

## Electronic Commerce: the emerging technology and its impacts

*Human Systems Management* has always energetically searched for the new issues in order to deliver to its readers the most innovative thinking in business management. We continue to focus on strategy, innovation, leadership, technology, and organizational change, while widening our coverage to include also e-commerce, entrepreneurship, marketing, and finance. This issue of the *Human Systems Management* presents selected papers about e-commerce of the recent years.

Grove (1996) [1] wrote a book titled *Only the Paranoid Survive*. He wrote it before the onslaught of the Internet revolution and e-commerce. His thesis remains fresh and appropriate for anyone thinking about e-commerce. We are in the midst of a number of major cognitive shifts: Traditional logic, so fundamental to the industrial revolution, is challenged daily by the widening possibilities of the world of e-commerce. The newfound sources of digital assets and networks of relationships are rapidly replacing well-understood sources of value creation through tangible, physical assets. New entrants are introducing powerful new business models and rewriting the rules of competition. Established companies need to embrace the e-commerce agenda: failing this may lead to their demise. They need to blend their traditional and e-commerce operations while confronting the challenges of *human systems management*.

The eight papers selected for this special issue of HSM can be divided into two groups. The first four articles deal with organizational responses to the emerging technology of the Internet. This technology includes the e-landscape, ethical aspects, legal aspects, and e-payment systems. The next four articles investigate the inside of the organization and the human processes driving the e-commerce impacts. This group covers user behavior model, knowledge management, visualization modeling, and Internet storefront reengineering.

The first article, 'The e-landscape: an unexplored goldmine of the new millennium,' by Liang analyzes Singapore's e-Commerce experience on the national basis with respect to one major consequence of e-Commerce: the emergence of an e-landscape. The e-landscape emerges at the new edge of chaos where order and disorder co-exist. A critical question to ponder is whether during a period of stasis, older established strategic models – such as the five competitive forces and critical success factors – are still useful guides. Liang suggests that a new mindset is requisite for venturing into the freshly uncovered nonlinear mental realm of the e-landscape. A more holistic approach towards e-Commerce would embrace both the tangible and the intangible. The traditional emphasis on reliable tangible physical structures and some aspects of the intangible environment present a development in the right direction.

In the second article, 'Ethical aspects of managing customer privacy in electronic commerce,' Kelly examines some of the ethical aspects of e-Commerce and consumer privacy. A fundamental tension exists between the legitimate commercial needs of a merchant to know his customers and the privacy interests of customers and web site visitors. An ethical and fair transaction must be based on the voluntary decision and the informed consent of all parties to enter the transaction. When either of these two criteria is missing, one can call the ethics and fairness of the transaction into question. Kelly also argues that serious issues of voluntary and informed consent arise in the collection of online data on consumers. The right to privacy is therefore becoming a focus in e-commerce. With each newly publicized intrusion on consumer privacy, such as the DoubleClick debacle, the outcry from the public calls for increased governmental oversight of the online privacy.

The third article, entitled 'Legal aspects of electronic commerce and their implications for the accounting profession,' Ragothaman, Davies, and Dyk-

stra describe some of the legal issues that affect e-commerce activities and explore their implications for the accounting profession. Critical legal issues include jurisdictional issues, web-linking, copyright and intellectual property issues, libel, sales and use tax, encryption regulation, privacy rights, domain name disputes, electronic agreements, and digital signatures. Consequently, accountants who act as consultants and strategic advisors to e-commerce firms must provide new services: widening e-commerce opportunities have legal and other risks associated with them. Many accountants and auditors must now estimate their client's exposure to legal liability arising from e-commerce transactions as part of their risk evaluation task. Moreover, as software programs *intelligent agents* begin to negotiate transactions on the web, business people need to understand the program code and the legal exposure of such programs. E-business needs secure digital signatures, and accountants can be involved in designing such systems.

