



Good Health Goes High Tech

Health care steps up funding for ambitious customer-service projects

By Karen D. Schwartz

Imagine what would happen if your business were under tremendous pressure to cut costs while increasing service and functionality to several demanding sets of clientele. Suppose your business wasn't free to conduct itself in the most effective and profitable manner possible, but instead was subject to stringent regulations and oppressive oversight. Under those conditions, how could your business survive?

That's the question many health-care organizations are asking themselves today. And it's getting more complicated because the impending regulations of the Health Insurance Portability and Accountability Act, which aims to simplify health-care administration by imposing strict security and privacy guidelines on health-care companies, make the task seem impossible.

Health-care organizations are rising to the challenge, though, undertaking ambitious programs to improve customer service and streamline business processes. And without a single exception, these companies use state-of-the-art technology to achieve their goal. That's impressive when you consider that health care has traditionally skimped on technology.

"Health care is a \$1.4 trillion industry, but it spends only \$20 billion on technology," laments Ken Kleinberg, research director for the health-care group at Gartner Group, an IT advisory firm. "Other industries spend three to five times more on IT." Slowly, that's beginning to change. Although average IT expenditures in the health-care arena hover around 3%, some organizations are at least stepping up funding.

Consider Cardinal Health Inc., a \$25 billion distributor of health-care products in Dublin, Ohio. The company has a technology budget of \$250 million this year, with \$20 million allocated to a single effort--the ambitious Cardinal.com project. The increased funding and emphasis on technology is a natural move for Cardinal Health as it tries to absorb its 1998 purchase of the medical-surgical product manufacturing and distribution company Allegiance Corp.

Vencor Inc., a Louisville, Ky., provider of long-term health-care facilities, increased technology funding, albeit slowly. In 1999, just 2.3% (\$60.5 million) of its budget was dedicated to technology, but CIO Richard Chapman says that 2.7% (\$79 million) will be earmarked for technology next year.

Boosting funding is the first step in overhauling and modernizing the technology infrastructure to make health-care companies more responsive, effective, and competitive. That means developing new, more-efficient systems to cut costs, increase productivity, and decrease errors.

To meet its goals, Vencor had to develop a spate of new systems. The Clinical Care Management System provides patient assessments, length-of-stay monitoring, rehabilitation outcomes, and key statistics monitoring for the company's 300 nursing homes and 60 long-term acute-care hospitals--and it uses a sophisticated data warehouse and online analytical processing tools. The system was built using a combination of technologies--including a Microsoft SQL 7.0 database and Microsoft's OLAP tools, as well as Seagate Technology Inc.'s SeagateInfo and Crystal Reports--and is housed on an Intel-based Data General 8900 eight-processor server with Fibre Channel-attached Clariion storage units. Results are displayed on the company's intranet.

Vencor is also streamlining business processes by rolling out a standard three-tiered architecture billing system based on Meditech from Medical Information Technology Inc. and housed on Data General servers. "Even though it sounds like a routine task, we did it in a state-of-the-art way," Chapman says. "As far as we know, it's the largest client-server-based billing system in the United States."

New systems that will increase efficiency and cut costs were on the agenda for Universal Health Services Inc., a \$2.6 billion company in King of Prussia, Pa., that owns and manages hospitals and behavioral health facilities. UHS CIO Linda Reino regularly convenes a meeting of representatives from several of the organization's hospitals to discuss and design new systems. This year, the group is focusing on two systems, the Automated Clinical Care Entry Support System, known as Access, and a new pharmacy system.

Access will provide a single admission assessment for each patient, accessible by all UHS hospitals. "We have the same patient fact sheet at all of our hospitals," Reino says. "A lot of hospitals can't even get that to happen between the emergency room and admissions." The system is based on the Clinical Documentation package from Shared Medical Systems Corp.



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Information is fed into the system in a variety of ways. In most cases, nurses and technicians simply bring a notebook computer on a cart into the patient's room, entering information online as they ask questions. Other departments, such as physical therapy, add notes to the file. The notebooks communicate with other hospital systems via radio-frequency technology from Symbol Technologies Inc. Eventually, Reino would like technicians to enter the data via wireless personal digital assistants at bedside but, at the moment, the screens are simply too small and the keyboards are virtually unusable.

The system provides a central place for all information and, most important, improves customer service. "The patient is happy because several people don't ask them the same question," Reino says.

