

## STRATEGIES FOR THE EVALUATION OF HIS VENDORS

Joan R. Rothenberg  
So. Baltimore General Hospital  
3001 So. Hanover Street  
Baltimore, MD 21230

John D. Goodman  
Goodman Associates  
1130 Venetian Way  
Churchton, MD 20733

### ABSTRACT

The keys to successful hospital information system acquisition are discussed. Topics addressed include setting hospital objectives, documenting system requirements, identifying suitable vendors, preparing requests for information and proposals, and evaluating systems and vendors. The benefits of proper planning are stressed.

### INTRODUCTION

In order to respond to recent developments in health care reimbursement systems, many hospitals need new data processing capabilities. Outside agencies are now requiring more comprehensive reporting from the hospitals. In addition, the hospitals' need for management information to help reduce inefficiency is becoming critical.

Many older hospital accounting systems, while capable of generating accurate hospital bills, were never designed to develop the integrated clinical and financial data necessary to support today's reporting requirements. As a result, an unusual number of hospitals are deciding to make substantial capital investments to significantly upgrade their data processing capabilities.

This paper addresses the acquisition of a new hospital information system (HIS), with the focus on the methods for finding a vendor to provide the new system.

### PRELIMINARY ACTIVITIES

Since the acquisition of a new HIS is a major investment for any hospital, it is appropriate to lay the groundwork carefully. Determining the most suitable vendor for your hospital is dependent on having a good long range plan with

clearly stated objectives. This route is often circumvented by hospitals seeking to replace an outdated system. In our experience, haste does make waste. Decisions made without proper understanding of the hospital data processing objectives are often disastrous. A hospital in our area followed this route and is now in the process of installing its second vendor system in three years. Another hospital has been in the process of installing its first application for nine months. A clearly thought out plan can help to avoid such pitfalls.

The preliminary planning activities discussed below are intended to clarify the need for a new system, define the overall direction for data processing in the hospital, and provide specifications for the desired systems. These activities provide the basis for a successful evaluation.

#### 1. Establish a project team.

A task force should be formed. The members of this group will be responsible for planning and coordinating the project, as well as performing many of the required activities. In addition, it is recommended that two committees be established:

- Steering Committee - to set overall goals and objectives and oversee the planning activities.
- User Committee - to advise the task force on specific system requirements and assist in evaluating the proposed systems.

The task force can be formed from the data processing staff or may require new employees or consultants. The skills required include knowledge of HIS and system planning. Understanding of the hospital objectives and the ability to relate them to information processing is more important than technical qualifications.

## 2. Assess the current state of data processing in the hospital and document perceived problems and shortcomings of the existing system.

Interviews with various types of hospital personnel are recommended, since it is important to consider the views of individuals who relate to data processing from different perspectives. Interviews with representatives of the following groups are appropriate at this stage:

- . Executive Management
- . User Department Management
- . Data Processing Department Management

In some cases, questions which arise during these interviews may suggest the need for a more detailed study of the information flow within and among key user departments.

Findings from these activities should be documented to avoid losing track of important concerns. Problems with the existing systems and desired/necessary improvements to them should be highlighted.

## 3. Prepare summary functional specifications for the desired system.

The specifications consist of a list of the functions and features sought for each desired application. Long descriptions are not called for at this time, but items listed must be clear and meaningful to project personnel.

## 4. Prepare a long range plan for the hospital.

Establishing a long range plan is the key to successful evaluation. The plan should state the basic automation objectives and their relationship to the hospital's business objectives.

The long range plan will set the framework used to evaluate the potential system vendors. At a minimum, it should contain a timeframe for the application implementation, the strategy for meeting the objectives, and an analysis of costs and benefits.

## 5. Identify important considerations.

The determination of the acquisition considerations helps to set the key factors by which the hospital may determine which vendors can best meet the hospital requirements. Considerations which might be addressed at this stage include:

- . Experienced hospital system vendors vs. new vendors
- . Single vs. multiple hardware manufacturers
- . Inhouse development vs. turnkey system vs. facilities management
- . Full HIS vs. modular installation
- . Packages vs. inhouse development
- . Purchase of operational packages vs. first time installation
- . Distributed vs. centralized processing

## IDENTIFICATION OF SUITABLE VENDORS

Begin by surveying the marketplace for HIS software vendors. Sources include books, magazines, consultants, and personnel familiar with available HIS's. The list should include such basic information about the vendors as type of hardware, applications offered, turnkey or shared system, number of installations, ballpark costs.

