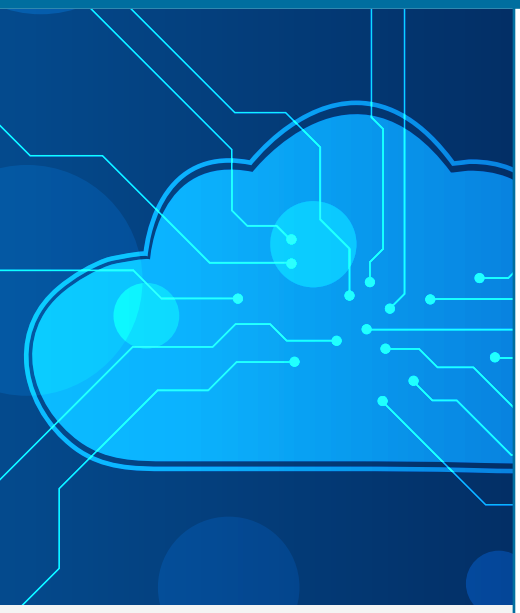
LabVantage®

A Guide to Software-as-a-Service LIMS

INCLUDING VALIDATED SaaS FOR REGULATED INDUSTRIES



Every successful laboratory functions at the nexus of talent and technology: the right people using the best, most streamlined tools to conduct research, measure quality, ensure compliance, and achieve their scientific and business goals.

To support that winning formula, access to a modern informatics suite is essential, either on-premise or as a cloud-hosted solution.

This guide examines a third option that is gaining traction among laboratories of all sizes – from entry-level to enterprise: Software-as-a-Service (SaaS).

A subscription-based Laboratory Information Management System (LIMS), hosted in the cloud and delivered via the internet, is a secure, scalable, and cost-effective alternative to traditional software licensing, installation, maintenance, validation, and management.

Here's what you need to know to determine if the software-as-a-service (SaaS) delivery model for a LIMS is right for your organization.

A SHIFT TO SaaS

The laboratory informatics space is experiencing a shift toward the cloud – and not just for data storage or hosting a purchased LIMS solution.

One of Mark Twain's rules for good writing was appropriately direct and concise. "Eschew surplusage," the prolific storyteller famously declared in an 1895 critical essay.

That's good advice for an aspiring scribe – and even established authors – to this day. But it can also easily extend beyond the literary arts.

Indeed, why complicate our personal and professional lives with unnecessary or non-essential matter, when simplicity and a frictionless experience can enable us to do as much, if not more?

That's certainly the philosophy behind the increasing trend to offer cloud-hosted, software-as-a-service (SaaS) delivery of applications, including some that many of us rely on daily.

Think Google Apps, Microsoft Office 365, Dropbox, and Slack, to name just a few ubiquitous SaaS brands.

Increasingly, the laboratory informatics space is also experiencing a shift toward the cloud – and not just for data storage or hosting a purchased LIMS solution.

There's a readiness to eschew the traditional models of licensing, installing, maintaining, and managing software in favor of engaging with a web-based service provider that delivers a right-sized application and, at the same time, shoulders responsibility for back-end security, availability, and performance.

Traditional Challenges

To understand the growing appeal of a SaaS LIMS, one first needs to get a sense of why some organizations prefer to continue with their existing implementations.

SaaS AVOIDS...

- Delays in upgrade
- Risk of service interruptions
- Upfront capital investment

For those that purchase software to meet their unique needs and are supported by strong IT departments, an on-premise LIMS has some compelling advantages. Companies that are particularly risk-averse might want to exercise more control over their data by keeping it in-house. The need for a stable, predictable LIMS, potentially with accompanying components like Electronic Lab Notebook (ELN), Lab Execution System (LES), and Scientific Data Management System (SDMS), outweighs other considerations, such as slower upgrade cycles and the risk of service interruptions during hardware or software maintenance.

But those rationales underscore the challenges that are fundamental to purchasing a LIMS. There could be substantial up-front expense of a perpetual license, to start. That might not be a concern for a large global enterprise, for example, but it could be prohibitive for many smaller companies and laboratories with tighter operating budgets.

Hardware, sufficient IT-support staffing, and the costs associated with maintaining a secure data center require deep pockets, as well.

...AND DELIVERS

- Rapid Deployment
- Increased productivity with global availability
- Single-contact support
- Instant scalability
- Built-in disaster recovery
- Validation documentation

Granted, a managed cloud solution can reduce many of those worries for large and small organizations alike. In an Infrastructure-as-a-Service (IaaS) model, the LIMS software is purchased but installation and hosting occurs on virtual servers at remote facilities, for a fee or through a subscription-based arrangement. The customer accesses the LIMS via a secure connection and a web browser, and isn't involved in infrastructure management. Service level agreements provide additional layers of assurance insofar as availability is concerned; however, the customer is still responsible for software administration and maintenance.

