WHITE PAPER

L7INFORMATICS

LIMS Migration Strategy

The need for better organization of laboratory operations is well known. While today's selection of commercial laboratory information management systems (LIMS) is a good start to organizing and running a lab, these solutions are only geared towards the management of wet lab operations. Existing solutions are inefficient for data-intensive laboratory operations that require significant bioinformatic data analyses. Therefore, in labs already burdened with the inefficiencies caused by unlinked functional silos, current LIMS solutions do nothing to resolve inefficiencies, and worse, laboratory operations remain fragmented.

Another commonly held view on LIMS is that they tend to be difficult to use. In many cases, compliance with LIMS utilization is difficult to maintain and users tend to work around these systems rather than working with them. This has become an even bigger issue today as labs become increasingly data-heavy, with some labs generating several terabytes of data daily.[1]

It's time for data-intensive labs to explore a more comprehensive solution, such as the L7 Informatics Enterprise Science Platform (ESP), that connects all facets of your lab, from samples to analysis. Since change can be scary and difficult to tackle, this white paper explores factors to consider in making the transition from legacy LIMS to ESP.

THREE IMPORTANT QUESTIONS TO ANSWER BEFORE MIGRATING YOUR EXISTING LIMS

Change is hard. There is always resistance, no matter how necessary the change is. One of the greatest challenges to successful implementation of new systems in labs, or anywhere, is the tendency for users to want to recreate their existing less-than-perfect systems in new software environments. The end result is the same problematic implementations in a new environment. If management sees the new system as just an updated replication of the old system, then it's logical that they are going to think, "Why would we pay more for this?" Users then end up wondering why they changed to a new system, and the problem with compliance amplifies.

To break out of this cycle, consider looking at the solution not as a LIMS replacement, but as an upgrade to a scientific process and data management (SPDM) platform[2] that will demonstrate tangible improvements over time. With this change of perspective, you're now replacing the way your lab manages its scientific processes, and you're focusing on long-term metrics of operation. To start this upgrade successfully, we recommend you ask the following fundamental questions:

1. What current processes are managed by the LIMS and what data is collected?

We approach this from a process management perspective, not just a task management perspective. We also take into account any analysis services that are integral components of your lab's operations and your workflows.

2. What things/processes need to go forward? What is not going forward and why?

We encourage you to purge practices and functions you don't need/like/use that might be lingering due to legacy systems. Then, we work with you to come up with a model for the essentials that need to be migrated.

3. What's missing from your current system that you would like to have in the new system?

Are there functions or services that would benefit your operation? We evaluate areas where you can make improvements and work with you to define these. A comprehensive wish list is created, and we present you with an overall assessment of how we would implement those items.

FIVE ESSENTIAL STEPS FOR EXECUTING YOUR LIMS MIGRATION

Each lab that deploys ESP is unique, however, our process for deploying the software is always the same and relies on the following steps:

1. We engage with our customers to fully understand their operating environment and ensure all questions are fully answered. Without a full understanding of our customers' problems and requirements, we cannot ensure the final solution will meet their needs. More on this topic below.
2. Implement a "blank" (standard) version of the software. This has a two-fold benefit: the first is that it gives us a sandbox (framework) for the implementation of content as it's developed, and the second is that it gives users the ability to acclimatize to ESP's operating environment.
3. Start migrating essential data into ESP. This enables our customers to begin using ESP in parallel with their existing LIMS, easing the transition into the new environment and minimizing downtime.
4. Configure ESP based on your unique needs. If there are features and functions that our users need that are not already in the system, we work collaboratively to define requirements and scope out a development project that meets your scientific goals.
5. Migrate (or don't migrate) all legacy data. This decision comes back to the question of "what does or does not need to move forward from the old LIMS?"

PLANNING FOR YOUR MIGRATION WITH L7

Our goal for any migration is to get the client up to their existing capacity as quickly as possible. The secret to achieving that goal is to deeply understand the customer's laboratory operations and use that information to lay out a step-by-step plan geared to the specific pain points of each organization. We feel that this is the most valuable part of our interaction, and since we have all gone through the process ourselves as users, we are uniquely qualified to fully understand our customers.

We take the time to speak to all the primary stakeholders in the data management process to understand their roles and their critical pain points. We focus on asking the right questions to get everyone in the organization to think carefully about what really does and does not need to be migrated over. We also get everyone to think in terms of the way the new system will work and to understand that doing everything at once up front might not be the wisest course of action. Sometimes you have to move slowly to go fast.

EXPERIENCING CONTINUED ROI WITH L7 ESP

Once your systems are under the management of a comprehensive SPDM platform like ESP, there are numerous areas of operation that you can assess to identify previously unrecognized efficiencies. These efficiencies can lead to increased margins, revenue, throughput, or other measures of improvement.

For example, if a lab technician can easily fire off routine bioinformatics jobs, then the bottleneck of communication and data exchange with a bioinformatician can be removed, and the time saved will enable the technician to process more samples. This integration of functions can save anywhere from 10 to 20 percent of both the lab tech's and bioinformatician's time. A 10 percent improvement in efficiency can directly lead to a 10 percent improvement in throughput, and therefore a 10 percent increase in revenue.

In another example, with all of your systems under centralized management, you can get direct insight into the efficiencies of your high-value laboratory instrumentation. With one of our customers, we were able to determine that one of their Illumina HiSeqs was operating inefficiently and that there was a service issue that needed attention. Had ESP not highlighted this problem, the lab would have continued to underproduce from that instrument. The alternative solution that the lab was considering was the purchase of another $500,000+ instrument to improve their throughput. ESP saved the customer from that major expense.

As outlined in this white paper, there are many benefits of an SPDM platform developed upon business process management principles and utilizing Six Sigma processes. As part of the deployment process of ESP, we walk through many of these ROIs and illustrate how your organization can operate most efficiently.

To learn more about SPDM, we suggest reading our white paper, "SPDM: Applying Business Process Management Principles to Better Manage Laboratory Operations". For more information on L7 or ESP, visit www.L7Informatics.com or email us at info@L7Informatics.com

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