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## **Editorial: Enabling organisational competitiveness using electronic commerce**

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The adoption of Information Technology (IT) and its integration as part of robust and responsive Information Systems (IS) has enlarged the competitive market place and made it a global playing field for many businesses. Such a business arena is truly global inasmuch as there has been a shift in trade from *merchandise goods* to *services*. This shift can be attributable to the increasing use of electronic commerce (EC) whereby businesses and trading partners are inextricably linked regardless of their sector. Electronic commerce has the ability to conduct business via electronic networks such as the internet and the World Wide Web. While EC is based on the principles of Electronic Data Interchange (EDI), it goes far beyond EDI in that it aims to support supply chain management (SCM) activities and integrate business processes.

Organisations conducting their business using EC typically work together in a seamless supply chain as a single unit using various telecommunications and advanced IT/IS so as to increase the effectiveness of their business relationships between trading partners. The use of such telecommunications and technologies is set to revolutionise the way that organisations operate in the next millennium thus, many organisations are now reviewing their business systems so that they can exploit technological developments and therefore enable improved organisational competitiveness through electronic commerce.

This special issue highlights the importance of using EC as a strategy to improve organisational performance and gain a strategic competitive advantage. Industrial and academic research that deals with strategic frameworks, conceptual, analytical and simulation models, surveys and case studies focusing on electronic and internet technologies can be found in this special issue. Papers published in this special issue deal with, but are not limited to:

- justification for the use of electronic commerce in business
- strategic implications of electronic commerce
- global and supply chain aspects of electronic commerce
- innovations in the telecommunication and network infrastructure to enable electronic commerce
- use of the internet and enabling technologies to facilitate electronic commerce
- use of computer-supported cooperative work and virtual organisations
- organisational and management aspects of electronic commerce

Noteworthy, increasing emphasis is being placed on business-to-business EC applications: taking orders, scheduling shipments and providing customer service. However, present EC implementations automate only a small portion of the electronic

transaction process. Moreover, EC is hampered by closed (self-contained) markets, which cannot use each other's services, incompatible frameworks that cannot interoperate or build upon each other and a bewildering collection of security and payment protocols. In general, EC applications do not yet provide the robust transaction, messaging and data access services typical of contemporary client/server applications. While there is considerable interest in developing robust internet applications, protection of significant investments in client/server technology and interoperation with mainframe transaction servers and legacy systems is a serious requirement.

In the first paper in this special issue, Au discusses Hong Kong clothing manufacturers, with a focus on small-and medium-sized enterprises (SMEs). This sector of the Hong Kong manufacturing industry is currently facing challenges from low-cost producers, change in consumer shopping behaviour and growth of overseas buyers' bargaining power. In response to these threats, SMEs are beginning to exploit the largest untapped opportunity in business today – *electronic commerce*. The key to their *success* is considered to lie in the adoption of a business model to add value to the physical supply chain and extract value from marketplace at the same time. By forming and expanding a dynamic network organisation and by integrating physical and virtual value chains, SMEs could potentially take full advantage of IT and the WWW to compete with their large counterparts. Application of the business model in the clothing industry is described and research implications are given.

Siomkos and Vrechopoulos deal with the use of strategic marketing planning for developing and sustaining competitive advantages in virtual retailing. The paper develops and presents a useful practical guide for the development of marketing plans by virtual retailers. The paper first examines the role of strategic marketing planning within an electronic commerce context. In doing so, the notion of value creation in electronic marketing, the strategies for competitive advantage and positioning in retailing are analytically presented and the concept of the virtual retailing mix is then developed. Siomkos and Vrechopoulos then conclude with a step-by-step presentation of the stages of the marketing plan for a virtual retailer. The implementation of the marketing planning process and the development and execution of marketing plans, can help virtual retailers to sustain their competitive advantage.

An interesting EC perspective is presented by Hackney *et al.* as the fundamentals of formulating an organisational strategy through the opportunities afforded by IS are discussed. One specific classification of IS is recognised in the form of EC which organisations are claimed to be using to revolutionise their business models. The paper defines and analyses such systems and considers their impact on competitive 'virtual' trading. It argues, in particular, for the relationship between EC and its potential influence on the value chain. The motivation for the paper is clear and is to consider the impacts of such systems on business performance. In this respect it is believed that their nature is recognised as offering different guidelines on approaches to organisational strategy. A number of European illustrative case examples are outlined through a descriptive model. This is augmented with an emphasis upon environmental, political socio-cultural and legal factors. The paper then concludes with a perspective on current and future organisational developments in this respect.

