

*How buying
life sciences
lab software
really works*

All Digital 2

Paths to lab nirvana



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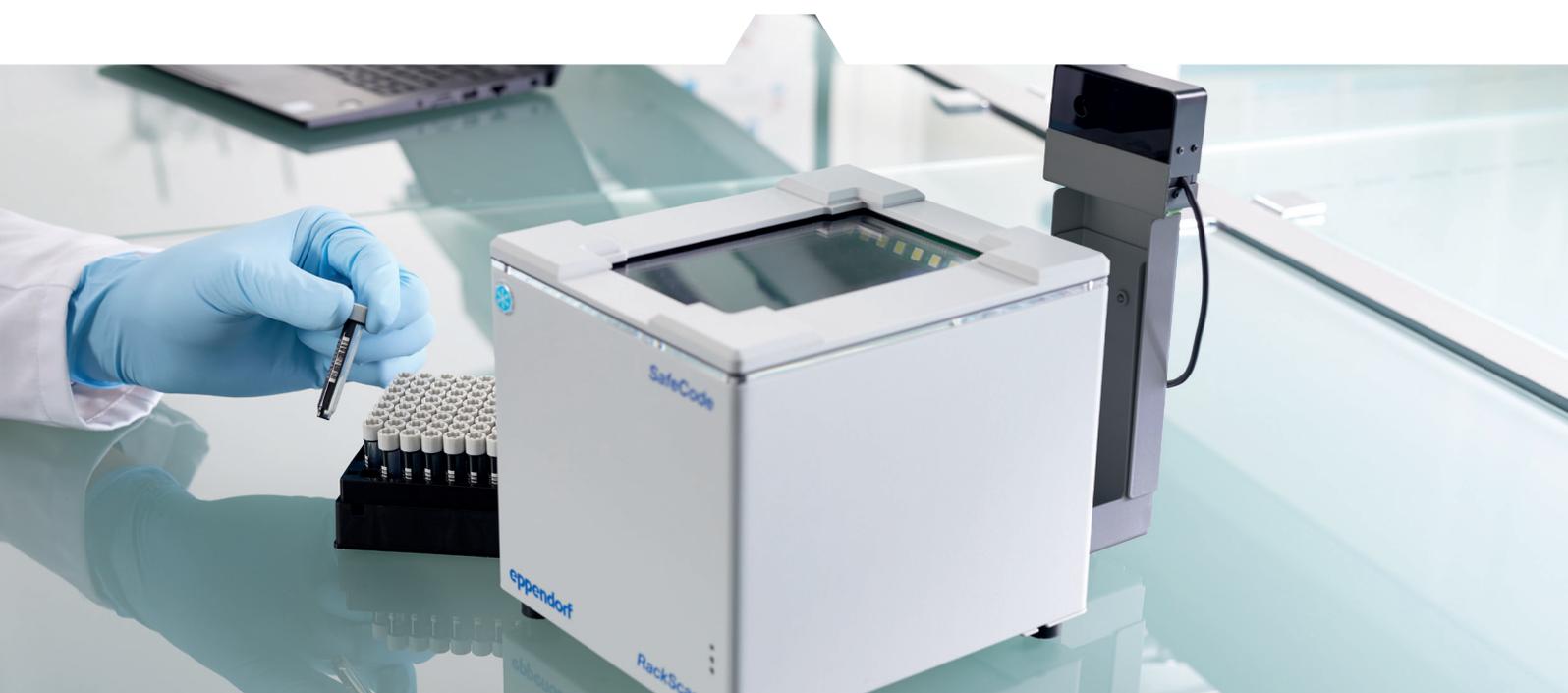
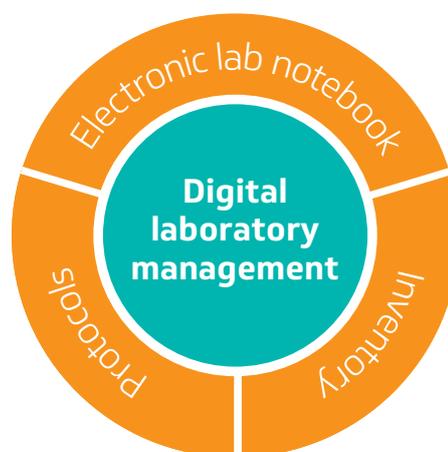
How buying life sciences lab software really works

Facing an unfamiliar process, such as buying a house, puzzled newcomers sometimes ask: Yes, but how does it really work? They know that any real-life process is full of alternatives and decisions, large and small, that make it both complex and nuanced. And they also know that most advice is grossly oversimplified. Choosing a digital laboratory management system for a life sciences lab is no exception. This document gives an inside view of that process, which will make you more informed and effective in navigating the paths to digital nirvana.

Three digital functions in three modules

Digital laboratory management systems can serve several functions. The functions are typically packaged in separate software modules. One module performs the relatively simple task of tracking and managing the inventory of samples in the freezer, fridge, and other storage units. Let's just call it freezer management, for comfort. The module that gets most of the publicity is the "electronic

lab notebook" (or ELN) that supplants the traditional paper lab notebook and adds digital storage of all data types, including data files, videos, and images. It performs the information storage functions of the traditional paper lab notebook, but adds management and retrieval functions, as you would expect of a digital database. And one more information module, perhaps the least known, stores and manages lab protocols, so that you don't have to enter every detail of procedures and experiments every time you execute them.



2 paths to enlightenment

Most labs, and larger organizations with multiple labs, enter one of two paths on their way to the digital laboratory. There are no hard and fast rules about this, but many individual labs and small organizations start down the inventory management or freezer path. Others, often the big life science businesses and universities, want to pull together a

standardized ELN system to cover the entire organization, saving experiments and results in one big, safe, secure database. So they start down the ELN path. No matter which path they choose, they usually enter the other one next, because ELN users will need inventory management soon enough, and vice versa.



