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Research article

Managing expectations and benefits: a model for electronic trading and EDI in the insurance industry

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Abstract
This paper investigates the role of insurer and broker expectations in achieving long-term benefit success from electronic trading in the insurance industry. The paper highlights the importance of intra- and inter-organisational expectations with the implementation of electronic data intercharge, as a major electronic trading initiative within the insurance industry. A benefits management model is conceptualised to explore the effects of competitive stimuli and depict the technology management response of insurers and brokers within the case study. The model highlights the importance of managing benefits and expectations in developing long-term partnerships for the successful implementation of electronic trading. The technology management response among key stakeholders and the roles of communication, coordination and support during the implementation phase are also discussed. Finally, a number of lessons are recommended, which should be of use to practitioners and concluding remarks indicate areas for future research.
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Introduction

While recent attention within the information systems (IS) research community has focused upon the impact of the internet for e-commerce, there still remains an opportunity to research, reflect and learn from the implementation experiences of the more traditional forms of electronic trading, such as electronic data interchange (EDI). Emmelhainz (1990) referred to EDI as the inter-organisational application-to-application exchange of business documentation in a standard automated way between trading partners. Cunningham and Tynan (1993) viewed EDI as a subset of a wider electronic trading phenomenon and having far reaching commercial implications:

> any trading relationship which relies upon the use of computer technology for inter-organisational communications, normally (but not necessarily) involving telecommunication links. Electronic trading systems exploit information technology capabilities to improve the efficiency of communications and/or functionally alter the nature of inter-organisational transactions. (Cunningham and Tynan, 1993: 4)

Cunningham and Tynan (1993) suggested that the less complex term 'electronic trading' was much a better way of conceptualising the changing role of inter-organisational systems (IOS) such as EDI. For example, in the retail and manufacturing sectors, EDI has represented the major electronic trading initiative, which has enabled changes to inter-firm coordination and logistics in vertical markets between organisational buyers and their upstream suppliers (Bakos, 1991; Weber and Kantamneni, 2002). In the financial services sector, EDI has enabled electronic markets to flourish, which allow buyers and sellers to transact business in a quicker and less costly manner, as well as generate more accurate and timely business information (Bakos, 1991; Barrett, 1999).

Interestingly, even though there have been numerous research studies to date illustrating the supposed enabling

benefits from electronic trading, the complex issue of how organisations actually realise those benefits when implementing EDI is far from clear (Jones and Beatty, 1998; Chatfield and Yetton, 2000; Weber and Kantamneni, 2002). Even though newer internet-based EDI systems have pervaded the marketplace, many traditional EDI systems using value added networks still exist in retail, manufacturing and financial services sectors as the stable form of electronic trading, dealing with high volumes of daily transactions between key trading partners. Developing a deeper understanding of the benefit success associated with existing forms of EDI should help greatly in our knowledge and understanding of the managerial and organisational issues associated with the adoption of new electronic trading platforms.

Within the electronic trading benefits literature, there have been a number of motivating factors in the form of competitive stimuli from the external environment, or streamlined internal logistics that have led to the adoption of electronic trading initiatives. In addition, there have been a proliferation of benefit classifications including, 'opportunity' benefits and 'intangible' benefits (Dearing, 1990). To add further confusion, there are a large number of 'direct' and 'indirect' benefits, whose effects are difficult to measure, yet, have been found to be associated with the competitive enabling capabilities of EDI technology (see Benjamin *et al*., 1990; Bergeron and Raymond, 1992; Banerjee and Golhar, 1994; Jones and Beatty, 1998; Weber and Kantamneni, 2002).

We argue that most motivating factors and benefit classifications for electronic trading are somewhere between: (a) the lower order, operational motivating factors and benefits, relating to internal competitive stimuli and advantages resulting from streamlining daily trading activities, as well as; (b) higher order, strategic motivating factors, or external competitive stimuli and benefits as a consequence of better trading relationships between key inter-organisational partners (Reekers and Smithson, 1994). Generally, the 'direct' benefits reflect the 'operational' classification in Table 1 and the 'indirect' benefits reflect the more 'strategic' classification (see Table 1).

While many benefit studies have highlighted the different types and classification of motivating factors and benefits from adopting EDI and electronic trading, little is still known about the inter- and intra-organisational processes of how these benefits, especially the more strategic benefits, are realised in practice (Massetti and Zmud, 1996; Reich and Benbasat, 1996; Chatfield and Yetton, 2000).

