate and become known and trusted world-wide. However, the major companies in this sector may dominate and push up the cost of these trust audit services, so that many smaller companies may not be able to use such services without passing substantial costs onto the consumer. There is no simple answer as the world of Internet commerce is not accurately predictable. There is always likely to be a trust versus risk factor as there is in all business dealings on the Internet or otherwise. It would be fallacy to presume that in the future all businesses involved in electronic commerce are going to be trust-worthy. However, the perception of trust in electronic commerce transactions can change for the better if the technology supporting security, privacy and delivery of service is quality driven. Trust is not an ethical concept in itself although it can be greatly enhanced by the involvement of professional people and companies adopting a socially responsible and ethical approach.

The survey research, although modest in scale, has provided a snap-shot of what is being offered by the banking sector over the Internet. From the statistics reported above it is obvious that the US is ahead of the UK in most areas. Banks in the UK should be learning from the US and they should perhaps set up some kind of monitoring of Internet bank sites worldwide. They need to do this to find out what is being offered and what appears to work for customers.

Moving away from old strategies and embracing a new, "customer first" attitude which is the only one that works for successful electronic commerce. The overall culture of banking must change before take up of online banking will offer adequate, let alone superior, service to customers. Banking companies that give greater attention to what their customers want are more likely to succeed in online banking business ventures than those that think that converted traditional strategies will do the job. Customers hold the key to success and companies must find out what different customers want and provide it, using the best available technology and making sure that the latest information is what they are acting on.

People will not tolerate inadequate web sites. The information must be instantly available and financial decisions must be available online for a whole range of products. It must also be an easy process to open accounts on-line with credit and reference checking happening in real-time. There are many ways to approach online banking business and some companies who don't think "customer first" are likely to fail miserably. There are already well-recorded failures of technology that simply could not cope with unpredicted web site usage. Basic failures are expensive and they have damaged reputations resulting in diminished brand trust. Technology failures lead to loss of custom, often forever. Any bank hoping to make a successful future in online banking must test the technology thoroughly before releasing it on customer access web sites. Unfortunately most banking companies in the UK have failed so far to totally understand what customer-centred online banking is. Even the new banks that are entirely web-based are failing to show enough expertise in this sector.

The phrase "Online Banking" should define a fully comprehensive service where all banking needs are catered for online. There appears to be some way to go before online banking provides a full service, at least in the UK. Many high street banks in the UK may not succeed if they do not fully comprehend what electronic commerce can do for them and their customers. US banks seem to be more aware of what is needed and what customer needs are. At this juncture banking institutions in the UK have failed to lead in this field and they have much catching up to do. They all need to think of strategies that will give their current and new customers superior customer choice and service online. Future planning and innovation is the key as electronic commerce is a fast evolving medium. The most successful electronic commerce vendors design their services and products to attract and retain new customers and to keep those that they already have. They also have strategies that aim to attract competitors' customers, which includes anyone who is surfing or browsing.

People/customers/consumers/users are in control in cyberspace and they have the power. All businesses especially banks must come to realise this. They cannot continue to make managing money difficult for customers. In the very near future, via interactive TV, Internet telephone and the personal computer, all customers everywhere will have more choice of where to put their money and why they should put it there. The Why? being ease of access, safe user-friendly technology, and highest customer service along with a range of products and services that equates to total consumer satisfaction.

REFERENCES

- Backhouse, J. P. (1998) Security: The Achilles Heal of Electronic Commerce. *Society*. 35. (4). pp. 29.
- CEPIS (1998) E-Commerce CEPIS Position Statement. *Council of European Professional Informatics Societies*. 30/08/98. [Online]. Available from: [wysiwyg://51/http://www.cepis.org/ecommm.htm](http://www.cepis.org/ecommm.htm).
- Kelman, A. (1998) Editorial. *The Journal of Information and Technology*. 3. [Online]. Available from: <http://www.law.warwick.ac.uk/jilt/98-3/editorial.htm>

- McCullagh, A. (1998) The Establishment of 'Trust' in the Electronic Commerce Environment. *The 1998 Industry Outlook Conference*. 7 November 1998, ACS Canberra Branch. [Online]. Available from: <http://www.acs.org.au/president/1998/past/io98/etrust.htm>.
- Meyer, K. D. (1998) Believing What You Can't See. *Managing Office Technology*. 43. (5). pp. 7.
- Ratmasingham, P. (1998a) Trust in Web-based Electronic Commerce Security. *Information Management & Computing Security*. 6. (4). University Press. pp. 162-166.
- Ratmasingham, P. (1998b) The Importance of Trust in Electronic Commerce. *Internet Research: Electronic Networking Applications and Policy*. 8. (4). University Press. pp. 313-317.
- Steinauer, D. D. Wakid, S. A. Rasberry, S. (1997) Trust and Traceability in Electronic Commerce. *Standard View*. 5, (3) pp. 118-124.
- Storey, A. and Thompson J. B. (1999) Will the Regulation of Software Engineering and the Texas Licensing Model Act as Catalysts for the Integration of Computer Ethics into Mainstream Computer Education, *The 4th International Conference on Social and Ethical Impacts of Information and Communication Technologies (ETHICOMP 99)*, Rome, October.
- Storey, A. Thompson J. B. and Bokma A. (1999a) Creating Socially Responsible Managers for the 21st Century World of Cybertechnology, *17th Annual Conference of the Association of Management (AoM) and International association of Management (IaoM)*, San Diego, August.
- Storey, A. Thompson J. B. and Bokma A. (1999b) Can Businesses that use Electronic Commerce be both Successful and Ethically Orientated? *The 19th Meeting of the International Information Management Association (IIMA)*, New Rochelle, New York, October.
- Storey, A. Thompson J. B. and Bokma A. (2000) A Review of Quality Issues for Electronic Systems, *The 8th Software Quality Management (SQM 2000) Conference held by the British Computer Society's Software Quality Special Interest Group*, Greenwich, London, April.

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