

# The real cost of LIMS

According to an independent study, standardising laboratory management systems can increase efficiency and reduce cost

As Laboratory Information Management Systems (LIMS) play an increasingly important role in improving the efficiency of laboratories, even greater benefits can be found from standardising LIMS.

A recent study conducted by IDC, a Massachusetts-based research and consulting firm, is the first to examine the financial implications of LIMS standardisation in depth\*. The study was based on interviews with senior LIMS and IT managers at leading companies from a range of industries such as pharmaceuticals, chemicals, food and beverage, and oil and gas – all of which have either standardised or are in the process of standardising LIMS.

The study found cost benefits of approximately \$300,000 (over £150,000) per lab annually from implementing a standardised LIMS. The benefits were realised in three areas: 1) a reduction in LIMS-associated costs, 2) increased IT productivity, and 3) enhanced LIMS user productivity.

Traditionally, multi-lab organisations have used a range of different LIMS solutions in laboratories doing similar work – a result of independent lab-driven purchasing decisions and/or corporate-led mergers and acquisitions. In the absence of a uniform LIMS strategy, companies miss out on the opportunity to gain efficiencies, such as harmonised operational processes, compatible file formats for consistent reporting and increased information sharing.

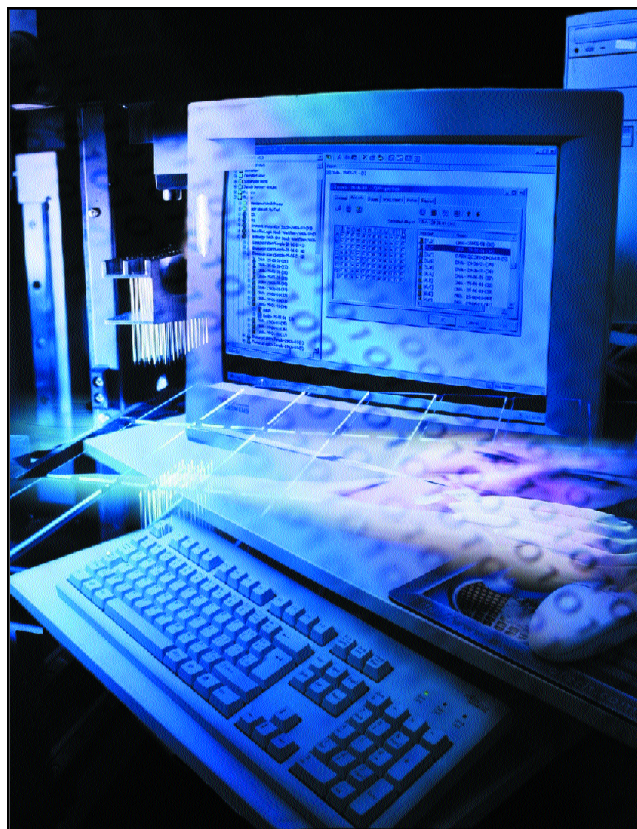
Opportunities for more effective decision-making regarding production, product quality, resource allocation and process optimisation are also being missed.

Additionally these organisations run the risk of draining IT resources – personnel must be familiar with multiple systems, including efforts to upgrade, validate and develop instrument interfaces for the disparate LIMS. End users often endure slow response times from an IT department burdened by administering and supporting multiple LIMS across the organisation.

## Benefits of standardisation

Standardising LIMS has the potential to reduce hardware and software costs, as well as simplifying activities such as internal support, training, upgrades and administration – key drivers in reducing the total cost of ownership (TCO) of a LIMS. Moreover, a universal LIMS strategy enables a consistent validation approach enabling companies to assure compliance inspectors that LIMS implementations conform to the same processes and controls as the rest of the company.

An integrated LIMS reduces downtime and increases productivity for the end-user. With one solution, IT departments can develop more knowledge of a particular LIMS and identify and solve problems faster, even anticipating them before they occur. Standardisation also streamlines vendor relationships, improves purchasing power and frees up IT staff to focus on more business-related activities such as laboratory operations planning, data mining and developing applications for integrating laboratory operations with other corporate systems.



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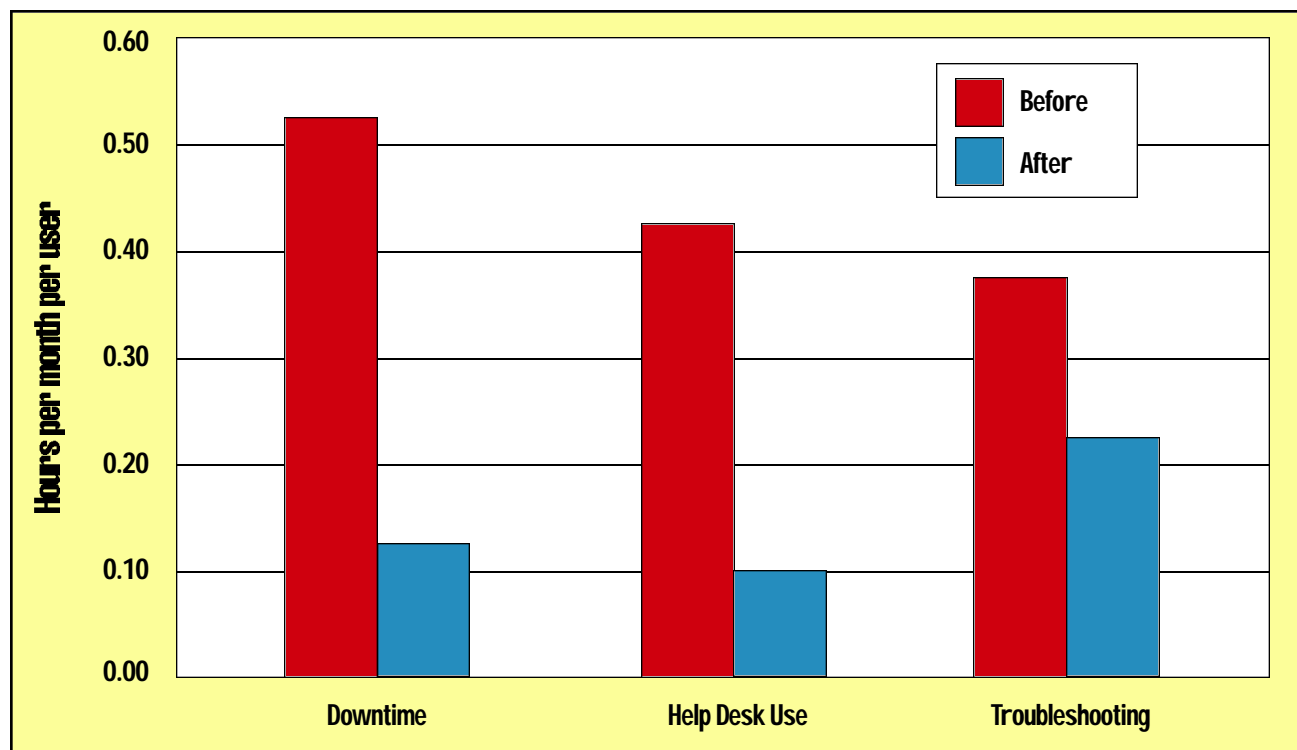


