CO-OPETITION

Adam M. Brandenburger
and Barry J. Nalebuff

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"This is the best book I've read on business strategy. Read Brandenburger and Nalebuff's *Co-opetition*. Then read it again. I want to do business with people who think this way."

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"*Co-opetition* gives executives what they need most: a technique for making the right strategic decisions, even in the most compli cated business situations. I can't imagine a modern business which wouldn't benefit enormously from this book."

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—Dick Brannin, Manager, Program Planning, Kaiser Permanente

"*Co-opetition* will open your eyes to new possibilities for profit in all your business relationships. It's a gift to bestow, not just on your partners, but also on your competitors."

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"Fast-paced, interesting, and full of cases, I raced through *Co-opetition* in one marathon sitting. We all recognize that we're in a game of business of sorts, but we don't always see the whole game. Having all the elements—players, added values, rules, tactics, and scope—laid out was very useful. I found myself mapping our own behavior at PepsiCo along these dimensions just to explore how we've changed the game—and more important, how we can do so in the future."

—**Indra K. Nooyi, Senior Vice President, Strategic Planning, PepsiCo**

“Small-company owners like myself will find *Co-opetition* uniquely helpful and relevant for day-to-day business. I found myself underlining passages which I gave to my sales manager and purchasing agent.”

—**John S. Lapides, President, United Aluminum**

“In a business environment of constant technological revolutions, *Co-opetition* provides a powerful, systematic framework to see new market opportunities from different perspectives. Here at Xerox, we’re using these game theory concepts to seek business value propositions for the dynamic interplay of emergent markets with emergent technologies. Every manager and engineer should have a copy of this brilliant book.”

—**Mark Myers, SVP, Corporate Research and Technology, Xerox**

“*Co-opetition* shows you how to benefit from both aspects of business: how to make a bigger pie, as well as get a bigger share of the pie. These practical insights from game theory are helping companies find more profitable business strategies.”

—**F. William Barnett, Director, McKinsey & Co.**

“U.S. research and development—about $175 billion annually—faces stern imperatives of both competition and cooperation. The fresh ideas in *Co-opetition*, based on game theory, may help to renew the contract of science with society. This lively volume should be ‘must reading’ for R&D executives everywhere.”

—**Rodney Nichols, President and CEO, New York Academy of Sciences**

“A very useful book, persuasively argued and written with astonishing clarity.”

—**Rabbi Harold S. Kushner, author of *When Bad Things Happen to Good People***

“*Co-opetition* is the perfect approach for the health-care industry to avoid the destruction of much that is essential to the continuing health of the American people. It should be required reading by managers of health-care providers and health insurance or HMO managers.”

—**John R. Gunn, EVP, Memorial Sloan-Kettering Cancer Center**

“Brandenburger and Nalebuff have produced an exciting new approach to business strategy. Informed by modern game theory but not mechanically applying it, they have shown that the range of possible strategies is much broader than usually contemplated. Their exposition is light and yet deep and wide-ranging and richly exemplified with examples from business reality.”

—**Kenneth Arrow, Nobel Prize Laureate (Economics)**

“I was negotiating a big sale. The buyer wanted me to throw in my advance copy of *Co-opetition* as a sweetener. I said, ‘No. There are some things that aren’t negotiable.’ ”

—**Herb Cohen, author of *You Can Negotiate Anything***

Co-opetition

1. A revolutionary mindset that combines competition and co-operation.
2. The Game Theory strategy that's changing the game of business.

Adam M. Brandenburger and Barry J. Nalebuff

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to Rachel, Zoë, and the loving memory of Benjamin
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Foreword to the Paperback Edition

There's nothing so practical as a good theory. A good theory confirms the convention wisdom that "less is more." A good theory does less because it doesn't give answers. A the same time, it does a lot more because it helps people organize what they know ar uncover what they don't know. A good theory gives people the tools to discover what is be for them. That was our goal in writing *Co-opetition*.

Co-opetition offers a theory of value. It's a book about creating value and capturing valu There's a fundamental duality here: whereas creating value is an inherently cooperativ process, capturing value is inherently competitive. To create value, people can't act isolation. They have to recognize their interdependence. To create value, a business mu align itself with customers, suppliers, employees, and many others. That's the way to develo new markets and expand existing ones.

But along with creating a pie, there's the issue of dividing it up. This is competition. Just a businesses compete with one another for market share, customers and suppliers also ar looking out for their slice of the pie.

Creating value that you can capture is the central theme in *Co-opetition*.

The best way to do this will obviously be different for different businesses. But on strategy that *Co-opetition* emphasizes is working with what we term "complementors." complementor is the opposite of a competitor. It's someone who makes your products ar services more, rather than less, valuable. Not surprisingly, the complementor concept especially relevant to the builders of the Information Economy. Hardware needs softwar and the Internet needs high-speed phone lines. No one, alone, can build the infrastructure fo the new economy. It's a whole new system made up of many complementary parts.