Many authors suggest that success from electronic trading would constitute the mutual realisation of a high magnitude of strategic and operational benefits being shared among key trading partners over the long term (see Cunningham and Tynan 1993; Riggins and Mukhopadhyay, 1994; Chatfield and Yetton, 2000; Maingot and Quon, 2001; Mukhopadhyay and Kekre, 2002). However, it has been consistently reported that these longer term partnership benefits are not being mutually realised for a lot of companies in the UK (Reekers and Smithson, 1994; Cox and Ghoneim, 1996; Premkumar *et al*., 1997; Barrett, 1999; Morris *et al*., 2003). Indeed, Morris *et al*. (2003) suggest the main reason for EDI adoption in the UK is still trading partner coercion on the part of the major buyer/

Table 1 List of motivating factors and realised benefits for electronic trading

Motivating factors/competitive stimuli	
Strategic factors	*Operational factors*
Better communication with trading partners	Quick response and access to information
To be competitive	Increase accuracy of data
Better customer service	Reduce cost
Request of trading partner	Improving order processing
Meet industry standards	Increase productivity
Reduce stock	Reduce paperwork
Increase sales	Improve delivery
Improve product/service quality	Reduce number of employees
Improve technological leadership	Improve planning
Realised benefits/competitive reward	
Strategic benefits	*Operational benefits*
Better customer service	Improved speed of communication
Gained competitive advantage	Reduced clerical error
Improved vendor relationship	Decreased administrative and clerical cost
Improved data sharing	Improved control over data
Improved customer loyalty	
Decreased inventory cost	
Increased sales	
Increased technological leadership	

Adapted from Weber and Kantamneni (2002), Reekers and Smithson (1994).

seller and that EDI merely serves to strengthen existing underlying power relationships and imbalances between trading partners.

Realising the benefits from electronic trading and EDI systems has traditionally been associated with variables relating to the effectiveness of the 'implementation capability' (Pfeiffer, 1992; Swatman and Swatman, 1992; McGowan, 1994; Galliers *et al*., 1995; Angeles *et al*., 2001):

- Degree of top management support
- Presence of champion
- Third party network/VAN support
- Extent of business process/network redesign
- Quality of audit and review process
- Extent of user training
- Extent of pilot testing among trading partners
- Degree of communication and support between trading partners
- Degree of systems integration and diffusion

Some recent studies highlight that social and organisational issues also contribute to the success of electronic trading. For example, Lee and Lim (2003) noted that the extent of trading partner trust, interdependence and commitment affect the success of EDI integration and mutual performance. Other studies have investigated the role of 'IS expectations' and how they can affect project success over the long term (Staples *et al*., 2002; Au and Kauffman, 2003). For example, Szajna and Scamell (1993) highlighted the need for greater research into the understanding of the causes and effects of unrealistic expectations from the adoption of IS. Ward *et al*. (1996) reported that as many as 50% of IS projects have been oversold at board level in order to get initial project approval and that many purported benefits were unrealisable in practice. Staples *et al*. (2002) believed that unrealistic expectations will cause weak a benefit return from IS projects. Staples *et al*. (2002) advocated that creating and maintaining realistic benefit expectations among all IS users will be an important concern for the longer term.

Kettinger and Lee (1997) suggested in MIS Quarterly, the future roles for IS user satisfaction research should be to (a) determine how specific tactics of expectations management affect IS user expectations levels; (b) develop understanding of where the optimal level of IS expectations management should be; and (c) examine whether overzealous management of expectations has negative effects on individuals and firm performance.

Understanding the impact of commercial expectations and IT implementation issues among buyers and sellers is particularly complex when dealing with electronic trading. Clemons and Row (1993) observed several weaknesses of electronic trading and inter-firm integration because of the profound differences in commercial objectives and expectations of different parties in the supply chain. Barrett (1999) reported similar findings in relation to failures in the London insurance industry, suggesting that low levels of electronic trading success were as a consequence of the different expectations and cultural assumptions among the various stakeholders. Barrett concluded by stating that if there were incongruent assumptions and expectations about electronic trading, they must be identified and reconciled early otherwise commercial failure would be the eventual result.

Aims and rationale for the paper

This paper aims to discuss the development of a benefits management model to study the factors that influence the expectation and realisation of benefits from electronic trading within the insurance industry. Using the experience of insurers and brokers, the paper investigates the issues that have affected the nature expectations and realisation of benefits from the implementation of EDI.