In that context, it's easy to see why a SaaS-based LIMS might be an attractive third option for many organizations.

A Web-Based Alternative

With a SaaS model, companies can get an advanced informatics suite without a significant upfront capital investment in licensing and infrastructure or paying for features that aren't required. They're simply renting access to cloud-hosted applications and the features they need, along with storage for their LIMS and other data.

Servers, networking, load balancing, security, auto-failover, and backups are all part of the subscription package, and because the vendor takes care of updating the software, users always have access to the latest version via their web browser of choice–whether they are in the same lab, a different building, or another part of the world. There's nothing else to install or validate on a workstation, laptop, or mobile device.

Access to certain features can be switched on or off–a characteristic that is also common across SaaS applications designed for personal and professional use. Subscribers might choose from a menu of plans, such as Standard, Advanced, and Enhanced, each with different pricing, based on their need to support a defined number of users and/or get access to increased storage, load balancing, failover and disaster recovery, testing parameters, or other features. That flexibility can be responsive to an organization's evolving requirements, as well. In fact, instant scalability to meet business demand is a core benefit of a subscription-based model.

In addition, a vendor can configure its SaaS offering as pre-packaged, industry-specific solutions that address unique workflows—in biobanking, cancer research, contract testing, diagnostics, health care, and quality assurance, or the food and beverage and oil and gas sectors, for example—which further right-sizes a LIMS for an organization, eliminates the need for customizations, accelerates adoption and deployment, and reduces costs. For LIMS customers in regulated industries, vendor validation of the SaaS environment is essential.

Benefits of SaaS Validation

Pharmaceutical, healthcare, food and beverage, and like industries can now take advantage of validated SaaS, in which the vendor ensures the delivered system is managed and maintained in a controlled, risk-aware manner. The vendor assumes responsibility for changes made to the delivered software during feature enhancements, software upgrades, and updates made to the LIMS, where every alteration is fully documented, tested, and reported to the user. That evidence of validated control is essential when a company must report to the FDA or similar regulatory body.

SaaS = SAVINGS

A subscription-based SaaS LIMS could produce a saving of as much as 32 percent compared with the expense of an on-premise solution.

Such vendor support guarantees the system is held to the highest-possible standard in terms of data integrity and system control, and the responsibility for maintaining those issues rests with the vendor.

In a large – or growing – organization, validated SaaS is essential because it allows the LIMS to be deployed with confidence, and even expand it to other locations, subsidiaries, and partners.

Common Scenarios

Pricing is one of the first—and foremost—concerns when a laboratory is weighing its options for a LIMS. According to a recent study by LabVantage, if one considers that most LIMS remain in use roughly seven years before they are upgraded significantly or replaced, along with the average annual costs associated with hardware and IT resources, a SaaS-based LIMS could produce a saving of as much as 32 percent compared with the expense of an on-premise solution.[1]