Vendors may be excluded at this point based on the key factors identified in the first phase. If a shared system or one which runs on equipment from several manufacturers is not desired, then vendors who offer these types of systems should be eliminated from consideration.

The vendors who remain on the list can be sent a Request for Information (RFI).

## THE REQUEST FOR INFORMATION

The objective of the RFI is to learn as much as possible about the vendor prior to sending the Request for Proposal (RFP). The RFI should contain questions about the size and longevity of the company and company background. If available, an annual report is very helpful. The characteristics of the applications at their operational installations may be determined from a checkoff list. Technical questions should be included to allow the vendor to define the hardware, communications, system software, applications development tools, reliability/backup, and system interfaces. Information should also be sought on the terms of sale, what is included in the cost (i.e., hardware, software, and support), service provisions, warranties, and conditions.

Evaluation criteria for the RFI responses may include:

- . Financial ability of the vendor
- . Number of desired application functions available
- . Number of installations and number of recent installations
- . Number of employees
- . Proximity of vendor support center
- . Fault tolerance (what is the recovery when a hardware component fails)
- . Availability of productivity tools (e.g., data base, high level languages screen generators, application generators, query languages)
- . Ability to acquire application source code
- . Cost (ballpark figure)
- . Degree of integration of financial and clinical systems
- . Standard programming languages

The RFI begins to separate fact from fiction. The many and confusing HIS recommendations can be sorted to discover the vendor systems that match the hospital's profile. The RFI reveals vendor systems that may simply be too costly for the hospital. Vendors may claim to have a full HIS, but on examination major components exist only as design specifications, not operational systems. The patient care system may be state-of-the-art and well accepted but lack true integration with the financial systems. The company might have impressive installation support teams, but their reply to the RFI may show that maintenance services have not been fully thought out.

A carefully prepared RFI and good evaluation criteria will limit the number of vendors who will receive the more detailed Request for Proposal (RFP).

#### REQUEST FOR PROPOSAL

The Request for Proposal allows the vendors to specify exactly what the hospital will receive from the vendor. The RFP should be included as part of the final contract, where it serves as a commitment by the vendor to deliver what is being bid.

In preparing the RFP, the hospital should begin by determining what factors

will be weighed in the final evaluation, and how important each factor is. For example:

|                               |    |
|-------------------------------|----|
| Functional Requirements       | 30 |
| Technical Requirements        | 30 |
| Cost                          | 20 |
| Company Stability and Service | 10 |
| Future Flexibility and Growth | 10 |

The first part of the RFP must describe the hospital and its requirements. Include hospital background, volume statistics, specific applications desired, timetable, type of equipment configuration, technical considerations. The purpose is to inform the vendor as to what the hospital would like to automate when. In addition, the introduction to the RFP should indicate the terms and conditions of the bid (how the hospital will treat the proposals it receives).

The second part of the RFP should be structured so that each vendor will respond in the same format. Where possible, design questionnaires for the vendor to fill out. Sections should include:

- . Executive summary.
- . Functional characteristics and availability
- . Technical characteristics
- . Staffing, training, and implementation support
- . Contract terms
- . Company profile
- . Costs
- . Client references

The vendor's ability to meet the functional requirements is one of the most important factors in the hospital decision. It is not necessary to prepare pages of detailed functions for each application for the vendor to check off. Functions may be identified at a high level and assessed based on a review of operational installations. Assuming the hospital desires applications that are already operational, detailed analysis of the applications' features and functions can be performed during vendor presentations or during site visits to other hospitals. Prepare evaluation forms for each application to be filled out by the hospital staff. They can determine and verify whether the desired functions exist and also see how well they are working in other hospitals.

The technical requirements are important in evaluating the proposed systems. Questions should focus on some of the following:

- Productivity Tools - Are they available to the vendor and/or hospital, and will they help reduce system development and maintenance time?
- Fault Tolerance - Is data backed up, and is the system able to recover transactions up to the time of failure? What provisions are made for redundancy of critical equipment?
- Communications - Are communications facilities included to permit the integration of other systems that are likely to be required by the hospital (e.g., for ancillary departments or for office automation)?
- Documentation - What types of documentation are furnished by the vendor? User, technical, and operational documentation should be included.

