

ICT IN BUSINESS: E-COMMERCE AND ITS STRATEGIC MANAGEMENT

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ABSTRACT

ICT in business is used in Administration, Invoice, Communications, E-mails, Finance, Accounting, Business Plan, Financial forecasting, Auditing, Market analysis, Research, Recording, Transaction, E-Commerce, Shopping 24/7, Global Market and E-marketing. Across the past twenty years the use of ICT has fundamentally changed the practices and procedures of nearly all forms of endeavour within business and governance. This paper deals on preliminary findings from a wider and more in-depth study organisations from different sectors that have successfully introduced e-commerce initiatives. The research adopted a case study approach, within which a questionnaire was administered. The findings suggest that the importance of the sector and environment of the organisation in determining their perceptions of e-commerce.

KEYWORDS:*E-commerce, ICT, Strategic, tangible benefits, intangible benefits, knowledge.*

INTRODUCTION

When the use of ICT and internet all over the world started growing at an explosive pace, the Government of India took note of human resource and market potential that India possessed and decided to promote the Information Technology (IT) Industry and IT application in a big way.

Computers came to India in 1959 but were slow to catch on because of resistance from workers fearing loss of jobs. In course of time, the advantages became apparent. National Informatics Centre (NIC) was set up under the Electronic Commission. NIC has developed IT industry in India and computer applications in various area of the business and management.

ICT (Information and Communications Technology) is often used as an extended synonym for information technology (IT), but is a more specific term that stresses the role of unified communications and the telecommunications (telephone lines and wireless signals), computers as well as necessary enterprise software, storage, and audio-visual systems, which enables users to access, store, transmit and manipulate information.

E-commerce was first introduced as a concept with great enthusiasm, with exhortations that it would change the world, and many organisations were led to believe that they had to embrace this new world otherwise they would suffer and be forced out of business by their more quick moving competitors. This was followed by the spectacular bursting of the dot.com bubble, with some high-profile failures, and retrenchment. As a result opinions changed and the literature reflected a radical change in the approach to e-commerce. It was no longer seen as a strategic weapon but more as a marketing tool, with traditional elements, such as branding remaining of key importance. We are now seeing continuing reassessment taking place which is perhaps changing the nature and recommendations concerning e-commerce.

OBJECT OF STUDY

We consider that our study is important since it helps not only to understand the role that information systems have in e-commerce initiatives and decision making, but also help to understand how this technology support major components of management and decision making functions.

METHODOLOGY

This paper reports on a preliminary study of perceptions of e-commerce in traditional, bricks and mortar, organisations. The organisations studied were already successfully competing in their own 3 traditional market segments but reported additional benefits after investing in e-commerce. It explores the experiences of organisations that have used e-commerce for the last 4-5 years and their perceptions of the benefits of e-commerce at both operational as well as strategic levels. It is hoped that this will shed light on the motivation and rationales for implementing e-commerce in traditional organisations and enable a re-assessment of their motivations.

This paper deals on preliminary findings from a wider and more in-depth study of six traditional organisations from different sectors that have successfully introduced e-commerce initiatives. The research adopted a case study approach, within which a questionnaire, identifying sixteen generic benefits synthesized from the literature, was administered. The organisations were also asked to characterise whether e-commerce was strategic for them or not.

THEORETICAL FRAMEWORK- LAYER OF E-COMMERCE

In this context a broad view of e-commerce is taken, i.e. that it is not just about buying and selling through the internet, but also about servicing customers, collaboration with business partners, and conducting business internally, within the organisation (Turban 2002). This definition permits the identification of three layers of e-commerce

- (i) Intra-organisational, or e-commerce conducted within a business, the main technologies used being the Intranet and internal e-mail
- (ii) Inter-organisational, or business conducted with other business partners, mainly utilising Extranets. Finally
- (iii) There is Customer to business, which is the public network (internet) open to everyone, (Kalakota & Whinston 1997). The same idea is adopted by Lawrence, et al. (2000) who defined e-commerce as a group of networks; Intranet or private to the organisation, extranet also private but with business partners, and the internet, which is the public and global network, open to everybody.