Thinking about the new economy, we've realized that there's a deeper connection here, connection through one of the great intellectual figures of this century, John von Neumann.

John von Neumann—mathematician, genius, polymath—died in 1957, well before he coul see the emergence of the Information Age he helped create. He was a co-inventor of th modern computer architecture—today's programmable computer. He also did pioneerin work on self-reproducing systems, presaging the discovery of DNA. And, together wi economist Oskar Morgenstern, he was the inventor of game theory. His theory of game provides a model of the pie, and how it gets divided up. We rely on these insights througho *Co-opetition*.

Game theory is a different way of looking at the world. Conventional economics takes th structure of markets as fixed. People are thought of as simple stimulus-response machine Sellers and buyers assume that products and prices are fixed, and they optimize productio and consumption accordingly. Conventional economics has its place in describing th operation of established, mature markets, but it doesn't capture people's creativity in findin new ways to interact with one another.

In game theory, nothing is fixed. The economy is dynamic and evolving. The players crea new markets and take on multiple roles. They innovate. No one takes products or prices a given. If this sounds like the free-form and rapidly transforming marketplace, that's precisel why game theory may be the kernel of a new economics for the new economy. And that why we see *Co-opetition* as a book for the Information Age.

Traditionally, a book has been a static and one-way medium. Fortunately, that's changin Like many authors, we've been able to use the Internet to make our interaction with reade more dynamic and interactive. On the *Co-opetition* home page, you'll find updates, article some interactive exercises, overheads, audio, and a convenient way to E-mail us. Since th book first came out, we've learned a great deal from a great many people about how an where they've been putting *Co-opetition* to work. Our heartfelt thanks to all of them. We hop you'll share your reactions with us, too.

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April 1997

http://mayet.som.yale.edu/coopetition

(We try to respond to all E-mails, although we have been known to fall behind.)

Production Notes

The combination of theory and practice you're about to read has taken many years t develop. Throughout these years we have received enormous help from people in th academic and business worlds and from friends and family. Our personal an intellectual debts are numerous and large.

We were each lucky enough to have unusually brilliant and inspirational teachers to initia us into the field of game theory. Louis Makowski showed Adam the value of looking everything from unusual angles. Bob Aumann taught Adam to think hard in order to mak things simple. Bob Solow, a disarmingly modest Nobel laureate, taught Barry the power o asking the right questions. The exuberant intellectual curiosity of Joe Stiglitz and Richar Zeckhauser inspired Barry to explore the wider applications of game theory.

Over the years, our research has been supported by the Harkness Foundation, the Harvar Business School Division of Research, the Harvard Society of Fellows, the National Scienc Foundation, the Pew Charitable Trust, the Rhodes Trust, the Alfred P. Sloan Foundation, an the Yale School of Management. We are extremely grateful for the generosity of all thes institutions. Their funding allowed us to do the basic research that led to this book.

At Harvard Business School, former dean John McArthur and Mike Porter have been constant support to Adam in his work. Anita McGahan, Dick Rosenbloom, Gus Stuart, an David Yoffie are among Adam's colleagues who have been enthusiastic supporters and kee critics. In fact, this book wouldn't have happened without Gus. He is a co-inventor of some o the key concepts that structure our approach.

At Princeton, Avinash Dixit got Barry started on writing books, coauthoring *Thinkin Strategically: The Competitive Edge in Business, Politics, and Everyday Life*. Former dean Mik Levine brought Barry to the Yale School of Management and encouraged him to create course in game theory. Sharon Oster guided Barry in the transition to business strategy.

We have been fortunate to regularly teach wonderful students at Harvard and Yale—an we learned as we taught. Our early courses on game theory and business were what yo might call successful failures. We didn't yet have the synthesis of theory and practice. Th weaknesses of these early courses taught us a great deal about what was missing from ou understanding. This book is the direct result of those early efforts. We thank all of our earl students for bearing with us during this period of experimentation and learning.

As we developed and extended our new synthesis, we drew heavily on research provide by our students and assistants over the previous years. The students who worked on case that appear in this book include: Greg Camp, Greg Chin, David Cowan, Michael Maples, Ann Minto, Richard Malloy, David Myers, Paul Sullivan, Bartley Troyer, Michael Tuchen, an Peter Wetenhall. The research assistants who supplied essential material include: Christin Del Ballo, Paul Barese, Monique Burnett, Maryellen Costello, Brad Ipsan, Julia Kou, Fion Murray, Troy Paredes, Adam Raviv, Deepak Sinha, and Geoff Verter. We'll miss Troy's 3:0 A.M. voice mails—and his surprise when we answered the phone.

