

# **Relationships, Information Technology and the Shipping Industry – An Exploratory Investigation**

Judy Zolkiewski<sup>1</sup> and Christina-Maria Morazzani<sup>2</sup>

## **Abstract**

As we move into the 21<sup>st</sup> century one of the key challenges facing business market strategists is the extent to which technology is effecting a new mode of business interaction in which electronic interaction has made the traditional business relationship and network redundant. Is yet another new business-to-business marketing paradigm needed or despite instantaneous, and new modes of, communication will relationships remain at the heart of many business markets? This is the question that inspired this research, which investigated the impact of technology, the Internet and e-commerce on business-to-business relationships in the shipping industry.

Our findings suggest that technological developments have had a positive effect on the relationships investigated by enabling faster and more effective communications; although this has meant that relationships have become less personal and more task orientated. Additionally, the Internet did not revolutionize the manner in which business is conducted between a ship owner and a broker it was used simply as a data warehouse, a provider of information – a tool to support relationships not to make them irrelevant.

The findings support the notion that relationships and networks are still at the centre of business markets and suggest that although technology has dramatically changed the speed at which we do business and the modes of communication we use it has not yet rendered the business relationship or the personal aspects of doing business redundant. This reinforces our understanding of the critical role of communication in developing, maintaining and enhancing the social bonds formed during personal interaction in business relationships. The findings also strengthen our belief that technology should be seen as an enabler of communication and conduit of data/information rather than as a replacement for personal interaction and trust in business relationships.

## **Introduction**

In the late 1990s before the dot.com bubble burst, many commentators were suggesting that a new mode of business interaction would become the norm and that electronic interaction would make the traditional business relationship and network redundant (Siebel and House, 1999). However, as we move into the 21<sup>st</sup> century it is apparent that this is not yet the case. Although technology has provided new modes of

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<sup>1</sup> Dr Judy Zolkiewski, Manchester School of Management, UMIST, PO Box 88, Manchester, M60 1QD, UK. Telephone +44 (0) 161 200 3470 Fax +44 (0) 161 200 3505 e-mail: [Judy.Zolkiewski@umist.ac.uk](mailto:Judy.Zolkiewski@umist.ac.uk)

<sup>2</sup> Christina-Maria Morazzani was a research student at Manchester School of Management, she is now a marketing manager in Greece

communication and instantaneous communication has become the expected norm, relationships still appear to be at the heart of many business markets. Even the widely predicted disintermediation of markets does not appear to be taking place.

In business-to-business marketing it has been widely acknowledged that buyer seller interaction often leads to the formation of collaborative relationships as opposed to transactional exchanges (Håkansson (1982) Turnbull, Ford and Cunningham (1996), Håkansson and Snehota (2000), Ford (2002), Webster (1992)). It has also been suggested that relationships improve the effectiveness of business conduct and enhance the competitive advantage of the parties involved (Ford, 2002). However, the potential for technology to radically alter, or even destroy the need for, relationships is also acknowledged and there is currently a burgeoning set of research, which is investigating the impact of technology on relationships (see for instance, Zolkiewski and Littler (2004), Salo and Karjalainen (2003), Kandampully (2003), Oppel, Lingenfelder and Gemuenden (2002), Rebolledo, and Ricard (2002) and Leek, Turnbull and Naudé (2000).) To date the results of this research are inconclusive and as such the area needs further investigation and theoretical development. For instance, will technology remove the need for relationships and will it be the companies that utilize technology most effectively that gain strategic competitive advantage?

This demonstrates the uncertainty about how, and to what extent, technology is affecting business-to-business relationships. Indeed, it could be proposed that technology is simply changing the dynamics of relationships rather than radically altering them. Hence, the objective of this research was to investigate if and/or how technology, the Internet and e-commerce are affecting business-to-business (broking) relationships in the shipping industry.

The remainder of this paper is structured as follows. It begins with a general discussion of the role of information technology<sup>3</sup> in business-to-business markets. This includes, whenever possible, examples from the shipping industry. The research questions that emerge from this review are then presented. This is followed by an overview of the research background and chosen methodology, a case study approach. Results are then given and discussed and finally conclusions and managerial implications are developed.

## **Information Technology and Business-to-Business Markets**

Organisational buying behaviour continues to evolve in response to changes in the global environment<sup>4</sup>. And, one of the major forces in this

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<sup>3</sup> The focus of this discussion is on technological processes rather than specific product technologies.