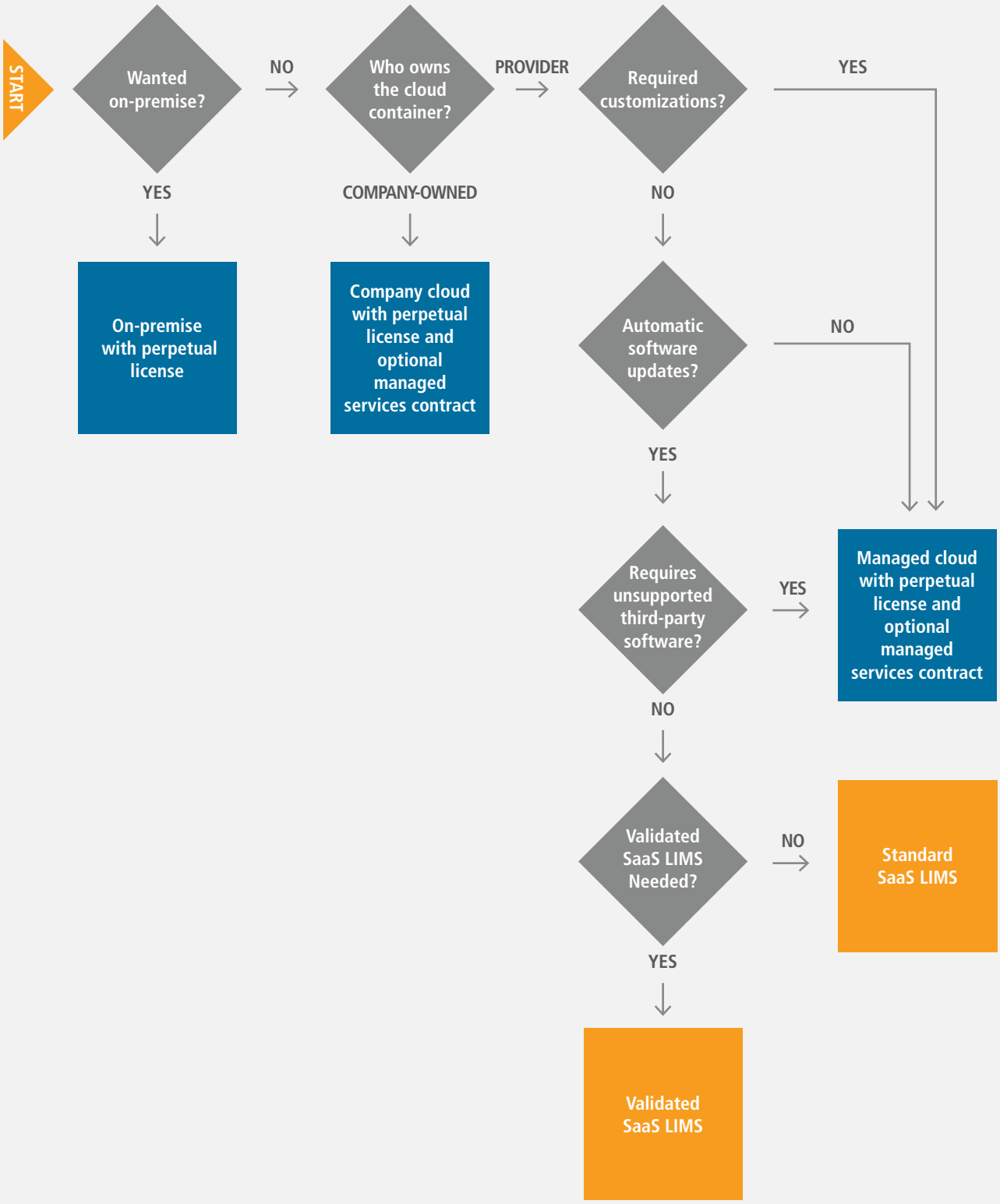
But budget alone should not be a determining factor. One of the first things a decision-maker should ask: "What's needed?" Followed by: "And why?"

That points to several scenarios in which a SaaS-based LIMS might make the most sense.

- For an organization that has already embraced the cloud and is tech-savvy, or in which the C-suite has decided to adopt a cloud-first strategy, the answer to "why" could take precedence. Others that don't have robust IT and financial resources to draw upon might also see a cloud-based solution as a natural fit for their needs.
- Labs of all sizes that have simple or common routines and don't require a full-featured or fully configured informatics suite present another category for which the SaaS model is well-suited.
- Mergers and acquisitions, contract or off-shore projects, and other situations in which a solution might be needed during a transition period or temporarily, possibly without clarity around the feature set required for long-term use, could take advantage of the built-in security, scalability, flexibility, and ease of adoption that a subscription LIMS offers.

ON-PREMISE, MANAGED CLOUD, OR SaaS SOLUTION?

Decision points that can lead to SaaS LIMS.



The Path to SaaS

Choosing between an on-premise, managed cloud, or SaaS solution–validated or not–involves many decision points. One way to examine the decision-making process is by decision tree. (see page 4)

Clearly, there isn't a path to SaaS for an organization that wants to keep its LIMS on-premise or is intent on customizing one. And if purchasing a perpetual license is preferred, the only options are an on-premise installation or a cloud-hosted solution with or without a managed services contract.

But for those that desire a less burdensome approach and see value in effortless and cost-effective access to an always up-to-date laboratory informatics suite, with fully integrated LIMS, ELN, LES, and SDMS, SaaS is a viable alternative. And with vendor validation, it's available to regulated industries.

Labs of all sizes–from entry-level to enterprise–can realize the benefits of relinquishing the expensive overhead associated with traditional systems, and only paying for what they need and use via SaaS-based LIMS.

TO LEARN MORE about how you can run your lab more efficiently with a subscription-based SaaS LIMS, visit LabVantage.com/SaaS or contact us today.

REFERENCES

[1] *"LIMS Total Cost of Ownership: Cloud Hosting versus On-Premises,"* LabVantage Solutions, February 6th, 2020, https://www.labvantage.com/lims-total-cost-of-ownership-cloud-hosting-versus-on-premises/.

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