INFORMED STRATEGY

Healthcare executives who have weathered the changes of the last 15 years know the strategic value of accurate, comprehensive information. Without knowledge of utilization trends, demographic changes, payer mix, and other factors, boards and chief executive officers (CEOs) cannot make productive strategy and policy decisions.

Despite this awareness, however, many organizations have failed to develop information systems that will effectively support strategic planning. Hospital information systems managers have traditionally been "system technicians" rather than full members of the executive team. And CEOs have often viewed information systems as an operational cost rather than a strategic investment. As a result, information systems have frequently developed independently of the organization's larger purposes and directions.

SET DIRECTIONS

At the Computers in Healthcare Conference this past May in San Diego, presenters stressed the need for hospital CEOs to set directions for their facilities' information systems and for information professionals to play a more direct role in planning.

"Until now, CIOs [chief information officers] have been in the trenches," said Charles J. Austin, chairperson of the School of Health Related Services, University of Alabama at Birmingham. But to do their jobs effectively, Austin noted, CIOs and other information systems managers must broaden their horizons, learning more about strategic management principles and concepts. He added that executive managers themselves must "become more knowledgeable of the important role that information can play in strategy formulation, implementation, and evaluation."

Information Managers Should Play A Key Role in Determining An Organization's Direction

Thomas A. Stocker, director of information systems development at Lutheran Medical Center in Denver, noted that information professionals who understand the strategic potential of an effective information system must develop transitional strategies to get organizational support for implementing one. "The question is, How do we sell senior managers on the importance of taking the small, incremental steps necessary for reach-

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Summary   Hospital chief executive officers need to set directions for their facilities' information systems, and information professionals need to play a more direct role in strategic planning, according to speakers at the Computers in Healthcare Conference last May. To implement effective information systems, chief information officers must be closely connected with the organization's capital budgeting and strategic budgeting process.

A key strategic role for information systems managers is to educate organization personnel in the use of information technology. As demands placed on information systems increase, improving end users' skill level is the best way to take the pressure off.

Information managers must create systems that respond to changes in healthcare, including the trend toward outpatient care. The information requirements for strategic planning include an external assessment and an internal assessment.

Managers should strive to create information systems capable of answering strategic questions concerning patients, payers, practice patterns, and other key issues. Information systems also must provide data that allow managers to assess strategic decisions. They should also give top managers access to information that will help them identify and pursue broad new goals and directions.
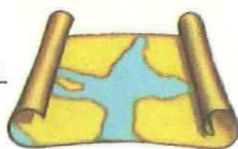
ing that goal?" Stocker explained.

To move the implementation process forward, Stocker said, CIOs must effectively position themselves within the organization. "The IS [information systems] professional should have a vision tied to the organization's goals and a strategic framework for the IS structure," he noted. "The plan has to be dynamic, you must know how to communicate it to the organization, and you must update it regularly for others."

According to Stocker, a critical step for information systems managers is to get involved in the organization's capital budgeting process and the strategic budgeting process. "You have to convince executive management that IS purchases need to be placed in a long-term perspective. If you continue to fall in the one-year budgeting cycle planning horizon, you're dead."

Stocker warned that an information systems manager who is not closely connected with the organization's strategic planning and budgeting process will have little to go on in making purchasing and policy decisions. He noted, for example, that many hospitals are now purchasing bedside terminals, but that some may be doing so for the wrong reasons. They may be purchasing the terminals to improve productivity, he said, when their real value lies in their potential as a front-end data collection system for an electronic medical record. "You won't realize the strategic potential for such an acquisition if you don't see that potential," he added, "and you won't see it if you are not attuned to your organization's larger purposes and directions."

A key strategic role for information systems managers, Stocker said, is to educate organization personnel in the use of information technology. He predicted that the demands placed on information systems will increase steadily in the coming years and noted that improving end users' skill level is the best way to take the pres-

sure off the information systems staff.

One way to accomplish more without adding more employees is "to get all employees to understand their role and responsibilities as a part of the information system," Stocker said. "We're not a normal department; we're a highly leveraged department. We touch 100 percent of our employees, 100 percent of our business partners, 100 percent of our clients. If we can get all involved to understand their role and devote 10 percent of their energy, we can have a tremendous impact on organizational performance."