We appreciate the opportunities the following people have given us to try out these idea in the field: Ken Chenault and Andy Wing at American Express, Charles Freeman at Chemic Bank, Robert Clement and Lynn Stair at Citibank, Jason Walsh and Jim Cooke at Cornin Ron Ferguson and T. Hoffman at General Re, Andy Shearer at KPMG Peat Marwick, Geo Porges at Merck, Mike Keller (formerly) at Northwestern Life Insurance, Lydia Marshall Sallie Mae, Mark Myers at Xerox. Bill Roughton at Bell Atlantic provided a uniqu opportunity to work on the Federal Communications Commission auction of person communication service spectrum. Bill Barnett at McKinsey and Co. challenged us to mak game theory relevant, gave us the chance to work with his clients, and was invaluable helping us bridge the gap between theory and practice. It would be hard to give enoug thanks to our corporate clients for the enormous amount they have taught us. In addition, th constant feedback from executive education programs and seminars helped us shape th book.

We are indebted to the *Harvard Business Review* for promoting our work and improving along the way. The process of preparing an article proved extremely valuable. This wa largely because of the encouragement and critical feedback we received from Joan Magrett Nancy Nichols, Sharon Slodki, and Nan Stone.

When we turned to write this book, Loretta Barrett helped get us started. Helen Rees, ou North American agent, and Linda Michaels, our foreign rights agent, continue to amaze u with their insights and skill. The enormous enthusiasm, confidence, and—yes—patience o Bill Thomas, our editor at Doubleday, gave the project an enormous boost throughou Harriet Rubin, of Currency/Doubleday, provided wonderful criticism, always making su that we had enough “trope.”

Scott Borg, novelist and cultural historian, was a brilliant help in making portions of th text clearer and more readable. He pushed us where we needed to be pushed, and pulled u forward with his insights and logic.

Early on, we discovered the skills of Rena Henderson, who does brilliant, high-spee manuscript editing from her Monterey, California, company, As the Word Turns. Never hav we felt that someone knows us so well who’s never met us.

At every stage in the writing of this book, we benefited enormously from the many peop who read and criticized our various drafts. Academic colleagues who provided informe critiques included: Bharat Anand, Sushil Bikhchandani, Joe Bower, Jeremy Bu-low, Dav Collis, Ken Corts, John Geanakoplos, Oscar Hauptman, Bob Kennedy, Tarun Khanna, Elo Kohlberg, Ben Polak, Julio Rotemberg, Roni Shachar, Carl Shapiro, Debra Spar, and Elizabet Teisberg.

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We have been fortunate to be helped in this project by so many people in all differer walks of life—CEOs, human resource managers, marketers, small-business owners, lawyer entrepreneurs, nonprofit managers, academics, business school students, undergradua students, artists, and mothers. We hope that we have succeeded in writing a book that will b useful to all those who have so generously helped us (and to many other people, too).

ADAM BRANDENBURGER

BARRY NALEBUFF

January 1996

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Part I

The Game of Business

1. War and Peace

"Business is War." The traditional language of business certainly makes it sound th way: outsmarting the competition, capturing market share, making a killing, fightin brands, beating up suppliers, locking up customers.[1] Under business-as-war, there a the victors and the vanquished. The ultimate win-lose view of the world comes from auth Gore Vidal:

It is not enough to succeed. Others must fail.

But the way people talk about business today, you wouldn't think so. You have to listen customers, work with suppliers, create teams, establish strategic partnerships—even wi competitors. That doesn't sound like war. Besides, there are few victors when business conducted as war. The typical result of a price war is surrendered profits all around. Just loo at the U.S. airline industry: it lost more money in the price wars of 1990–93 than it ha previously made in all the time since Orville and Wilbur Wright.[2]

The antithesis to Gore Vidal's worldview comes from Bernard Baruch, a leading banker ar financier for much of this century:

You don't have to blow out the other fellow's light to let your own shine.

Though less famous today than Gore Vidal, Baruch made a whole lot more money. Mo often than not, we'll follow Baruch's advice in this book.

In fact, most businesses succeed only if others also succeed. The demand for Intel chip increases when Microsoft creates more powerful software. Microsoft software becomes mo valuable when Intel produces faster chips. It's mutual success rather than mutual destructio It's win-win. The cold war is over and along with it the old assumptions about competition.

So,

"Business is Peace"?

That doesn't sound quite right, either. We still see battles with competitors over mark share, fights with suppliers over cost, and conflicts with customers over price. And th success of Intel and Microsoft hasn't exactly helped Apple Computer. So if business isn't wa and it isn't peace, what is it?

A New Mindset

Business is cooperation when it comes to creating a pie and competition when it comes dividing it up.