<sup>4</sup> It is not the aim of this paper to enter into a debate about organizational buying behaviour, rather it accepts the premise of the interaction, relationship and network

environment is technological change (Levitt, 1983, Sheth, 1992). However, as Keegan and Schegelmilch (2002) clearly note technological change, as such, is nothing new and electronic based commerce is certainly not a new phenomenon in business-to-business markets. Companies are being challenged to develop an evolution strategy that involves the adoption of technology and more particularly that of e-commerce and the Internet (Sara, 2000). Sharma (2002) suggests that business-to-business marketers who embrace the Internet are consistently outperforming their counterparts who do not.

Relationships between companies tend to be characterised by close working, mutual commitment, trust and adaptations rather than simple transactions (Håkansson, 1982, Dwyer et al, 1987, Ford, 2002, Anderson and Narus, 1990, Morgan and Hunt, 1994). Consequently, effective management of relationships tends to be considered to be closely connected to effective operation of business-to-business markets. The application of any form of IT inevitably removes the need for continuous face-to-face contact and as a result technology has been known to have a significant impact on relationships. However, it has been and still remains an issue of considerable debate whether the impact on relationships is largely positive or negative, i.e. whether IT-and the Internet in particular- is removing the need for interpersonal relationships, or whether its application is a means for enhancing them.

Stump and Sriram (1997), for example, suggest that IT investments enhance buyer-seller relationships indirectly, through the use of IT in transaction processing, whilst also directly contributing to the reduction of supplier bases. The findings of Oppel, Lingenfelder and Gemuenden (2002) are interesting in this respect. They report that using electronic marketplaces as sources of information has no effect upon relationships; but when transactions take place within electronic marketplaces positive relational effects can be observed, e.g. in terms of closeness and cooperation.

It has been suggested that although the application of IT facilitates communications it also makes relationships less personal, more formal and more task oriented (Chen and Wilson, 2000, and Leek et al, 2000). However, Zolkiewski and Littler (2004) found that IT-based communication is mostly used as a means of strengthening and maintaining relationships and as a replacement of traditional means of information exchange (fax, telex, paper) rather than as a substitute for inter-personal contact. While Pawar and Driva (2000) and Azzone et al (2000) indicate that technology has the power to protect relationships. The use of improved images enables more effective communications, the allowance of worldwide and on-line access to sales improves sales, and 24-hour customer assistance improves customer support. Kandampully (2003) provides another perspective that suggests that relationships and networks are still critical to the successful implementation of technological-mediated exchange, noting how Covisint the automotive

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paradigm that dyadic relationships and networks are the glue that hold business-to-business markets together.

exchange is based on an existing network of suppliers and buyers. Thus suggesting that technology is successful when it is the servant of business not the leader.

The Internet can have various uses ranging from an ornamental web presence to a relational presence where the web is used to actively develop relationships with customers (Geiger and Martin, 1999, Avlonitis and Karayanni, 2000). Interestingly, Geiger and Martin (1999) also suggested that most companies had failed to develop their web sites beyond virtual brochures. Deeter-Schmelz and Kennedy (2002) provide another aspect to this debate, in their research they found that the Internet is still not perceived to be as influential as other traditional industrial marketing communication tools such as personal selling.

It is often suggested that the Internet will eliminate intermediaries from the supply chain, a process usually referred to as disintermediation (Wunderman, 1998, Hollensen, 2001). However, Hollensen (2001) argues that a process of complete disintermediation is a myth. He believes that while the Internet may eliminate the traditional 'physical' distributors in the transformation process of the value chain new types of intermediaries may appear. So a re-intermediation force will balance the disintermediation process.

Disintermediation has been discussed at length in the context of shipping brokers. One view casts doubts among the current service providers such as agents and brokers about what their role is going to be (Royston, 1999). Another view is that irrespective of whether e-platforms exist the choice will always be in favour of the broker (Stopford, 2002) and the role of the Web is not to replace the middlemen; rather the aim is to build on-line networks alongside the personal business networks of the broker and improve the quality of the service they provided to the clients (Blankenhorn, 1997, Zolkos, 2001).

It is also being suggested that b2b exchanges are failing to achieve the success that was expected because they provide few benefits for suppliers (through forcing them to enter a highly competitive bidding process, which simply results in their margins being squeezed) and for buyers (as it does not allow flexibility in delivery, quality etc. which are central to many lean production models) (Wise and Morrison, 2000). The application of e-commerce platforms is recognized to have both benefits and drawbacks, including issues about the future role of intermediaries (Zolkos, 1999). These are summarized in Table 1 below.