The process of formulating expectations is an intangible process to analyse. In addition, finding suitable mechanisms for practitioners and researchers to measure expectations prior to adoption and after implementation is also difficult (Galliers *et al*., 1995). Disconfirmation of expectations theory predicts that unrealistically high expectations from an IS will result in lower levels of perceived benefit than those associated with realistic expectations and that creating and maintaining realistic expectations of IS benefits is important for adopters (Staples *et al*., 2002). Therefore, it is valuable for researchers to better understand the process of formulating and communicating expectations within an inter-organisational context and this paper will explore some of the major issues.

Methodology

The study is part of ongoing research from the late 1990s to 2003 concerning the role of expectations and inter-organisational systems performance. This early study consisted of 15 semi-structured interviews and several informal interviews conducted with four major insurers and six key brokers. The companies chosen were the largest insurers and brokerages with a priority and volume of electronic trading performed via EDI. Interviews were conducted and relevant documentation gathered. This rich insight allowed the authors to better understand how IS expectations interacted with organisational behaviour (Babbie, 1998). As the sample size is small and concerns only one industry sector, there is no attempt to provide any statistical recognition to support any of the assumptions made. However, findings from this study do help conceptualise the importance of expectations and benefits management among key participants, as radical change enabled by electronic trading, transformed the fabric of inter-organisational transactions within the insurance industry. Informants were mostly senior business managers who were deemed the most knowledgeable sources concerning the performance of electronic trading within their own company, or branch of their business. Usually, two managers (technical and non-technical) were involved from each company. Senior business managers were chosen because of their involvement at the strategic level and their ability to take an overall view of the firm. Interviews typically lasted between 1 and 2 h. All the informants were present, or involved in the adoption and implementation of EDI and represented the views of their companies regarding electronic trading.

During the interviews, detailed information was collected on a range of issues from insurers and brokers including

(see Scala and McGrath, 1993; Cox and Ghoneim, 1996; Kumar and Crook, 1996):

- Background to the company
- Electronic trading profile
- The reasons for adoption
- Competiveness and industry analysis
- Expectations, benefit analysis and partner relationships
- Views concerning the role of trading partners and external stakeholders
- Prior experience with electronic trading, EDI education and awareness
- Degree of communication and support between partners
- Technical expertise, staff training and technology management culture
- Degree of internal and external diffusion of electronic trading
- Presence/absence of organisational and technical problems.

Content analysis after interviews reviewed the above themes, addressing ideas and opinions that related to commercial and technical expectations and the ability to realise those expectations. The model which was developed after analysis attempts to provide a conceptual understanding of the different factors contributing to the formulation of benefit expectations and benefit realising capability within the insurance industry. There was an attempt during each interview to discuss perceptions of commercial expectations and perceived levels of realised benefit via a self-assessed rating instrument, adapted from technique used by Fearon and Philip (1999). An analysis and discussion of those assessment ratings *per se* are beyond the scope of this particular study. Rather, informant comments concerning the nature of commercial and technical expectations, as well as conceptualising the process of how benefits were realised are the main focus, culminating in the benefits management model and subsequent discussion.

Discussion – the benefits management model

The findings from the case led to the development of the benefits management model as outlined below (see Figure 1). The model and discussion is helpful to researchers because they explore the role of commercial and technical expectations during the adoption and implementation of EDI.

The starting point on the benefits management model is the competitive stimuli and formulation of expected benefits. EDI adoption is commercially and rationally motivated (see Au and Kauffman, 2003), created by competitive stimuli, or rational opportunities and threats from progression of technology trends in the environment, principally from the actions of first mover insurers seeking to win market share, and a secondary desire to improve internal logistics and reduce operating costs with key brokers through the adoption of EDI.

