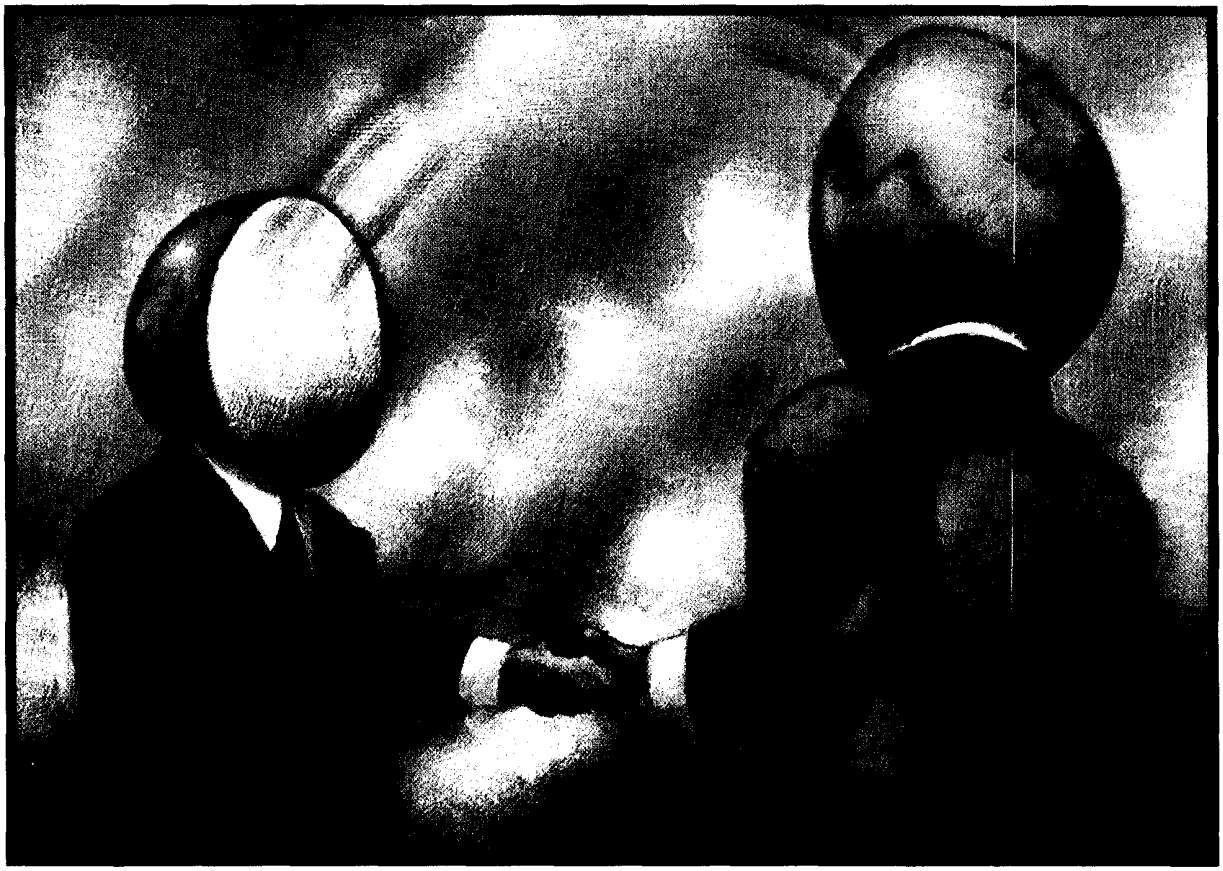

The words we use influence how we think. For example, when we think about business, most of us would probably say "Business is War." A company has to capture the market, beat the competition, make a killing, bury the competition. Using this metaphor, we have a whole vocabulary of winners and losers. Yet, in reality, that's often misleading. We may think there will be victors and vanquished in a price war, but in the end, no one wins.

At the other extreme, when we consider the importance of partnerships, alliances, working together, listening to the customer, and working with suppliers, it would seem that a more appropriate metaphor might be "Business is Peace." But that can't be right either, because we know there is conflict with rivals over market share, conflict with customers over price, and conflict with suppliers over cost.

If "business-as-war" is wrong, and "business-as-peace" is too simplistic, what's the right mindset? It's War *and* Peace—simultaneously. Creating value, a bigger pie, is fundamentally a cooperative activity involving customers and suppliers that a company can't accomplish alone. On the other hand, the act of dividing up the pie is fundamentally competitive.