E-commerce has suffered from the kind of hype syndrome that has become common in business and more recently IT (Abrahamson 1996, Newell et al. 2001). In relation to IT, Business Process Reengineering (BPR), Total Quality Management (TQM), just-in time production, and possibly Customer Relationship Management (CRM) have all shown some evidence of the syndrome. The syndrome is essentially a very enthusiastic initial welcome for a new idea or concept with tales of significant and business changing benefits together with predictions of dire consequences for any organisation that fails to embrace or adopt the new concept. This is followed, sometime later, by a swing of the pendulum to the other extreme, as a result of some poor experiences, that suggests that the new concept has not lived up to its early hype and that severe problems have been identified, even to the extent that the concept might now have to be rejected. This is then followed by a reassessment that identifies that the concept may indeed have some benefits but also some downsides, but that if applied appropriately and in suitable circumstances, can still be beneficial. Wang (2002) talks about waves of technologies that come and go, 'frequently associated with

fashions, fads and hype' and suggests that e-Commerce fits the syndrome symptoms exactly.

THE CHANGES IN E-COMMERCE PERCEPTION- PHASES OF DEVELOPMENT OF E-COMMERCE

The literature relevant to this study can be divided into three different distinct eras.

- i) The first one is around 1980 to 1990 when several authors argued that competitive advantage could be achieved through the use of Information Systems (e.g. Porter & Millar 1985, Earl 1989, Robson 1997, Galliers & Baker 1994, Ward & Griffiths 1996). Information Systems were seen as a strategic weapon and various ways of achieving this strategic value were identified, for example, the enabling of new opportunities, the creation of new markets, the negation of geography and distance, and the creation (or destruction) of barriers to entry.
- ii) The second stage begins around the end of 1996 when the first internet based e-commerce systems arose. This literature reflected an increasing enthusiasm for a new kind of business, with different rules for that needed different strategies and theories (e.g. Kalakota & Robinson 1999, Currie 2000). The internet was perceived as a panacea, able to produce large benefits, address an enormous target market, enable global businesses, and provide the opportunity to reach clients more effectively than ever before. This assumption came to be accepted by most sectors, particularly financial services, government, consultants, the media and the public in general. As a result new internet based start-up companies rapidly emerged, they were not constrained by conventional business and market rules, and were not assessed by the market according to revenues, but on their potential future performance, which was thought to be extremely large.
- iii) The third stage observed in the literature is relatively recent and adopts a more critical view of e-commerce. These authors maintain that the internet is not as radical as previously thought but was simply an additional channel of communication (Porter 2001, Carr 2003). Consequently, its importance needs to be re-assessed in this light. However, some authors maintain the strategic importance of e-commerce and its powerful influence on markets and industry structures (Dans 2004).

THE ROLE OF E-COMMERCE- ANALYSIS AND INTERPRETATION

A wide range of different motivators and benefits of e-commerce can be found in the literature. Maloff (1996) usefully identifies four general areas or categories of benefit.

- a) The first category concerns benefits arising from the reduction of external and internal communication expenses, e.g. the speed-up of businesses processes and reduction of administrative tasks.
- b) The second category relates to revenues that can be generated, either from current business or from new initiatives.
- c) The third category relates to tangible benefits, such as reduced costs and more flexible working practices

- d) The final category relates to intangible benefits, such as enhanced competitive positioning and improved customer relationships.

Other studies found some similar benefits but also some additional ones. Currie (2000), for example, in a study of three organisations (Dell, Cisco, and Fedex) highlighted lower sales/marketing costs, lower service/support costs, and improved customer relationships. Lederer, et al. (1996) identified a list of 33 motivators and benefits, which they evaluated in a survey and using factor analysis over the 33 benefits derived the following list of key themes: Information, Cost savings, Competitiveness, Productivity, Control and New applications. Zhuang and Lederer (2003) used this list to measure business benefits of e-commerce in the retail sector, identifying some specific additional benefits related to that particular sector.