In other words, business is War *and* Peace. But it's not Tolstoy—endless cycles of wa followed by peace followed by war. It's simultaneously war and peace. As Ray Noord founder of the networking software company Novell, explains: "You have to compete ar cooperate at the same time."[3] The combination makes for a more dynamic relationship tha the words "competition" and "co operation" suggest individually. This is why we've adopte Noorda's word *co-opetition*, and made it the title of our book.

What's the manual for co-opetition? It's not Leadership Secrets of Attila the Hun.[4] Nor is Leadership Secrets of St. Francis of Assisi. You can compete without having to kill th opposition. If fighting to the death destroys the pie, there'll be nothing left to capture—that lose-lose. By the same token, you can cooperate without having to ignore your self-interes After all, it isn't smart to create a pie you can't capture—that's lose-win.

The goal is to do well for yourself. Sometimes that comes at the expense of other sometimes not. In this book, we'll discuss business as a game, but not a game like sport poker, or chess, which must be win-lose. In business, your success doesn't require others fail—there can be multiple winners. Throughout the book, you'll see many examples of thi In the spirit of co-opetition, we'll present some cases where win-lose is the most effectiv approach and others where win-win is most effective. We'll discuss situations where defeatin your competitors is the best course, and present other situations where the best plan benefi several players, including competitors.

Putting co-opetition into practice requires hardheaded thinking. It's riot enough to b sensitized to the possibilities of cooperation and win-win strategies. You need a framework think through the dollars-and-cents consequences of cooperation *and* of competition.

Game Theory

To find a way of bringing together competition and cooperation, we turn to game theor Game theory has the potential to revolutionize the way people think about business. This because the fundamental ideas of game theory are so powerful, and because business offe so many opportunities for applying them.

There has been a growing recognition that game theory is a crucial tool for understandin the modern business world. In 1994 three pioneers in game theory—John Nash, Joh Harsanyi, and Reinhart Selten—were awarded a Nobel Prize. At the same time, the Feder Communications Commission was using game theory to help it design a $7-billion auction radio spectrum for personal communication services. (Naturally, the bidders used gam theory too.) Even as we write, the leading management consulting firms are introducin game theory into their strategy practices.

The field of game theory dates back to the early days of World War II, when British nav forces playing cat and mouse with German submarines needed to understand the game bett so that they could win it more often.[5] They discovered that the right moves weren't the on pilots and sea captains were making intuitively. By applying concepts later known as gam theory, the British improved their hit rate enormously. Their success against submarines le them to apply game theory to many other war activities. Thus, game theory was proven practical life-and-death situations before it was actually laid out on paper as a systemat theory.

The classic theoretical formulation came soon after, in 1944, when mathematical geni

John von Neumann and economist Oskar Morgenstern published their book *Theory of Gam* *and Economic Behavior*. This brilliant, but highly abstract, work was immediately heralded a one of the greatest scientific achievements of the century. It led to large numbers of technic papers in the fields of economics, politics, military strategy, law, computer science, and eve evolutionary biology. In each of these fields, game theory has resulted in major discoverie Now game theory is transforming the field of business strategy.

Game theory makes it possible to move beyond overly simple ideas of competition an cooperation to reach a vision of co-opetition more suited to the opportunities of our time. T many, this will come as a surprise. The image game theory often conjures up is business-a war. That's to be expected, since the field was born during World War II and grew up durin the Cold War. The mentality was one of winners and losers—the zero-sum game, even th zero-sum society.[6] But that's only half the subject. Contemporary game theory applies just a well to positive-sum—or win-win—games. The real value of game theory for business come when the full theory is put into practice: when game theory is applied to the interpla between competition *and* cooperation.

What are the essential characteristics of game theory as applied to business? What are i special virtues? How is it different from a host of other management tools?

What Game Theory Has to Offer

Game theory focuses directly on the most pressing issue of all: finding the right strategies an making the right decisions. There are many valuable books on how to create a managemen environment conducive to making the right decisions. There are also valuable books on ho to build organizations effective at carrying out decisions once they're made. But there's still great need for guidance in identifying the right strategy to begin with. This is what gam theory provides. It goes right for the crux of things, showing you in strategic terms what the best thing to do.

Game theory is particularly effective when there are many interdependent factors and no decisio can be made in isolation from a host of other decisions. Business today is conducted in a world bewildering complexity. Factors you might not even think to ask about can determine you success or failure. Even if you identify all the relevant factors, anything that changes one likely to affect many others. Amid all this complexity, game theory breaks down the gam into its key components. It helps you see what's going on and what to do about it.