**Table 1 The Advantages & Disadvantages Of E-Commerce**

Advantages	Disadvantages
Expand product distribution to more buyers and improve service quality	Downgrade the role of traditional intermediaries such as brokers and agents

Advantages	Disadvantages
Increase brand equity and strengthen customer loyalty among current buyers-deepen relationships with customers	Data tampering or corruption, unauthorised access, disclosure or theft, introduction of viruses
Reach new market segments or geographic sectors which otherwise would have not been pursued	Intellectual property theft (patent, trademark, copyright, domain name infringement)
Reduce costs	Damage to data centres, transmission networks and power sources
Address fundamental market changes	
Increase market share	
Connect with business partners or suppliers	
Defend against new competitors	
Source: Adapted from Sara, 2000, EIU, 2001, Winston, 1999, Zolkos, 2001 and Wojcik, 1999	

Within the shipping industry a vast number of e-chartering companies emerged and on-line charterers argued that they were in a position to help the industry by offering greater efficiency in the control of the information and business process. They claimed to offer the potential to manage all of the chartering procedures, from the most simple to the most complicated (offering bunker prices, port costs, matching of cargoes to ships and vice versa, as well as voyage management), on-line (in Fairplay International Shipping Weekly, 25-10-01). All in all, it seemed as if e-chartering was going to replace traditional chartering, i.e. replace the brokers.

However, during the year 2000 the 35 Web start-ups in this area failed to build a working product, leaving only a few players in the arena who were at the time struggling to survive (Berrill, 2001, 2002). The remaining players in the area were Level Seas, AXS Marine, Strategic Software and Baltic Exchange (Parker, 2001). Potential users had concerns about aspects such as privacy, security and data ownership (Berrill, 2001) and were not sure whether they were interested in saving the 1 ¼ per cent of brokers fees and excluding the efficiency that the human element (the brokers) had so far provided (Fairplay International Shipping? Weekly 25-10-01).

Another area where one would have expected the formation of an e-platform but which has not yet occurred is that of shipping insurance. Consumer insurance markets have been revolutionized by technology, in the UK the high street broker has virtually been replaced by technology, firstly consumers adopted telephone insurance and now the rise of Internet insurance providers means that the household and car insurance market is radically different from the market that was in place in the late

20<sup>th</sup> century. However, Stopford (2002) believes that shipbroking has worked for so long and will continue to work because of the expert knowledge of brokers and argues that "*there is no software in sight that will do this as well as the human mind*" (pg. 63). Zolkos (2001) also points out that the value of the broker is recognised by the consumers of their service.

The key areas that emerge from the discussion above are:

- The recognition that business relationships are not static, they evolve continuously in response to a range of environmental factors of which technology is only one factor.
- Aspects of relationships that technology has already been suggested to affect, including:
  - Personalising or depersonalising relationships
  - The reduction of supply bases, resulting in fewer, closer relationships
  - Improvements in the effectiveness of relationships
- The wide range of ways in which the Internet is being used, from ornamental presence to fully operational e-commerce
- The lack of consensus about the effectiveness of b2b exchanges
- The failure of disintermediation to occur in the shipping industry.

The list above demonstrates that the influences of technology on relationships (and vice versa) are still very much under-researched and well-supported theoretical models are yet to emerge. Such a broad research arena demands an exploratory research framework and as such we developed the following research questions (which have specific reference to the shipping industry):

1. How is the contribution of technology perceived by the different parties in the relationship?
2. How have technological developments affected relationships between the brokers and the ship owner?
3. To what extent are e-commerce policies being introduced in the shipping industry, specifically with reference to chartering and insurance broking?