Figure 1: Reductions in non-productive hours by users through LIMS standardisation

## Making standardisation work

Many science-based companies now view LIMS as an essential component of their IT strategies. It is therefore important to demonstrate visible senior level commitment to the standardisation initiative. In addition, good project management, with local champions and a dedicated project manager is critical to ensuring the implementation process runs smoothly and efficiently.

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It is equally important to involve a representative group of end-users as early as possible in the process and to ensure they fully understand the potential benefits of a standardised solution. Involving select end-users on a one LIMS concept in advance will result in distributed proponents who can help explain the project's merits to any dissenters at the local lab level.

End-user involvement will also ensure the final result reflects the needs and requirements of the broader organisation. While scientists may at first be reluctant to embrace standardisation – preferring locally established processes – selecting the best LIMS for the specific application (QA/QC, DMPK/bio-analytical, R&D, in vitro, for example) is essential. TCO provides a useful means of estimating total costs incurred throughout the lifecycle of a particular IT asset, from original acquisition through retirement.

Since TCO analysis extends beyond procurement costs and incorporates ongoing support and IT management cost implications, it also offers a meaningful metric for evaluating the benefits of standardisation.

## Study data

The IDC study revealed that companies that standardised on one LIMS derive significant savings from equipment purchase avoidance, improvements in IT staff efficiency and a reduction in training expenses. On average, among the participating companies, every \$1 spent on deploying a standardised LIMS was offset by \$1.50 in savings on hardware and software. In addition, companies lowered the cost of support per user and were able to reduce their IT staff supporting LIMS by 57% on average. Standardisation also saved companies the cost of IT and user training for multiple LIMS, estimated at up to \$250 per user per year.

Through standardisation, companies also experienced reductions in the amount of downtime and the level of IT activities required to resolve problems related to LIMS. User support activities, applications management and validation, time devoted to troubleshooting activities and data management were typically reduced by more than 50%, and in some cases as much as 90%.

LIMS users as well as those outside the lab who required access to

data benefit the most from standardisation. These individuals were able to build reports dynamically and conduct analysis more efficiently, dramatically impacting their productivity.

In fact, over half the participating companies in the study credited LIMS standardisation with reducing their time-to-market, while 77% felt a standardised LIMS improved product quality, which freed up on average 6.3 hours of productive time to each LIMS user per month. This number becomes particularly significant when multiplied by the few hundred LIMS users a large global company would typically license.

Within the first year of implementing a standardised LIMS, companies also saw their LIMS systems, applications and network downtime drop 77% (Figure 1). Users also devoted less time to troubleshooting and contacting the help desk to resolve problems.

## Selecting a LIMS as a global standard

Standardising on one LIMS represents a significant investment of time and money, and without careful selection and proper planning, can carry considerable risk. Key requirements for a global standard include the ability to become an integral part of a company's IT infrastructure and to provide easy access to data through Web service architecture and XML processing capabilities.

The solution must also be highly scalable for a large number of users, and capable of operating in multiple languages. Access logs and electronic signatures are also critical features needed to accommodate users operating across multiple time zones.

Selecting a vendor capable of implementing a global standard is potentially more important than selecting the appropriate technical solution. Companies seeking a LIMS standard need to select a vendor experienced in LIMS standardisations capable of providing the implementation and support essential to long-term viability.

A complex global LIMS project requires a well-established project methodology that can track project milestones, communicate progress reports, and enforce regular project reviews. In addition, the ability to offer local support on a worldwide basis is a necessity. With the level of investment at stake, and the high potential for encountering pitfalls, the importance of choosing the right vendor cannot be underestimated.

Changing economic conditions are driving life and analytical science organisations to curb expenses, and at the same time improve product quality. These companies are closely examining their LIMS strategies and exploring opportunities for harmonising processes and standardising on one LIMS in an effort to reduce the TCO of LIMS and improve efficiency.

By deploying one integrated LIMS from a single vendor instead of many disparate applications, companies can reduce costs, IT departments can gain productivity and end-users can become more efficient. With independent research to confirm the value of LIMS standardisation, companies can now make the decision to standardise on one LIMS with confidence.

\* The study *Standardising on LIMS: TCO and ROI for the Multi-Lab Setting*, was funded by Thermo Electron

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