

A marriage of necessity: automated and manual systems

Successfully managing automated systems is about as easy as reversing the tide. Automation projects originally designed as improvements often bring a flood of complications when integrated with manual systems.

Almost everything within the medical records kept at nursing stations are still manual in spite of attempts to effectively automate records. Amazingly, medical records from the 1960s—now kept in archives—look similar to the records of the 1990s.

Not only has the industry been unable to automate the patient record, but unable to make major improvements to the manual information system as well. The problems of the 1960s have reached crisis proportions in the 1990s because of the increasing demands put on information systems that have changed little in the past 30 years.

One of our clients—a large healthcare delivery system in the Midwest with several hospitals and other provider services—gave us a tour of its nursing stations at its largest facility, which had more than 100 beds. The client's CIO was extremely proud of the information systems supposedly in place. "We are leaders," the CIO said, "in the effective use of automation. Although there are some user problems, the measures we are now taking will effectively address these issues."

Upon examining the nursing stations, we found that the majority of the systems that the CIO described could not be seen anywhere. In fact, we found four different terminals operating at the nursing station and one terminal at the bedside. We first examined the bedside computer system and learned that it was not being used because the nurses did not like



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it. Instead, they took the information they collected manually at the bedside and entered it into the bedside system by using one of the terminals at the nursing station. Of the three nursing station terminals, one processed lab orders and subsequent results in conjunction with the laboratory computer system. The second communicated orders to the ancillary service departments and the third was used for nurse staffing and care planning.

Finally, we looked at the chart and found that in spite of the many systems in use at the nursing station, the chart mostly contained manual information with only lab results coming from an automated system. No wonder the users were confused, had great difficulty in doing their jobs and complained a great deal about automation at that organization!

Another client, a large healthcare system in the Northeast, engaged our firm because their current information system was not working well and they felt it needed to be replaced. We were concerned about this engagement because the client was using one of the most advanced information systems available.

The first area we reviewed with the client was the medication charting component of their automated system. We had seen that component work well at a number of user sites, and this organization seemed to be using that component in a similar fashion. So, we continued to wonder what was wrong.

We asked about the manual records supporting medication charting and the nurses pointed to a manual medication cardex and to manual entries on the chart that duplicated the automated system's records. The client's executive management quickly realized that their problem could not be solved by replacing the automated system. Instead, they needed to eliminate duplication.

These situations are the norm rather than the exception. Smoothly working information systems are a rarity in the industry. In fact, industry automation efforts often hurt more than help, due to the poor implementation of the automated systems. This situation is typically difficult to improve because of the top management's reluctance to undo unsuccessful past efforts.

Looking at the past

Let's go back to the beginning and see what the situation was like. I recently looked over some old speeches of mine and found one from 1974 that summarized the situation back then.

"The complexity of many systems in use in hospitals today results in many duplicate transcriptions of the same data and many redundant tasks. Users have great difficulty in retrieving data. To obtain improvement, many hospitals have undertaken major investments in automation.... When the results are in, most of our experience suggests that automation has increased costs, had little affect on patient care, increased the complexity of managing the hospital and increased the management burden.

Vendors and consultants are fueling the problem by making outlandish claims that make less-experienced management feel more confident about plans that will not work. Finally, there is poor to no management after the decision is made. Top management has expected too much from computer management and has not recognized that these inadequate plans are being poorly implemented until it is too late. This has produced poor results for the huge investments being made in automation."

Moving forward

Most U.S. hospitals have used three or more generations of sys-

tems for automating patient billing and patient care while undergoing reengineering programs to simplify and improve manual information systems. Unfortunately, these efforts have often created redundancy and other complexities in many organizations.

Fortunately, the industry can learn from past experiences. Those wanting to succeed will need to accurately understand the industry's history before realizing substantial improvement in today's information systems.

Remember, during the past quarter century, the healthcare enterprises attempting to make major investments in automated systems and implement large visions all at once have almost always made the least progress. Organizations using a more orderly approach with reasonable goals and step-by-step plans for accomplishment have and will continue to produce the greatest success. Finally, these plans must be managed properly during their implementation. It is possible to reverse the tide of poor results, but a new and different style of leadership and management is required.

It is up to the industry's courageous leaders to change their approach when it comes to system implementation and use. Most leaders, however, probably do not know how to make these changes. Occasionally, some steps backward must be taken in order to go forward. Educa-

tion will help many understand the problem before they must confront it.

Start addressing the issue by allocating a larger percentage of personal efforts to information-systems improvement. Steps in this direction may include:

1. Tour the order-processing system of your own organization to determine how well it works. Look for redundancy and inefficiency.
2. Tour the order-processing systems of one or two similar organizations to determine how you compare to others.
3. Look at your record of past system-change efforts to determine how well they worked. Find the corrections that will make your present efforts get better results.
4. Seek external information-systems education so you can learn to separate fact from fiction when listening to internal or external sales presentations.
5. Create a plan for systems improvement that gets at the high-priority items based on hard benefits and risk considerations.
6. Manage change more carefully with close and frequent monitoring of results.

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