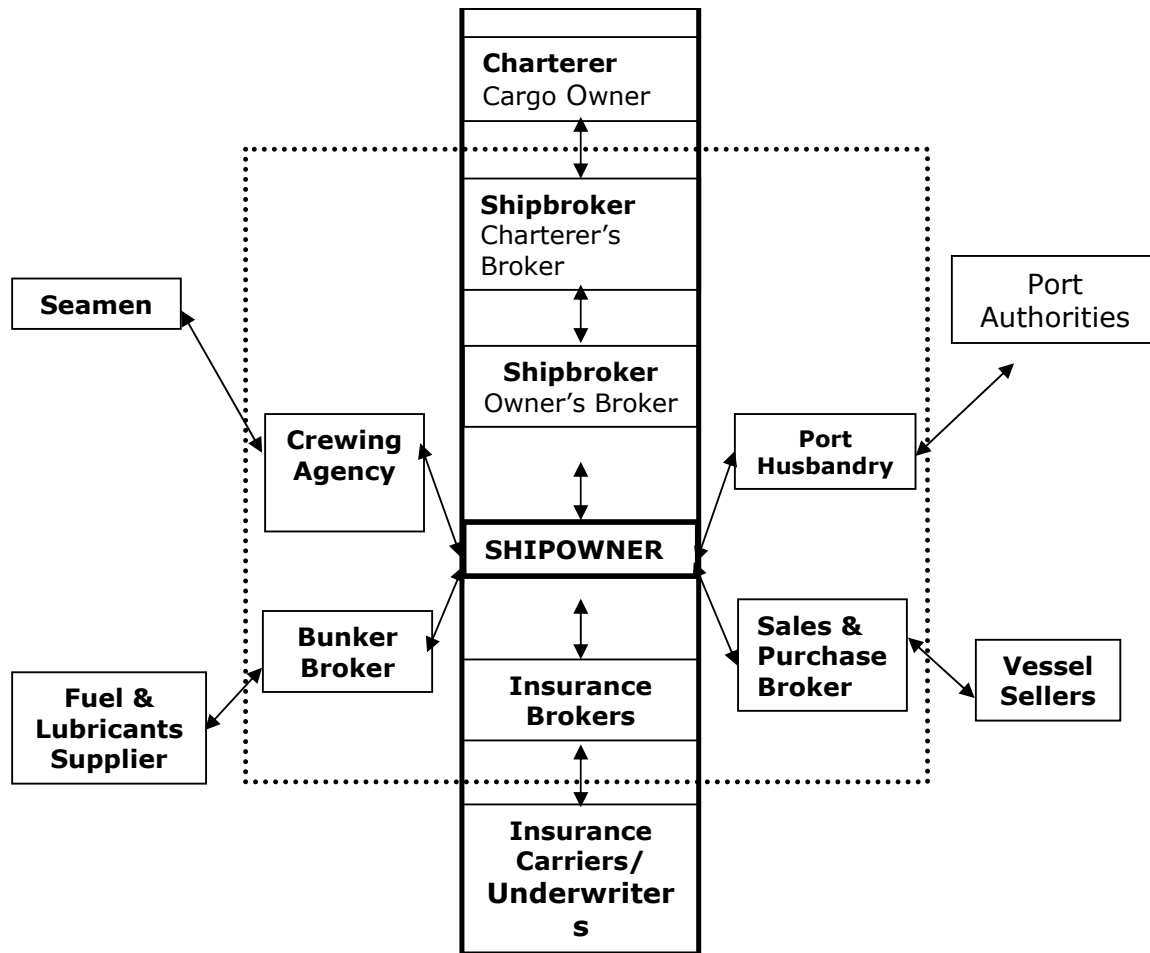
## **Research Background**

The shipping industry shows many of the classic features of a business-to-business market and is interesting because a large number of intermediaries are involved in the day-to-day conduct of business. It has been described as an industry whose whole existence is founded on the development of relationships and effective communications (Stopford, 2002). For a single voyage of one vessel a ship owner/principal may be dealing with a large number of other principals and usually deals between principals take place through the involvement of intermediaries, referred to as either agents or brokers. An indication of some of the business that is conducted through intermediaries is provided in Figure 1 below, which clearly indicates the large number of interactions that occur through intermediaries.

Two such dyadic relationships in the shipping network are those that are formed between the ship owner and:

- a shipping insurance broker
- a shipbroker (charterer's or owner's broker).

**Figure 1 Intermediaries in the Shipping Industry**



This paper presents the results of exploratory research based on a case study approach that investigates the relationships between ship owners and these two different types of shipping brokers. The first area investigated was that of shipping insurance broking, where an e-commerce platform had not been established. The second area of investigation was that of chartering broking where an electronic trading platform had been established, but this platform had had limited success.

## Methodology

This research is exploratory and, therefore, a qualitative study rather than a quantitative research study was conducted. The form of the research strategy was that of a case study and the study was more concerned with describing real world phenomena than developing normative decision models (Yin, 1994, Perry, 1998). Two separate case studies were

undertaken. Documentation was collected and in-depth interviews were performed for each of the case studies. The data collected was analyzed using thematic categorisation (Maxwell, 1996).

Five different companies were involved in the research: two large shipping insurance broking companies, one reasonably large chartering broking company and two small to medium size shipping companies. An outline of the participating companies is given in Table 2 below.