Game theory is an especially valuable tool to share with others in your organization. The clea and explicit principles of game theory make it easier to explain the reasoning behind proposed strategy. It gives you and your colleagues a common language for discussin alternatives. By letting others in on the process you've used to reach a strategic decisio game theory helps you build a consensus.

Such techniques for sharing strategic thinking are increasingly needed at all levels business. Decision making is becoming more complex and more decentralized. Rapid chang in markets and technology require rapid, strategically informed responses. Hence, the numbe of people in a company who will benefit from applying game theory is growing greater a the time.

Game theory is an approach you can expand and build on. It's not a particular prescriptio suited to a particular moment in business history. It's not a rule of thumb that stops workin when conditions change. It's a way of thinking that survives changing business environments

In many cases, game theory can suggest options that otherwise might never have bee considered. This is a consequence of game theory's systematic approach. By presenting more complete picture of each business situation, game theory makes it possible to se aspects of the situation that would otherwise have been ignored. In these neglected aspect some of the greatest opportunities for business strategy are to be found.

What You'll Find in This Book

We approach game theory mainly through real-life stories, involving characters an companies you'll recognize. These stories tell of businesses competing and cooperatin succeeding and failing, sometimes with surprising outcomes. Some are war stories, others a peace stories. In both cases, they are more than anecdotes. We use game theory to expla the successes and failures. Each story is a case study accompanied by a full analysis of th principles involved. We interweave the stories with theory, and summarize the lessons in th form of checklists. This way, our analysis becomes more than descriptive. It become prescriptive, too. When you understand why a strategy worked—or didn't—you can apply th lesson to other situations.

The numerous case studies have other functions as well. They're not just a device fo making the subject more entertaining or for showing how our concepts work in practic They serve as an ongoing test of our theories. We're skeptics, and we want you to b skeptical, too. We don't want you to take what we say on trust. Our goal is to give yo enough evidence through case studies to accept or challenge our conclusions. After you'v seen game theory applied to large numbers of cases, you'll discover its power, get a feel fo how it works, and learn to apply it yourself.

Despite the current surge of interest in applying game theory to business, this is still a ver new approach. Much of the terminology is new. In fact, some of the key terms were actual coined during the writing of this book. Even terms that seem familiar take on a new meanin in the context of game theory. Like any theory offering a new perspective, it requires som patience in the beginning. But if our explanations are successful, the new concepts will soo become so much a part of your thinking that you'll wonder how you ever managed witho them.

How This Book Is Organized

Part I, consisting of three chapters, outlines the game of business. It introduces all the bas concepts and shows how they fit together. The present chapter is intended to serve as a orientation session, a kind of advance briefing on where this book will take you.

Chapter 2 describes all the players and analyzes the elements of competition ar cooperation among them. To make this clear, we construct a map for the game of busines We call this the Value Net. It's a diagram that serves as a visual representation of the game business. The Value Net locates all the various players relative to one another, and identifi the interdependencies among them. It's particularly useful for pointing out the ways relationship between players can combine competition and cooperation.

Chapter 3 introduces game theory. We explain how this academic discipline applies to th real world of business. Using detailed examples, we discuss what happens when games a played out. In the process, we make game theory accessible by taking the essential principl and stating them in a simple and clear fashion that requires no mathematics or abstra theory.

Our account of game theory identifies five basic elements of any game: ***Players, Adde values, Rules, Tactics***, and ***Scope***—PARTS, for short. These become our touchstones for the re of the book. Along with the Value Net, they provide the central conceptual scheme fo applying game theory to business.

Part II, the remainder of the book, consists of separate chapters on each of the fiv elements of a game. We describe each element in detail and what significance each has fo your business. Archimedes said that given a proper lever, he could move the world. These a the five levers for moving the world of business.

Changing the Game

This is where the biggest payoff comes. We said business is different from other game because it allows more than one winner. But business is also different in another fundament way: the game doesn't stand still. All the elements in the game of business are constant changing; nothing is fixed. This is not just by chance. While football, poker, and chess hav ultimate ruling bodies—the NFL or FIFA, Hoyle, and the Chess Federation—business doesn't People are free to change the game of business to their benefit. And they do.

Why change the game? An old Chinese proverb explains: if you continue on the cours you're headed, that's where you'll end up. Sometimes that's good, sometimes not. You ca play the game extremely well, and still fare terribly. That's because you're playing the wron game: you need to change it. Even a good game can be made into a better one. Real succe comes from actively shaping the game you play—from making the game you want, not takin the game you find.

How do you change the game? You may well have been doing this instinctively. But gam theory provides a systematic method. To change the game, you have to change one or mo of the five elements: you change the PARTS. Each component we discuss is a powerful to for transforming the game into a different one. This is where game theory finds its greate

opportunities: in *changing* the game. Changing not just *the way* you play, but *the game* yo
play.

