

**A NEW PARADIGM  
FOR A NEW ERA:  
HOW KNOWLEDGE AND  
SERVICE BASED SYSTEMS  
ARE REVOLUTIONIZING THE  
ECONOMY, ALL INDUSTRY  
STRUCTURES, AND THE  
VERY NATURE OF STRATEGY  
AND ORGANIZATIONS**

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# **INTELLIGENT ENTERPRISE**

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Core Competencies

•  
Best in World

•  
Outsourcing

•  
Managing Intellect

•  
Creating Infinitely Flat,  
Spider's Web, Starburst and  
Inverted Organizations

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**JAMES BRIAN QUINN**

# **INTELLIGENT ENTERPRISE**

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**A KNOWLEDGE AND SERVICE BASED  
PARADIGM FOR INDUSTRY**

**JAMES BRIAN QUINN**

**FOREWORD BY  
TOM PETERS**

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TO MY LITTLE FAMILY

the most delightful, challenging, supportive,  
comic bunch imagination could invent

# FOREWORD

I found my hands shaking on several occasions as I read Brian Quinn's manuscript. I was that excited. (And I had seen drafts of bits and pieces years ago.) "Revolutionary"? "Mind-warping"? Those apparently hyperbolic words are too timid.

In *Intelligent Enterprise*, Quinn pushes us to the wall, and beyond—and demands that we completely rethink the nature of the corporation, the sources of its added value, and how it is embedded with other, co-dependent corporations in the economy. If you are serious about this book's message, you will (1) take a couple of weeks off and read it; (2) put it aside for a month, then give it a second, thorough re-reading; and (3) use it as the basis for your top-management retreat in 1993.

The average manufacturing company today ain't. Seventy-five percent to 95 percent of a "manufacturing" firm's employees are in non-manufacturing activities—engineering, design, sales, marketing, information systems, purchasing, service, distribution. That is, they are in the professional-service development and delivery "business." Quinn urges us to reconceive every organization as packages of interdependent services. The consequences are enormous. First, all "industry" designations disappear. Old-line mining toolmaker Kennametal used information technology successfully in its own operation, then ended up inventing a new business: It now manages tool storage areas for several of its customers. Federal Express does much the same: Its \$400 million



Business Logistics Services operation manages all logistics (including internal inventory) for the likes of Laura Ashley. These two firms took “internal” service activities (which we previously called “staff” activities) and turned them into solid-gold lines of business. So tell me what “business” Kennametal is in? And if you’re a (former?) toolroom worker at a Kennametal customer, did you ever imagine you’d be “competing” for your job against a tool “manufacturer”?

Brian Quinn is a meticulous researcher, and you’ll find nothing “pop” in this extraordinary book. Every comment—no matter how apparently zany—is backed up by a bucketful of incontrovertible evidence. No walking away from this troublesome message by writing it off as the latest yarn spun by a hyperactive business guru. Quinn’s got you dead to rights; the detail is overwhelming.

*Intelligent Enterprise* goes beyond providing a brilliant analysis of what firms (of all stripes) are becoming. Quinn also gives you a running start toward figuring out how to deal with the redefined enterprise, how to manage *intellect*—the basis for virtually all of tomorrow’s added value. No, you won’t find any 10-step approaches. But you will discover a raft of practical ideas for thinking your way through your own firm’s dilemmas and opportunities.

Oddball corporations are defining traditional corporations right out of business. Your stomach may go queasy at times when you consider these pages. Every service your company provides (engineering, information systems, financial management) may be done better by a bevy of outsiders—and that’s one enormous problem in a context when virtually all your value comes from frequently uncompetitive staff services.

In short, the wise executive will read this book with a king-size bottle of Maalox at his or her side. If you don’t reach for that bottle from time to time as you peruse these pages, then go back and re-read what you’ve just read: If your stomach stays tranquil, you haven’t understood what Brian Quinn is trying to tell you.

