

## APPLIED INTELLIGENCE

## Strategic-Information Systems: A Formula for Success


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*In this, the first of five columns on strategic systems, James Martin describes how a corporation can use information-systems technology to gain a competitive advantage.*

In recent years, there have been many examples of one

corporation pulling ahead by making better use of information technology than its competitors. At the same time, there have been some corporations that have watched their earnings decline (sometimes to the edge of bankruptcy) because their competition used computers, microelectronics, intercorporate networks or information in new competitive thrusts. One of the most important questions in corporate computing is, how can we use information technology to gain a competitive advantage?

Systems that enable a corporation to gain a direct advantage over its competition are called strategic systems. Some of these are on-line systems that directly enable the corporation to accomplish a mission, and are referred to as mission-critical systems.

Examples of mission-critical systems are an airline operating a network of terminals in travel agents' offices and a distributor using on-line computers in its customer locations.

A mission-critical system operates at the heart of the business, performing vital corporate and intercorporate functions. If the system stops, those aspects of the business stop. A strategic system is thus critical to the functioning of the business rather than a back-room, paperwork-processing system, as most commercial computers are.

As shown in the figure, strategic-systems opportunities include on-line links to customers, agents, distributors, retailers and suppliers, as well as software in customer locations, new products, automated fabrication, service innovations, strategic alliances and so on.

Corporate presidents are strongly concerned with how their organizations can do better than the competition or how they can prevent the competition from taking business away from their organizations. They need to regard the computer and information system as critical weapons in their battles with competition. Some corporate presidents do not have this vision yet. They still regard computers as an overhead cost that should be minimized whenever possible. One president of a large corporation in Manhattan told me, "I'm an enemy of computers in this place. All I want to know about them is how much they cost—and it's too much." At the same time, his competition was devising inventive ways of using information technology to capture a major part of his business.

The phrase "strategic-systems vision" simply describes the ability to see ways

in which information systems can enhance the competitive position of a corporation.

Rigorous business-planning methodologies—the analysis of goals and problems, technology-impact analysis and critical-success-factor analysis—should be used, but strategic-systems vision is perhaps the most important technique for top-level planning. The habit of thinking about how technology can change (or radically transform) the enterprise to make it more competitive needs to start at the top and pervade the entire enterprise. End users with Information Center tools need to be en-

Federal Express was once a small upstart confronted with numerous competing airfreight companies. Benetton in Italy was, in the early 1970s, a small family business in a no-growth industry with tough, old, established large firms.

Reuters, in the 1850s, used the technology of carrier pigeons to distribute news and details of transactions on the Brussels stock exchange faster than its competition. In the 1970s, it again outdid its competition by providing financial information on terminal screens with its worldwide news network, and then enabling its customers to make trades over that network.

S. Aloe Co. and Will Ross Inc. from the hospital-supply distribution business. Once a hospital got an ASAP terminal, American Hospital Supply couldn't be budgeted."

The examples discussed here relate to large corporations (although some were small when the strategic decisions were initiated). Strategic systems vision is highly relevant to small corporations, as well, and there are numerous examples of small-scale strategic thrusts. Some small accounting firms, for example, with less than a hundred customers, realized in the 1980s that they could introduce personal computer packages to their customers and grow their client base rapidly. Their competition that did not move in this direction lost clients.

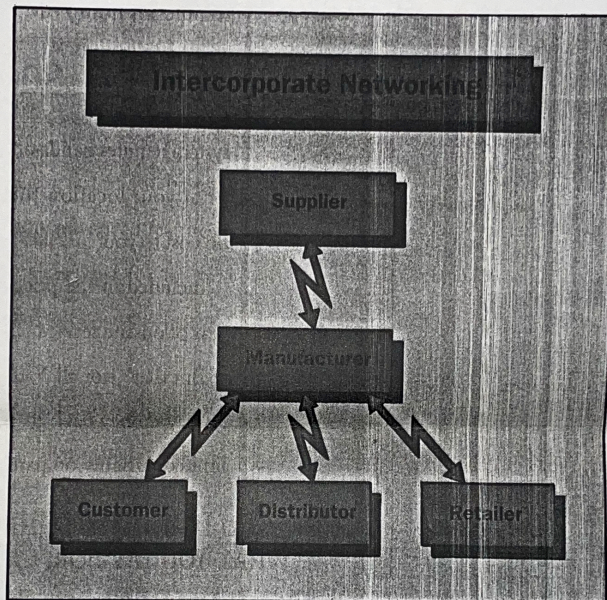
An analysis of strategic opportunities may make it clear that a corporation requires technology that it does not possess. It may need to buy a corporation that does have that technology. Some strategies have been to make acquisitions. In the late 1970s, Dun & Bradstreet searched for appropriate takeover candidates to acquire both information and technology that would further its strategic vision.

### Acquisitions

The firm purchased National CSS (NCSS), a leading time-sharing company with the innovative fourth-generation language (NOMAD) and a nationwide time-sharing network. Next, it purchased McCormick and Dodge, one of the largest software companies, with strong financial packages. It merged with A.C. Nielsen, America's leading consumer-research organization. Dun & Bradstreet also purchased several television stations and cable television systems. Later it refined the facilities it needed to help meet its mission by selling its television stations and systems and selling the NOMAD language (which by then looked somewhat old-fashioned). This process of acquiring and selling facilities can adjust a corporation's resources to help it meet its strategic vision.

To succeed fully in an era of rapidly changing technology, a corporation needs to understand the technology and to develop a strategic vision of how it can use technology to achieve something better than its competition. It may plan a preemptive strike against its competition. The strategic vision should be bold and clear. To implement it, systems may be created in-house, acquired externally, or acquisitions or mergers may be planned.

Next week, we'll look at the business risks involved in the development of strategic-information systems. ■



Alan Witschorko

**For corporate executives, the computer and information systems are critical weapons in their battles to do better than their competitors.**

couraged to explore how they can use computing strategically.

Many highly competitive corporations are successfully employing new technology to create a major innovative business thrust. Some of these companies were old, established corporations that changed their methods of operating. Some were new corporations that used technology in an innovative way to grow rapidly. Some fundamentally changed a basic link in the industry chain, as when American Airlines put travel agents on-line to its computer center or American Hospital Supply put order-entry terminals into clinics. Some were David and Goliath situations where a small company challenged the giants with technology.

A preemptive strike, as it's used in this context, describes a corporation making a thrust that establishes an advantage that cannot be dislodged by its competition. When American and United Airlines established terminals (and later, on-line PCs) in travel agents' offices, other airlines were left out in the cold.

American Hospital Supply similarly preempted its competition. Its terminals were attractive to clinics and hospitals, and usually were not dislodged by competition once they were in place. Charles Wiseman, in his book "Strategy and Computers," quotes industry executives as saying the American Hospital Supply ASAP system was "largely responsible for driving competitors like A.

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