

## **How Healthcare Agencies Acquire Enterprise Software**

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### **Introduction**

Selecting enterprise software is a decision that should not be taken lightly. If a defined process is not followed, healthcare providers may choose an application that does not meet their needs or drastically exceeds their budget. Selecting the ‘wrong’ software can have a huge impact on an organizations’ success.

Through sharing the experiences of a number of leading healthcare providers, and expertise in the software industry, a ‘best practices’ framework for enterprise software selection will be discussed. Information was gathered via interview using an informal survey with ‘Directors of Nursing Informatics’ at six leading hospitals across Canada and Australia.

Larger healthcare agencies frequently adopt a more formal ‘Multi-step Approach’ to selecting software. The method of implementing this type of approach varies among healthcare agencies, to some degree, with each method having its own advantages and disadvantages.

By combining the approaches and learnings from healthcare agencies with experience in a selection process, the ‘best practices’ steps to selecting enterprise software have been summarized and described.

In this article, enterprise software is defined as packaged software that solves organizational problems rather than departmental problems. Examples include Staff Scheduling, Human Resources Management, Workload Measurement and Clinical Information software.

## **‘Best Practice’ Software Acquisition Framework**

Hospitals of different sizes, with different organizational structures and resources follow different steps within an information system acquisition project. The number of steps and the degree to which each is carried out is determined largely by the amount of experience with previous projects of the same nature, by the size and anticipated impact of the introduction of the new system and by the available resources to manage and drive the project.

The steps that are most commonly followed include:

1. Identifying the Need
2. Making the Decision to Go Ahead
3. Gathering Requirements
4. Creating a Formal Tender
5. Evaluating the Vendors
6. Negotiating the Contract

### ***1. Identifying the Need***

Different hospitals use different approaches when it comes to determining who will provide the leadership to the software acquisition project. In some hospitals, the project leaders come from the area which houses the primary users of the system – a clinician for a clinical application or a manager/

administrator for a corporate application. In other hospitals, the project leaders are from IT as they have a more in-depth understanding of the installation and implementation of software/system projects. And yet other hospitals have co-leaders that include someone from the primary use sector and someone from IT.

Whatever the configuration of the project leadership, every hospital interviewed recommended the involvement of the Information Technology (IT) department from the beginning of the process. At most organizations, IT departments develop short and long-term strategies along with hospital leaders to support the organization's corporate and clinical priorities. As hospital priorities change, the IT department is required to revise its strategies to realign its efforts and budget to match the evolving priorities.

Ideas are typically brought to IT from a variety of sources including:

- A patient safety issue usually identified by a nurse or other clinical leader
- Process automation or improvement identified during hospital accreditation
- Converting from paper-based data collection to an electronic format
- A change in government regulations that dictates a change in practice
- Current software is no longer supported, or there is need for add-ons to existing systems

Regardless of the reason or source that is motivating the investigation of a new information system, it is essential that IT and other hospital staff work together to ensure that there is a thorough understanding of the identified gaps and whether enterprise software is a viable solution to the problem.

## ***2. Making the Decision to Go Ahead***

It is very important to determine up-front whether software will solve the problem and whether it is worth the investment involved in selecting, purchasing and implementing it. It can be very costly to go through the entire selection process to then realize that implementing software is not the right solution to the problem, or would simply automate a poor process.

One healthcare provider interviewed performs the first 5 steps (including evaluating the vendors) before seeking budget approval. Most of the other hospitals indicated that waiting until a later stage to get full approval can prove to be inefficient and time-wasting since projects often get delayed or cancelled due to other hospital priorities. It is recommended that the best method to determine whether to go ahead with the decision to select software is to perform a reasonably detailed analysis up-front before moving on to step 3 (gathering requirements).

This up-front analysis is a 'Process-oriented Return on Investment' (PROI). The PROI document includes process flows of all associated activities that would reveal the issues, and then a mapped flow of the future, automated process, anticipating where the new software would be used and if the processes are improved with its implementation.

