

Editor's Comments

What Role for the CIO?

I've been in the information systems business for 35 years now, and it seems to me that the field has faced an identity crisis the entire time. We're the Rodney Dangerfield profession; we never seem to get our share of respect.

In the 1950s we were the new kids on the block, and no one took us too seriously. Back then, as an employee of Westinghouse Electric responsible for developing computer-based systems, I was told by more than one crusty production superintendent that the computer could never conceivably be made smart enough to generate acceptable inventory ordering decisions. The marketing folks didn't acknowledge our existence. Fortunately, there were always payroll programs to keep us busy.

Information technology is hardly ignored now. No one could possibly have predicted in the mid-50s how pervasive the computer would become by 1991. On almost every professional's desk sits a computer far more capable than the one I first worked on (which was powerful enough by standards of the time to handle the entire data processing and engineering load for a large plant). Many managers now regard information systems as a vital component of any competitive strategy. Organizations spend an increasing share of their budgets for information processing scattered lavishly around every nook and cranny of the enterprise. We use information technology to link upstream to coordinate with our suppliers and downstream to capture our customers (in the nicest possible way). Hardly a sparrow can fall in the production yard without the event registering in somebody's computer; hardly a jar of peanut butter can be rung up at the cash register without updating somebody's marketing database.

What success! What glory must be heaped on the custodians of this marvelous technology!

It hasn't happened. The laurels have gone to Wall Street's rocket scientists and Madison Avenue's marketing whizzes. (Credit for our, ahem, failures is another matter; no lack of recognition there.)

The MIS academic profession is not immune from this cunning appropriation of the fruits of information technology. This was brought out in a recent discussion I had with a marketing student. I tried to argue the case for the relevance of information technology for a marketing professional. Marketing has probably undergone as drastic a change from the computer revolution as any other functional area. In the consumer product field, information technology has given marketing specialists the ability to track detailed movements of product, almost in real time. It has caused a shift of power and revenue from producers to the large chain stores. This has come only through the deployment of tremendous technology. Powerful point-of-sale terminals, effective telecommunication links, flexible database management tools, and sophisticated decision models underlie this marketing revolution. Putting all of this technology together is no small achievement for the information specialists.

The student was not convinced. To be sure, he had no doubt about the importance and relevance of information technology in his career. But he viewed it as marketing, not some abstract field called management information systems (or whatever). Obviously, he felt, the best way to learn about computer-based marketing tools is in a marketing course.

He may well be right. At Wharton, as at many good business schools, the marketing faculty members are among the most sophisticated users of information technology. Long-time users of advanced statistical packages, their expertise in recent years has extended to database management, expert systems, and all manner of other technologies that we used to claim as our exclusive province.

It is hard to see how information technology could have prospered as it has without this embrace by the functional areas. Some IS organizations tried to preserve their monopoly over the technology, and it didn't work. The thing about information processing that makes it absolutely unique is that it penetrates into everything in the enterprise. It is the glue that holds the organization together and provides the basis for decision making and coordination. It is not overstating the case to view the information system

as the organization's "central nervous system." Given the unprecedented advances in information technology, the substitution of information processing for other resources—people, land, plant, equipment, energy—offers one of the most attractive avenues for improvement in all of the business functions.

If this is the case, it's little wonder that the rest of the organization is not willing to cede control of its functions to the information systems specialists. That's as it should be, because IS professionals certainly can't claim deep expertise in all of the business areas. But neither can the functional specialists claim expertise in all of the supporting information technology that allows them to get their jobs done.

This brings us to the issue of a partnership relationship between users and technologists, which is the only sound basis for the survival of the information systems organization. Looking again at the marketing example, what does each side bring to the partnership? The marketing specialist brings his or her expertise in such things as the structure of markets, the nature of competition, the needs of existing and potential customers, consumer behavior, and certain technical tools of the trade (market research, media allocation models, and the like).

What does the IS professional contribute? That is apparently a more difficult question. Some (mercifully few) suggest that IS responsibilities should—and will—eventually get distributed down to the user community, leaving them unimpeded in satisfying their own IS needs. That is certainly a minority opinion; there is a growing consensus among most informed managers and academics that an essential ingredient for running an effective and efficient organization is a sound enterprise-wide information infrastructure—not likely to be a single monolithic one, to be sure, but one nevertheless that considers the needs of the organization as a whole. This infrastructure consists, as a minimum, of mechanisms for sharing and protecting common data and linking things together through a telecommunications network, and an effective environment for developing and maintaining application software. Such an infrastructure provides users with a powerful enabling capability to get their work done.

Building such an infrastructure is an exceedingly difficult and demanding task. It never ends because the infrastructure must continually adapt as changes occur in markets, technology, and user needs. In the eyes of some, this task is enough to absorb the energy of the best chief information officers; if they do that, they need not search further for other responsibilities to justify their existence. This is essentially the position argued, for example, by Paul Strassmann in his admirable book *The Business Value of Computers*.

Others see a broader and more proactive role for the CIO. They see a need for a strong voice of advocacy for the exploitation of information technology. Users, they argue, generally cannot anticipate trends in the technology, nor develop mechanisms for assimilating attractive new uses within the organization. Neither can users easily deal with cross-functional needs, nor make informed judgments about the spectrum of technological alternatives open to them. They are unlikely to understand the extremely demanding discipline required to develop and maintain mission-critical, heavy-duty transaction systems. From a fragmented collection of functional managers, it is difficult to see how there could emerge an effective overall vision for meeting the information needs of the organization—a vision that is both technically realistic and yet deeply insightful about the profound changes we will surely face in an information-intensive world of the next century.

One has to be a little skeptical about how effective a CIO can be in infusing the organization with such a vision, no matter how good it might be. Most managers would argue that it is the CEO, not the CIO, to whom we should look for vision. Unfortunately, the CEO's vision is often blurred or myopic when it comes to information technology.

Although it is extremely unlikely that the corporate leadership will defer to the judgment of the CIO on matters as vital as the future application of information technology, it is not too much to hope that by good deeds the CIO can earn a place in the top councils of the organization. However, the CIO is never likely to achieve this status unless he or she can first put in place an effective enabling infrastructure; a broader role can come when other senior executives see the value of a strong partnership with the information system side of the house. Indeed, there is evidence that more and more organizations are

moving to the concept of the CIO as a senior executive with both a business and technical perspective, who can contribute actively to the formulation of an effective amalgamation of business and IS strategies.

In sum, then, it can be said that the CIO has a legitimate shot at becoming an important contributor in setting organizational policies and strategies. It won't be easy to earn this station, and it certainly isn't guaranteed from the title alone. But if the CIO can get his or her own technological house in order, while also building credentials in the broader business, organizational, and behavioral aspects of the enterprise, then respect and influence have a good chance of gravitating to the office.

Can we possibly hope that Rodney Dangerfield will have to find someone else to commiserate with?

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My three-year term as Senior Editor of the *Quarterly* is drawing to a fairly rapid close. My successor will take over following the publication of the December issue. I am delighted to announce that Blake Ives has accepted the invitation to become Senior Editor. As almost every reader of these pages must know, Blake is one of the most prolific contributors to the *Quarterly* (including this present issue, as well as the past December and March issues), and has previously served with distinction as one of our associate editors. His work in *MISQ* and other leading publications is widely cited in the literature. He has also been very influential in a variety of other professional activities. I feel entirely confident that the journal will prosper in his capable hands. At 6'11", his achievements will hardly go unnoticed.

James C. Emery