Shin examines firm-level data to identify empirically the relationship between information technology and vertical integration for both manufacturing and service firms. The results show that increases in information technology spending are closely associated with decreases in vertical integration for the five-year period from 1988 to 1992. This

study confirms earlier research, with the findings of this study implying that recent applications of information technology such as EDI provide a better means of inter-organisational coordination than early applications of IT.

Small and medium sized enterprises are described by Klang *et al.* as being at a disadvantage when competing in a global environment. As a result, their paper looks at the need for specialised and adequate tools for the small and medium sized enterprise. These tools are required to comprise both human and technical elements if they are to be successful in providing SMEs with the wherewithal to compete efficiently in the global marketplace.

Papazafeiropoulou *et al.* consider the role governments and public sector organisations can play in promoting organisational competitiveness in EC using case evidence from three different European national contexts. The research indicates that stakeholder involvement can be critical for the adoption of systems by intended users and explores two alternative development scenarios for project management in the public sector. Both development scenarios represent approaches that have been adopted in practice with mixed results. The paper illustrates the importance of stakeholder analysis and stakeholder involvement in the development process. In particular, Papazafeiropoulou *et al.* argue that the consideration of a broad range of stakeholder perspectives is essential for establishing the public sector as a capable change agent for organisational competitiveness in EC.

Pandya and Arenyeka-Diamond's review is in the form of a SWOT analysis; the concept of electronic supermarkets. As a precursor, the external business environment in which supermarkets operate was analysed to determine the opportunities and/or threats they present. This was undertaken using the PESTIE (Political, Economic, Sociological, Technological, Industrial and Ecological factors) model. A further analysis examined the internal capabilities of the supermarkets and their abilities to exploit the opportunities or combat the threats presented by the external environment, i.e. strengths and weaknesses. Key Success Factors (KSF) for enabling competitive advantage were identified.

In the paper presented by Bennett and Koudelova, marketing heads in 91 UK companies with electronic marketing facilities were surveyed to investigate relationships between marketing personnel and staff responsible for the technical side of their firms' e-commerce operations. The research focused on the possible organisational consequences of the introduction of electronic marketing; whether friction and conflicts arose between marketing managers and e-commerce specialists and respondents' perceptions of the contributions of e-commerce to the marketing function. Results indicate that many of the organisational consequences experienced during earlier implementations of major IT-related new technologies have been repeated in the e-commerce field. Marketing executives reported that IT experts increasingly occupied highly influential roles in their companies' marketing decision making systems.

Finally, this special issue presents a generic conceptual framework proposed by Cheng *et al.*, for a Total Information Networking System (TINS) in construction. The rationale for this paper stems from the introduction and use of business-to-business EC within the construction industry. The scope of this technology is to expand the inter-organisational relationships within supply chains. In this way, EC is being seen as an enabler for delivering significant strategic, tactical and operational benefits. Such technology can be used as a system for the sharing of information. Communication, coordination and inspection of the needs of different parties can be enhanced in different

forms, if information is effectively managed to complete the array of heterogeneous activities and tasks within construction projects. This paper proposes a TINS as a mechanism for conducting EC in construction. This system entails the development of a generic conceptual framework for structuring different kinds of information that flow within a company and its supply chain. The framework is based on three concepts. First, information can be classified according to the levels of goals and objectives to be achieved in a construction project. Second, information is either managerial or technical and thirdly, that information can be classified according to the phases of a construction project. Specifically, the framework represents the TINS to *carve* different forms of construction information into 30 manageable blocks. In doing so, establishing IT can be applied to the TINS and the associated Information Management Sub-Systems (IMSS).

The Guest Editors of this special issue has been overwhelmed by the response for the call for papers on *Enabling Organisational Competitiveness Using Electronic Commerce*. A total of over 50 papers were received with each one being reviewed by at least two referees. The Guest Editors gratefully acknowledge the assistance provided by the 70 anonymous referees who reviewed the manuscripts for this special issue.