The Freezer Path

So why would a lab go down the freezer path first? Because they have freezers whose clean, scientific exteriors hide total chaos within. The samples are jumbled, hard to find, and labeled inconsistently, and that's presuming that the labels haven't fallen or rubbed off over time. Forget about barcodes! The thought of having to find a particular sample can wake a lab manager in a cold sweat at 4 am. For the many labs that lack inventory management software, getting it is an easy decision.

Once they decide to act, the process is straightforward. Inventory location data is simple, but most labs also store so-called metadata about the samples (including valuable, legally-protected patient data in some cases) that are part of the organization's intellectual property. So the database must offer several possible levels of security and have absolutely reliable backup to prevent data loss. Simple spreadsheets and location databases just can't cut it. Despite the sophistication required, the prospective user can go to a vendor website, sign up for a free trial, and be up and running in ten minutes. And because the software would eventually be treated, in accounting terms, as a relatively small monthly expense rather than a major capital

expenditure, senior management approval or competitive bidding would probably not be required. Now, most labs already have freezers full of samples, so they will want to access those so-called legacy samples, as well as those added in future, so the first task is to get the legacy samples into the eLABInventory database. When labs start using our eLABInventory software, for example, we offer reliable, reasonably priced Data Import Services (DIS) that take existing inventory records, stored in a wide range of database and spreadsheet applications, and turn them into new records in their eLABInventory system.

For some labs, starting with inventory management alone makes complete sense. Not only is the Software-as-a-Service (SaaS) inventory system simple for the accountant to expense and the users to learn, but it enables the lab or organization to evaluate the performance of the vendor. Is the vendor reliable, trustworthy, and lastingly responsive? It is still not too late, after the honeymoon is over, to declare the vendor unsuitable and switch to a better one. And, as we explained above, inventory data is relatively simple to port from one vendor's application to another. It's like returning a lemon to the dealership, and driving out with a better car!

The ELN Path

Purchasing an ELN module, however, is often less simple although it is equally critical to the future of the organization. The ELN data invariably contains intellectual property, and the need for rigorous data security can be compelling, especially if the organization has an alert information technology and data security team. Committing to a particular ELN may require approval from higher levels of the organization. And whether it is a university, a government lab, or a big company, it may have to go through a tendering process of taking competitive bids and transparently evaluating them. Installing an ELN is both strategically inevitable and vital to the future success of the organization, so it needs careful, transparent deliberation.

Standardization and Security

Inventory management apps may not be considered “strategic,” in the sense that several labs in a single institution would have to use the same app and coordinate with each other. That may come in the long run, but in the meantime, everyone has a tidy freezer.

That doesn’t seem to be the case with ELN software. Organizations generally insist on choosing and installing a single application from a single vendor. Such standardization makes sense, because it reduces training, support, and hosting costs and organizational complexity, and provides other advantages. There is little opportunity to change partners after the honeymoon. The stakes being quite high, it

will probably take longer to select the “right” product. In the meantime, your freezer may still be a disaster waiting to happen.

You can see why some individual labs and departments in larger institutions would not hesitate to install local inventory management apps without consulting others, including the IT department. By analogy, labs might freely choose to use Google Docs or Microsoft Word. But once the digital management of lab information in the ELN is involved, the dual and often parallel forces of security and standardization come into play.

Of course, eLAB and a number of other vendors offer both inventory management and ELN software that is hosted in the cloud. They can all serve single labs and smaller organizations, of which there are many, until security and standardization become significant issues. Some also offer private cloud hosting, which provides options for a higher level of security for their intellectual property. And some large or growing organizations may insist on internal hosting of the entire suite of lab management software on their own servers. eLAB offers all of these alternatives.

For those same large and growing organizations, like universities, government labs, and corporations, we strongly recommend that they begin by considering the needs for standardization and security, if not for today, then for the future. It is a great shame when an organization commits to a solution that will not be usable in five or ten years. It happens.



Scaling and Cost Allocation

There are two further considerations in the same vein of future growth in the size or sophistication of the organization. The first is scaling. If the organization is likely to grow, the solution should be able to scale, without loss of performance, from tens to thousands of users. The second is in accounting and cost allocation. The system should be able to proportionally allocate usage costs by lab, by department, or the entire organization, or in some combination. This is quite a sophisticated capability, but it is not a luxury, as nobody wants to pay for services that they didn't use.

Next Steps

In summary, we're absolutely serious in suggesting the idea of taking your first steps into digital laboratory management along the freezer path. All the time that you are performing rigorous analysis for your ELN system, writing User Requirement

Specifications, and conducting competitive trials of two or three shortlisted products, your users can clean up the freezers and gain important experience of a vendor and a product. That will help with your final decision.

You can start on the freezer path and later add the ELN, or you can go directly to the ELN path. Some labs elect to implement both at once, which makes complete sense. But no matter how and when you choose the right ELN, you will need a disciplined process. That's what the next installment - All Digital 3 - Evaluation Checklist - is all about.

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About eLabJournal

eLabJournal offers an intuitive and flexible solution to manage information in your lab. The all-in-one Electronic Lab Notebook also includes modules for sample tracking and protocol management. eLabJournal improves efficiency when documenting, organizing, searching and archiving data, samples and protocols. The software is suitable for any lab ranging from small academic laboratories and start-up companies to large academic institutes and globally operating companies.



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All of our product specialists have a scientific background and are happy to discuss your needs. Schedule a demo for a free, no-obligation product demonstration.

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