Contract terms constitute another important decision factor. Ask the vendor to include a copy of his standard contract. Determine from the contract or from the vendor his position on questions such as:

- What type of warranty does the vendor offer? Is he willing to warrant the features and functions of the system as described in the documentation?
- Does the warranty include the performance of the application system running on the proposed hardware configuration with the hospital's estimated transaction volume?
- Does the warranty include the documentation, or just the software itself?
- Is payment for the systems tied to acceptance by the hospital, and what is the nature of the acceptance?
- Is the timetable for implementation included in the contract, and are there reasonable remedies available to the hospital if the dates are not met?

One of the most difficult things to define is the scope of services included

in the vendor's implementation and maintenance support. Services that may be provided include preparation of functional specifications, application tailoring, user and technical staff training, installation of software and/or hardware, assistance with problems, documentation, conversion, etc. Ask the vendor to define what is included in terms of staff, time, and responsibility. Have him specify which assistance is onsite, and what participation is expected from the hospital. Additional costs related to the support activities (travel, communications, media preparation, etc.) should also be defined and included in the cost of the proposed system.

From the site visits, determine how difficult it may be to install the proposed software. Support by the vendor is important, but other key factors are:

- How smooth are the human interfaces? Are the screens well designed and easy to understand?
- Are there good user manuals, and are they used by the hospital?
- Is online help available, and does it describe the functions, error messages, and codes?
- How effective is the training provided, and what training materials were used?
- Can the users modify parameters in the system, or must all changes be done by data processing personnel?
- Does the system help to reduce paperwork, and are the reports meaningful to management?
- What is the response time, and is it acceptable to the hospital users?

Check the references to determine whether the proposed system operates effectively in hospitals with requirements comparable to yours. Ask about the data processing staffing and the experience level of the hospital personnel. Confirm findings from the site visits and vendor presentations with at least three or four other hospitals. The vendor will take you to his best site; determine if the same service and support is provided to all of his clients.

The cost section of the RFP should ask for costs to be broken down by year and type. Types of cost may include computer equipment, terminals, hardware

maintenance, software, software maintenance, implementation support, and other costs. It is helpful to have each cost category broken down on an individual schedule. For example, software costs should be shown by application, support costs should be shown by type of support and hours available, hardware costs by components, etc. The more detail available, the more understanding the hospital will have of the true implementation cost. Be sure to state that you want full system cost. If tailoring is to be included, ask the vendor to define the amount of time available, and during the evaluation phase have the vendor list all the features to be included.

### EVALUATION

The evaluation entails detailed analysis by data processing staff, user personnel, and possibly consultants. It includes:

- . Vendor's overview presentations
- . Additional presentations to each major user department
- . Visits by users and data processing staff to sites where the system was already installed
- . Extensive reference checking
- . Detailed analysis of the proposals
- . Followup meetings with the vendor and review of additional documentation

Evaluation matrices can be created to organize and reduce the information gathered from the above steps. A matrix of key factors may be easily derived for functional and technical considerations and cost. It is more difficult to analyze the less tangible information gathered from site visits and reference calls. The discussions may unearth key factors for your final decision. In our experience, major issues influencing the evaluation arise in such conversations. The ease of maintenance promised by the vendor may not have been realized by the installed hospitals. The company appears professional, but the installed users complain of the lack of ongoing maintenance support. The product is installed but not up to the service level desired by the hospital. The integrated system advertised by the vendor is made up of separate components that are linked at a very minimal level. The system performance is not acceptable at many of the installation sites.

The discussion factors and the evaluation matrix will result in the final vendor ranking. The process of contract negotiation should be the last step in the hospital decision. The clarification of what the vendor is providing, and the full cost of the packages and services, will not be finalized until the contract agreement between the hospital and the vendor has been reached.

In the last analysis, it is the planning and evaluation process that provides the groundwork leading to a successful HIS implementation. All questions will not have been asked, and all provisions will not be included in the contract. It is hoped that the process will have developed a relationship based on clear expectations and a realistic view of product capabilities. This is the desired outcome of a successful evaluation.