These competitive stimuli have a direct impact upon the formulation of commercial expectations forcing internal management and decision makers of the company under study to respond in either a proactive or reactive manner. Being proactive, implies that in-house commercial and technology managers have the ability to understand and exploit the potential market opportunities from IS, by combining internal knowledge and resources with an IS competency based upon implementation experience and sufficient EDI support from external stakeholders in the

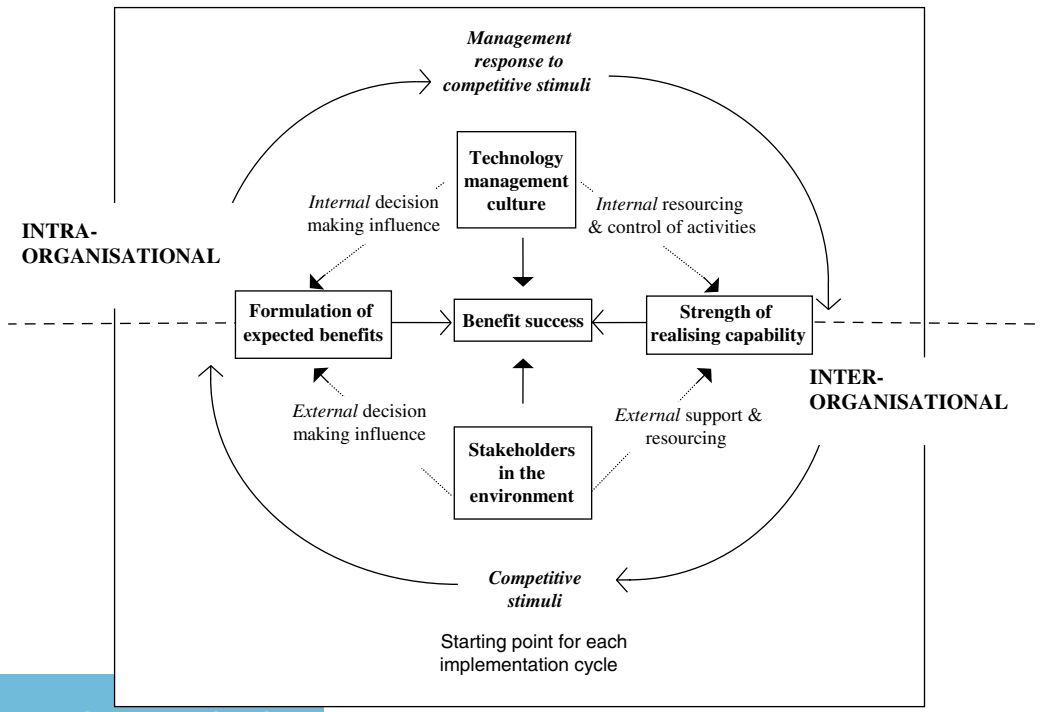

Figure 1 The benefits management model.

environment including trading partners, software houses and trade associations (Philip and Booth, 2001).

A proactive technology management response in conjunction with information from external stakeholders helps formulate a surrogate or approximate level of benefit expectation, as well as identifying resource capabilities for the implementation phase to realise the anticipated benefits. A proactive technology management culture will possess sufficient internal people, skills and communication mechanisms to inform effective decision-making concerning commercial targets and implementation plans among buyers and sellers. A proactive strategy seeks to elicit relevant advice and support from external consultants, industry bodies and trading partners in order to formulate realistic expectations about the project (see Au and Kauffman, 2003). A proactive response will have an effective strategy for communicating plans, liasing with software houses, trading partners and gaining the necessary support during the implementation phase.

The following sections and recommendations will support the above assertions and the processes within the benefits management model in the context of the case study and supporting literature.

Competitive stimuli and management response of insurers

The expected benefits and motivating reasons for companies adopting EDI were as a consequence of strong competitive stimuli to exploit IOS-enabled opportunities from a fast changing environment. EDI offers the ability to make operations more cost effective through the redesign of antiquated inter organisational trading practices (Bakos, 1991; Venkatraman, 1994; Bensaou and Venkatraman, 1996). As insurer 2 stated when referring to a comparison between the old manual and new EDI systems:

> …Not only is there a lot of manual work [manual system], but there is a lot of duplication. The broker keyed information onto his system for his purposes and when it came to ourselves, when we were satisfied that all our relevant information was already there, we then keyed the information into our system. This is an old antiquated manual system, it is disgraceful, it led to an increase in costs which someone had to pay for. The industry then looked for some way of importing the information from the brokers system down to our system without re-keying.

Insurer 1 believed:

> …EDI was seen as the way forward, it would enable us to perform our business more quickly and that was our number one priority. It would provide us with an all round better service.

At first, there were only a few key players responding to EDI opportunities, however, as time passed other insurers have began to push strongly for EDI when the implications for electronic trading-enabled opportunities became clear. The role of EDI technology within a relatively small marketplace served to differentiate between those who were interested in making profit by gaining greater cost efficiencies and building strong partnerships through personal line insurance and those who wished to concentrate upon other forms of commercial and household insurance.

