



Browser-based vs. Client-Server-based ELNs Which is right for your Organization?

There are many Electronic Lab Notebooks on the market, and picking the right one for your organization can be confusing. One of the issues that you may run across is whether or not to choose a “cross-platform” ELN; meaning it will run on Windows as well as on Mac OS X. While this is an interesting topic on its own, let’s explore what cross-platform really means.

In the past, developers had to compile code in order to create an application that would run natively on more than one operating system. Today, developers use Java™ to create applications that are cross-platform in the sense that they will run natively in a *virtual machine*, and virtual machines are available for many, if not all, platforms.

However, many ELN vendors say that if software runs within a web browser, it is considered cross-platform. This allows users on both Windows and Mac (and even the various flavors of Linux) to access information and generate content in both a document management system (e.g., Microsoft Sharepoint) as well as another functionality that resides on a server while users access it via their web browsers (e.g., Internet Explorer, Firefox, Safari). But what does this really mean for the users?

Any application is at the mercy of the technology it is built upon. Browser-based applications are at the mercy of the browsers they run within – and therein lies the problem. Not all browsers are equal, nor do they render the same content in the same way. In addition, browsers are generally designed to retrieve and view content, not to serve as authoring platforms.

What is the bottom line? Browser-based ELNs, while cross-platform and functional, often provide the user with a less-than-optimal experience when compared to their “heavy-weight” application-based cousins. When viewing information in a browser, users may not experience the same sort of visual experience, and content creation may not be open and free-form, but may rely instead on uploading existing files or typing text entries into web forms.

Another disadvantage to browser-based ELNs – the “heavy lifting” such as converting, storing, analyzing, processing, and so on is performed on the server, which in turn affects responsiveness and scalability.

The advantage, of course, is that browser-based systems are generally significantly *cheaper* than their application-based cousins. But even while considering the limitations of funding we face today, quite honestly, you get what you pay for.

What are the advantages and disadvantages of Client-Server Application-based ELNs? For starters, because these are actual applications, the visual interface is very tightly controlled – and thus consistent – for all users. Also, the application can be much more dynamic, incorporating components that allow users to view not just a static representation of their data, but to manipulate and interact with the live data in real time.

Another advantage – the client installed on the local computer takes some of the heavy lifting burden away from the server, which means that these systems can be more scalable. Of course this means that the client machine needs to be somewhat more robust – a minor disadvantage.

A disadvantage of application-based ELNs is that they frequently are *not* written to be cross platform, because it can take significant effort to transfer the code to another platform. Because the Mac OS X and

Linux platforms represent a small proportion of the potential ELN users, most vendors end up *not* supporting anything other than Windows, or they end up writing a web browser-based application. [Rescentris, Inc](#) is a vendor that writes an application-based ELN that runs on both Windows and Mac OS X platforms.

What about cost? Some may balk at having to pay 50% to 150% more for application-based ELNs, but this is not a disadvantage if you consider that you get what you pay for.

When deciding what ELN to purchase, what works well for one organization may not work well for another. Here are three tips to remember when exploring the options:

1. Take a look at several different vendors and ask to test-drive any system you think may be right for you and your organization.
2. Don't take the vendor's word for *anything* – be sure to talk to current users of all the systems you are considering and see what *they* think of the ELN.
3. If cross-platform functionality matters, *don't* buy an ELN from a vendor who says: “We're working on that; we'll have Mac/Linux support any day now.” Buy an ELN that works for you *today* and has been tested by real customers, not one that promises you the moon *tomorrow*.

About us: *Rescentris, Inc. is the provider of CERF - enterprise software to help organizations protect their R&D investments and intellectual knowledge assets. CERF combines electronic lab notebook (ELN) and scientific content management to collect, secure, share, and leverage data and lab records in collaborative projects.*