TOM PETERS

# PREFACE

This book attempts to develop a new paradigm that explains and integrates many of the massive changes we are seeing in the economy, in industry competitive structures, in corporate strategies, and in the form of many individual organizations. With little fanfare, over the last several decades the development and management of services, service technologies, and human intellect have emerged as the primary determinants of business and national economic success. In the United States, service industries account for 77 percent of all employment and 75 percent of all GNP. Service activities contribute most of the value-added in manufacturing and constitute 65 to 75 percent of most manufacturers' costs. These are not developments to be deplored or ignored. This book demonstrates how, if approached properly, they represent major opportunities for all executives and policymakers to exploit on behalf of their companies and the nation.

Contrary to popular mythologies, the United States enjoys a strong-to-preeminent competitive position in most services relative to Japan or Europe. By utilizing these capabilities to their fullest and by developing their own strategies around carefully selected intellectual and service "core competencies," virtually all companies can achieve much greater strategic focus, higher leveraging of their human and fiscal resources, flatter less bureaucratic organizations, faster response times, and vastly increased flexibility and morale in their organizations. This is true for all compa-

nies, whether in services or manufacturing. This book tries to show why and how all the key elements fit together in assembling and managing these more efficient, competitive, and flexible “intelligent enterprises” of the future. It tries to show how the frontiers of theory and practice merge today. Utilizing all of the relevant statistical databases and well over 100 interviews with CEOs, Chief Information Officers, and operating managers of major companies, it tries to present concepts in the most pragmatic and useful form for business leaders, national policymakers, and thoughtful academicians.

Research for the book began in 1983 in preparation for a conference on “Technology and Economics” sponsored by the National Academy of Engineering at Stanford University. The conference papers were later published as *The Positive Sum Strategy*, edited by Ralph Landau and Nathan Rosenberg, National Academy of Engineering (Washington, DC: National Academy Press, 1986). As a member of the sponsoring committee for this conference, I was astonished to find that, among all the papers planned for what was to become a 980-page book, not one paper addressed the subject of technology in services. Consequently, with the help of my research assistant, I put together a brief analytical commentary, which appeared in that book.

Dr. Robert White, then President of the National Academy of Engineering, became interested in that short presentation and asked me to head a committee on “Technology in Services” for the National Academy of Engineering. With the help of an excellent committee, we sponsored NAE’s “Conference on Technology in Services: The Next Economy,” held in Washington on January 28 and 29, 1988. Bruce R. Guile and I edited the two books that resulted from that conference: (1) *Technology in Services: Policies for Growth, Trade, and Employment* and (2) *Managing Innovation: Cases from the Service Industries*, published by the National Academy Press in 1988. Having dealt almost exclusively with the high-tech manufacturers of the world in my consulting, this effort was a major departure for me. However, I soon became intrigued by the use of technology in the services sector and came to believe that the development and use of technology for services—whether in the “service industries” or within manufacturing—was the key to future wealth and productivity in advanced industrial countries.

This has been a team effort from the beginning. Several excellent research assistants, notably Mr. Christopher Gagnon, Ms.

Penny Paquette, and Ms. Patricia Higgins, helped with a series of data studies and interviews to understand this interaction better. We first investigated the major national and private databases that contained macro economic data on services. They included the Commerce Department Bureau of Labor Statistics, PIMS, and *Fortune 500* databases. These provided some interesting insights but were very limited because of (1) the definitional problems and (2) the lack of fine-grain data collection for services. As we proceeded, however, we tried constantly to reconcile our empirical findings with those of the major databases.

As portions of the 1988 National Academy study, several succeeding projects, and a 1991–92 study for the National Research Council, we carried out extensive interviews with many leading companies developing and using service technologies. Interviews were carefully structured to sample the top four acknowledged advanced technology users and developers in each of the major service industries: financial services, wholesale trade, retail trade, transportation, communications, professional, and other services. These were exploratory studies in which we were “trying to find out what was going on” rather than establishing or testing specific hypotheses. What one can derive from such studies is a sense of the “patterns” of success and failure in the real world. This is a technique commonly used by field biologists, meteorologists, geologists, oceanographers, and other scientists dealing with macro systems. It is a valid stage in the knowledge generation process, normally followed by hypothesis formulation, hypothesis tests, development of new system technologies, development of knowledge bases, and ultimately new paradigms for further exploration. Results of these exploratory studies have been published in a number of refereed conference papers and books in such major applied journals as *Scientific American*, *Harvard Business Review*, and *Sloan Management Review*.

