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cover story

1995 & Beyond: Stepping Around the Pitfalls

by Sheldon Dorenfest

The fourth annual *The Healthcare Informatics Top 100* listing spotlights great opportunities for buyers and sellers in a terrain filled with pitfalls.

After years of relatively flat growth, 1994 furthered the trend toward more rapid market growth. The healthcare industry spent $8.5 billion for products and services to support automated information systems, a 13.3 percent growth rate over the $7.5 billion spent in 1993. See Table 1. This is the first year of double-digit growth in industry expenditures since the mid-1980s. The growth rate will continue to increase over the next few years as healthcare information system expenditures are expected to rise to $13 billion by 1997. All market segments are growing rapidly, but expenditures for automating ambulatory services and managed care activities will grow more rapidly than expenditures for automating the acute-care environment. As a result of the improving marketplace, many companies are showing better financial results, and the investment banking and venture capital communities are focusing more heavily on the HIS industry as one of the better investment opportunity areas in the next few years.

The fuel for growth in this market comes from a variety of sources, including the movement toward regional healthcare delivery, managed care and capitated rates, along with a growing desire to satisfy a variety of old needs.

Regional Healthcare Delivery

The need to integrate a wide variety of provider and payor services to better serve a community has resulted in the creation of many regional healthcare delivery systems. Their existence created a variety of information system requirements that did not exist in the healthcare industry as it was previously structured. For example, gaining the benefits of integrated healthcare delivery requires that patient data be available across the entire enterprise so it is accessible wherever the patient enters the regional healthcare delivery system. Thus, the patient can be treated by a physician at the patient entry point with the familiarity that only comes from access to past medical records for that patient. Because the ability to access prior patient records does not exist often, even within individual provider organi-

zations, regional healthcare delivery system officials believe their major competitive advantage will emerge from servicing this enterprisewide need early. As a result, large investments are being made in a variety of automated systems that may be helpful in solving this problem.

Integrated healthcare delivery also makes current, relatively limited automation efforts of the individual components of the entire delivery system appear even more obsolete as the forming regional health delivery system desires to provide "seamless" care across the enterprise. This is motivating formation of some of the delivery systems to acquire a variety of systems to add greater commonality to the diverse products used within the individual provider components of the regional healthcare delivery system. Finally, there is the emergence of community health information networks, or CHINs, which are being created to allow regional providers and payors to share appropriate data.

Managed Care and Capitated Rates

Managed care produced a sharper focus on costs related to individual diagnoses and outcomes. But the industry has not created the necessary underlying information systems to support management in the endeavor to manage individual cases to produce higher-quality outcomes for lower costs. The movement toward capitated managed care within certain regional markets has produced great pressure on regional healthcare delivery systems to lower costs to survive or become "the low cost producer" to gain a competitive advantage. This brought a need for a large category of systems broadly referred to as "managed care systems," which may include member tracking systems, contract management systems, cost accounting systems and a variety of systems and techniques to improve healthcare delivery processes and lower costs.

Table 1: The HIS Industry Market ($ in Billions)

	1993		1994		Forecast 1997		
Market Segments	$	% of Total	$	% of Total	$	% of Total	% Growth
Acute Care Hospitals and Assoc. Inpatient/ Ambulatory Svcs.	$4.9	65.3%	$5.4	63.5%	$8.0	61.5%	48.1%
Physician Offices/Clinics	$0.8	10.7%	$1.0	11.8%	$1.8	13.8%	80.0%
Less Acute Care Hospitals and Other Providers	$0.8	10.7%	$1.0	11.8%	$1.7	13.1%	70.0%
Federal Gov't Programs (Medicare/ Medicaid)	$1.0	13.3%	$1.1	12.9%	$1.5	11.6%	36.4%
Total	$7.5	100%	$8.5	100%	$13.0	100%	52.9%

Growing Desire to Satisfy a Variety of Old Needs

Areas of unsatisfied need within the older, simpler form of healthcare delivery that are now gaining increased attention include the computerized patient record, or CPR, clinical data repositories as a way of moving toward a CPR, systems supporting the analysis of clinical data contained within clinical data repositories and CPRs, integration of a variety of disparate systems to facilitate sharing data among them, and building the repository systems to support closer hospital/physician relationships, as well as a variety of other lesser, but significant, needs for better automation. While these needs have been the focus of industry attention for many years, the movement to regional healthcare delivery has heightened their importance to these newly forming delivery systems.

Increased activity and investment in automation information systems presents a series of major opportunities for suppliers to grow more rapidly and for providers to gain competitive advantages through information systems improvement. But this arises in the context of a simpler past environment in which the industry scarcely produced good results from implementing new systems. In actuality, the past 25 years of industry change has produced very costly, error-prone processes for delivering healthcare, and automation has contributed to this situation.

For example, more than $1 billion has been invested in systems to automate the patient record during the past 25 years. Many organizations undertook programs to create CPRs in the 1970s and 1980s. But the results of these investments are not visible when the contents of medical records at most provider organizations are examined. The records are thicker than they were 25 years ago because the number of orders per patient have increased dramatically. The manual forms in those records look remarkably similar to forms contained in patient records in the late 1960s.