**Table 2 Research Participants**

<b>Company Type</b>	<b>Company Name</b>	<b>Company Description</b>	<b>Interviewee's position</b>
Shipping	Deutsch Shiff	Established 100 years ago in Eastern Germany. The company had an annual turnover of 10-14 million dollars. Over the years it has had control of up to 11 vessels.	Owner
Shipping	Deutsch Shiff		Director
Shipping	Hellas Shipping	A Greek based shipping company. It had been operating for about 20 years and was run by three partners. The company owned six specialised bitumen tankers.	Partner
Insurance broking	Shipping Insurance Brokers London	A major international company ranking among the twelve largest brokers in the world, had 30 highly qualified experts and handled all aspects of marine insurance and reinsurance from initial advice to claims settlement	Director of the shipping insurance department
Insurance broking	Shipping Insurance Brokers Greece	Had recently become a subsidiary of a larger insurance company. The company had a substantial share in the marine insurance brokerage market as it currently ranks amongst the top three companies in Greece by market share	Chief Executive Officer
Chartering Broking	Shipping Services London	Shipping Services London is a subsidiary of a larger group of companies,	Director



Company Type	Company Name	Company Description	Interviewee's position
		established in 1981 with offices in London and Hong Kong.	

## Results

The research results are presented below. First an overview of the participants' websites is provided, see Table 3 below. This is followed by a summary of the findings from the in depth interviews.

**Table 3 Participants' Websites**

Company	Website Description
Deutsch Schiff	No website
Hellas Shipping	No website <sup>5</sup>
Shipping Insurance Brokers London	Includes basic information regarding the company, its history and what business they are in. The company's address, telephone number and e-mail address are available. Furthermore, included is a list of the different people within the company with their special areas of interest and business expertise, together with their contact telephone number, e-mail address and in some cases a photograph. A section named latest news is provided but at the point when the site was accessed it included nothing.
Shipping Insurance Brokers Greece	Contains a vast deal of information on the company as a whole. the information provided about the company per se is very basic as there are no contact details for the shipping insurance broking department.
Shipping Services London	Accessed from the parent company's website. The information provided is relatively narrow as it is limited to an outline of the services provided and the prospects of the company. However, a link is provided which leads to a list with the names of the people working for the company and their areas of expertise.

## Case One: The Effect Of E-Commerce On The Business Relationship Between The Insurance Broker And The Ship Owner

All informants from the owner's side consider that technology has made an important contribution to communications within the industry. With the

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<sup>5</sup> Investigation of shipping companies' websites indicates that it is mostly companies with a large number of vessels (more than 20) that implement web sites. Hence, it would appear that the shipping companies that participated in the research did not have a web site because they were small to medium sized (owning 10-12 vessels) and/or because the nature of their business was very specific ([www.thshipslist.com/ships/fleets.html](http://www.thshipslist.com/ships/fleets.html)).

introduction of new technological developments communications have become a lot easier, much faster and perhaps less costly. From the perspective of the ship owners the most important technological development up to the present time has been the mobile phone because it allows the owner to reach and contact people anywhere at any time. More particularly one of the informants said, *"Probably the most important technological development would be the mobile phone. You can get hold of anybody, anywhere and at any time. Especially get hold of the broker [any broker] all the time"*.

The brokers described technological developments as *"wonderful tools"* that have assisted them in doing their job. Their contribution to the industry cannot be contested, as they have enabled faster communications. All of the brokers interviewed consider the most important technological development to be the Internet mainly because of the substantial amount of free information that it has made available to them.

In fact the contribution of technology to business relationships was perceived rather negatively. One of the brokers stressed the following aspect of technology *"it [technology] is not protecting the relationship. If anything it is probably serving to fragment the relationship because if you are oversupplied with data then that inevitably gives one less time to maintain and further enhance relationships. Less time to telephone someone and certainly less time to visit someone."*

During the interviews with all the informants an effort was made to investigate whether Internet technology has made business relationships more or less personal, more or less formal and more or less task oriented. The answers are summarised in Table 4 below.

**Table 4 The Effect Of Internet Technology On The Nature Of Business Relationships**

		Personal		Formal		Task-oriented	
		More	Less	More	Less	More	Less
Brokers	John		*	*		*	
	Nicolas		*	*		*	
	George		*	*		*	
Owners	Helga		*	*		*	
	Tobias		*	*		*	
	Alexander		*	*		*	

The informants believed that the Internet had made relationships less personal because e-mails involve typing which is necessarily less personal than talking whether on the phone or face-to-face. The Internet was perceived to have made relationships more formal because it has increased the amount of paperwork involved. According to one of the informants *"writing is always more formal than talking. Any written form needs to be word perfect and whatever is written cannot be easily taken back. Inescapably any written form is more formal than speech"*.

