



## BioResearch Data Management Provider Brings Open Source Business Intelligence to Life Sciences Labs

### The Company

GenoLogics is the leading provider of lab informatics solutions for translational research, enabling the high-throughput data management, lab information management and operational reporting for discovery research. The company focuses on providing best-in-class informatics solutions for genomics, next-generation sequencing and proteomics research, and biorepositories.

GenoLogics solutions meet a wide range of demands found in life sciences research settings, giving research labs unmatched workflow traceability, systematic data capture and online collaboration tools, and enabling them to track observational studies and biospecimens, collect patient data at remote sites and manage clinical annotations.

Serving a wide range of prominent customers at academic institutions, medical centers and pharmaceutical and research facilities across North America, Europe and Australia, GenoLogics helps ensure that translational research can substantially improve patient care, increase efficiency in drug development and improve drug efficacy. The company is headquartered in Victoria, BC, Canada.

### Background

Along with the explosive progress in the life sciences research in recent years has come an explosion of data. Depending on the research being pursued, some laboratories can quickly generate multiple gigabytes of data—due to data-intensive disciplines involved, high throughput rates, or (sometimes) both.

A failure to efficiently manage that data could significantly impede research progress. GenoLogics software solutions are designed to help labs track all that data, give it context, and make it more manageable. These solutions are typically part of larger application environment that runs from initial patient information collection and sample tracking through analysis and research conclusion development.

Most GenoLogics solutions are installed at the customer site, and are composed of server components and thick-client applications running on desktops, laptops and lab

### FAST FACTS

#### CUSTOMER

GenoLogics Life Sciences Software Inc.,

#### INDUSTRY

Research and Biorepository Informatics Software

#### SOLUTION

Adaptive Reporting Framework

#### RESULTS

Customers enjoy self-service, easy-to-use reporting and analytics for fast answers to research questions, while GenoLogics transitions support.

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**Tyler Black**  
Field Applications Specialist,  
GenoLogics

## CASE STUDY

instrument PCs. The solutions record critical data associated with samples that pass through the lab, track that data, and enable collaborative data sharing with clinical labs and other research facilities through a range of lab management capabilities.

Most importantly, the GenoLogics platform can—and usually does—aggregate contextually relevant data across one or more biomedical and research disciplines, facilitating advanced analysis and reporting processes by storing the data in a secure, accessible repository.

## Challenge

Given the essential questioning nature of any research lab, it's no surprise that reporting and analytics are important components of GenoLogics solutions. And, because lab processes and data evolve rapidly and so extensively, these business intelligence capabilities (like their data management counterparts) must be both scalable and highly flexible. Why?

One reason is the lab presence of multiple roles or “personas,” each of which has its own unique, evolving information requirements. A technician working at the bench with beakers and pipettes has very different questions than a lab manager trying to identify bottlenecks, optimize resources or streamline operations, or a principal investigator looking for a cause or a cure.

The differences compound as we move from lab to lab, which means different kinds of science and different users. One lab might do work on just one sample in a given month, but perform millions of tests with that sample. Others might process samples in the thousands or millions but perform only a single, operation on each. And the data requirements for each type of research can be simple or extremely complex.

“We never know which parts of our database schema will grow for a given customer, or what kinds of reports they'll want tomorrow,” says Tyler Black, Field Application Specialist at GenoLogics. “There's always growth and change, but where it will occur is unpredictable.”

Many of the life sciences present problems and opportunities requiring deep analysis. In proteomics (the study of proteins produced by genes), for example, it's important to create numerous compilations of protein and peptide data, among which there are many connections and dimensions. These views require multi-dimensional analysis found in online analytical processing (OLAP) tools.

In order to meet these demanding requirements, the team at GenoLogics sought existing Business Intelligence (BI) technology which would integrate well with its solutions—and which would be flexible and user-friendly enough to meet its customers current and future needs. As Black puts it, “It would have taken too long and cost too much to roll our own.”

## Choosing a BI solution.

The team at GenoLogics considered a handful of proprietary and open source reporting and analytic solutions. “We did have a preference for open source,” says Black. “We liked being able to try it out at no cost, to get a handle on it with very little investment.”

GenoLogics chose the Jaspersoft Business Intelligence Suite for a number of reasons:

- **Reputation.** GenoLogics knew the Jaspersoft reporting, analytics, query, dashboarding and ETL solutions to be well regarded—and felt its prospective customer base would feel the same.
- **Support.** With a support program in place—plus a strong community—Jaspersoft would ease the burden on GenoLogics internal resources.
- **Collaboration.** During the investigative phase, the two teams worked well together. “Jaspersoft was really responsive when we wanted to try something new or needed help,” says Black. “We felt it would be a reliable partnership ... and it has been.”
- **Documentation and training.** Both were plentiful and well presented.
- **Easy integration.** While the team wanted to use Jaspersoft functionality without customizing it, creating a seamless user experience was important. Jaspersoft’s APIs made this repackaging work easy—and made it a better choice over proprietary solutions that offered no similar abilities.
- **Ease of use.** “Our customers’ reporting needs are going to change,” says Black. “So it’s important that we be able to train our customers to use the reporting tools themselves.”