As electronic trading and EDI developed over time, insurer bargaining positions steadily strengthened, so that they were in a position to build long-term partnerships with the larger and more proactive broker houses. The economies of scale effect allowed higher volumes of more profitable trading between the larger insurers and brokers (Mulligan and Gordon, 2002). At the same time, divestment strategies were being used with the smaller brokers with whom business was not so profitable. In effect, an industry shake out was occurring so that personal line markets, especially motor insurance, could become more lucrative.

The reputation of electronic trading for promoting greater competitiveness and deriving cost benefits was very well known among the top insurers who had developed products in the UK (Zaheer and Venkatraman, 1994; Barrett, 1999). The desire to be leaders rather than followers provoked a strong sense of urgency in the management response strategies among insurers within the sample. New EDI products were expected to arrive on the market place as quickly as possible, in order to remain competitive with industry rivals. As a consequence, most expectations of what EDI could deliver during a single project were unrealistically high. Also, most insurers were trying to adopt similar EDI strategies in the late 1990s with the same range of brokers and software houses, all within a short development time.

Competitive stimuli for brokers and their management response

The main stimulus for EDI adoption among brokers was not initially based upon seeking an opportunity, rather the avoidance of a major competitive threat. There was evidence to suggest that implicit mandatory pressure was used by some insurers in order to induce brokers into adopting EDI technology. As broker 4 mentioned:

> …We started using EDI as a matter of self preservation, we saw that if you didn't use it you could no longer function.. we were forced into using it in a way. It had no real significant savings for us, 95% of savings accrue to the insurance companies… so, there were no real benefits, they all go to the insurance companies.

Broker 3 firmly advocated:

> we introduced EDI because the insurance companies wanted it, no other reason.

The arrival of EDI roughly coincided with the advent of direct insurance, or direct writers. These were another form of insurance service offered by the large insurers in a bid to provide a more competitive service to the consumer. The effect of the extra business segment was to increase competitive pressure upon brokers, so that they would respond by committing to the latest forms of electronic trading technology, in order to satisfy the requests of insurers. Broker attitudes varied regarding the adoption of

electronic trading technology. Some had viewed electronic trading in conjunction with broker mergers as the only way to compete cost effectively, especially when price margins for most insurance products were being severely eroded because of a saturated insurance market. Others had viewed the decline of the broker in motor insurance as inevitable. They argued it would only be a matter of time before direct writers and the larger brokers, who have the advantage of greater economies of scale, would dominate the main market segments. However, heavy investment by brokerages in electronic trading technology was regarded as an overall sign of good faith by insurers, thus indicating broker commitment to IT, which would supposedly ensure their competitive survival in a changing marketplace.

Commercial expectations affecting benefit success

Expectations in the context of this study are important because they illustrate, the quality of management knowledge and decision-making concerning how and why EDI developed for participants within the study. The most notorious examples of the impact of benefit expectation are usually when they have been overestimated, and subsequent IT reviews have highlighted the management of expectations as a clear a source of concern (see Senn, 1992; Cox and Ghoneim, 1996; Barrett, 1999). Previous studies have shown that external stakeholders such as vendors and consultants have had a tendency to oversell information technology, thus making the intended benefits unrealisable in practice (Holmes and Poulymenakou, 1996; Ward *et al.*, 1996; Staples *et al.*, 2002).

Evidence for unrealistic benefit expectations created by insurers

In terms of benefits management for brokers, there was a prevailing belief that insurers initially promised unrealistic competitive products, in order to encourage widespread EDI adoption. However, as time passed many brokers adopted the technology because not doing so would have meant losing insurer custom. Many brokers believed that the original competitive opportunities first mentioned to them by insurers were strongly overexaggerated as an inducement towards EDI adoption. As broker 1 noted:

> …We were told we would have EDI products that would compete with direct writer insurers, that didn't happen. The rating incentive is better than we had [under manual system] but not as good as direct writers…'

Broker 5 stated:

> …We expected more commission to be passed to the broker. We were given false expectations, after all we are keeping the bulk of paper storage now and we would expect some savings.

Broker 3 noted:

> …there was a lot of publicity at the time, but ultimately, we were given lower than expected commission rates.