In the fourth paper, 'An exploratory framework for understanding electronic bill presentment and payment model selection,' Luo, Cook, Joseph, and Ganapathy address an interesting topic of e-payments. For consumers to accept any e-payment solution, they must be convinced of its benefits to them, or be given no option for other bill payment alternatives. Billing parties must develop systems that not only meet their needs, but that satisfy consumer needs, fit consumer habits, provide tangible benefits to consumers, and thereby encourage consumer use. The authors review various electronic bill presentment and payment models and introduce an exploratory framework for evaluating these models and selecting an appropriate e-payment solution. More importantly, e-payment gives billing agents the opportunity to enhance their interactions with customers and generate additional revenue streams by cross-selling other services and products. Many bill generators have already outsourced the printing and distribution of their paper bills. This increases their lead time to produce inserts to the bills, which inform customers of collateral goods and services. To correspond with a given customer via mail on an ad hoc basis, billing firms must have a parallel mailing system. The authors suggest that bill characteristics and customer type should be important considerations in selecting an electronic bill presentment and payment system.

In the fifth paper, 'E-commerce user behavior model: an empirical study,' Jiang, Hsu, Klein, and Lin use data from an international sample of 335 college students to investigate the Technology Acceptance Model

for e-commerce. The model consists of five constructs: (1) utilization of the Internet, (2) near-term consequences, (3) long-term consequences, (4) facilitating conditions, and (5) experience with the Internet. The empirical study follows a two-step procedure: the first step is to develop a measurement model by confirmatory factor analysis. After an acceptable measurement model has been developed, the next step is to specify and to examine causal relationships among the constructs by performing a simultaneous test whether the conceptual framework provides an acceptable fit to the data. Results obtained from this study indicate that utilization of the Internet is positively related to perceived near-term usefulness, perceived long-term usefulness, prior experience, and facilitating conditions. Moreover, the external factors indicate more substantial impact on utilization of the Internet. One of the major managerial implications of this study relates to the notion that experience is an important driving factor for respondent's utilization of the Internet. The authors suggest that creative promotional programs in e-commerce should be implemented to create an environment that facilitates the prospects to visit a set of specific web sites.

Most franchisers do not have the necessary knowledge to run their businesses in the e-commerce age. Chen, Chong, and Justis, in their article 'An Intranet-based knowledge repository: A structure for learning organizations in franchising' argue that learning organizations will have the advantage of creating barriers of entry in two directions. On the one hand, the expertise makes the company operate more efficiently. On the other hand, the expertise may allow the company to develop new products or processes to generate new revenues. The purpose of management development is to elevate regular managers to the level of more experienced managers to handle more diverse situations. The authors propose a Franchising Knowledge Repository to enhance the organizational learning.

Wang, in his article 'Organizational visualization of electronic commerce,' suggests the emerging need to develop analytical techniques in order to understand whether e-commerce stimulates information flow and eliminates hierarchy, and how electronic data interchange results in a very tight coupling between partner organizations. While there are a variety of angles to view an organization, it is unlikely that a single visualization model can be applied to all organizational domains. This paper focuses on the visualization of virtual organizations of e-commerce. By drawing on a range of literature in the system model-

ing and e-commerce management, Wang illustrates a model of organizational visualization for e-commerce virtual organizations. This model is structured around two dimensions: object-oriented organization modeling and organization measures particularly related to the e-commerce context.

In the last paper of this special issue, 'Internet storefront reengineering using an element schema approach,' Trappey, Trappey, and Chang derive a means for evaluating vwebsites and define the elements underlying their success. Previous research indicated that a majority of customers lack confidence with online transactions, especially when the privacy of information is considered. A four-tier privacy model to help online companies build good relationships with customers has been proposed as a result.

This study uses a code sheet to generalize business-to-consumer (B2C) Internet storefronts with the elements schema approach. Elements are extracted from best and worst ranked websites. Then, by comparing the distribution of elements and analyzing the principal components, the elements underlying good and bad Web sites are defined. Once the distribution of elements and components are understood, the principles for designing better websites are described. The elements schema code sheet is the standard for classifying the elements on the targeted good and bad websites. Principal components analysis indicates that cru-

cial elements can be divided into three groups: transaction triggers, information offers and data exchange. It is concluded that quick services by text are helpful during the stage of triggering transactions whereas during the stage of information gathering, text becomes better than pictures.

As a whole these eight articles provide an overview of some of the most interesting issues which need to be studied under a dynamic view of e-commerce. It is hoped that they will encourage further research into the evolutionary aspects of the e-commerce world. We welcome reader's suggestions and hope for receiving ideas and comments about the future work and direction of *HSM*.

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#### Reference

- [1] A.S. Grove, *Only the Paranoid Survive: How to Exploit the Crisis Points That Challenges Every Company*, Random, New York, 1996.