PART I

PERSPECTIVES

INTRODUCTION

Chapter 1. TECHNOLOGICAL DRivers OF CHANGE

Chapter 2. CREATING VALUE: ECONOMICS OF INTERNET-BASED COMMERCE

Chapter 3. CAPTURING VALUE: MARKET STRUCTURE AND COMPETITION

Chapter 4. CREATING AND CAPTURING VALUE IN THE SUPPLY CHAIN
INTRODUCTION

We live in an extraordinary time. The Internet and related technologies have opened new forms of communication, caused the costs of many kinds of market interactions to plummet, and have brought firms and consumers around the globe into closer proximity than ever before. At the same time, many of the frictions that impede efficient market performance—for example, imperfect information about who is willing and able to supply which goods and services and at what price—are being swept aside. This is creating a tremendous amount of economic value. As with any dramatic technological change, the most obvious and earliest effects are incremental: we find easier and less costly ways of doing the things we were already doing. Over time, however, the shifts are more drastic: we discover that we can do new things, or completely restructure how we conduct age-old business. So, too, the current technological change will drastically affect business transactions. Although change will take time to work its way through the system, it is restructuring entire supply chains and markets, and the industries, firms, and labor forces that participate in them.

As with prior major technological developments, such as the railroad, telegraph, and electric power, the current technological change is creating new industries, transforming existing ones, and giving birth to new firms that will be household names and industry giants a century from now. Consequently, who captures the value that is created—whether it be firms or end-consumers, and if firms, which firms—will also change.

Technological changes of this magnitude don’t simply change things at the margin. Many incremental changes add up to nonincremental change. In the language of economics, we shift from one equilibrium to another. The complexity of the changes that are taking place makes it difficult for managers to see far ahead and plan accordingly. When the entire landscape is changing, navigating by just peering ahead on the road you are currently on is dangerous! You need to head for higher ground to try to understand the major forces at work and their likely impact.

Through the text and cases in this book, we have tried to give general managers a perspective on those key forces and their likely impacts. Given the complexity and uncertainty of the many markets and industries that technology is affecting, it would be foolhardy to attempt to cover all situations. That would require analyzing the idiosyncrasies of each specific case. Our goal, instead, is to provide some perspective that

This Introduction draws heavily on Severin Borenstein and Garth Saloner, “Economics and Electronic Commerce,” Journal of Economic Perspectives, 15, 1, Winter, 2001, 3–12. The authors thank Severin and the American Economic Association for their permission to do so.
helps the general manager get to the starting gate in thinking strategically about electronic commerce.

THE CHALLENGE: LOOKING AHEAD

We begin the class that we teach on electronic commerce by examining how the pottery industry in England evolved in the 1700s and the role that Josiah Wedgwood played. This old tale illustrates several challenges that the analysis of major technical or industrial change poses. One of the most important is the difficulty of forecasting the nature of the change. As prescient and visionary as he was, even Josiah Wedgwood would have had difficulty during the 1750s or 1760s predicting the character of his own industry five years hence.

The problem is that in such periods of ferment, so many things are changing and so many different strategies are being pursued that there are numerous paths that firms and industries can go down. With hindsight we can see which path was taken and can often explain why the firm in question took it; however, to those living at the time, neither the path forward nor the reasons for taking it are clear.

Part of the complexity is typical for the emerging stage of an industry. Scholars of the early history of the automobile industry, for example, will recall that hundreds of new firms were pursuing different strategies. Some firms tried steam engines, others electric or gas. Some concentrated on engines and outsourced the purchase of bodies while others sought competitive advantage in bodies and procured their engines. Over time, however, the uncertainty about which approaches would be the most successful was resolved, and the industry entered a “shake-out” period. Before long the hundreds of aspiring firms were winnowed down to a few pursuing similar strategies. Successful firms absorbed the less successful, and the industry consolidated.

This evolutionary process in which firms experiment and only a few survive and are imitated is a natural process of the emergent phase of new industries. It is also reminiscent of competition among different “business models” that fledgling electronic commerce companies are pursuing. But just because it has happened before does not make it easier for managers to deal with uncertainty.