Oftentimes, staff is comfortable with their current processes and find it difficult to approach a problem from a different perspective. Leading the staff through a process-oriented approach requires experience and can be very difficult for someone who is also only familiar with the current processes. Bringing on an expert facilitator with experience mapping current processes and identifying issues that could be solved with software could be useful at this stage in the process.

As an example, a nurse leader identifies the need to save nurse managers time scheduling staff.

IT can work with the Nurse Managers and nursing staff to analyze **Process-oriented** steps surrounding scheduling in the following way:

- *Current Process:*

- The nurse manager determines how many nurses with varying qualifications are required for each shift (staffing requirements)
- The nurses write down preferred shifts on a piece of paper
- The nurse manager attempts to match requirements with preferences

- *Automated Process:*

- The system calculates staffing requirements based on census and acuity
- The system posts required shifts on-line for nurses to select
- Nursing staff sign up for desired shifts, following pre-determined criteria

Measuring items such as the following can estimate the Return on Investment of the new process in the above example:

- The reduction in time spent (and associated cost) by nurses and managers to prepare a schedule
- The estimated savings associated with an improvement in patient care due to better staffing levels and mix of staff experience (industry benchmarks can be used to estimate the cost associated with improved patient care)
- The estimated savings associated with expected decrease in turnover rates due to increased nurse satisfaction (industry benchmarks estimate cost of replacement RN's)

And finally the **Investment** must be calculated and weighed against the return. The Investment is calculated by determining how much time and capital is involved in selecting and implementing the

software.

Using this Process-oriented Return on Investment study, if the Return is greater than the Investment for every related process, then the decision to go ahead can be made.

### ***3. Gathering Requirements***

Once the decision has been made to go ahead, a selection team must be assembled. The most effective team is one that involves key players from IT and a variety of levels of clinical or corporate staff, from the frontline to the director level, as well as an executive sponsor.

Involving clinical or corporate staff in the requirements gathering process is vitally important as they are typically the primary users of the system and the ones who would be most directly impacted by its implementation. The frontline staff and directors must be made aware of: their role in the selection process, the main purpose of the software, and the 'IT speak' that will be used throughout the process. If they do not understand what is being discussed, they are not able to provide useful feedback and contribute to the decision-making process.

The executive sponsor must keep the rest of the executive team aware of the progress of the project on a regular basis to ensure that there are no surprises at any point in the process. Lack of executive buy-in can lead to extensive delays or even cancellation of projects.

It is also crucial to involve IT staff in this step of the process as they are able to question vendors and analyze the detailed software/system information to determine if the application will meet the need of the staff and the hospital.

One healthcare provider interviewed cited an example where clinical staff did not involve IT until after hosting software demonstrations. They did not take into account important factors such as how configurable the software was and whether it was able to integrate with existing systems, which

caused major issues during the implementation phase.

When the team begins gathering requirements, the scope of the project is usually defined based on a number of factors. Some projects may be required to stay small due to budget constraints and the inability for the hospital to cope with a larger project due to other organizational priorities.

Staff has usually been thinking about system requirements since the time the initial idea surfaced. It is important to re-visit the processes that were mapped during Step 1 to determine if process re-engineering should take place rather than just automating an existing process. It may turn out that there are specific processes that are best kept manual if they are not easily automated by packaged software, or if customization of the software is either not possible or too much effort for the small return.

If the PROI methodology was used to make the decision to go ahead, the documents developed during that step are an excellent starting point for identifying requirements.

#### ***4. Creating a Formal Tender***

Using a formulaic, non-biased evaluation method helps to narrow down the list of vendors and ensures that all requirements across the organization are taken into account.