A company has to keep its eye on both balls, creating and capturing, at the same time. We have chosen to call this "co-opetition," because it combines competition and cooperation.[1]

For example, in Columbia, S.C.. the local newspaper, *The State*, has lost market share to *USA Today*. *The State* tried cutting prices, adding more color, including more local news—all in an effort to keep its share of the pie. What the paper's executives really needed to do was find ways of creating more pie and getting a slice of that bigger pie. *The State's* large Sunday edition requires 50 percent greater printing capacity than its weekday edition. Thus, some of its presses sat idle for most of the week. *USA Today* doesn't have a weekend edition. The co-opetition solution: *The State* now prints *USA Today* during the week using its Sunday printing presses. While the two papers compete for customers and advertisers, they have found a way to cooperate in creating a larger pie.

Using Game Theory as a Tool

In traditional economics, markets are fixed; companies set prices, and customers take the price or vote with their feet. The "old" economy was based on decreasing returns to scale—if you wanted more gold, you had to dig deeper. In the information economy, by contrast, the costs are upfront —the more people that want a product, the cheaper it is for everyone.

Just as when cars first came out and we were missing roads, gas stations, and mechanics, much of the infrastructure to support the information economy hasn't yet been

by Barry J. Nalebuff and Adam M. Brandenburger

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CO-OPETITION:

COMPETITIVE AND COOPERATIVE BUSINESS STRATEGIES FOR THE DIGITAL ECONOMY

developed. Online commerce doesn't work if you don't have online payment devices. As the infrastructure is still being developed, Adam Smith's invisible hand won't work, because many of the markets are missing. Succeeding in the new economy requires a different approach.

Because we're in a period of transition, today's firms have the ability to influence what that future will be like. Instead of accepting what is, they can ask, "What game would I like to play?" That's a difficult question to answer, because, normally, we learn these things through experience. But by the time we're in a new game, it's too late to shape it. Game theory allows us to analyze the game before we get into it.

The inventor of game theory was John von Neumann. Now, fifty years later, game theory is coming into its own. The FCC used game theory to design what has become a $20 million auction of radio spectra. We are now teaching game theory in management schools, and management consulting companies are bringing it into their practices.

Game theory had its beginning in the early days of World War II when the British air force was playing cat and mouse with German submarines. The British discovered that by applying what later became known as game theory, they could increase their hit rate. In those early days, game theory was used primarily to analyze particular problems. It was focused on solving games rather than asking if it was the right game.

To make the theory more useful to business, we had to move away from finding the answer to a particular game. Instead, we looked at the meta-game of designing the right game. To do this, we went back to von Neumann's roots of game theory and put value creation at center stage.

In thinking of business as a game, it is misleading to imagine games such as poker, football, or chess. First, in order to win at those games, someone else has to lose. That rule doesn't always apply in the game of business. Intel's success hasn't hurt Microsoft, and Microsoft's success hasn't hurt Intel.

The second difference between business and most other games is that in most games the playing field, the players, and the rules are set. In business, the action comes from changing the game.

A game has **players** and the **added value** that each player brings. A game has **rules** that structure the interaction between players. The game is also affected by **perceptions**—what the players believe. And a game has **scope** or boundaries and linkages to other games—where one game ends, and another begins. (In reality, there's only one big game, but that game is so complex we pretend there are a lot of little games and think about how they're connected.)

"A player is a *complementor* if customers value your product *more* when they have that player's product than when they have your product alone. A player is a *competitor* if customers value your product *less* when they have that player's product than when they have your product alone."

If you want to change a game, you must change one of these components. In this article, we spend most of our time addressing the players and their added value, because they are the most fundamental elements. However, when you make a systematic change in one aspect of the game, it is very likely you will create change in one or more of the other aspects as well.

Knowing the Players

In the game of business, we sometimes list players as customers, suppliers, and competitors. Then there's the government, which often pulls strings from behind the scenes and sets some of the rules of the game. But there's yet another type of player that is often overlooked.

Think about the relationship between Intel and Microsoft. Is one a customer of the other? Not really. The real relationship between Microsoft and Intel is not customer, nor supplier, but *complementor*. The Pentium chip makes Windows 95 work better, and Windows 95 gives people a reason for upgrading to the Pentium chip. Similarly, WindowsNT and the Pentium II chip each make the other more valuable.

Complementors are not just in the high-tech industries. When cars first came out, the auto makers got together with the headlight people and the tire manufacturers to form the Lincoln Highway Association, which helped subsidize the building of the first cross-country road. They knew they could sell more cars if there were more roads. Auto makers soon recognized that they could sell more cars if people could borrow money, so General Motors formed GMAC and Ford started Ford Motor Credit. (Ford now makes more money on car loans than it does selling cars.)

