Informatics Standardization and Program Management for a Global R&D LIMS Implementation Project

CASE STUDY

PROJECT AT A GLANCE

Business Sector:
- Specialty Chemicals and Materials

Informatics Systems:
- STARLIMS 12.3

Service Offering:
- Vendor Selection
- Implementation
- Project Management

Elements:
- 8 Global Sites
- 8 Testing labs
- 24 Months (on going)
- 9 CSols Team Members

A large specialty chemicals and materials company needed help to manage a global LIMS selection and implementation project for their R&D labs. The client is undertaking a drive to digitalize the business in support of data security, research productivity, and data collaboration. Due to past mergers and acquisitions, there were a number of heritage systems in use across the organization. These systems lacked instrument connectivity and a cohesive data organization structure. The client's business managers felt it was important to simplify their informatics portfolio with a modern LIMS solution that could provide better connectivity, access, and security.

Objectives

The overall goal of this project was to improve productivity and reduce the multitude of outdated informatics solutions and platforms within the organization. The client wanted to standardize their R&D laboratories by centralizing their lab data into fewer systems, streamlining the workflow processes for their sites, and modernizing their laboratory data pipeline and report generation. This would involve providing instrument connectivity, data management best practices, and easy access to data for analysis.

The project was split into two phases—to select the appropriate LIMS product and then to standardize all business units around two products, STARLIMS and Dotmatics ELN. Configuration of the chosen LIMS was then site- and workflow-specific.

Challenges

The client faced challenges when trying to get buy-in from stakeholders for the project. There were some groups that were eager to move down the road of standardization,

some who were resistant to change, and some who could not standardize (due to budget constraints). Because of these mixed reactions, the client required consistent project management across the sites. With the assistance and guidance of upper-level management, the project progressed as some of the business units engaged in requirements and planning discussions with CSols.

As with most implementation projects, additional challenges arose during the implementation including supplemental work requested by the client that caused scope creep, a technical instrument data file parsing issue that impacted the timeline, and availability of the client's subject matter experts.

CSols's Role in the Solution

CSols has a longstanding relationship with this client, built on trust and mutual respect. Therefore, they reached out to CSols for assistance in the LIMS vendor selection process. CSols helped the client create a list of requirements and then worked with vendors and the client's stakeholders to facilitate demonstrations and meetings to discuss features specific to each LIMS and how they might benefit each business units. This effort required input from each of the business units as well as the vendors' personnel in grading (or self-grading) how well the software performed against specific requirements.

After reviewing all captured data points and scores, a decision was made to select STARLIMS and Dotmatics to be the standardized informatics solutions to implement across all R&D sites, as each had desirable advantages for specific business units.

As experienced consultants with domain, industry, and project management expertise, CSols managed the eight global site implementations for consistency across all platforms. CSols worked

closely with the LIMS vendor and the client to provide consistent leadership, guidelines, advice, and consultation for the various sites implementing a LIMS. Their roles:

- **The CSols program manager** oversaw all on-going LIMS implementations, timelines, and impacts. The program manager also made recurring updates to project milestones, communicated weekly with the client and internal teams, and provided guidance on business process flows from a holistic perspective.

- **The CSols development team** was knowledgeable in all phases of LIMS implementations, including configuration of static data and workflows, and customization of reports. The team's focus was on request creation, sample management, and result entry options. The team provided advice and suggestions for the projects across all technologies to promote efficiencies and scalability gains where possible.

- The client had various instrument file formats to parse, which were difficult to integrate with the parsing routine in STARLIMS. **The CSols developers** wrote custom code for the parsing routines, which was a successful approach but took additional time to design, develop, and test.

Benefits

The detailed **vendor selection** process guided the client through a rigorous request for proposal and demonstration process to capture company and product information needed to narrow their selection choices to two laboratory informatics vendors, each with significantly different platforms and strengths for the various types of businesses involved. The business units were then able to engage in selecting the product that would work best for them and begin the implementation.

The timeline of the implementation across the eight global sites was crafted strategically by the CSols program manager to cause little to no business process disturbances. Any disturbances that did arise were managed appropriately and quickly.

The **LIMS consolidation** project reduced the number of informatics platforms that the client had to support as an organization. As a result, support costs will be decreased as there will be fewer technologies to support and internal technological understanding will increase across business units.

The client quickly realized **efficiencies** from the work CSols performed to centralize data, automate report generation, and simplify request workflow. To maximize productivity, automation was used where possible; including for request creation and result processing. The report improvements gave the client the ability to generate metrics reports using the same form/format and common tools across the organization. Automating the request approval process was a unique aspect of this project, as each site had various needs for the same module.

The CSols developers built each system for **future growth**, so the client has the ability to expand their LIMS implementation with additional modules and to refine their workflows and SOPs.

Additional benefits the client received through the LIMS implementation and standardization project included the following:

- Shorter turnaround times for testing samples
- Reduced administrative processes and maintenance
- Eliminated redundancy errors by using automation (where possible)
- Upgraded request module and improved the overall request workflow
- Easily replicable file parsing approach
- Implemented a smart lab approach where the client received the following:
  ▷ Centralized lab data
  ▷ Streamlined workflow processes
  ▷ Modernized laboratory data pipeline
  ▷ Improved report generation