The recommended format for the Request for Proposal (RFP) is to stipulate that they reply to each requirement with one of the following options:

1. 'does not comply' – the product cannot meet the requirement,
2. 'complies out-of-the-box' – the product has a core feature which meets this requirement,
3. 'complies with configuration' – the product meets requirement only if *trained consultants setup* the software accordingly,

4. ‘complies with extension’- the product meets requirement only if *trained consultants change* the software accordingly.
5. ‘complies with customization’- the product meets requirement only if *the development team (head office) change* the software accordingly.

The main difference between option three versus four and five is that the latter options require an actual change to the software which means that some programming must be completed. It is important that the vendor agrees (in writing) that any changes to the software will not be affected when the software is upgraded at a later stage.

A complete description of each of these response options should be provided to the vendors within the RFP so there is no confusion when reviewing and evaluating their response.

Below are some recommended items to include in the RFP itself:

- *Internal Selection Process* – Vendors should be made aware of the details of the entire selection process, including:
  - the RFP timelines/deadlines that they must meet
  - how they are to ask any questions or obtain information and how they will be answered – in most cases, all vendors will receive the answers to any question posed by any single vendor to ensure an open and transparent process
  - who they are permitted to contact at the hospital throughout the process
  - how they will be contacted, whether or not their response will be considered
  - what type of presentation will be required and the expected audience
  - what type of evaluation will be undertaken



- if there will be a short-listing process
- *Vendor's Representative project plan* – It is important to get a clear understanding of the time a typical implementation takes for a similar sized hospital or organization. The vendor with the shortest plan is not necessarily the best choice. It is also important to include that the hospital will co-develop the final implementation plan with the successful vendor. This is particularly important to ensure that the organizational culture is considered when developing timelines, education/training schedules and delivery method, as well as expected go-live support.
- *System/Software Upgrades/Enhancements* – It is important to indicate what the expectations are in terms of availability for, installation of and any associated payments for future upgrades.
- *System Configurability*– Ideally, the software should be configurable by the hospital IT staff rather than bringing in an expensive consultant when a change is required.

Before issuing the RFP, the hospital's legal counsel may be able to provide input that ensures that contract negotiations run as smoothly as possible in the future.

## ***5. Evaluating the Vendors***

Depending on the complexity of the system being requested and the number of vendors, after the RFP, the vendors are typically short-listed to those who are able to meet all or the majority of the requirements with little customization, at a reasonable cost. This is usually not more than 5 vendors, but may be lower if there a few companies that provide the software being sought.

The short-listed vendors are invited in for an initial demonstration that provides them with an opportunity to display their functionality and allow hospital staff to learn more about what the systems can do. Further narrowing down can occur, with the further short-listed vendors then returning for a

second round of demonstrations. Since it would be almost impossible to configure and install software for an actual ‘live evaluation’ due to the time, effort and cost that would be required by both the vendor and the hospital, these second round demonstrations are typically scenario-based, with the hospital providing common situations for which the system would be used. Because of the nature of the healthcare industry, vendors are often likely to be on the ‘more cautious’ side when going through the process of demonstrations. More caution should not lead to overly extensive scenarios - only key clinical or corporate processes need to be demonstrated.

These scenario-based demonstrations serve as the evaluation with formal grading of each vendor’s system and its ability to meet the requirements within the hospital’s context. Every requirement should have a weighting associated with it to identify the importance of the requirement and enable the participants to score the demonstration in a non-biased manner.

It is important that the vendors provide information about their longevity, and strategic directions and plans. This could reveal any issues with company solubility or major restructuring that could affect future working relationships, service and support.

Discussions with vendor references are one of the most important steps in the selection process. Ensure that the vendor has a customer of similar size and complexity and get an understanding of what was involved in implementing and upgrading the software. Ask if there were any unexpected delays or surprises during their implementation process that they felt the vendor was responsible for.

Sometimes, ‘Conference Room Pilots’ (CRP) are required to make the final decision. In a CRP, representative data or more detailed scenarios should be provided to the vendor several weeks beforehand for them setup in the software. Members of the project team have an opportunity to try out the system or participate along-side the vendor in a demonstration to test for usability and functionality. Evaluation of the vendors during this step also requires a formal weighting process to ensure a

consistent approach is used to rate and rank the pilots. Coordinating a CRP is also useful for determining the vendor's ability to respond in a timely manner.