A player is a *complementor* if customers value your product *more* when they have that player's product than when they have your product alone. A player is a *competitor* if customers value your product *less* when they have that player's product than when they have your product alone. The only difference between complementor and competitor is that the word *more* is replaced by *less*, which tells us that every strategy a company aims toward a competitor should be applied in exactly the opposite way toward a complementor.

Exhibit 1 contains the Value Net—a map of the whole game, the players and their relationships to one another. Money goes from the customers to the business and from the business to its suppliers. Your customers have other suppliers, and some of those suppliers are going to be good for you in the sense that when customers buy their products, your products become more valuable. These are your complementors. If your customers' other suppliers sell products that make yours less valuable, they are your competitors.

Similarly, your suppliers have other customers. If supplying those other customers, makes it harder for those suppliers to supply you, those other customers are your competitors. If supplying them makes it easier to supply you, then you have a complementor on the supply side.

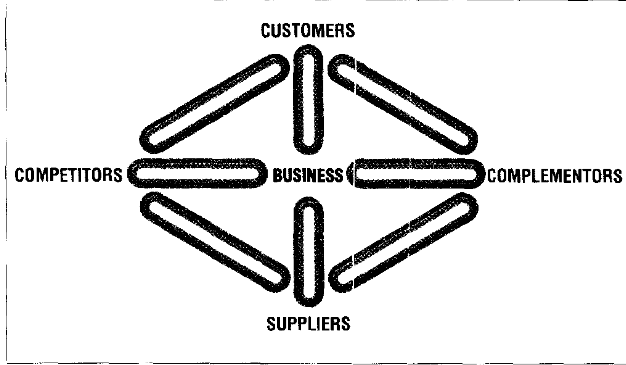
To figure out if somebody is your competitor or your complementor, you must see the world from the customers' and suppliers' perspective. You must be allocentric —centered on others, rather than egocentric—centered on yourself.

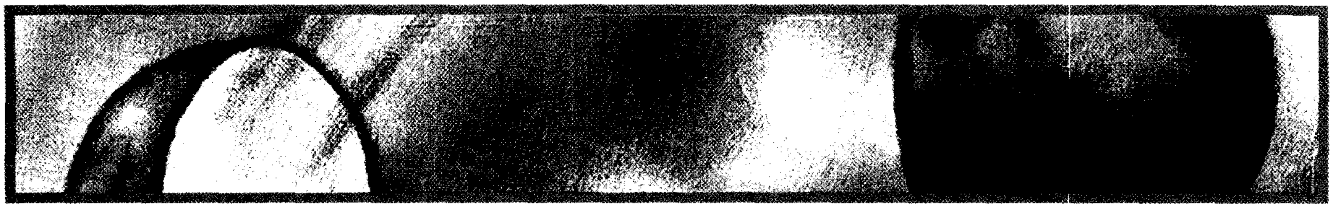
A company should have a strategy for every relationship in its Value Net. A case in point is Intel. Its chief executive, Andy Grove, has a strategy for each type of player. His competitor strategy is to be constantly innovative, to make sure that by the time competitors catch up with his technology, he's advanced to the next improvement. Toward customers, Grove's strategy was to create the branded ingredient, the "Intel inside" campaign. He also has an incredibly well-thought-out complement strategy of pushing his customers to the next level of technology. He understands that software alone will not push the limits of processing cycles, and without that push, why would people demand the faster and faster chips his engineers have built?

Grove recognizes that it's video rather than numbers and words that will create the next big push for upgrades. He has formed an alliance with Hollywood Creative Artists to create virtual reality video games for the PC; he's invested in ProShare for desktop video conferencing; he's formed an alliance with MCI to get more fiber into intranets to increase their capacity. Grove has asked: What are all the things that will make my chips more valuable? What can I do to engineer a demand for my product?

The traditional strategic approach to business strategy has been "stick to your knitting." But you can't stick to

Exhibit 1—The Value Net





your knitting if there isn't enough demand for sweaters. You have to prod the market to discover what type of activities the market is not providing.

For example, Carnival Cruise Lines created Carnival Air to overcome high airfares from the west coast to Florida. Carnival Air's low fares brought more people into the cruise market and forced United and Delta to bring their fares down as well. Carnival Cruise Lines doesn't own and operate the planes, but it made the change happen.

Why hasn't the Internet taken off in Japan? Japan's local phone calls are metered. If you were on AOL for ten hours in Japan, you'd have a $100 phone bill. No matter what the price of the AOL service is, the Internet is not going to take off. The complements have to be cheaper.

