

# Preface

Technological advances, primarily in the use of Internet and mobile technologies, combined with the deregulation of the communication market created a new and highly competitive environment for companies globally. Although technology is the driver of the changes, economics plays a major role in this new environment. The recent dot.com boom and bust is a great example of this relationship.

However shocking the NASDAQ crash was to some, as Brad deLong (2001) suggests:

*... the long-run economic impact of the 'new economy' is likely to be very large indeed for two reasons. First, the pace of technological progress in the leading sectors driving the 'new economy' is very rapid indeed, and will continue to be very rapid for the foreseeable future. Second, the computers, switches, cables, and programs that are the products of today's leading sectors are general-purpose technologies, hence demand for them is likely to be extremely elastic. ... Over a wide range, the dominant effect of the 'new economy' has been to make competition more effective, not to create scale-related cost advantages. Third, the principal effects of the 'new economy' are more likely to be 'microeconomic' than 'macroeconomic.' ...*

By addressing issues in the intersection of technology and economics, economics of information systems area strives to further our knowledge on how information technology can create value for businesses and consumers alike.

This book will introduce readers to the underlying economic aspects of information technology. It is one of the few that brings together different trends of research in this young field. It covers concepts that complement or even challenge traditional economic theories while contributing to the research in information systems.

## **Organization of the Book**

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The book is organized into 10 chapters. A brief description of each of the chapters follows:

In Chapter I the authors study the standards competition between DIVX and DVD formats. In April 1997, a consortium of hardware manufacturers and movie studios launched the DVD format. By that fall, electronics retailing giant Circuit City announced its intention to launch a partially incompatible format known as DIVX. The chapter assesses Circuit City's strategy to establish the dominant standard for digital video technology. It identifies several key principles that any firm must consider when deciding how to compete in a market with evolving standards. The authors argue that virtually all of these factors weighed in against Circuit City, so that its effort was destined to fail.

Chapter II explores the private and social desirability of information transparency of a business-to-business (B2B) exchange that provides an online platform for information transmission. The abundance of transaction data available on the Internet tends to make information more transparent in B2B electronic markets. In such a transparent environment, it becomes easier for firms to obtain information that may allow them to infer their rivals' costs than in a traditional, opaque market. How then does this benefit firms participating in the B2B exchanges? To what extent does information transparency affect consumers and the social welfare in a broader sense? Focusing on the *informational* effects, this chapter explores firms' incentives to join a B2B exchange by developing a game-theoretic model under asymmetric information. The authors then examine its effect on expected profits, consumer surplus, and social welfare. The results challenge the "information transparency hypothesis" (that is, open sharing of information in electronic markets is beneficial to all participating firms). In contrast to the popular belief, the chapter shows that information transparency could be a double-edged sword. Although its overall effect on social welfare is positive, its private desirability is deeply

divided between producers and consumers, and even among producers themselves.

In Chapter III the authors explore the evolution of B2B e-market firms in terms of the strategies they employ to “perfect” their value propositions and business processes for the firms. This is a critical aspect of their attractiveness as business partners for the buyers and sellers that participate in their electronic marketplaces. The key theoretical perspectives of this work are adapted from economics and strategic management. They enable the authors to construct a “partnering for perfection” theory of strategic alliances in e-procurement markets. This perspective is captured in a series of inquiries about “why” and “when” B2B e-markets are observed to form alliances. The authors carry out an innovative econometric analysis that delivers empirical results to show the efficacy of the theory in interpreting real-world events. The chapter concludes with a discussion of the implications of this work in academic and managerial terms.

Internet-based selling offers firms many new opportunities regarding the strategies for design of mechanisms to support consumer transactions. Chapter IV examines the use of transparency as a strategy for Internet-based selling for maximizing firms’ value from their selling activities on the World Wide Web. The authors define “transparency” as the extent to which a seller reveals private information to the consumer and explore three of its most-often observed dimensions: product, price, and supplier transparency. They evaluate consumers’ responses to each kind of transparency in terms of their willingness to pay. The chapter positions the theory in the context of the online air travel (OTA) industry to showcase its applicability and the power of its theoretical insights in an appropriate real-world context. The authors also generalize our findings to suggest some managerial guidelines that will help managers who want to make choices regarding transparency strategy in other Internet-related business contexts.

Chapter V analyzes the structural dynamics of multilateral B2B relationships based on game theoretical approach. It focuses on the evolution of network structures initiated by three major forces: a neutral intermediary, a dominant supply-chain partner, and an industry consortium. The authors show the typical enterprise network structures, identify the conditions that cause structure reconfiguration, and demonstrate the change of social welfare in the evolution process. Web-based technologies have changed the landscape of the entire enterprise networks, and the proposed framework will provide an analytical understanding of the endogenous formation and dynamics of enterprise networks in the information era.

Escrow is an emerging trust service in online consumer-to-consumer auction markets in preventing Internet fraud. Chapter VI studies the effect of traders' perceived risk on the adoption of online escrow service. This research establishes decision-making models for both the honest trader and the monopolist online escrow service provider. Perceived risk rate (PRR), a dynamic measure of perceived risk for online traders, is introduced to link the two decision-making models together. A calculative model for PRR is proposed, and the primary outcomes from the computer simulation for PRR measurement are presented. This chapter reveals that online escrow service (OES) adoption is positively correlated to the estimated level of trader's PRR. A higher PRR definitely leads to a higher OES adoption rate and hence reduces the Internet fraud in the auction markets. In addition, an overestimate of PRR leads to a higher adoption rate, lower defrauding rate and higher fraud blocking rate.

Chapter VII studies the joint effects of inter-firm collaboration and electronic business on firm profitability primarily in Finnish manufacturing. It is found that deeper forms of inter-firm collaboration boost financial performance but that high e-business intensity might even strain profitability. Firms that simultaneously have high inter-firm collaboration and e-business intensities as well as use electronic networks for conducting their collaboration are also more profitable. Based on this, two conclusions are drawn. First, suitable e-business practices facilitate inter-firm collaboration. Once in place, inter-firm collaboration tends to be immensely more productive with supporting electronic means. Second, e-business investment has to be accompanied by complementary organizational innovations, in this case a new form of external (and also internal, although not observed directly in the data used) organization of the firm, that is, inter-firm collaboration.

In Chapter VIII the authors draw on behavioral economics literature to identify the conditions under which consumers would prefer one of three pricing schemes (prepayment, pay-as-you-go, and post-payment). They suggest that consumer preferences for particular pricing schemes are likely to be determined by systematic relationships that exist among a variety of psychological variables. They offer nine empirical propositions that identify when consumers will prefer different pricing schemes.

In Chapter IX the author attempts to build a bridge between mobile commerce and the emerging field of behavioral economics. He first provides examples from mobile commerce and links them to behavioral economics. A stylized model assesses the impact of hyperbolic discounting on the profit maximizing behavior of a monopolist firm. He finds that the monopolist makes

lower profits compared to exponentially discounting consumers for low levels of (positive) network externalities. As the network externalities increase, first-period prices increase, second-period prices decrease, and the profits increase in equilibrium.

The book contributes to the field of economics of information systems by providing a collection of chapters at the forefront of the research in this field. From online auctions to behavioral economics of mobile commerce, the chapters touch upon a variety of novel topics.

## References

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deLong, J.B.L. (2001). *Summers the 'new economy': Background, questions, and speculations*. Working paper.