Once the evaluations have been completed, there is usually an opportunity for the project team to meet and discuss the advantages and disadvantages of the vendors, prior to a single recommendation going forward to the final approval body.

## ***6. Negotiating the Contract***

Once the final decision has been made; it is time to start the contract negotiations. Those interviewed stated that the length of time it takes to negotiate the contract is variable, but it is estimated to be the same amount of time it takes to perform the first five steps of the process. A typical length of time to negotiate the contract is about three months, but it depends on the organization and the complexity and cost of the system being purchased. The hospital legal counsel should again be included to ensure that the hospital is protected if any aspects of the contract are not met by the vendor.

A final estimate from the vendor on the amount of time it will take to implement the system is required. Any timelines indicated during the RFP response may have changed due to more detailed discussions of requirements. Regardless, the contract should be clear that the hospital requires collaboration in the project implementation schedule and timelines. It is important that the project plan is not 'subject to further discovery', as vendors may estimate a short timeframe in order to win the deal and then extend the length of the plan once the contract is signed. If the vendor is not able to provide a detailed plan, invite them to come in for a week of paid high level discovery to enable them to provide an exact estimate.

For any new features or customizations to be added to the product, the functional details and timelines should be outlined. Healthcare providers interviewed mentioned that it is important to

include a clause in the contract that specifies exactly what must be implemented in a certain length of time. This will enable the hospital to back out and go with the ‘second choice’ vendor if necessary.

## ***Conclusion***

Learnings from the trials and tribulations of leading healthcare providers has led to the identification of the ‘best practices’ approach for enterprise software selection.

The key points to ensure the selection process is successful include:

- Involving IT and clinical/corporate staff in the process and ensure that everyone knows their role and the purpose of the project.
- Getting appropriate executive approval and budget as early as possible by documenting a Process-oriented Return on Investment that outlines overall costs and savings accurately.
- Rather than gathering required features, gathering requirements in a process-oriented nature and if necessary involve an outside team member with experience facilitating this part of the process.
- Using a formulaic evaluation method ensures that decisions are made in a non-biased way.
- Ensuring that the weighting system reflects the importance and priorities of the key requirements.

The ‘best practices’ approach outlined throughout will help to ensure that applications are selected that meet an organizations' needs while still meeting budget and timelines, leading to a successful implementation.

## Authors

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Lorraine has worked in the Enterprise Software industry for nearly ten years designing, selling and project-managing solutions for the Healthcare market both in Canada and Australia. She received her degree in Information Systems from the University of Waterloo and is a certified Project Manager.

The majority of Lorraine's career has focused on Software sales and design. In a sales capacity, she acted as a Software Sales Engineer, responding to RFP's (Request for Proposals) and demonstrating software. As the leader of a product management group, she designed software for the Healthcare market. This experience has given Lorraine a good understanding of the business and technical aspects of staff scheduling and content management software and more importantly, insight into the business needs and processes of the Healthcare sector. Focusing on a fundamental process-oriented approach has provided a solid framework for this analysis.

Lorraine's LPL Software Consulting practice, ([www.lplconsulting.ca](http://www.lplconsulting.ca)) is based in Toronto, Canada and provides expertise to assist healthcare providers in the selection of enterprise software.

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Helen describes the focus of her current role as influencing and driving the technological transformation within the hospital - ensuring that clinical and corporate computer applications support and reflect the practices and workflows for nursing and professional services staff. In addition, Helen's role encompasses establishing evidence-based practices that drive the processes of acquiring and implementing new medical device technologies, to ensure optimal integration of technology with nursing practice.

She has presented posters and papers at numerous conferences and workshops on the topic of facilitating the technology-practice interface for nursing, and teaches part-time in the Ryerson Master of Nursing program/ Health Informatics course.

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