

May/June 1993

The Ecology of Competition

Competition vs. cooperation: a paradox resolved?

At the same time we see an increasing interest in our seminars on competitive intelligence, we also observe an increasing number of articles in the business press on strategic alliances, customer/supplier networks, virtual organizations and other manifestations of cooperation. How can this apparent paradox be resolved? We found a plausible resolution in a recent issue of the *Harvard Business Review* in which author James Moore compares business relationships to a biological ecosystem. Highlights of that article appear below.

The business ecosystem

Instead of going head-to-head in an industry, battling for market share, Moore maintains that a company should be viewed as part of a business ecosystem that crosses a variety of industries. Apple Computer, for example, is the leader of an ecosystem that involves:

- personal computers;
- consumer electronics;
- information;
- communications.

The Apple system includes suppliers such as Motorola and Sony as well as a large number of customers.

Several ecosystems can vie for survival and dominance, just as in its biological equivalent, a prairie grassland is succeeded by coniferous forest, which in turn gives way to complex forests dominated by hardwoods.

Moore discusses how Apple's strategy of working with business partners, protecting its proprietary technology, and talking about "evangelizing" to encourage co-evolution contrasted with rival Tandy's strategy of vertical integration -- a simpler and "tighter" ecosystem that resulted in faster initial growth but did not harness as much capital and talent through participation with other companies.

The evolution of a business ecosystem

The idea that companies evolve in predictable patterns over time is not new; everyone can cite examples of fast-track start-ups that stall when the original management team proves unsuited for managing the problems and challenges of second or third stage growth. Moore's contribution is to show how different cooperative and competitive strategies are needed at different growth stages.

Stage 1: business proposition

In the first stage of business development, success often goes to those who best define a new "customer value proposition" -- a particular product or service at a certain price. Cooperation is important at this stage to help round out the full package of value for customers and to pre-empt "follower" companies from helping other emerging ecosystems.

Stage 2: expand and consolidate

In Stage 2, business ecosystems expand, igniting battles for market share. The challenge here is to stimulate customer demand without exceeding the ability to satisfy it. While a company in Stage 2 is trying to squeeze competing ecosystems to the margin, it must also cultivate cooperative strategies that control customer relationships, protect core centers of value and innovation, and develop relationships with suppliers that constrain other companies from becoming leaders in Stage 3.

It was in Stage 2 that IBM stumbled by not being able to satisfy the demand created when it entered the personal computer market. Its mistakes set the stage for the rise of a new ecosystem with Microsoft and Intel as leaders. Walmart, on the other hand, successfully developed the organizational capabilities that permitted expansion and built the bargaining power that made it a leader in Stage 3.

Stage 3: standards and vision

In Stage 3, the ecosystem has sufficient growth and profit potential to be worth fighting for. Also, the structure of value-added components and processes becomes reasonably stable. Companies focus on standards, interfaces, and customer/supplier relations.

To maintain its dominance in Stage 3, a company must constantly innovate and also inspire its ecosystem partners to do so. A well researched and well articulated vision supports this process. According to Moore, IBM failed to keep innovating in personal computers or even to achieve economies of scale, allowing power to shift to chips and software (areas in which IBM did not excel).

Stage 4: innovation or catastrophe threatens the ecosystem

Mature ecosystems enter Stage 4 when the external environment changes due to such factors as new government regulations, customer preferences, or global economic conditions. An altered environment creates problems for dominant ecosystems, opportunities for

marginal or weak ecosystems.

Dominant companies can attempt to counter these changes by:

- seeking to slow the growth of new ecosystems;
- incorporate innovations;
- restructure themselves.

Moore cites the pharmaceutical industry's response to generic drugs -- limiting their growth through legislation -- as an example of the first strategy. Drug companies used the second strategy -- incorporating the threat instead of trying to limit it -- with biotechnology companies.

The pharmaceutical industry will probably have to use the third strategy (restructuring) to meet the challenge posed by the clamor for reduced health care costs. This may involve limiting and carefully focusing R&D expenses, designing a testing process that emphasizes cost/benefit over mere efficacy, and refocusing sales and marketing efforts away from individual doctors and toward third-party payers and government.

Implications of the ecosystem theory

According to Moore, the major behavior change required by the ecosystem theory is systematic questioning of a company's current situation. This means continually asking questions like:

- Is the company linked with the "best" suppliers and customers?
- Are suppliers leading the way in commercializing innovation?
- Over the long term, can the company maintain a bargaining position that will yield satisfactory financial returns?
- What are competitors doing -- or likely to do?
- What seed innovations might make current businesses obsolete?
- What would it take to transform an innovation into a new business

ecosystem?

- What type of community (ecosystem) would it take to bring these new ideas to the widest possible market?