Finally, the informants felt that the Internet has significantly increased, the number of tasks they have to do at any one time. For instance, a telephone conversation needs to be backed up by a fax and, in recent times, by e-mail as well. Furthermore, the information load has increased and any information received needs to be scanned before it is discarded.

The ship owners did not perceive the effect of the Internet on business relationships any differently to the effect of previous technological developments such as the mobile phone. Internet technology seems to be largely conceived as an additional means of communication with an extra function of providing the ability to trace more information that is very cheap but far less personal. All the ship owners agreed that relationships could not be created and maintained solely through the Internet. With respect to this last point one of the informants said, *"I have great difficulties imagining relationships working purely over the Internet. The Internet just lacks that personal aspect that is a prerequisite for a relationship"*.

The brokers suggested that as long as Internet technology is used as a tool to help the development of business formed out of a relationship then the Internet could have a positive effect on relationships. Quoting one of the brokers clarifies this *"using the Internet to trace some information on something that a client of mine has requested and then using the Internet to send this information to my client as quickly as possible will obviously keep my client satisfied. In effect, this satisfaction will positively feedback into the relationship. If, however, I were to use e-mails or any other Internet related communication means on a day-to-day basis to communicate with my client...I doubt that he will be particularly satisfied"*.

The ship owners had serious difficulties imagining how shipping insurance broking could be conducted through an on-line platform. The main reason that they stressed was the risk if a vessel was not correctly insured, which could lead to financial disaster. On-line platforms were perceived as too impersonal for an owner to have confidence that no problems would occur and furthermore there are still serious problems with respect to the trustworthiness of the Internet as a means for conducting business overall. With respect to the trustworthiness of the Internet as a platform for conducting business one of the informants noted: *"It doesn't take a hacker more than 5 minutes to find out what is happening somewhere, such systems can be easily distorted and can be easily misused"*.

The brokers believed that shipping insurance broking could not be conducted on-line because:

- Marine insurance is not mass-produced like other insurance forms such as motor insurance. It is very much customised to each individual owner and to each separate vessel.
- A vast deal of preparation and interaction, which requires specific information, takes place between the parties before a contract can be formed.
- Face-to-face contact is a prerequisite before any dealings take place.

## **Case 2: The Effect Of E-Commerce On Business-To-Business Relationships Between A Chartering Broker And A Ship Owner**

The ship owners did not specify the contribution of technology with particular reference to shipping insurance broking or chartering broking. The results of these interviews are presented above. The views of the chartering broker are provided below.

When the chartering broker was asked about the contribution of technology to the industry he regarded the question to be specific to the contribution of the Internet to the industry and therefore, his answers have specific references to the Internet. He considered the main contribution of the Internet to be the provision of a vast deal of information, which has allowed brokers to provide a better quality job. Through this information a chartering broker is allowed to have more up-to-date information about the market background and its current position. Given, however, that the amount of information provided is very great he believes that there is a general call for research, i.e. for someone to collect all the information, filter it and provide the principals with the most relevant and important information.

The chartering broker felt that the Internet has not had a significant effect on business relationships. He maintains that relationships were well in existence and functioning before the appearance of the Internet and e-mail. He perceives the only contribution of the Internet to business relationships as an additional mechanism for communicating with people.

Two of the ship owners, even though they had never tried on-line chartering, had followed the progress of e-chartering platforms closely. They believed that chartering broking is much too complex to take place only over the Internet. Moreover, beyond the issues of complexity the informants also stressed issues of security and imbalance of power between the two principals. With reference to the first issue the informants perceived that on-line systems could be easily hacked. With reference to the latter issue the ship owners felt that the use of such platforms would leave them at the mercy of the charterers. As one informant said, *"in theory there is complete secrecy and the charterer will not know whose vessel he is about to quote. In practice, however, this secrecy can be easily broken down. It is very easy for a charterer to find out not only whose vessel he is quoting, but also how many other similar vessels the particular owner has around the area."* Such transparency gives charterers the ability to push rates down.

