

OPERATIONS & MANUFACTURING

The Added-Value Theory of Business

by [Adam M. Brandenburger](#) and [Barry Nalebuff](#)

There is nothing so practical as a good theory. A good theory confirms the conventional wisdom that "less is more." A good theory does less because it does not tell people what to do. At the same time, it does a lot more because it helps people organize what they know and uncover what they do not know. A good theory gives people the tools to discover what is best for them.

The word "theory" comes from the Greek for "I see." A theory is a way of organizing and explaining (not necessarily predicting) facts and data. To quote Albert Einstein: "A theory is more impressive the greater the simplicity of its premises is, the more different kinds of things it relates, and the more extended its area of applicability."

Here we offer a theory of business. It's a way to think about creating value and capturing value. There is a fundamental duality here: whereas creating value is an inherently cooperative process, capturing value is inherently competitive. To create value, people cannot act in isolation. They have to recognize their interdependence. To create value, a business needs to align itself with customers, suppliers, employees and many others. That is the way to develop new markets and expand existing ones.

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

Creating value that can be captured is the essence of business.

The best way to capture value will obviously be different for different businesses. But one idea that we emphasize is working with what we term "complementors." A complementor is the

opposite of a competitor. It is someone who makes your products and services more rather than less valuable. Not surprisingly, the complementor concept is especially relevant to the builders of the Information Economy. Hardware needs software and the Internet needs high-speed phone lines. No one, alone, can build the infrastructure for the new economy. It's a whole new system made up of many complementary parts.

In thinking about the new economy, we realized that there is a special connection here. The connection is with one of the great intellectual figures of this century, John von Neumann.

Game Theory

Von Neumann -- mathematician, genius, polymath -- died in 1957, well before he could see the emergence of the Information Age he helped create.

Co-inventor of modern computer architecture -- today's programmable computer -- von Neumann also did pioneering work on self-reproducing systems, presaging the discovery of DNA. Together with the economist Oskar Morgenstern, von Neumann was also the inventor of game theory. Von Neumann and Morgenstern's game theory provides a model of the pie and how it gets divided up.

Game theory provides a different way of looking at the world. In contrast, conventional economics takes the structure of markets as fixed. People are thought of as simple stimulus-response machines. Sellers and buyers assume that products and prices are fixed, and they optimize production and consumption accordingly. Conventional economics has its place in describing the operation of established, mature markets, but it does not capture people's creativity in finding new ways of interacting with one another.

In game theory, nothing is fixed. The economy is dynamic and evolving. The players create new markets and take on multiple roles. They innovate. No one takes products or prices as given. If this sounds like the free-form and rapidly transforming marketplace, that is why game theory may be the kernel of a new economics for the new economy.

One of the key concepts of game theory is added value. Here is the definition:

Added value equals total value created with you in the game, minus total value created without you in the game.

Game theory says that if competition is unfettered, no player will get more than his or her added value in a game. Thus, added value allows us to characterize who has power and who does not. It allows us to understand how the pie is created and how it is divided up.

If truth be told, this one equation seems simple, perhaps even too simple. But its simplicity is deceptive.

The first thing to note is that added value is an allocentric concept. ("Allo" means others and is the reverse of "ego," or self.) Instead of asking what you can get on your own, it requires you to ask what others will lose if you go away. It forces you to imagine a world without you -- not a pleasant task -- and to consider just what it is that you bring to others.

For example, what is the added value of the glass that makes up the screen in a laptop computer? Without strong and lightweight glass, there would be no laptop computers. So the added value of the glass is the same as the added value of laptop computers, which is enormous. The only problem is that there are several makers of computer glass. So for any one of them the right question is not what is the added value of glass, but what is the added value of their particular glass?

Here the answer tends to be pennies, reflecting small manufacturing cost advantages. The computer makers would not miss any one manufacturer very much. Of course, that would be changed if one of them could develop a glass that was even slightly less likely to break than that of its rivals. A broken screen renders a laptop practically useless. Thus the added value of a tougher glass would equal the whole pie multiplied by the reduction in the chance of breakage, which is likely to be dollars per computer rather than pennies. What this illustrates is the gain from thinking about one's added value over the entire value chain (the laptop computer) rather than one's link in the chain (making glass).

Connections

Added value may seem new but it is, in fact, connected to many of the ideas in the strategy of negotiation. To our minds, the premier book on negotiation is still Fisher and Ury's "Getting to Yes," written in 1981. A key concept in their book is "Batna," or best alternative to a negotiated agreement. A Batna is one's walk-away number or reservation price. It turns out that in a two-player game, Batna and added value are mirror images:

AV Player 1 =

Total Value Batna Player 2

AV Player 2 =

Total Value Batna Player 1

Think of it this way: what happens if Player 1 walks away from the table?

Player 2 is then left with his or her best alternative to a negotiated agreement. Thus, the amount the pie shrinks when Player 1 walks away is the difference between what the two of them can create together (total value) net what Player 2 can get individually (Batna Player 2). The second equation is based on the identical logic.

With three or more players, added value and Batna are no longer equivalent, at least they are not if you continue to think in terms of individual walk-away numbers for the other players. That is because when you walk away, the other players are left with the value that can be created without you, which is typically much larger than the sum of what each of them can do individually. You need to think in terms of a group Batna, if you like, and that brings us back to added value.

Along with its links to negotiation, added value can also be tied to some of the best-known concepts in business strategy. Take the concept of "competitive advantage," as defined by Harvard's Michael Porter. This is typically understood to mean some activity or set of activities that one organization can do better or cheaper than others. If you can do some things better or cheaper than others, then without you in the game, the total pie would indeed shrink.

Doing something better or cheaper than others is an important source of added value, but it is not the only one. Consider the Microsoft Corporation, for example. Whether or not it does things better or cheaper than others is somewhat beside the point. A key reason for Microsoft's enormous added value is the existence of the Intel Corporation and the complementarity between both companies' products. Similarly, the existence, or lack thereof, of complements will be a key determinant of whether the network computer, electric cars, DVD players, digital cameras and a host of other new technology products succeed or fail.

Added value also fits nicely with the concept of core competence as advanced by C.K. Prahalad and Gary Hamel. You can think of a core competence as a source of added value. What would be lost if you, along with that competency, were out of the game? How well can others fill in?

While added value is on the abstract end of business concepts, that abstraction has its own rewards. It is a simple idea that relates to many different spheres, and, in the end, is highly practical. For chief executives, the important questions to ask are: What is your added value? Where does it come from? And how can you make it bigger, much bigger?

Authors

Adam M. Brandenburger, Adam M. Brandenburger is a professor at the Harvard Business School and is the co-author of "Co-opetition" (Currency/Doubleday, 1996) with Barry J. Nalebuff. Please follow up at their Web page, <http://mayet.som.yale.edu/coopetition>

Barry J. Nalebuff, Barry J. Nalebuff is the Milton Steinbach Professor at the Yale School of Management and is co-authors of "Co-opetition" (Currency/Doubleday, 1996) with Adam M. Brandenburger. Please follow up at their Web page, <http://mayet.som.yale.edu/coopetition>



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