The perceived unfair advantage was because brokers under the new EDI system performed the keying of customer information, which was previously also a task for the insurance companies. They also stored the written proofs of customer insurance documentation for up to 7 years, which provided a huge demand on back office space for some brokers. However, sustainable benefits in terms of discounts and commission for EDI products were short-lived. As soon as a critical mass of EDI users came on-line, then these discount and commission benefits provided negligible advantage, as everyone qualified for their exploitation. More significantly, some brokers were led to believe that using EDI for motor-based products would stem the flow of competing direct writer schemes. As broker 4 believed:

> …EDI gave us an advantage over brokers who didn't use it, it did not give advantage over companies who did use it.

The bargaining position of insurers had also increased because of the entry of direct writers. This led to a competitive frenzy among the main brokerages as they began to compete for losing market share. Broker 5 mentioned:

> …it is a cut throat business now, everyone is undercutting everyone else….there is a lot of broker merging… as more clients are now going to the direct insurance companies.

Indeed, four of the insurers stated that they had plans to reduce the number of brokers with whom they traded.

Unrealistic expectations affecting the (benefit realising) implementation capability

The benefit realising, or implementation capability concerns the effectiveness of the more commonly reviewed project management activities that are associated with EDI and electronic trading. These activities include: redesigning current administration systems; designing, testing and reviewing new systems; and being able to integrate with existing IT platforms (Swatman *et al.*, 1994; Galliers *et al.*, 1995; Cox and Ghoneim, 1996; Jun and Cai, 2003) ensuring participative communication and support EDI between trading partners (Premkumar *et al.*, 1997; Barrett, 1999) ensuring adequate levels of technical expertise and end-user training (McGowan, 1994).

Insurer experiences with managing their implementation capability

Insurer 1 believed that some commercial expectations were not realised because of underestimating the implementation effort required to design a robust system to deal with the high volume of new trade from brokers. Extra staff had to be employed because of the additional work that underlying platforms could not cope with, given the short time frame by which all new business EDI (i.e. 1st implementation cycle) had to go on-line.

Insurer 1 affirmed:

> …We have received the benefits so far as service goes and that we can issue our policies and issue documenta-

tion very quickly. We can also receive the benefit as far as changing our rates are concerned, we can follow market trends very quickly… We have not seen the benefit in staff reduction that we expected. In fact we had to take on more staff. Three years ago I would have looked around my department and expected to have been working with half the people. Instead I'm working with twenty plus people and looking for another two or three.

The business manager further suggested that:

…We are testing new systems at the moment but the limitations as far as EDI has been concerned hasn't been the brokers systems, they have been our own internal systems.

According to insurers, the main software houses had also given the impression that there would be no problem with running EDI for delivering software according to insurance company specifications. For example insurer 2 stated:

…We were disappointed by the response of the software houses with delays in developing, the accuracy of the software… so we were a bit disappointed with the amount and effort and working time we had to put in, to get it right… The quality of their work sometimes left a lot to be desired…

A significant problem for some insurers had been the over-inflated expectations created by consultants about what the IT platforms could deliver, as well as the time period it would take to set up effective EDI networks. However, the sense of urgency for exploiting the new competitive opportunities from the EDI had in turn created an overwhelming management response from a number of insurance companies at the same time. The consequence was that software houses had quickly become inundated with demands for new EDI software. The insurers and brokers also had to quickly come to terms with the technical and business process changes required to make these new EDI products work.

Broker expectations and their implementation capabilities

Brokers also relied heavily upon the performance of the software houses. As broker 1 mentioned;

…the technology is moving so fast… At first, it took approximately 9 months to get EDI products tested and rates guaranteed so that they could go live.

The situation had subsequently improved during later EDI project cycles (full cycle and mid-term adjustments) with the time to market waiting time down to 6 weeks. There was a belief that software was initially slow to emerge on the market because (broker 1):

…Insurers aren't bothered, they have the new business that they want and it is so competitive now that they can do what they want. The business margin used to be around £30 [per transaction], now it is around £10.

Another problem concerned the level of investment required to make EDI systems work. Brokers 1, 3, 4 and 6 experienced concern at the level of ongoing investment required for system upgrades which were not originally expected. This was also cited as a common complaint among brokers which three of the four insurance companies were aware of. Also of great significance was the entire issue of training. As broker 1 stated:

…Software houses could have done a lot more on the training side….EDI couldn't take vehicle registrations into account, for example…EDI regarded them as personalised number plates…these silly things were very irritating. Before you realised you hadn't been told, you didn't know whether the problem was a software problem, or lack of knowledge on our own part, or something insurers hadn't realised.