According to the chartering broker, fixing vessels on-line is obviously a possibility since it has been taking place for some time now. However, as far as the informant knows the use of such platforms also involves brokers. He believed that these platforms had not been adopted as widely as expected because they were not functioning properly. They are not secure enough and in their present form they seem to strongly represent the interests of the charterers and not at all the interests of the owners. This obviously makes the owners more reluctant to adopt such systems.

The ship owners and the chartering broker considered that e-chartering had created a serious threat to the chartering brokers as it theoretically allows for the two principals (owners and charterers) to deal directly with each other without the involvement of intermediaries. The chartering broker noted that these platforms were not perceived very kindly by the brokers at their outset because they were claiming that their purpose was to remove the broker which, according to the informant, was a bad policy because it immediately turned the brokers against these platforms. The informant also specified that these platforms have so far failed to produce a working product that will make the charterers, the owner's or even the broker's role a lot easier and with respect to this he said, *"without being able to demonstrate that I don't think that it is going to get the reception it was hoping to get"*.

## **Discussion**

In the discussion below the manner in which the results relate to the research questions generated from the literature review will be presented.

### **How is the contribution of technology perceived by the different parties in the relationship?**

The contribution of technological developments to communications was stressed by all of the informants. This supports the views of Stopford (2002) about the positive attitude of the shipping industry towards technological developments. There was, however, no consensus as to the most important technological development to the present time. Whilst brokers stressed the aspect of availability of unlimited information through Internet technology, which empowers their knowledge of the market (supporting Hollensen, 2001), ship owners placed higher emphasis on continuous communications with the different parties permitted by the use of mobile phones.

This imbalance in perceptions between the two sides could be conceived as indicating the different nature of the two parties involved in the dyadic relationship. A broker needs to be well informed because it is his/her expert knowledge that provides the value which he has to offer to the relationship while the ship owner needs to be in continuous communication with the broker in order to obtain the most recent and updated information. In a sense the broker acts as the eyes and ears of the ship owner in the market that he is operating.

### **How have technological developments affected relationships between the brokers and the ship owner?**

With respect to the affect of technological innovation on business relationships between a broker and a ship owner, the only clear cut conclusion that can be drawn is that as long as the social aspect of the relationships is not removed when new technologies are introduced then the contribution can be either neutral or positive. Brokers feel that technological developments have enhanced the quality of the services

they provide but have not improved relationships. Ship owners, on the other hand, take a more neutral stance and believe that provided sufficient face-to-face contact exists the contribution of technology is not negative although if technology is used as a replacement for face-to-face contact its contribution is perceived to be negative.

These findings suggest that the impact of technology on relationships is not as clear-cut as suggested by Stump and Sriram, (1997). It can be positive, it can be negative or it can be neutral. It follows that the contribution of technology to business relationships may be highly dependent upon the industry in which it is applied and it may also vary according to which side of the relationship one investigates and this is a distinction that theorist will need to consider before drawing clear cut conclusions and making generalisations.

The research findings suggest that the Internet and its applications have altered the nature of relationships rendering them less personal, more formal and more task-oriented. For convenience parties often communicate with each other by e-mail. However, the written word is generally conceived to be less personal than telephone conversations, where audio cues are involved, and certainly less personal than face-to-face contact, where both visual and audio cues are directly involved.

Consequently, the findings of the research with respect to the effect of Internet technology on business relationships seem to be in agreement with those of Leek et al (2000). While the findings of Leek et al (2000) were of a more general nature, i.e. the overall effect of technological applications on the nature of business relationships, the present research suggests that the same findings can be applied to the more specific effect of Internet technology.

The research also suggests that in the shipping industry Internet technology in itself is not used as a means of protecting relationships. Internet technology is seen as a tool, in the same sense as the telephone is viewed as a tool that is used in such a way so as to enhance communications. Contrary, however, to suggestions of Zolkiewski and Littler (2004), in the shipping industry new IT based communication is not used as a replacement for traditional means of information exchange; rather it is used as an additional mechanism. The implications of the last two points are that caution should be used by theorists before they suggest that new technological communications will replace business relationships or even to replace old methods of communication.

### **To what extent are e-commerce policies being introduced in the shipping industry, specifically with reference to chartering and insurance broking?**

The commitment of the companies that took part in the research to integrating e-commerce policies can be considered to be relatively low especially on the part of the ship owners. Out of the five companies that participated in the research only three had a web site and these all were

broking companies. To a certain extent this may indicate the threat felt from the brokers' side of being replaced by on-line platforms. Following Geiger and Martin's (1999) categorisation of the ways in which companies can use the Internet it was found that the implementation of their web sites does not go beyond that of virtual brochures and thus supports Geiger and Martin's (1999) findings that most companies' websites are used as a virtual brochure. The results also support the findings of Deeter-Schmelz and Kennedy (2002) about the continuing influence of traditional marketing communication tools in business-to-business markets. The results are also contrary to Sharma's (2002) suggestion that by embracing Internet technology companies can outperform their rivals who do not.