PLAN FOR CHANGE

David L. Woodrum, president of the Chicago-based Woodrum Group, stressed that information managers must create systems that respond to the changes in healthcare. He identified four trends that will greatly affect the development and use of healthcare information systems in the near future:

- Movement of care outside the inpatient acute care setting
- Demands for cost-effectiveness and other financial pressures
- Advances in quality management and measurement, including practice parameters and other clinical guidelines
- Continued demands to make the most skillful use of healthcare staff

Woodrum predicted that the trend toward outpatient care will pose one of the biggest challenges to information systems professionals. Because most of these outpatient facilities (e.g., skilled nursing facilities, hospices) will not be owned or run by the hospital, he said, information managers will have to redesign patient data retrieval systems. For hospital executives to have reliable information about their patients' utilization patterns and outcomes, Woodrum noted, they must have access to a system that integrates information from all levels of providers.

Austin divided the information requirements
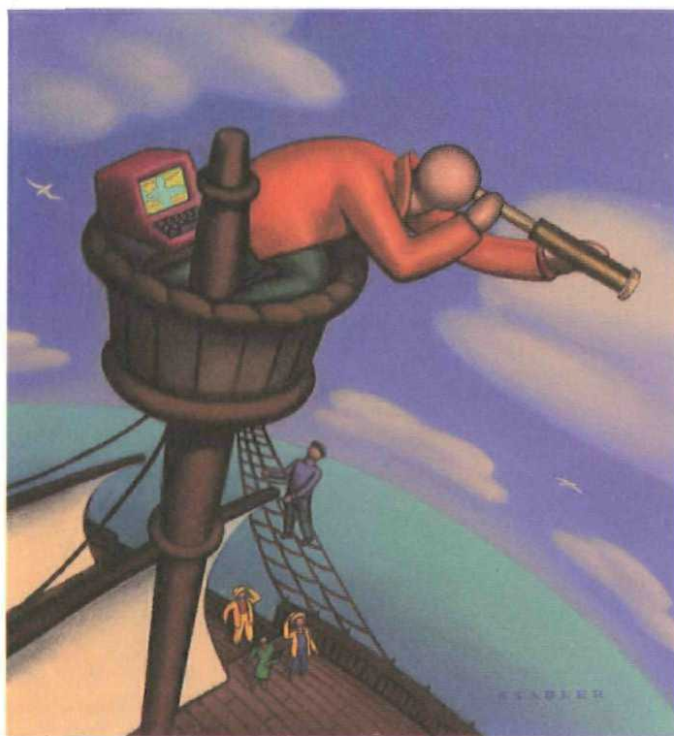
Barton Stabler

The information systems professional should have a vision tied to the organization's goals.
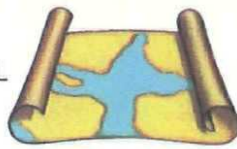
for strategic planning into two broad categories: external assessment and internal assessment. The former involves data on consumers and competitors, plus information about the healthcare environment in general (including technological, regulatory, demographic, economic, and political material). For internal assessment, healthcare organizations require timely, relevant information about programs and services, human resources, medical staff, financial resources and results, and physical facilities.

Austin said managers should strive to create information systems capable of answering strategic questions concerning patients, payers, practice patterns, and other key issues (see **Box** below). "Amazingly, many systems don't provide such basic information as a comparison of costs and charges with third-party payer revenues," he noted. "A hospital lacking these data may have a well-established strategic planning team, but the CIO is certainly not part of it."

According to Austin, a strategic decision–support system should be able to:

• Combine clinical and financial information for case-mix analysis
• Define activities in terms of products and product lines
• Identify costs and revenues associated with each product line

With such information, he pointed out, providers will have a quantitative means of measuring the value of their services, of identifying what services patients need and use, and of determining whether the organization is positioned to provide the service. "With a good management

Executives must "become more knowledgeable of the important role that information can play in strategy formulation, implementation, and evaluation," said Charles J. Austin.

information system, an executive might fine-tune his estimation of the impact of granting a 5 percent discount to a major employer," Austin said. "Too often these kinds of data have been available only to the planning and marketing department."

INCLUDE SENIOR EXECUTIVES

To be effective, then, information systems must provide data that allow managers to assess strategic decisions. To be valuable to senior executives, however, they should do even more, giving top managers access to information that will help them identify and pursue broad new goals and directions. As Larry Collins, senior vice president and CIO of Bethesda Hospitals, Cincinnati, explained, the most important role of a true *executive* information system (EIS) is to guide an organization's vision.

Collins's first priority in setting up an EIS at Bethesda was to involve end users in the process. Many executives are unfamiliar with computers and are not interested in learning about them. To get over this hump, he advised, information managers need to design systems that are easy to learn and at the same time deliver something whose value is immediately apparent.