All of the personal quotations in this book have been cleared with their sources, unless they are referenced from secondary sources. On a few occasions, because of some element in the quotation, its source preferred not to be identified. In those cases, we have used the designation of the person’s title and industry only. While we have interviewed primarily in companies that are considered to be leaders in their field now, time and competition can play unexpected tricks. No company can stay at the top of the list forever. And technology is moving so rapidly that some of the

companies we cite as exemplars today may, for other reasons, not look so good in the future. Learning is a cumulative process. We present the examples for what may be learned from them today, knowing we cannot predict an unknowable future for each company.

As a result of these studies, it became clear that service technologies had restructured both the economy and the way in which one could and should approach strategy formulation and the organization of enterprises. Papers on these topics appeared first in 1987 and 1988, coauthored by Penny Paquette and Jordan Baruch, in *Scientific American* and *Harvard Business Review*. Then in the January 1990 issue of *Sloan Management Review* and in the March–April edition of *Harvard Business Review*, in collaboration with Tom Doorley, we published the first papers that systematically set forth the concept of strategy later called “core competencies.” Expecting earlier publication of these concepts by the *Harvard Business Review*, we had disclosed them in professional conferences repeatedly during 1989. During that time we also published some of the earliest papers specifically on the relationship between service technologies and the new organizational forms described here in Chapters 4 and 5. This book is a continuation of our studies on the interactions among service technologies, economics, strategic control systems, and organization. We are convinced that this confluence is critical to the future productivity, economic growth, and quality of life in advanced industrial countries.

This book is an attempt to integrate and reformulate some of the most important themes in economics, corporate strategy, and organization theory today. It focuses on the service economy and the development of the myriad technologies which support that economy as the basic causes of many of the social and business restructurings now taking place. Rather than simply describing these changes, it attempts to explain them, link them, and provide a pragmatic framework within which managers can design and implement more effective corporate and organizational strategies. Now and in the future, effective strategies will depend more on the development and deployment of intellectual resources than on the management of physical and fiscal assets. The key concept we present here of disaggregating corporate activities into manageable intellectual clusters—called service activities—is the crux of reconceptualizing organizational structures, the management

of intellect, and the interlinkage of corporate organizations with the new “alliance” modes of external competition.

We have consciously gone beyond the concepts of “core competencies” as they have been published to date and the mere use of “information technologies” as causative factors in these changes. Information technologies almost always require interfacing with other physical—materials handling, transportation, storage, health care, production, chemical, mechanical, fluid flow, or management—technologies in order to be effective. The reconceptualization and restructuring of human and technology interactions at the “service activity” level brings coherence and manageability to many other complex phenomena at the enterprise level. New technologies have made it possible to disaggregate, delegate, and manage work at much more decentralized and refined levels—not only within an enterprise but across enterprises—and at a scale and scope never feasible before.

To use the technologies and their new possibilities to their fullest extent also requires a major reconceptualization of strategy processes. Many of the prevailing mainstays of strategic analysis—including economies of scale, experience curves, industry analyses, and market share—need to be reconsidered in the light of the new competitive structures and organizational forms made possible by the dominance of services and their technologies. In this book we have tried to provide a new conceptual framework for considering these important changes at the macro economic and enterprise levels. As a first attempt, the results are, of course, incomplete. However, we hope readers will find the approach new, insightful, and provocative and will contribute their experiences and views to amplify or challenge key points. We also hope readers will discover enough useful practical examples to transform the broader concepts into utilitarian solutions for their own companies or clients. The goal is to make this a readable, pragmatic book contributing both to theory and to practice.

JAMES BRIAN QUINN  
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