In retrospect, another explanation for the non-application of e-platforms on shipping insurance broking could be the amount of trust assigned to each kind of broker. These findings, therefore, support one of the main ideas of the IMP group, which suggests that the main reason for increased interaction between companies in business-to-business markets is the need for security and reduced risk (Ford 2002). Additionally, they also confirm the concerns raised by Berrill (2001) that relate to privacy and security.

The findings of the research are also in line with those of Leek et al (2000). They suggest that the advent of new technology has decreased the frequency of face-to-face interaction between individuals in companies, making the resolution of problems difficult, increasing uncertainties and making relationships more difficult to manage. Therefore, future theory on the application of e-commerce should pay close attention to the level of risk involved in business conduct before suggesting the removal of the personal aspect and its replacement by impersonal on-line platforms.

## **Conclusions and Managerial Implications**

The research indicated that high levels of importance are placed on the social aspects of a relationship with the individual brokers with whom the ship owners deal. Trust is directed toward the person with whom the ship owners deal, not toward the company. Hence, managers must remember the centrality of trust when they are dealing with buyers either face-to-face or via the Internet.

The findings indicate that e-commerce has had an effect on business-to-business relationships between a ship owner, a chartering broker and a shipping insurance broker respectively. Internet technology is recognised as an additional enabling means of communication and as a valuable source of information that can allow a broker to provide a more efficient service. The better the service provided becomes, the closer the relationship. If parties are satisfied they engage in repeated business, repeated business means increased interaction and increased interaction brings the two parties closer together. As an enabler of informational and communicational improvements Internet applications have a positive effect on business relationships between a ship owner and the two kinds

of brokers. Hence, managers need to recognize the benefits of using technology as a tool.

Internet technology in itself may not be able to function as an intermediary in shipping because it is lacking the direct human element that ship owners require. It has, however, additional values to offer. It offers speed and it offers more information. These values need to be recognised by the brokers and Internet applications will have to be incorporated into the traditional role of the broker. Therefore, it appears as if in the shipping industry the application of Internet technology is going to be realised in improved ways of performing old functions rather than in the creation of totally new products that have totally new values and which threaten previous technologies, products and service providers.

The findings reinforce our understanding of the critical role of communication in developing, maintaining and enhancing the social bonds formed during personal interaction in business relationships. They also strengthen the evidence for technology being recognized as an enabler of communication rather than a replacement of personal interaction and trust as a means for doing business. Hence managers need to remember not to neglect traditional marketing communication tools and to consider the wider impact of technology, for example how it impacts on both sides of a relationship or indeed throughout the whole network in which they operate.

Finally, we return to our initial question as to whether the changes in the business environment brought about through the Internet in particular or technology in general mean that we need to develop yet another marketing paradigm. We would suggest that our findings show that business relationships and networks (supported by technology) are still paramount in this market (as they are in many others). Hence, both academics and managers need an understanding of how technology impacts upon the dynamic nature of relationships (given the caveat that they recognize that relationships are not always warranted or needed). They should also recognize that technology is a tool (not the master) and consider how it can be used to gain competitive advantage and enhance existing strategic relationships (whilst still being aware of the changing dynamics that may result from its implementation by existing and emerging competitors).

## **Limitations of the Research**

First of all, the number of companies and the size of the companies involved were limited and the views of the informants that participated in the research need not necessarily be representative of the overall view that exists in the shipping industry about Internet applications and e-commerce. Secondly, the research focused only on the one side of the supply chain and the intermediaries involved. The other end of the supply chain, i.e. underwriters and charterers were not part of the research. Including their views in the research could have lead to the formation of entirely different conclusions not to mention that it would have enabled the research to obtain a more complete form.



Additionally, because of the exploratory nature of the research it is recognized that these findings cannot be generalized more widely, simply that they form a good basis for further research.

### **Areas For Further Research**

It should be noted that the above-mentioned limitations of the present research are also areas that should be considered in future research. In other words, it is suggested that further research in the shipping industry is required. Research could also be broadened out to cover other industries and markets with a view to further understanding the impact of technology in business markets.

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