2. Co-opetition

If business is a game, who are the players and what are their roles? There are custome and suppliers, of course; you wouldn't be in business without them. And, naturally, the are competitors. Is that it? No, not quite. There's one more, often overlooked b equally important group of players—those who provide complementary rather tha competing products and services. That's where we'll begin this chapter. We'll see ho complements can make the difference between business success and failure.

1. Thinking Complements

The classic example of complements is computer hardware and software. Faster hardwa prompts people to upgrade to more powerful software, and more powerful softwa motivates people to buy faster hardware. For example, Windows 95 is far more valuable on Pentium-powered machine than on a 486 machine. Likewise, a Pentium chip is far mor valuable to someone who has Windows 95 than to someone who doesn't.

Though the idea of complements may be most apparent in the context of hardware an software, the principle is universal. A complement to one product or service is any othe product or service that makes the first one more attractive. Hot dogs and mustard, cars an auto loans, televisions and videocassette recorders, television shows and *TV Guide*, fa machines and phone lines, digital cameras and color printers, catalogs and overnight deliver services, red wine and dry cleaners, Siskel and Ebert. These are just some of the many, man examples of complementary products and services.

Let's take a closer look at the complements to cars. An obvious one is paved roads. Havin built a better mousetrap, the fledgling auto industry didn't leave it to others to make a beate path to its door. While it couldn't pave all the roads itself, it got many started. In 191 General Motors, Hudson, Packard, and Willys-Overland, together with Goodyear tires an Prest-O-Lite headlights, set up the Lincoln Highway Association to catalyze development o America's first coast-to-coast highway.[1] The association built "seedling miles" along th proposed transcontinental route. People saw the feasibility and value of paved roads an lobbied the government to fill in the gaps. In 1916 the federal government committed its fir dollars to building roads; by 1922 the first five transcontinental highways, including th Lincoln, had been completed.

Today there are plenty of roads, but money can still be scarce. Cars, especially new one are expensive, so if customers find it hard to borrow, they may find it hard to buy a new ca Thus, banks and credit unions complement Ford and General Motors. But auto financing ha not *always* been accessible. That's why General Motors created General Motors Acceptanc Corporation back in 1919 and Ford Motors formed Ford Motor Credit in 1959. It doesn really matter who provides the financing—banks, credit unions, or the automobile cred companies themselves. More money in this market leads to lower interest rates. Better an cheaper access to credit enables people to buy more cars—and that helps Ford and GM. Th flip side is also true: selling cars helps Ford and GM sell loans. Over the last decade, Ford ha actually earned more money making loans than making cars.

Auto insurance is a complement to cars because, without insurance, people might not b willing to risk investing $20,000 or more in a new car. Just as carmakers have made au loans more affordable, perhaps they could help make auto insurance more affordable. Th would be particularly valuable to first-time buyers, who often face prohibitively hig insurance rates.

Complements are always reciprocal. Just as auto insurance complements new cars, ne cars complement auto insurance. The more new cars people buy, the more insurance the buy, especially collision and theft insurance. Thus, auto insurance companies might want use their expertise and clout to help their customers get a better price on new cars. We come back to the subject of cars and auto insurance later in the book.

Suppliers to the car industry haven't forgotten complements, either. Until ti manufacturers figure out a way to add a fifth wheel to a car, there's really only one way f them to boost sales, and that's to whet people's appetite to drive. That's why the French ti maker Michelin sells the Michelin guidebooks. These guidebooks don't give just the shorte route, they make sure to point out the longer scenic routes as well. The Michelin guide mak getting there at least half the fun. It encourages travelers to keep moving, to keep wearin down those tires. There's always another town to see, another interesting detour to mak The Michelin guide not only helps sell more tires, it's also a profitable business in its ow right. It dominates the guidebook market in France and is making inroads in the rest Europe.

The used-car market also benefits when people pay attention to complements. For proc look to John and Louise MacBain, publishers of *La Centrale des Particuliers*, a Paris week specializing in advertisements for used cars. They have found people who will provide th complementary services their readers want—auto insurance, financing, and mechanic warranties. And the MacBains have prenegotiated very favorable rates for their readers b giving the providers a prominent listing in the magazine and use of the *La Centrale* bran name. The MacBains go even further, selling some complements themselves. Both readers an advertisers want to know average transaction prices and the average time on the market f each make, model, and year. Through France's Minitel online service, the MacBains make th information available for a fee.[2] By paying attention to complements, the MacBains hav ensured that there is no competition for *La Centrale*. They've taken their idea on the roa changing the way used cars are sold in Canada, Hungary, Poland, Sweden, Thailand, th United States, and other countries.