UHS is also hard at work finalizing the selection of a new pharmacy package, which will automate the process of managing medication, ordering supplies and medications, and dispensing and administering drugs. The system has online charting, which lets doctors, technicians, and nurses track where and when drugs were administered.

Cost-cutting measures this year at HCA-The Healthcare Co., a Nashville, Tenn., company formerly known as Columbia/HCA Healthcare Corp., are focused on consolidating back-office operations into a dozen regional centers and applying technology to help reengineer most business processes from the ground up. By the time the project is finished, patient information will be converted to images locally and transferred to the closest regional data center. The company is also developing a Web portal that would let patients receive information in real time.

"In our industry, cutting costs has been done on the clinical side, but we can't do that anymore because the clinical side has been cut to the bone," says chief technology officer Tom Morris. "We're looking for other ways to take cost out of the system, and technology is helping us do that."

Ultimately, customers want more control. "Patients are starting to ask for more control over their care," says Sandip Patel, head of the National Health Care Regulatory Group at PricewaterhouseCoopers. "They want to know what their options are and understand the medical protocols."

In large part, health-care organizations realize that providing these capabilities through technologies such as Internet portals and alliances with other online companies makes good business sense. Not only are customers more satisfied, but the company's reach is expanded, making it more attractive to hard-to-come-by IT personnel and increasing profits.



Under CIO Marrone's leadership, Quest Diagnostics developed Results Online to give patients and doctors online access to the lab-test results. The system, which went live in June, has several hundred users.

Gerald Marrone, CIO of clinical laboratory Quest Diagnostics Inc., certainly believes that. Marrone is spearheading the development of Results Online, an initiative that provides the results of laboratory testing to patients and their doctors via the Web. The \$2.2 billion company in Teterboro, N.J., has partnered with Caresoft Inc., a Sunnyvale, Calif., Internet health portal, to develop the system. Although it only went live in June, Results Online already has several hundred users.

The system wins on two counts. Not only does it cut down on the amount of time it takes to receive results and allow patients to better manage their own health, but it helps physicians as well. "By removing the administrative burden of delivering routine test results to their patients, they can focus on communicating critical test values," Marrone says.

Quest Diagnostics has also partnered with Caresoft to extend the reach of Results Online. Through Caresoft's Web site, TheDailyApple.com--renamed MyLabCenter.com for Quest customers--patients can download test results into their own personalized medical record. The system will also compare the patient's results to a reference range and provide access to information about relevant

diseases.

But patients are only one group of customers that health-care organizations must deal with today. They also must cater to physicians, who increasingly act as independent contractors instead of company personnel, as well as hospitals, insurance companies, and medical equipment suppliers. These customers crave up-to-date information and constant communication with the health-care organization and are just as interested in efficiency and cost-cutting measures.

UHS is focusing this year on servicing its physicians. Through its Physician Access Gateway Enterprise program, physicians can access UHS's mainframe through dial-up modems to view demographics, lab results, radiology transcription, and insurance information. UHS is working with Computer Associates to replace many of the CICS-based screens with Java-based applications. UHS also is in the process of offering physicians access via the Intellispan Virtual Private Network, allowing for better connectivity than dial-up modems. Eventually, the system will be completely online, offering faster and better service, Reino says.

Cardinal Health has launched perhaps the most ambitious Web-based project of all. Designed to service the company's entire customer base of health-care facilities and physician's offices, Cardinal.com is a procurement portal that offers more than 500,000 items for purchase. It's a gutsy move for the company, which has been transacting most business with customers via electronic data interchange for years. "We're thinking that many of our customers will move to the Web with us," says CIO Kathy White.

White is banking on Cardinal.com to increase the company's customer base. Because the system is online, "we can reach areas where we had very low penetration because it wasn't financially feasible for our sales representatives to call on outlying physicians' offices and rural hospitals," she says. So far, White's predictions seem to be on target. As many as 20% of Cardinal.com's customers are new.

Cardinal Health is also developing a software product called Entelligence, which provides decision-making reports for health-care facility executives. The product will function as a subscription service and be hosted on Cardinal.com, to be used by subscriber companies for a monthly fee.

Health-care organizations are moving in the right direction by using technology to address their long-standing problems. "They're dealing with cost pressures to the move toward Web-based applications," says PricewaterhouseCoopers' Patel. "They're doing the best they can."

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