The various benefits identified in the literature overlap to a large degree, although there are some important differences.

As a starting point for this study it was decided to identify a comprehensive list of potential e-commerce benefits that could be used independently of the organisational domain and then employ such a list to inform a study of the way organisations perceive these e-commerce benefits and how they have changed over time. This combines the motivations and benefits derived from Maloff (1996), Lederer, et al. (1996), Curry (2000) and Zhuang and Lederer (2003), to derive a more comprehensive generic list. (1) The criterion for deriving the list was, first, to identify the common benefits, that is those found in more than one source. (2) Second, any benefits that did not have a match in other lists were rejected, on the grounds that they were probably specific to a particular organisation or context, and finally, (3) benefits specifically relating to a particular sector were rejected.

Thus the approach fits well with research in the e-commerce area. On the other hand one of the weaknesses of case study research is the difficulty of generalising from findings (Cavaye 1996).

The six organisations were chosen as significant e-commerce players and are from different activity sectors and can be regarded, to some extent at least, as representative, due to either their size and/or importance within the sector. Their e-commerce initiatives were also an additional part of their traditional business and they were not start-up e-commerce companies, but traditional, bricks and mortar companies, that have been successful in their e-commerce initiatives.

The organisations are from the following sectors: **Education, Oil and Gas, Local Government, Alcoholic Beverages, Building Materials, and Audit and Advisory services.** Obviously not all sectors engaged in e-commerce are represented but for this exploratory study six were thought to be appropriate. Clearly the issue of access was important and it is always difficult to get organisations to agree to participate. Unfortunately, some of the organisations, although happy to participate did not wish to be named, for reasons of confidentiality, so the organisations have been anonymised. They are labelled generically as Business School x, Oil x, Borough x, Beverage x, Material x and Consultancy x.

Interviews were conducted in the six organisations together with analysis of documents and texts, and observation of their web-sites and their e-commerce initiatives. Participants were also asked to complete a questionnaire and reflect on the importance of various benefits of e-commerce. This list was derived from the theoretical framework as explained. The

paper focuses on the results of this part of the study in relation to the organisations perceptions of the benefits of e-commerce. The interviews and questionnaires were conducted with e-business and IT managers from the headquarters of the organisation, all of whom had a significant role in defining and implementing their e-commerce platforms from either a business or IT perspective. These people were identified as key players in relation to the organisations' e-commerce initiatives and were mostly senior within the organisation, or had the ear of the strategist where they were not in that position themselves.

This study provides a brief description of the findings from this part of the study. In particular it reports the perceived benefits (or reasons) related to the adoption of e-commerce for each of the organisations under study. The rankings provided by the organisation, via the questionnaire, in relation to reasons/benefits for adopting e-commerce initiatives.

The importance of each benefit was assessed on the following scale: 1 (not important), 2 (of very little importance), 3 (somewhat important), 4 (important), 5 (extremely important). We analyse the responses in relation to the nature of the business and the sector and environment within which they operate.

The Business School regards e-commerce as highly strategic and they believe that the internet is their main means to promote their courses and attract students from home and abroad. Not surprisingly, the most important reasons for investing in e-commerce was to improve their link with customers (existing and potential students) and to improve customer service. The improvement of customer (student) service was one of their main concerns as online delivery of courses and e-learning in general was a main priority to address the needs of their increasingly dispersed students and staff. As online education is growing fast, the business school perceived e-commerce as a way to succeed in this area. Additionally the school was seeking to enhance its image, especially as they compete in the international market, as well as enabling flexible working practices as the staff are highly independent, as is common for college/university professors.