The complements mindset also helps explain why some businesses fail. Alfa Romeo an Fiat had trouble selling their cars in the United States, because people knew they'd hav trouble finding spare parts and qualified mechanics. Both have exited the U.S. market. Th Sony Betamax videocassette recorder, though technically superior to the VHS in som respects, was ultimately undone by the lack of rental movies in the Betamax format. In man cities, downtown shopping has lost out to suburban malls because of a lack of convenie parking. If these enterprises had provided the necessary complements, they might have far much better.

The problem of missing complements is multiplied a thousand times over in the case of new economy. This is the situation in much of the third world and in many of the forme communist countries. There the fate of everything—not just the company or industry b often the whole country—depends on complements. One industry will need complementa industries so it can get going, but those complementary industries will need the first industr so *they* can get going. It's a chicken-and-egg situation everywhere you look. Everything has happen all together, or nothing might happen at all. That's why some developing economi take off while others stall.

Thinking complements is a different way of thinking about business. It's about finding wa to make the pie bigger rather than fighting with competitors over a fixed pie. To benefit fro this in sight, think about how to expand the pie by developing new complements or makin existing complements more affordable.

Intel is the ultimate competitor. Andy Grove, the CEO, is known for saying: "Only th paranoid survive."[3] But competitors aren't the only thing on Grove's mind; Intel is also on th lookout for complements.

Inside Intel We started this chapter by explaining how Microsoft benefits when Int develops a faster chip and how Intel benefits when Microsoft pushes forward in softwa development. But from Intel's perspective, Microsoft doesn't push hard enough. According Andy Grove: "Microsoft doesn't share the same sense of urgency [to come up with a improved PC]. The typical PC doesn't push the limits of our microprocessors.... It's simp not as good as it should be, and that's not good for our customers."[4]

If software applications don't push the limits of existing microprocessor chips, then Grov has to find something else that will. Otherwise, his customers won't feel the continued nee to upgrade. If they don't keep upgrading, not only will the market become saturated but th other chip manufacturers—AMD, Cyrix, and NexGen—will be able to catch up.

This is not a new problem for Intel; processing capabilities have always led the softwa applications. For example, although 32-bit processing has been a technological reality sin 1985, Microsoft's first 32-bit processing system—Windows NT—didn't appear until 1993 Intel has always been on the lookout for applications requiring massive processi capabilities.

One of the most CPU-intensive applications is video. Even the Pentium chip will not hand full-screen, 24-frames-per-second output. But the next-generation chip, the Pentium Pro, wi What Intel wants, therefore, is a cheap and widely used video application. To that end, it h invested over $100 million in ProShare, a videoconferencing system that sits atop a deskto computer.[6] ProShare is an ideal complement to Intel's chips.

But Intel faced the same problem that makers of fax machines faced a decade earlie what's the point of having a desktop video-conference system if there's no one to call? F machines only took off in 1986, when their price came down to under $500. How could Int establish a market presence for ProShare and get the price down without shelling out anoth $100 million? Intel's strategy was to look for other companies interested in helping out.

The phone companies proved to be a natural ally. ProShare complements their busine because it receives and transmits more data than ordinary phone lines can handle. To wo effectively, ProShare requires an Integrated Services Digital Network (ISDN) line.[7] The

lines have three channels for transmission—two for data and one for voice—each with near
five times the capability of ordinary twisted copper. The phone companies have th
capability of supplying ISDN lines, but there's been little demand so far. If people bu
ProShare, they'll buy ISDN lines, too.

So Intel doesn't have to pay for ProShare all by itself. Just as phone companies subsidiz
the purchase of a new cellular phone in order to attract new subscribers, some are subsidizin
ProShare to encourage people to buy ISDN lines. They are offering ProShare to the
customers for $999, half the list price of $1,999.[8]

In another move to create momentum for ProShare, Intel reached an agreement wi
Compaq under which Compaq will include ProShare in its business PCs. This integratio
brings down the cost of ProShare for Compaq buyers to between $700 and $800 and give
ProShare's market presence a further boost.

All the players—Intel, phone companies, and Compaq—recognize their complementar
relationship. Intel wants to increase the demand for processing capability; phone compani
want to increase the demand for data transmission; Compaq wants its business PCs to stan
out from the competition. These objectives all come together with person
videoconferencing.