Bethesda includes two acute care hospitals, a retirement home with a skilled nursing facility, and a hospice, as well as a variety of other services such as a corporate health program. For the past several years, Collins explained, the organization has been developing into a vertically integrated healthcare system. To facilitate this vertical integration process, Bethesda entered into a joint venture with a software vendor to create and implement an EIS.

Collins established several criteria for a system that would be useful for senior executives (see **Box** on next page). In addition, he wanted a structure that would meet the information needs of all Bethesda personnel without disturbing the integrity of the EIS.

The result was a structure with four distinct levels:

• A transaction system at the base (supporting daily operations)
• A management control system (supporting departmental managers' functions such as product-line analysis)
• A decision-support system (for planning)
• An EIS (to enhance senior managers' decision making)

QUESTIONS A HOSPITAL INFORMATION SYSTEM SHOULD ADDRESS

• Has case mix changed in terms of patient type or disease severity?
• How do costs and charges compare with revenues received from third-party payers?
• How do physicians differ in their use of resources to treat similar types of patients?
• What is the impact of technology on practice patterns?
• How do costs, revenue, and productivity compare with those of competitors?
• What are the trends in the social, economic, and demographic characteristics of the marketplace?

Collins explained that the decision-making environment becomes progressively unstructured and open-ended at higher system levels. He noted that top managers will use the information made available by the system to explore possible directions for the organization, rather than to confirm whether a decision is correct in light of the organization's goals. "An EIS really doesn't have an endpoint or target that you're going to meet," he said. "It's more like a journey. It will continue to evolve over the years."

Bethesda executives' involvement in putting the system into place forced them to give a lot of thought to information system needs, he said, "to look critically at what they had versus what they thought their needs would be." And because executives have regularly suggested new uses for the system, the ongoing process has provided the organization with top-down priorities for the acquisition of new systems. By staying close to the process, finally, Bethesda executives have kept the system attuned to the organization's strategic plans and goals.

Although the EIS was conceived to support strategic planning, Collins pointed out that it has had operational benefits as well, the most notable of which was a major improvement in the integrity of data the hospital used to make decisions. Before Bethesda developed the EIS, he said, managers assumed that the other systems in the organization were providing high-quality results. But as executives began to make hands-on use of available information, they found that data were often incorrect or inconsistent. "Any organization not undertaking intense audits of the information it uses for management should be doing so," Collins said. "The catch is that, without an EIS, the problem is not likely to get the attention it needs from senior managers."

The process of implementing an EIS allows information professionals to see which systems are meeting end users' needs and which are not. "An EIS acts as a vacuum cleaner to locate the real dirt about the system's environment and the organization," Collins said. "Clearly, when the CIO is really plugged into the management of the EIS, he'll have a much better insight into the real issues, challenges, and problems the organization faces."

The value of an EIS is difficult to quantify, Collins said, because it is designed to improve managerial effectiveness rather than operational efficiency. But he added that the system has

CRITERIA FOR AN EFFECTIVE EXECUTIVE INFORMATION SYSTEM

- Easy to learn and simple to use
- Comprehensive, incorporating information about all the organization's entities
- Capable of assessing current status of operations, analyzing trends, and communicating key information throughout the organization's executive branch
- Dependable, giving managers confidence they are making decisions based on the most current information available
- Flexible, allowing managers to identify and evaluate alternatives quickly and establish future priorities with confidence

enabled executives to focus on strategic, long-range issues without losing sight of day-to-day operations.

"At Bethesda, we tie success of the system to success of the organization," he continued. "But I can list some obvious indicators of what the system has achieved. It is used regularly by the organization's senior managers. It enables executives to focus on strategic, long-range issues without losing sight of day-to-day operations, and it has proven to be a catalyst for executives to understand the importance of information integrity for making key decisions."

BE AN EDUCATOR

Although changes in both healthcare and technology constantly place new demands on information professionals, their primary task at present may be to demonstrate to others how critical good information is to their organizations' mission. "Perhaps the most important role the CIO should play in an organization is that of an educator," Austin said.

As an EIS matures, Collins pointed out, its value should begin to speak for itself. "An effective system will ultimately enable senior managers within the organization to consider issues from a larger perspective," he said. "Managers who get in the habit of using the EIS to consider strategic alternatives will soon find that the system has taught them how to think strategically. When they reach this point, they will have truly become agents of the organization's mission."

—*Phil Rheinecker*

"Managers will soon find that the EIS has taught them how to think strategically," said Larry Collins.