DLS SOLUTIONS

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Sergey Vlasenko, Ph.D.
President and CEO

PROzyme

THE BACKGROUND

ProZyme, Inc. is a leading manufacturer of reagents and tools for glycobiology. In October 2016 ProZyme, located in Hayward, CA, released the Gly-Q™ Glycan Analysis System, an integrated platform for high-throughput and user-friendly glycoanalysis. With Gly-Q, cell line development and analytical groups at BioPharma companies can determine the glycan profiles of their samples faster while reducing overall costs.

Gly-Q instrument control and N-glycan data analysis are facilitated by a custom-built Gly-Q Manager software developed by DLS Solutions, Inc. ProZyme's goal was to design a complete system for glycan analysis, which includes an instrument, software, and reagents. All BioPharma companies analyze glycoprofiles of therapeutic proteins, and the way they traditionally do it is by running complex methods on large, expensive analytical instruments. The Gly-Q project was to design a smaller, more cost effective and much faster instrument driven by easy-to-use software.
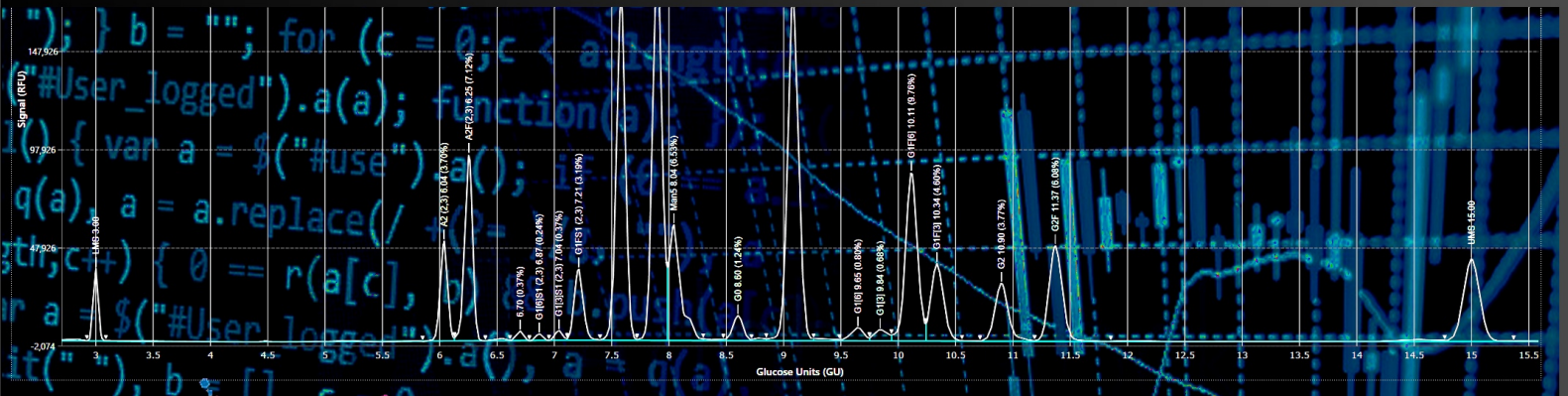
Sergey Vlasenko, Ph.D. President and CEO of ProZyme, says, "When I joined ProZyme in May 2015 DLS was already working on the Gly-Q project. Our Chief Operating Officer knew Bruce DeSimas of DLS Solutions and had reached out to him to develop the scope of the project and some initial feasibility prototypes." Bruce DeSimas and Jeff Levi are Co-Founders and Co-Presidents of DLS Solutions.

THE CHALLENGE

Sergey says, "When I came onboard I reviewed the progress our team had made and the results of all the tests they had done with some of the BioPharma companies. They were under the impression that they could take the software from our instrument OEM partner, put a ProZyme user interface on top of it, and be done with it. However, customers did not accept that kind of a quick software solution. The software that the instrument manufacturer produced was functional, but it did not meet our customer expectations. That's why we had to rethink the effort."

"One option we considered, together with DLS, was to partner with a large instrument company that already had a nice software package, and have DLS integrate our requirements with the larger software package. However, we had a hard time convincing big players to work with us. So, we decided to build it on our own."

Gly-Q Glycan Analysis Instrument

THE CHALLENGE   Cont'd

"DLS was very helpful in this. One thing that they did, which was very valuable, was to show me some prototypes of user interface elements. They said that we did not have to design things from scratch. Instead, we could use graphic modules from companies such as Infragistics and file navigation module from another company. DLS was able to show me sample modules developed for analytical instruments that we could drop into our software product."

CONTROLLING ANALYTICAL INSTRUMENTS

Software programs that control analytical instruments have three parts. The first is the instrument control part supplied by the instrument manufacturer, the second is data analysis and the third is the user interface. The instrument control part consists of low-level DLL modules. The user is not exposed to these modules, but it was important for DLS to make sure that the data analysis and user interface software would communicate smoothly with them. Sergey says, "For the data analysis piece, DLS helped us minimize the variability between sample injections, or sample analysis by developing an innovative algorithm for data 'alignment,' a feature so unique and valuable that we have filed a patent application for it."

Alignment is the critical part of Gly-Q and deals with the inherent variability of one instrument to another. The Gly-Q instrument runs 96 samples at a time and even if it's the same sample, these analytes, called glycans, can shift, which is not acceptable. Without alignment, the software would incorrectly identify sample peaks.

Sergey continues, "Alignment gives us a competitive advantage in head-to-head competition with the bigger players and we often win the business because our alignment gives more reliable results."

"From the customer perspective the 'wow' factor of the software is the user interface, but alignment, working behind the scene, gives us viability and robustness."

WORKING WITH DLS

"We have a great relationship with DLS," says Sergey, "I have experience working in large companies on software projects having multidisciplinary components. The hardest part is communicating with software engineers and translating market requirements into the software developer's language. This was not an issue with Bruce because he has a background in both analytical chemistry and software engineering, so the translation happened very smoothly. Also, DLS has experience working on projects similar to this one, such that we didn't really have to create a lot of paperwork, or documentation. Instead, we worked with simple mock-ups and PowerPoint. "That was an agile way of doing it, but we took agile to an extreme where we were making decisions every week and producing prototypes every other week."

"DLS produced the software in record time and it is state-of-the-art. The main benefit was the agile way of doing things, and not getting bogged down in excessive documentation. Agile resulted in a timely delivery. This project had several streams, and the software stream was always delivered on time, or earlier than the other streams. And the alignment algorithm was a discovery that we didn't expect."

RECOMMENDATION

"I would recommend working with DLS because of all these benefits. The DLS team is great, and if another company uses the agile approach, then they can repeat the same success that we had."

"It surprised me when I joined and started working with DLS, how fast things can move, and how easy it was to communicate what we needed. We don't plan to hire software engineers for this type of projects which we may have every four or five years. So when we decide to do another instrument project, we'll certainly reach out to DLS. Plus, the Gly-Q project is not going to end. There will be product line extensions and new applications."

Sergey concludes, "The DLS people are highly professional, knowledgeable, and agile. DLS' cross-functional experience, not just with software but also with instrumentation analytics and chemistry, is a very strong asset. Their ability to deliver prototype software quickly and the ability to discover new things that have intellectual property potential are a huge plus. We will always consider DLS Solutions when we do new products or versions."

DLS
SOLUTIONS

DLSSolutions, Inc.
46 Gatehouse Road
Trumbull, CT, 06611
e-Mail: info@dlssolutions.com
www.dlssolutions.com

RESULTS