GenoLogics chose Jaspersoft and integrated it with its other solutions, branding the optional BI offering as the GenoLogics Adaptive Reporting Framework.

## Solution: Scalable, Flexible Business Intelligence

The Adaptive Reporting Framework includes key capabilities from Jaspersoft’s JasperServer reporting engine and report server, the iReport graphical report design tool, and portions the JasperAnalysis OLAP solution. Related and foundation technologies in the solution stack include the JBoss application server, Tomcat web server, and the Oracle and PostgreSQL databases, as well as proprietary core and web applications.

A few standard reports are built in – primarily as baseline examples that customers can expand or customize. These standardized reports enable lab personnel to monitor a wide range of metrics including overall lab activity, project-specific activities, instrument usage and maintenance schedules and consumable usage.

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Though the Framework is offered to GenoLogics customers optionally, most need it. Many labs have internal informatics teams who learn the Jaspersoft tools and GenoLogics schema, creating their own reports as needed. Others take advantage of GenoLogics professional services to design reports for them.

At present, reporting is done directly from the GenoLogics transaction database—but that’s about to change. The team is considering using Jaspersoft’s ETL (extract – transform – load) tool to populate a separate database designed for reporting. This will offer both performance and support advantages. “Because life sciences are changing so rapidly, we must evolve our schema at a similar pace. But data for reporting can be held in more stable data stores, which will simplify support for us.”

Labs focused on proteomics disciplines, who require extensive analytics capabilities, take advantage of analysis cubes (multi-dimensional, analysis-tuned data stores) designed by the GenoLogics team. They also have the option of designing their own, custom cubes.

A few labs also take advantage of JasperServer’s ad hoc query capabilities—though labs tend to prefer reusable reports; once they develop a new information need, it tends to stay in play long enough to make full-fledged reporting the preferred solution.

## Results

Jaspersoft’s Business Intelligence solutions have had a number of positive impacts on GenoLogics’s business. Most importantly, the tools enable researchers working in the life sciences to get critical answers to important questions—ultimately without assistance from GenoLogics.

“We’re happy to make sure our customers know they’re using Jaspersoft technology,” says Black. “We want to transition as much support as we can to the community at large. It’s good for us, and it’s good for our customers, because it will make them self-sufficient.” GenoLogics

includes complete Jaspersoft documentation with each sale of its Adaptive Reporting solution, and encourages its customers to take advantage of Jaspersoft forums, discussion groups, and other community resources.

The GenoLogics sales cycle has benefited as well. “It’s the norm for our prospects to have the need for reporting high on their list,” says Black. “A few have another solution in-house already, and that’s fine, but most need our BI solution. We absolutely have to offer integrated BI to our customers, and the Jaspersoft technology is reassuring to prospects, since it’s an established solution with a strong community. Jaspersoft adds to our credibility.”

Jaspersoft's pixel-perfect graphics and charts are plus during the sales cycle. And when prospects pose a unique information need, the GenoLogics team can use iReport to develop a solution in short order. "When we're able to get a new, prototyped report back to them in a couple of hours, completely branded for them, using their lab names and workflows, it shows off just how easy and flexible the Jaspersoft tools are," adds Black.

Finally, Jaspersoft's deep support capabilities have been a real help. GenoLogics opted for the highest level of support from Jaspersoft, to ensure rapid response when its own customers have a question or problem. "We need to respond ASAP to our customers," says Black. "If Jaspersoft were slow to respond, it would cripple us. We love the quick turnaround we get."

## About Jaspersoft

Jaspersoft provides the most flexible, cost effective and widely deployed Business Intelligence suite in the world, enabling better decision making through highly interactive, web-based reports, dashboards and analysis. Leveraging a commercial open source business model, Jaspersoft provides end-to-end BI capabilities at a fraction of the cost of other vendors. The BI suite includes pixel-perfect enterprise reporting, ad hoc query, dashboards, OLAP and in-memory analysis, and data integration. Jaspersoft is the only BI vendor that enables companies to adapt to the new, virtualized world by providing a complete spectrum of on-premise, multi-tenant SaaS and cloud-based deployment options for both embedded and standalone business intelligence. Unlike traditional BI vendors, Jaspersoft is built on a modern, light-weight, standards-based architecture and offers greater vendor independence thanks to its open source codebase. Unlike niche BI vendors, Jaspersoft represents a safe choice with tens of thousands of production deployments across a wide range of industries.

Jaspersoft's open source business intelligence software has more than 11 million product downloads worldwide, 160,000 production deployments in 100 countries and over 13,000 commercial customers. Its BI suite is advanced regularly by a development community of more than 150,000 registered members. For more information visit: [www.jaspersoft.com](http://www.jaspersoft.com) and [www.jasperforge.org](http://www.jasperforge.org).

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