This is a general problem. If companies price their competing products independently, prices will come down as companies try to compensate for lower margin by gaining profit from increased market share. The reverse situation is true for complements. The natural incentive is to set prices too high, which makes the total package too expensive. Complementors should agree to lower prices. In this case, a monopoly that prices complements actually leads to higher profits and *lower* prices for consumers. This is also why we see so much bundling. It's a way of bringing the prices of a complementary package down.

Unlike the invisible hand of Adam Smith, complements don't take care of themselves. Complements tend to be missing or too expensive. Often, the best solution is to get involved. There are three approaches you can take.

◆ ***Do it yourself.*** If you are sufficiently large and you own enough of the market to get a large fraction of the benefits, then it may be worthwhile for you to undertake the new venture alone. Think of Intel and chips.

◆ ***Form an alliance.*** Sometimes the project is too big, e.g., building the roads for cars or building the infrastructure for electronic commerce. In these cases, you may need to join with competitors as well as customers and suppliers.

◆ ***Set up a proprietary business.*** Barnes & Noble and Starbucks have joined hands because coffee brings people into the stores, and the stores bring people to the coffee.

Identifying complements in the Value Net can help determine how to make a business more profitable. The Value Net can also help determine what makes a business more valuable. When IBM was in a hurry to launch its PC, it abandoned its tradition of internal development and subcontracted the chip to Intel and the operating system to Microsoft. At the same time, IBM decided on an open-architecture policy, which allowed companies like Compaq, Dell, and Osgood to build IBM clones. The advantage of these moves was that a larger pie was created sooner. But Intel and Microsoft got the majority of the benefit, because they controlled the necessary technology and software. IBM had to share its profits with its hardware competitors. In retrospect, many people say that IBM should have kept one piece of the puzzle, probably the architecture, to itself.

We don't agree. A closed architecture would have made a much smaller pie. Another way to share in the gain is to invest in complementor companies. IBM owned 20 percent of Intel and had options on another 10 percent; it had a chance to buy half of Microsoft for $300 million. If IBM had kept its Intel stake and bought Microsoft, it would be $50 billion richer today.

Of course, we have the benefit of hindsight. But when you own all the pieces, as IBM did in the beginning, you can write the rules. You're protected because you have equity stakes in all the key players, so you don't have to guess right. You'll be there with whichever one turns out to make the money. If you have helped other people to become more valuable, you should share in some of their gain. Too often we ask how much money other people can help us make, rather than what we can do to make the pie larger for others and then how we can share in the gain we created.

The Value Net is a place to start. It is a complete map of a business' relationships; it helps counter limited thinking, focusing only on competition and forgetting cooperation; it is a prompt to understand the business from the outside in; and it provides a shared template for discussions of strategy. Before you redefine a business strategy, you should write down your Value Net and the Value Nets of your customers and suppliers. It's a challenging exercise, but the insights are well worth it.

Assessing Added Value

The concept of added value helps determine how a pie will be divided. By estimating the size of the pie when you're in the game, and then subtracting the size of the pie when you're out of the game, you can determine what would be lost if you weren't in the game. You also need to identify what others would lose if you were not in the game, and what alternatives they have.

For example, what's the added value of NutraSweet, the high intensity sweetener used in Diet Coke and Diet Pepsi? It's the value that customers get from drinking Diet Coke and Diet Pepsi compared to Tab and Fresca. And it's the profits Coke and Pepsi make selling Diet Coke and Diet Pepsi compared to the profits they used to make selling Tab and Fresca. Add the profits that Monsanto makes selling NutraSweet compared to the profits that were made selling saccharin, plus all the profits Ajinomoto makes supplying amino acids to Monsanto compared to the petroleum makers who supply their products to saccharin makers. What would be lost in the entire market if NutraSweet didn't exist?

In thinking about added value, you have to think about the entire value chain and understand where your added value comes from. To the extent that a company can make sure it has added value throughout the game, it can claim a bigger piece of the pie.

At the same time that you're trying to raise your added value, you're also concerned with limiting the added value of the other players. The best way to lower the added value of a supplier is to bring more suppliers into the game, so that any single one has less added value. How can you bring more suppliers into the game?

◆ Pay new suppliers to play. Give them a guaranteed contract to get them to enter the game.

◆ Form a buying coalition to become a larger buyer. American Express joined with RJR, Sears, IBM, and others to buy $1 billion worth of HMO coverage rather than the $15 million worth they would buy alone. That brought 200 HMO suppliers into the game, which guaranteed that none of them would have much added value.