It must be noted that according to insurers and brokers alike, the software houses have since improved the quality of their services substantially, but the central complaint on the part of the brokers, who are now more EDI educated and experienced, is for increased provision of training, which is fast and efficiently delivered. Insurer 1 believed that introducing computer-based training would have been advantageous in this regard.

Insurer technology management experiences

Managing expectations takes time to get right. At first, some insurer expectations appeared to be unrealistic in relation to speed of development, as well as, underestimating the inter-organisational complexities associated with EDI technology. For insurer 4, underestimating the implementation, or benefit realising capability did not happen, because problems were better anticipated and there was more time to develop products through extensive testing and full software house support.

Having experienced very few problems, Insurer 4 stated:

…Our EDI is very successful in that we are leading the way and working very closely with the software houses. Unfortunately, there are always teething problems, for example, where the rate may be wrong in the system and you have to go back and [manually] change it.

She went on to add that achieving successful EDI was a matter for careful planning and pilot testing, well in advance of starting operations:

…EDI was a process of getting everyone on board, particularly senior management. Making EDI a product of the overall company's strategy was difficult, but they did see that it was the way forward for our industry.

Management teams learned from the frustrations experienced within the first project cycle (i.e. new business). The 'benefit realising capability' became an aid to learning during subsequent project cycles (i.e. full cycle and mid-term adjustments), compensating for weaknesses encountered during the first project cycle. As each implementation

cycle passed for insurers and brokers, the degree of systems integration increased (Markus *et al*., 2000). There have also been attempts to 'shakedown' (see Markus, 2004), or deal with implementation problems as they arose. For example, insurer 2 decided to invest heavily in EDI help desk and support staff to deal with broker queries, a function originally performed by software houses. Insurers, brokers and software vendors should learn from their experiences for the next project, or implementation cycle (Huang *et al*., 2003).

Another feature of the insurer technology management response has been trying to anticipate the reaction of brokers as trading partners before a new EDI product is launched. For example, insurer 4 recalled:

> …it was difficult to persuade brokers to invest in EDI, so, it [EDI] was a major investment in them. We had road shows, we brought brokers along various training documentation.

As the hurdle of persuading brokers to use the technology passes and investment in hardware and software products continues, insurer 4 believed:

> …when they come to see the benefits of full cycle [ie. the next major implementation cycle], convincing them is not going to be a problem, because as there is an EDI culture already built, they will be very used to doing EDI.

Broker technology management experiences

Once EDI was initially introduced, the more technology proactive brokers believed that this was the future strategy for the entire industry and began co-operating with insurers in order to remain competitive. For brokers who couldn't make this change, the future was more bleak. As broker 4 pointed out:

> …the technology has presented a problem for smaller brokers, if they don't use it and co-operate, they are finished, insurance companies simply won't accept their custom.

What was an initially reactive stance among some independent brokers has subsequently developed to one where an awareness of the opportunities meant they viewed the competitive stimuli in a more proactive light. As the successful broker 2 noted:

> …if the broker has a good business strategy using IT and has a more personal service and can operate more exclusive deals, then we can keep customer loyalty, we do not fear direct writers as other brokers do.

Once the initial project cycle (new business) had passed, some brokers found that if they were more proactive, benefits accrued from greater economies of scale, if they merged to form larger brokerages. Brokers were aided by the development of marketing groups that promoted rates more attractive for smaller brokers trying to compete. Industry initiatives such as Polaris were also being sponsored by insurers and brokers to reduce the controlling power of software companies by making EDI products much less complex to rollout and easier to maintain.

Recommendations – lessons for technology managers

Based upon evidence from this study and relevant IS literature, the following recommendations can be made:

- *Promote education, training and communication mechanisms.* Think about communicating knowledge with trading partners to build education and trust about the benefits and problems of implementing electronic trading (Kumar and Crook, 1996; Lee and Lim, 2003). The successful insurer 4 believed in road shows and training documentation for bringing brokers along. Broker 1 believed:

  > …Software houses could have done a lot more on the training side…initial training didnt explain that EDI would be different for every insurer…problems that should have been identified in training were not.

  Participatory decision-making and communication between all parties are vital to the success with the implementation of EDI (Hausman and Stock, 2003).