Moreover, predicting the long-term impacts of technological change is particularly difficult for electronic commerce. For one thing the markets are currently far from equilibrium. The rapid pace of technological change has created a wealth of entrepreneurial opportunities that in many markets has spawned large-scale entry and further innovation. Although it is always difficult to know when an industry is near a long-run equilibrium, in many of these new markets, we know that they are not.

In many markets, firms are pursuing strategies that are not sustainable in equilibrium. In an attempt to survive, much of their activity aimed to gain and secure market position amounts to the payment of one-time, largely sunk entry costs. The focus

---

of these expenditures is often on “customer acquisition” or building infrastructure to achieve minimum efficient scale. These expenditures—fueled by the largest inflow of venture capital ever—may represent reasonable investments for a chance of a future stream of profits that might accrue to the resulting market positions. Nonetheless, we cannot see them as equilibrium long-run expenditures or part of the permanent competitive landscape in most markets.

A clear example is expenditure on banner advertising when a firm quickly funnels the revenue it garners from the banner advertising on its own site into its own advertising on others’ sites, showing up as a source of revenue there. Yet the demand for banner advertising is diminishing, not least because many of these nascent market participants clamoring for visibility are disappearing while the brands of the survivors become more prominent. Indeed banner advertising rates have already plummeted. As this occurs, “business models” that depend on such revenue become unsustainable.

The continuing entry into electronic commerce of firms that have an established offline presence also affects current market structures. These “traditional” firms bring tremendous strategic assets, including brand names, geographic locations that are often synergistic with an online presence, logistics and fulfillment infrastructure, and so forth, to bear on their electronic commerce operations. Yet in some cases the online initiatives of these firms are in their infancy or still on the drawing board, and their implementation will affect equilibrium market structures.

Despite the uncertainty and complexity of this environment, managers need a clear, albeit changing and evolving, view of the landscape. It is difficult to plan without such a view, or at least scenarios of the possible futures the firm may confront. Moreover, although strategy must evolve in response to market and competitors, having a strategy is critical. This book seeks to provide tools, frameworks, and perspectives to help map the landscape and set strategy.

OVERVIEW OF THE BOOK

The book has two parts, “Perspectives” and “Cases.” “Perspectives” provides an overview of some of the important issues in electronic commerce. “Cases” provides case studies that we, our colleagues, and students have compiled. The cases contain a wealth of information about technologies, industries, issues, firms, strategies, and organizational structures. They also pose issues that the challenge of electronic commerce confronts for students and practitioners. The two parts of the book work in tandem. “Cases” provides context for “Perspectives,” which accordingly often refers to the cases, and “Perspectives” seeks to help the reader address many of the challenges the cases pose. A brief overview of the chapters in Part I follows.

In Chapter 1 we begin with an overview of the technological drivers of the changes that have given rise to electronic commerce. We have found in teaching the subject to both MBA students and executives that to analyze electronic commerce strategic options one must understand the underlying technologies. Although the most relevant developments relate to the Internet and World Wide Web, the development of the computer platforms on which they rest is equally important. Moreover, any electronic commerce strategy must take into account both the enterprise systems already in place
in large firms and the economy-wide distribution infrastructure. In addition, earlier technologies like electronic data interchange can teach important lessons.

In the subsequent chapters we examine how these technological changes create value in the economy and what determines who captures that value. In Chapter 2 we discuss how electronic commerce can increase the amount of value created in the economy by reducing cost, enhancing products and services, and ensuring that goods and services are allocated to the people who value them most.

In Chapter 3 we examine which competitors within a particular industry are best situated to capture value that is created, and the extent to which competition will cause downstream buyers rather than the competing firms to capture value. Since industry structure influences the extent of competition, we examine conventional determinants of market structure and the role of demand-side increasing returns. We also examine the determinants of competitive intensity within the industry, including product differentiation and price competition.

In Chapter 4 we broaden the discussion to include a more holistic look at the entire industry supply chain in which firms operate. This is important both because some of the most interesting ways that electronic commerce can create value are by improving the coordination of supply chains and because the adoption of electronic commerce can determine which firms in the supply chain have the power to capture the value in the chain. Moreover, the emergence of new intermediaries that seek to replace bilateral transactions between firms with broad marketplaces in which all firms participate is reengineering some supply chains. Chapter 4 discusses the role of such intermediaries and the potential disappearance of existing ones.

Part II of the book begins with an overview of the cases that follow and relates them to the concepts in the “Perspectives” section.