This paper reports on a study of six traditional organisations that have successfully introduced ICT with e-commerce initiatives. Each organisation is from a different sector and they are significant players in that sector and can be regarded as somewhat representative. The research adopted a case study approach, argued to be appropriate for such a study, and within the approach a questionnaire relating to their perceptions about the benefits of (or reasons for adopting) e-commerce was introduced. The fourteen questionnaire asked the respondents to rate, on a Likert type scale, the strength of the benefits for their organisation. The questionnaire listed a set of sixteen potential benefits synthesised from the literature. The organisations were also asked to characterise whether e-commerce was strategic for them or not. Four of the organisations characterised e-commerce as strategic and two as non-strategic. The findings were assessed and discussed, first, in relation to comparing the strategic versus non-strategic, second, in relation to comparing the responses of each individual organisation and the distinction between tangible and intangible benefits, and finally in relation to the organisations particular sector and background.

The results show some mixed but interesting findings. In relation to whether organisations perceived e-commerce as strategic or non-strategic there were clear differences. Those organisations that obtain income and profit through the internet are more likely to perceive e-commerce as strategic, whereas those organisations that have no direct revenues through the internet usually have a lower strategic perception of e-commerce. This conclusion supports findings by others, e.g. Chang, et al. (2003).

Another issue from the early days of e-commerce was the perception that it was about creating competitive advantage. This was supported in the organisations that perceived e-commerce as strategic but much less so in those that did not. So organisations that view e-commerce as strategic seem to think this is still a significant benefit but perhaps the message is that it is not quite as simple as originally thought and that it depends on how organisations characterise themselves and what they are trying to achieve with e-commerce. This fits with a related finding of significance which is the importance of the sector of activity and the environment in which organisations are operating. Many of the perceptions of the participants are revealed and explained by an understanding of these factors. An obvious example is Borough x, where its perceptions are clearly highly influenced by central government policies and their ability to pressurise the Borough. The importance of context is also found in other sectors albeit with perhaps a more complex set of background and environmental factors. Overall what emerges is the shifting nature of e-commerce and the way that organisations perceive it, together with the importance of the sector of activity in influencing these perceptions. Clearly further e-commerce research is needed but perhaps a more sector oriented focus, or level of granularity, is required and treating e-commerce as a homogeneous concept is probably a mistake.

CONCLUSION

E-commerce strategic tended to consider intangible benefits more important than tangible benefits, indicating perhaps a move away from the traditional view of e-commerce as a marketing driver to increase or create sales. Those organisations perceiving e-commerce as non-strategic rated the tangible benefits in much the same way as the strategic organisations but rated the intangibles lower. For those that perceived e-commerce as strategic the highly valued intangibles included the benefit of improving customer service but many related to improving communication not only with customers but with staff within the organisation. Thus it seems that the value of intra organisational e-commerce is more important than previously thought. Indeed its importance as a vehicle for communicating and disseminating information and knowledge internally came as something of a surprise. Interestingly this last was also equally highly valued by the non-strategic organisations. These kinds of traditional organisations value less highly tangible benefits such as direct cost savings and enhanced revenues, and value intangible benefits more, including those associated with communications, both internal and external to the organisation. If this is correct it indicates that organisations are taking a broader, perhaps more sophisticated, view of e-commerce and its rationale than previously, certainly than in the early days of e-commerce hype. Indeed it may also be that the notion of e-commerce is itself increasingly being perceived as a broader concept than just electronic trading and that the related area of intranets, service, communication, and even

business improvement processes, are being included in the term. If this is the case then it might be seen as a further step along the road towards the disappearance of e-commerce as a separate concept.

SCOPE FOR FURTHER RESEARCH

Although information systems intend to support management decision making and have made great contributions to organisations, until recently these contributions of information systems have been confined to narrow, transactions processing area. Much work needs to be done in broadening the impact of information systems on professional and managerial life and further research are needed.

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