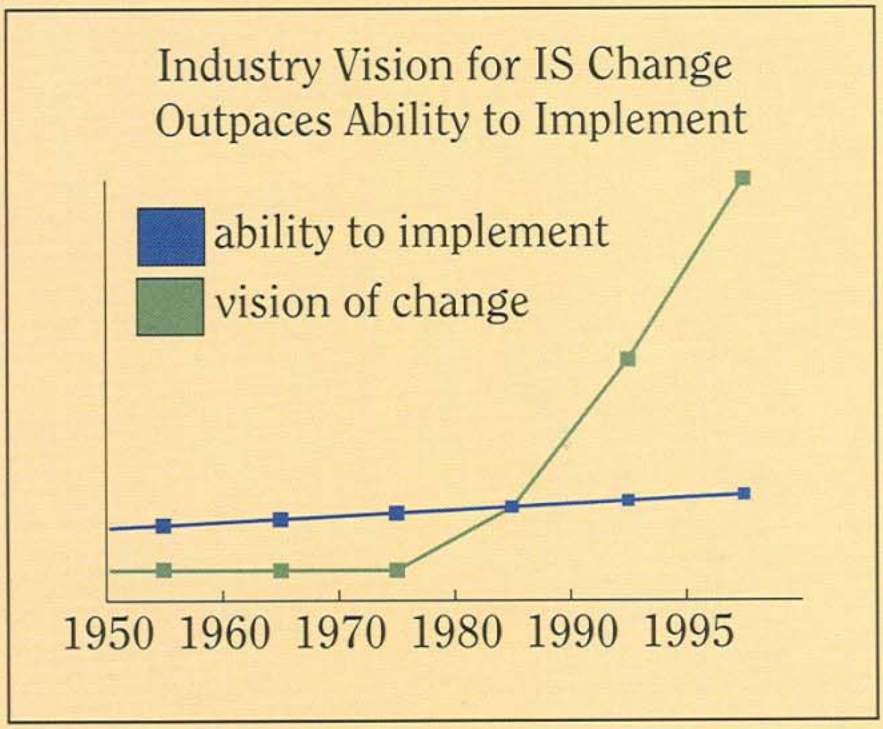
The vision for many of these new organizations in 1995 usually includes the following elements:

- automated systems to serve all episodes of care wherever they take place within the integrated delivery system;
- immediate access throughout the

organization to all patient data for all episodes of care;
- ability to manipulate these data to support clinical decision making;
- replacement of the manual medical record with an electronic chart.

The most-used approach to implementing this vision of a CPR involves software suppliers integrating data from their own or other companies' product lines into a data vault, called a clinical data repository. The data in these repositories usually duplicates data stored in the manual medical record. The justification for storing duplicate data in these repositories is that when enough data is contained in them, they will be able to replace the manual record. However, it will be a long time before this is accomplished.

FIGURE 1



Although most of you know this vision cannot be implemented immediately, some of you are implementing it as a two-year program, for others it is a five-year program, and for others it is even longer. For most of you who are embarking upon implementing this vision, adequate interim milestones that are measurable have not been well established. If you are going about it wrong, you may not know the magnitude of your error for years. And for those of you who allow enough time and money to accomplish much of this vision, you will not create seamless processes. Many redundant manual records will remain based on present approaches to managing this change.

Our vision for information system change is growing faster than our industry's ability to implement. See Figure 1. We forecast that, as a result, the industry will continue to buy a lot of products for the next two years that will not succeed. After a period of difficulty and failure, we forecast that by the end of 1997, we will get "back-to-basics" and see much greater short-term results orientation. To gain a competitive edge, organizations should develop more realistic programs for implementing this long-term vision and more orderly approaches to implementing change. This includes gaining a better understanding of new automated systems, as well as their own processes and how they want to change them. This approach will prove more successful.

When making automation investments in the next three years, keep in mind that a variety of technical approaches to connectivity and networking, repositories of data, object-oriented programming, expert systems, and a myriad of other technical ideas are the latest "bells and whistles" that will divert our focus away from user results. The promise of computerization has been three years out for the past 30 years. We are lulled into believing the people who show us the latest technology and present solutions that are on the drawing board. We do not realize that the technology to create what we need has existed for many years, but the problems stem from the length of time it takes to define and create software, and in the industry's ability to manage change. One more time, industry leaders may be oversimplifying what it takes to succeed with automated systems, and creating unrealistic and inadequate plans that will not produce expected benefits or meet objectives while turning their backs on the less exciting, but easier to accomplish, high-payoff opportunities that exist all over their organizations.

Providers who focus their efforts more conservatively on improving the current use of manual and automated systems, through process reengineering, as opposed to management restructuring, and through more appropriate acquisition methods for acquiring and implementing new automated systems, will have the highest probability for success. From the supplier's point of view, concentrating on helping customers focus on better results will help ensure long-term success. The healthcare industry will need more and better automation. As a result, it will be making large investments in automated systems. How the industry manages these automation investments will determine future success. This is a great time to gain the competitive edge through improved management approaches. ■

Sheldon I. Dorenfest, C.P.A., M.B.A., is President of Sheldon I. Dorenfest & Associates Ltd., Chicago, an 18-year-old healthcare consulting firm best known for The Dorenfest 3000+ Database, *in use in provider facilities nationwide. Dorenfest was a founder and CEO of The Compucare Co., which is listed in* The Healthcare Informatics Top 100.