



Arxspan - Cloud-Based Electronic Notebooks Migrating from Old to New

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Constellation Pharmaceuticals was founded in 2008 with the goal of translating excellent science into breakthrough medicines. The company integrates a unique target validation platform, expertise in structural biology, automated screening technologies, proprietary biochemical, cellular, and biophysical assays, medicinal chemistry capabilities, and experience in clinical drug development. The main focus of the Company is the study of epigenetics to modulate disease states by modifying specific sites on DNA or chromosomal proteins affecting expression of proteins.

The Company works with staff housed both in Cambridge as well as in globally-based CROs. Their projects utilize sciences including biology, medicinal chemistry, pharmacology, enzymology and structural biology. Electronic notebooks (ELN) are used to record experiments as well as to meet legal and archival requirements; their compound registration and inventory systems are not linked to the ELN. The Company's first ELN was a client-server system. It was difficult to maintain, expensive, and very problematic to upgrade. It required frequent coordination of updates of Microsoft Office, Adobe Acrobat, the chemistry plugin and the Microsoft Windows operating system or functionality would easily break. The users found performance of the client-server ELN was slow, especially during signing and witnessing experiments. These problems became more apparent when the lab in China came on line. The ELN's high license costs and requirement for a local installation necessitated that there would be only one user in China who was tasked with adding all experimental information. "

While our original ELN was the leading product of its time, its client-server monolithic design interfered with our changing needs."

"Our original ELN was slow to load and very slow to upload supporting spectral data. Signing and countersignatures were also slow. The Arxspan web-based ELN is much faster [for the user]."

While not actively looking to replace the existing ELN, the shortcomings of their first system left Constellation open to consider alternatives without the constraints of a client-server installation. IT management also believes that cloud-based software solutions would be the industry-wide standard within 5-7 years. This vision is supported by the numerous advantages of the cloud including platform neutrality, reduced maintenance and upgrade costs, and reduced (or eliminated) need for local data centers.

"Web-based notebooks have some inherent constraints. The Arxspan ELN has a robust feature set given those constraints."

Any time software replacement is considered, the change has to meet the needs of IT, the research community, and approval of corporate management. These goals must include maintaining or enhancing functionality available to researchers, while making the system more effective at lower costs for IT. Assuming those goals are satisfied, migration from existing to new software must occur so that there is no loss of data and essentially no downtime for users. Constellation decided that

the Arxspan notebook would both overcome the limitations of their existing client-server ELN as well as meet the current and future needs of the scientists. The Company determined that the Arxspan web-based ELN allows straight-forward global access by all users and meets the legal and regulatory requirements required for drug discovery.

"All migrations have challenges. Careful planning and team communication are essential to overcome the inevitable glitches."

"My expectation was that the Arxspan ELN would be equivalent to our prior notebook. After a few initial problems, it has lived up to expectations. I liked the fact that Arxspan worked with us to make changes to meet our needs."

The migration process went smoothly. Prior to the migration, Arxspan spent about a month training users so that they would be comfortable with the change. IT management spent about a month in working out the logistics of the migration. The biggest issue was ensuring that users signed and closed their notebook experiments before the old system was decommissioned. After the migration, there was about a month of tweaking the ELN to make sure that all functionality was working properly with various web browsers.

"The migration went quite well. In the end, it was just a giant export of data (closed and signed PDF files). The biggest issue was getting scientists to close their notebooks to allow the migration to happen."

"Once everyone closed and signed their notebooks, the actual migration took place over a weekend with essentially no user downtime."

"Overall, this was a very smooth transition. Arxspan committed to the process and made it happen. I am satisfied."

"There was very little learning curve after migration."

The users and IT are satisfied with the experience. IT expenses are significantly reduced. The 60-70 users have very few "Help Desk" issues, most of which are handled by Arxspan transparent to the users. There is no longer a backlog for desktop support. While there were some initial functionality issues such as chemistry grid calculations, Arxspan corrected these shortcomings. Arxspan is aware of some remaining bugs and is currently working to correct them.

"There were some features that were lacking after migration. Jeff and his team were great at listening and fixing these issues."

"The Arxspan support is great. Once migrated, they handled any tickets submitted to the Help Desk. From the user perspective, it appears as if it is local help, but it actually handled by a third-party. Most issues were fixed within 1-2 days."

"Dollar for dollar, we are well ahead. We have gone from 10-15 support tickets per week to none for enormous savings."



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