◆ Form a buying coalition with your future self. Instead of buying for one year, go to a seven-year contract.

◆ Become your own supplier.

These same principles apply to customers. It's harder to bring more customers into the game, but you can:

◆ Educate customers—the more people know about your products and services, the more uses they may find for them.

◆ Pay customers to play by giving away part of the service. This works best in the early adopter stage.

◆ Bring in better and cheaper complementary products, as in the Intel example.

◆ Become your own best customer. It's not a coincidence that automakers own car rental agencies.

Differentiation Through Loyalty

If you could charge a different price to your customers versus your competitors' customers, to whom would you offer a lower price?

Most people are tempted to give a lower price to their competitors' customers. That's a poor strategy. What businesses do we know that give their competitors' customers lower prices? Telephone companies—switch and get the lowest prices. Cellular phones—switch and get a free cellular phone. Credit cards—teaser introductory rates. All of those businesses are plagued by massive churn.

Let's think about the businesses that charge their own customers *less* than competitors' customers. If you're a United Airlines customer, United charges you less than an American Airlines customer, because the American person doesn't get the upgrade, the Mileage Plus program, or the special toll-free reservation number. In effect, the American customer pays a higher price to fly on United.

Creating loyalty by rewarding it actually creates added value. If all the customer looks at is the product, the transaction becomes anonymous—a commodity. But if customers invest in the relationship, they will seek not only a flight to Chicago, but a flight on United. The relationship is a form of differentiation and a source of added value. Thus, charging competitors' customers more adds value.

Sometimes you have to reward people for wanting to repeat the same experience and form that relationship.

◆ Say thank you in kind, rather than with cash. If an airline gives someone a free trip to Hawaii, the airline's cost is $40 and some peanuts, but for the customer the value added is $300.

◆ Save the best thank you for your best customers.

◆ Don't forget to say thank you, even if you have a monopoly.

◆ Say thank you to suppliers as well as customers.

◆ Say you're going to say thank you.

◆ Say thank you in a way that builds your business.

◆ Allow competition to have loyal customers, too.

Just because you have added value doesn't mean you should collect on it today. Sometimes the best way to use the power of added value is to restructure the game—change the rules, write down-stream revenue contracts, create a branded ingredient. Then, if your product later becomes a commodity, you will have created an environment that will preserve your added value.

What to Do if You Have No Added Value

When the NutraSweet patent was due to expire, a company called Holland Sweetener built a new factory to produce aspartame, the generic form of NutraSweet. Monsanto had been in the business for 17 years and owned the customer-preferred brand name NutraSweet. When Holland Sweetener entered the market, it lowered the added value of Monsanto, but it had no added value of its own. The company spent $50 million to build a plant, entered the game, and watched Coke and Pepsi renegotiate their contracts with Monsanto and save themselves $200 million a year.

Holland Sweetner did not realize that what it was really selling was competition. If you can't make money in the game, you can get money for changing the game. Here are a number of ways of getting paid to play.

◆ Ask for contributions for bidding expenses.

◆ Ask for a guaranteed sales contract.

◆ Ask for a last-look provision.

◆ Ask for better access to information.

◆ Ask to deal with someone who will appreciate what you bring to the table.

> "Creating loyalty by rewarding it actually creates added value. If all the customer looks at is the product, the transaction becomes anonymous – a commodity. But if customers invest in the relationship, they will seek [your product]."

- ◆ Ask to bid on other pieces of business.
- ◆ Ask the customer to quote a price at which he would give you his business.
- ◆ Cash is okay, too.

When bidding for new business, you should think about how to bring new customers into the market versus how to steal another company's customers. However, if you do go after another company's customers, make sure you're getting something for it. By negotiating what you're going to get, you can make your bid more likely to succeed.

A Checklist for Change

Game theory is a tool to incorporate into your way of thinking. You don't have to accept the game you find yourself in. You have the freedom to change it. And that's where great future success will come from.

- ◆ Use the co-opetition mindset. Think about creating *and* capturing pie—competing and cooperating.
- ◆ Write out the Value Net for your organization. Describe the whole game. Identify all the players and their relationships. Think about complements. List the players you would like to bring into the game.
- ◆ Calculate your added value. Think about how you can increase your added value. Use the concept of added value to understand who has the power in your game.

Game theory is a systematic approach to discovering new strategies and changing the game. It helps you to keep your eye where the real action is and to find a different and better game to play. ■

Note

1. The term "co-opetition" was coined by Ray Noorda, founder of the networking software company Novell.