2. The Value Net

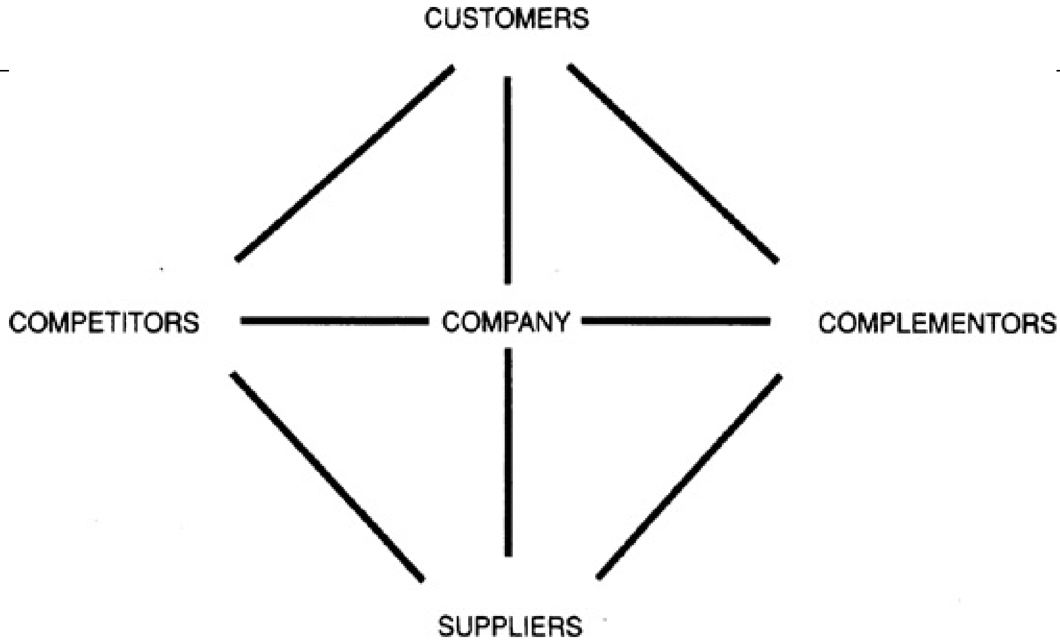
We're now in a position to better answer our first question: if business is a game, who are th
players and what are their roles? Customers, suppliers, and competitors. And one mo
category: people who provide complements. There's no word for people who provid
complements, so we're going to propose one: *complementor*. This is the natural counterpart t
the term "competitor." The fact that we had to coin a new word is proof that the vital role o
complements has been largely overlooked in business strategy.

Why not just call complementors "partners" or "allies"? There are two reasons. First, th
terms "partner" and "ally" are too broad. Customers, suppliers, and complementors can all b
your partners or allies. We want to distinguish these roles. Second, the terms "partner" an
"ally" are, in a different way, too narrow. They don't necessarily capture the full nature o
the business relationship—a relationship that involves some inherent tensions, as we'll see.

In the rest of this chapter, we're going to present a complete picture of the game o
business. We'll explore the roles of all four types of players—customers, supplier
competitors, and complementors—and the interdependencies among them. We'll see how th
same player can have multiple roles. We'll define exactly what we mean by our new ter
"complementor"; it will even prove useful to give a definition of the familiar ter
"competitor."

It's a back-to-basics exercise. Focusing on one type of player or one type of relationsh
tends to produce blind spots. Taking in the wider picture reveals many new strateg
opportunities.

To get things started, we introduce a schematic map to help you visualize the whole gam
This map, the Value Net, represents all the players and the interdependencies among them. A
we proceed, you might start thinking about how you'd draw a Value Net for your busines
You'll see the Value Net we drew for our own business later on in this chapter.



THE VALUE NET

Along the vertical dimension of the Value Net are the company's customers and *supplier* Resources such as raw materials and labor flow from the suppliers to the company, ar products and services flow from the company to its customers.[9] Money flows in the revers direction, from customers to the company and from the company to suppliers.

Along the horizontal dimension are the company's competitors and *complementors*. We'v already seen many examples of complementors. Here's a definition of the term:

A player is your complementor if customers value your product *more* when they have the other player's product than when they have your product alone.

Thus, Oscar Mayer and Coleman's are complementors. People value hot dogs more whe they have mustard than when they don't. And vice versa. The way to identify complemento is to put yourself in your customers' shoes and ask yourself: what else might my custome buy that would make my product more valuable to them?

Competitors are the reverse case:

A player is your competitor if customers value your product *less* when they have the other player's product than when they have your product alone.

Coca-Cola and Pepsi-Cola are a classic example of competitors. So are American Airlin and Delta Air Lines. If you've just had a Coke, you value a Pepsi a lot less than if you've y to quench your thirst; Coke doesn't add life to Pepsi. Likewise, if you have a ticket on Delt American is something a little less special in the air.

The traditional approach defined competitors as the other companies in your industry- those companies that make products similar to yours in a manufacturing or engineering sens As people think more in terms of solving their customers' problems, the industry perspectiv is becoming increasingly irrelevant. Customers care about the end result, not about whethe the company that gives them what they want happens to belong to one industry or another.

The right way to identify your competitors is, again, to put yourself in the customer shoes. Our definition leads you to ask: What else might my customers buy that would mal

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