Visualizing LIMS: How to Develop an RFP to Get the System You Want

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A Request for Proposal (RFP) is a comprehensive way to supply information on how a Laboratory Information Management System (LIMS) will meet the requirements of your laboratory. A LIMS RFP is an essential tool for helping visualize a LIMS implementation project, and it also provides a solid roadmap for the laboratory-vendor relationship. A properly developed RFP describes in detail the desired LIMS features and functionality and is the best way to express to potential LIMS vendors what your LIMS specifications are. A well designed LIMS RFP will also address all the laboratory's needs and require that responding LIMS vendors conform to the laboratory's methodology for dealing with them.

In addition, utilizing the RFP process provides the laboratory an opportunity to examine their entire operation taking in consideration the laboratory and data management requirements and business rules. Knowledgeable people inside the laboratory, including the various departments such as laboratory managers, staff, and IT (Information Technology) must all work together to develop the blueprint and vision of the LIMS project, as well as what the expected outcomes are.

The first step in the RFP process is performing a laboratory needs assessment. A needs assessment provides a very effective way to convey to potential LIMS vendors what the LIMS is expected to do for the laboratory, in terms of defined goals and objectives.

This presentation will discuss the entire process and the many benefits of utilizing a RFP to obtain a LIMS and ensure a successful LIMS implementation. Important factors in utilizing the LIMS Request for Proposal process include:

- Conducting a Needs Assessment
- Analyzing Needs Assessment Results
- LIMS Features and Functionality Requirements
- RFP Structure
- RFP Content
- RFP Evaluation
- Vendor Selection Criteria

Needs Assessment

The laboratory should begin with a Needs Assessment of the current laboratory data management system and review of current automation.

•Invest time to clearly define your data management needs, goals, and the role that the LIMS will play in your organization.
•Create a flow diagram of the current sample or specimen flow through the laboratory for each department.
•Review your laboratory processes, how orders are received into the laboratory, how samples and specimens are received, accessioned, prepared, tested, quality controlled, validated, approved and finally reported and invoiced to clients.
•Examine each step in the cycle and try to determine the average amount of time the sample spends at each stage of processing, examine bottlenecks.

Now that the flow diagram is complete, more detail is added in the form of specifications. It is often easier to create specifications based on departments. These specifications will define the features that your laboratory requires, and will be placed in the LIMS Requirements section of your RFP.

The Needs Assessment Summary Report generated from the assessment will be the blueprint for the RFP. The laboratory will review the Needs Assessment Summary Report and prioritize their system requirements and LIMS features, distinguishing between core requirements and optional items and organize the actual RFP document.

Performing a Needs Assessment within the laboratory is an excellent way to determine exactly what the laboratory needs in terms of overall data management, tracking, and reporting. It provides a very effective way to convey to potential LIMS vendors what the LIMS is expected to do for the laboratory, in terms of defined goals and objectives. There are many companies that offer a laboratory automation needs assessment service, if there are no resources or expertise to complete this task internally.

A few important questions to address during the Needs Assessment Phase:
• What are the laboratory bottlenecks?
• Will instruments be integrated into the LIMS? If yes, which ones?
• Will bar-coding be utilized?
• Does the laboratory have the required hardware and software?
• Is data migration required?
• Integration with enterprise systems? If yes, which ones?
• Does the laboratory have experienced IT staff and end-users? Will additional training be required?
• Is training required for implementing software/hardware solutions?

Features Fundamental to a LIMS
There is core functionality that is integral to a good LIMS. This includes sample tracking, invoicing, integrated bar-coding, sophisticated query searching, integrated QC functions, instrument integration, full audit trail, and enterprise system integration. A sophisticated LIMS system will have many features that the laboratory may not use immediately, but may require as the laboratory grows and utilizes additional automation features.

Below is a list of modules that are typically included in a COTS (Commercial-off-the-Shelf) LIMS:
• Sample Tracking (Invoicing/Quoting)
• Data Entry
• Sample Scheduling /Stability
• QA/QC
• Electronic Data Transfer
• Chemical/Reagent Inventory
• Resource Management (Personnel and Equipment Management)
• Time Tracking
• Customer Relationship Management (CRM)
• Maintenance
• A Web-based Data Portal (LIMS KIOSK)
• For client request entry
• For client reporting with attached files, pdfs, Excel, Word or others

RFP Structure and Content

The structure of the RFP should:

• Allow for easy and objective comparison between vendor responses.
• Request “essay” answers, but rely heavily on “short answer” component in terms of question style.
• Require that all questions be answered and be clear that non-conforming responses will be rejected.
• Require that the RFP and the vendor’s responses will be appended to, and constitute a part of, the ultimate contract signed between the company and the selected vendor.

The content of the RFP should include:

• An Executive Summary: a synopsis of the vendor’s project development approach, tools and techniques for deployment.
• Vendor’s Corporate Information: size, financial stability, experience, number of years in business, certifications, (copy of ISO Certificate), number of LIMS installations, Support Plan, and User Group.
• A List of Vendor References: complete contact information and a short description of the project.
• A Detailed Description of the Vendor’s Implementation Process for the LIMS Project including a project Gantt chart.
• LIMS Requirements (Specifications, based on Needs Assessment Summary Report).
• A Detailed Description of Required Functionality.
• Hardware Requirements (Server, Clients, and backup).
• Software Requirements (Operating System).
• Vendor’s Training Plan for end-users and administrators.
• Cost Proposal: itemized, software, hardware, instrument interfaces, training, including any on-going maintenance costs.
• Support and Warranty Options.
• A Requirement for a Site Visit to One of the Vendor’s Clients to See the Software Running “Live.
• Milestones and Deliverables.
• Set Deadlines for Initial and Final Project Testing as well as Date for “Going Live”.
• A Defined Protocol for Handling Delays and a Procedure for Resolving Problems that May Arise.
• A Scripted Demonstration (for vendors that make the short-list and are invited to give an on-site or remote product demonstration, which should include an emphasis on how the system addresses the laboratory requirements.)

RFP Evaluation and Vendor Selection

The next step is to analyze the submissions received in response to the RFP. The most common method of evaluation is what is sometimes referred to as “weighted attribute analysis”. This involves assigning weights to each evaluation criteria or question. The weight reflects the importance of the question, and defines its contribution to the total score. When the vendors have submitted their RFP responses, the answers are scored, and a weighted total score can be calculated.

After calculating the RFP scores, typically a short-list of the top 3 rated responses is created. The short-listed vendors are invited to provide an on-site demonstration of their product and to respond to any questions by the LIMS team. The LIMS Team may also decide to conduct a site visit to one of the vendor’s clients to see the software running “live.” After all demonstrations, the LIMS Team discusses and scores each demonstration and makes a final LIMS partner selection.

Conclusions

The RFP process provides the laboratory an opportunity to examine their entire operation taking in consideration the laboratory requirements, instrument integration and business rules. A well designed LIMS RFP will address all the laboratory’s needs and require that responding vendors conform to the company’s methodology for dealing with them. An optimal LIMS RFP will require a vendor to provide solid answers to specific questions and will maintain that the vendor be accountable for those answers by being incorporated into the final contract. A LIMS RFP is an essential tool for helping visualize a LIMS implementation project, and it also provides a solid roadmap for the company-vendor relationship.

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