- *Avoid a hasty management response.* If an implementation failure occurs through hasty network planning, it could prove very costly in the long term regarding falling market share and company reputation (see Farbey *et al*., 1995). For example, insurer 3 tried to implement EDI very quickly in order to avoid being left behind in the market place. However, insurer 3 believed rushed expectations from EDI development created quality problems after implementation:

  > …It was a mess in the beginning..where the broker had committed policies but the insurer could not find them. It [the fault] was all to do with not enough testing. Maybe our expectations were too rushed…But we are getting to the stage now where it works fine.

  While a frenzied response among one's competitors may urge the necessity for adopting electronic trading quickly, this will be eroded over the longer term anyway as electronic trading becomes the norm (Bakos, 1991; Clemons and Row, 1992). Therefore, it is better to take time to test and integrate software and systems properly.

- *Promote a learning and proactive technology management culture.* If internal knowledge and experience is weak it can be more prudent, as insurer 4 noted, to wait and learn from the experience of others:

  > …The later entrants have learned from our mistakes. I think when you are trying anything new, it is trial and error and you know you have a lot of working at it. Once it's right then other[competitors] come on board and it is easier for them, as they learn from you.

  If there is a weak internal knowledge, then get external help from consultants or industry associations, thus improving education and awareness, with less risk of an implementation failure.

- *Avoid overexaggerated competitive expectations.* If competitive promises for EDI followers are overexaggerated by EDI initiators, as an inducement towards initial electronic trading adoption, followers will comply in the short term, but will simply lose trust over the longer term (Riggins and Mukhopadhyay, 1994; Webster, 1995; Morris *et al.*, 2003). Broker 1 noted:

  > …There was a lot of competitive hype, but there was a lot of problems with the technology…companies were slow to provide EDI products and training.

  Broker 2 also felt aggrieved over expected commercial benefits:

  > …We did anticipate a discount, policies are cheaper to produce with EDI that without, the savings however, were passed on to the customer and did not come to us.

  Staples *et al.* (2002) noted that low expectations rather than high increase the chances of successful IS adoption as users are likely to perceive the system more useful and easy to use.

- *Gain top management commitment.* It is important for electronic trading network initiators, as opinion leaders, to increase both the management education and commitment concerning electronic trading (Kumar and Crook, 1996). As insurer 4 noted:

  > …I think we have been so successful because we have had top management behind it. It was our strategy and we all know that.

- *Plan closely with software houses as strategic partners.* Most literature agrees that systems integration is vital for EDI (Galliers *et al.*, 1995; Lee and Lim, 2003). This means that trading partners must work together with each other and the software implementers as strategic partners. For example, the successful insurer 4 noted:

  > …Our EDI is very successful in that we are leading the way and working very closely with the software houses.

  In effect, software houses become a strategic partner in the development of inter-organisational projects.

Conclusions

This exploratory paper investigated how the insurance industry had adopted EDI as their major electronic trading initiative. A conceptual benefits management model and discussion reviewed the importance of expectations and experiences of insurers and brokers as they dealt with competitive stimuli and implementation issues. The authors realise that merely imitating an electronic trading technology by industry rivals will not reap competitive benefits as ultimately these are eroded over time (Bakos, 1991; Clemons and Row, 1993). Creating and communicating realistic expectations may improve the knowledge of EDI initiators and followers, so that all trading partners can have a better shared understanding of what the technology can deliver and how to overcome problems.

Studies have shown that the network externalities effect increases the magnitude of benefits as the number of companies participating in an electronic trading network grows (Riggins and Mukhopadhyay, 1994; Webster, 1995). However, recent research highlights that strategic benefits associated with EDI-enabled relationships are not being realised for a lot of companies in the UK (Reekers and Smithson, 1994; Cox and Ghoneim, 1996; Premkumar *et al.*, 1997; Barrett, 1999; Morris *et al.*, 2003). This case study has demonstrated that some brokers initially reacted against the adoption of electronic trading. Broker 3 for example, believed that they were forced into using EDI by the larger insurers. However, as insurer 4 and broker 2 noted, there has been an increased realisation that a proactive technology management response regarding electronic trading relationships is the only way forward for all stakeholders in a fast changing industry.

The authors believe that a greater understanding of the nature of trading partner expectations and how benefits are realised can help achieve better long-term trading relationships. This was an exploratory paper which investigated the major issues associated with formulating expectations, as well as, the benefit realising capability. In terms of future research, it is hoped that the process of formulating IS commercial and technical expectations can be investigated in greater depth in order to increase our understanding of key actors, influences, processes, behaviours and decision-making variables.

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