The need for expanded horizons

Moore concludes that executives whose horizons are bounded by traditional industry perspectives will miss the real threats and opportunities that face their companies. Perhaps the visibility of once-dominant companies in eclipse -- Wang, IBM, American automobile manufacturers, large defense contractors -- drives this point home. That may be why interest in competitive intelligence is growing.

Business intelligence: a critical resource

The questions posed by Moore in his article can be answered by a good business intelligence program that gathers and analyzes data from:

- customer and supplier interviews,
- literature searches;
- internal records (customer and supplier accounting, inventory, and marketing files);
- distributor and/or a direct sales force feedback.

We modified Moore's table to reflect the information requirements of each evolutionary stage (see below). How such information is acquired changes, reflecting technical advances, economic pressures, and the impact of the ecosystem theory itself.

New models for acquiring information

Traditionally, large companies have set up a corporate library or research department to find answers to questions posed by top executives and members of the board. But that model is changing in the following ways:

- as companies seek to reduce overhead and push decision making

further down in the organization, central research units are shrinking or disappearing altogether;

- research units that survive are becoming pro-active about identifying research topics and are learning to market their services, not only to internal clients but also to other members of the ecosystem;
- smaller companies and business unit managers of larger companies without access to an internal research unit are turning to user-friendly computer information networks and free-lance researchers or "information brokers."

Ecosystem information requirements

A healthy business ecosystem not only requires a lot of high quality information, it also provides a means of collecting it, provided that a collection system evolves in parallel with ecosystem growth. A key issue is to design an intelligence system that maximizes information flow in cooperative activities and protects proprietary information in competitive activities.

Afterward

Multi-disciplinary contributions

Since this article was written, Moore has published a book (*The Death of Competition: Leadership and Strategy in the Age of Business Ecosystems*, HarperCollins, 1996) and founded a consulting firm, Geopartners Research. He also writes a column for Upside, the new magazine devoted to Internet-related venture capital.

Biology is not the only discipline whose conceptual underpinnings are being pressed into service to explain the effects of global information networks on business strategy. See the discussion of Xerox's use of anthropology to design a copier repair

	Cooperative Challenges	Competitive Challenges	Information Needs & Opportunities
Birth	Define new product/service with help from suppliers & customers	Protect ideas from others; tie up critical lead customers/suppliers, channels	Identify "seed innovations," research market players and market needs
Expansion	Work with suppliers & customers to bring offer to large market	Dominate key market segments; defeat alternative implementations of similar ideas	Use information to pull in new customer groups, consolidate leadership position
Leadership	Provide a compelling future; encourage suppliers & customers to improve offer	Maintain strong bargaining power in relation to other players in the ecosystem	Identify long-term trends; monitor existing and potential competitors
Self-renewal	Work with innovators to bring new ideas to fruition	Maintain high barriers to entry and high customer switching costs	Incorporate information into value-added services; identify innovators

knowledge base in our Briefing, "CFO's Guide to Intellectual Capital." The Briefing also highlights the contributions of organizational psychology in identifying and reporting on "information seeking behaviors" and their impact on the bottom line. For a sociologist's perspective on the dynamics of E-mail, see Lee Sproull and Sara Kiesler's book, *Connections: New Ways of Working in the Networked Organization* (MIT Press, 1992).

"Information ecology"

The multi-disciplinary approach is catching on. Tom Davenport, a professor at University of Texas at Austin and a frequent contributor to CIO magazine, has extended Moore's "ecology" model in a new book, *Information Ecology: Mastering the Information and Knowledge Environment* (Oxford University Press, 1997). Davenport lists four "ecological attributes" applicable to information management:

- Integration of diverse types of information. True information integration -- computerized and non-computerized, structured and unstructured, text/video/audio -- doesn't occur without major changes in management approaches and organizational structure. "In most organizations," he says, "there's scarcely any contact between the information systems, library, and competitive intelligence functions."
- Recognition of evolutionary change. Because change is endemic to business as well as biological systems, a stable and predictable information environment is rare and may even be impossible.
- Emphasis on observation and description. Says Davenport, "While information engineers emphasize modeling the future, information ecologists take a more humble approach. ... If we can't anticipate the future, we shouldn't plan it in detail.
- Describing and understanding the existing information environment is a major undertaking in itself." Focus on people and information behavior. In the past, providers of information have focused almost exclusively on the production and distribution of information. What the recipients have done with it has been nobody's business. "From where I stand," says Davenport, "if a management initiative doesn't

change information behavior, there's no point in bothering with it."

Davenport's proposed model for "information ecology" includes the following elements:

- information environment -- strategy, politics, behavior and culture, staff, processes, and architecture;
- organization environment -- overall business situation, existing technology investment, and location of physical and human capital;
- external environment -- government regulations, customer requirements, national or regional socio-political factors, markets;
- information ecology "Web" -- explicit acknowledgment that the different elements in the ecosystem constitute an interconnected "web."