WebAssign Uses Business Analytics to Improve Education

Pentaho enables WebAssign to analyze disparate data sources for millions of student users

Quick Facts

- **Industry**: Education
- **Headquarters**: Raleigh, North Carolina
- **Website**: http://webassign.net
- **Products**: Pentaho Business Analytics, Pentaho Data Integration

Customer

WebAssign is the leading provider of powerful online instructional tools for faculty and students. Developed by teachers for teachers, WebAssign offers an array of customizable precoded questions from a wide range of math and science textbooks. To date, more than five million students have used WebAssign to submit over one billion answers to homework assignments and tests, and WebAssign has been used at over 1,500 educational institutions worldwide.

Key Challenges

With over five million students who have used the service and an additional 600,000 new students using WebAssign materials each semester, WebAssign generates a huge amount of data around student performance, learning habits, and which materials they are using. In addition, WebAssign's partnerships with textbook publishers require accurate numbers on usage in order to pay royalties to publishers.

Complicating the company's data challenge is the fact that WebAssign distributes its material through a web application, which consists of specialized code. This data is stored in various databases and had to be extracted and imported into a legacy data analysis tool. This process was very time intensive, requiring the IT department to write new code for each type of report analysts wanted to run on the data. As a result, the IT department had a backlog of requests and WebAssign was limited in the types of data analysis it could complete.

Another growing data challenge was the companywide need to automatically capture and analyze data from disparate data sources. Seeing analytics as a solution, WebAssign CEO John Risley decided to embed a third-party analytics platform instead of starting from scratch and building new analytics features into their software. Thus, the company set out to find a user-friendly solution that would bring the power of analytics to employees in finance, research, sales, and purchasing, as well as executives.

Solution

After evaluating several offerings, WebAssign chose Pentaho Business Analytics Enterprise Edition because it met all of their data needs and was easy to integrate with existing systems due to the flexible advantages of open source technology.

WebAssign benefits from the end-to-end capabilities of Pentaho Business Analytics, including:

- **Data access and integration** capabilities automatically aggregate WebAssign's data from across the enterprise and populate data models for the finance and sales departments.
- **Data discovery and analysis** capabilities help WebAssign's 140 employees to easily perform drag-and-drop analysis, uncovering new trends and information in the data.
- **Data visualization** has further simplified data analysis for users across the organization, enabling agile reporting and automatically creating custom reports.
- WebAssign has also taken advantage of **Pentaho's professional support and training** courses, helping them to get maximum value out of their business analytics.

Pentaho integrated seamlessly with WebAssign's existing technology stack, which consists of the following:

- Operating system: CentOS Linux, 64-bit, in a VMware virtual machine
- Hardware platform: VP hosted on Sun/Oracle X4270 – 4 cores allocated to Pentaho on 16GB ram
- Database: MySQL, infobright (ICE)
- Application server: tomcat

Results

- **Critical element to company success** – Pentaho's end-to-end analytics platform has transformed company operations. WebAssign CEO, John Risley explains, "Pentaho provides the information we need to stay in business. By knowing exactly who our customers are, what they want, and whether they are coming back, we can improve our retention rates and maximize new opportunities. Pentaho has been really critical to our success in that regard."

> *"We would have blinders on without Pentaho. Pentaho is providing the information we actually need to stay in business."*
>
> - John Risley, CEO, WebAssign

- **Reduced IT costs** – Because employees across the organization are now able to analyze data and run reports on their own without the need for additional code, WebAssign's IT resources are freed up to focus on other issues.

- **Enhanced data visualization** – Pentaho Business Analytics with Community Dashboard Framework (CDF) enable WebAssign to visualize data in different ways, such as creating histograms to easily see how much time students are spending on homework. The ability to create different dashboards gives WebAssign executives and employees improved visibility into critical data points, such as which books are most popular and by how much, which customer demographics are growing fastest, how much time students spend studying and how that correlates with performance, and which educational programs result in the highest test scores.

- **Improved Bottom Line** – Pentaho Business Analytics has given WebAssign a better view into its complicated revenue model. Risley explains, "Pentaho helps us understand the company's overall financial picture at a glance. Being able to carefully analyze financial data to look at trends and understand what's going on in the organization is critical to ensure we're making the right decisions."

- **Increased Customer Satisfaction** – Thanks to improved data analysis, WebAssign is leveraging its data for valuable insights that improve both business operations and student learning. Risley explains, "With Pentaho, we are no longer blind to the types of decisions we're making. We know exactly which textbooks are most popular and by how much. Before, we didn't know because it was so difficult and time-consuming to pull those numbers. Now everyone has access to that information so they can understand the trends impacting our customers, and we can adapt our offerings to better serve students and teachers."

Summary

Because WebAssign distributes educational materials to more than 600,000 students worldwide each semester, the amount of data generated exceeded the capabilities of their legacy data analysis tool. For each new report that executives wanted to run, WebAssign needed a developer to write custom code, which resulted in a backlog of IT requests and severely limited the types of data reports that could be created. In addition, data was spread across various databases, spreadsheets, Google documents, and customized code in the WebAssign web application, complicating efforts to compile and analyze the data. As a result, WebAssign executives lacked insight into critical information, such as which textbooks were most popular and by how much. WebAssign needed a business analytics solution to automate the collection of disparate data across the organization and provide real-time data analysis. By implementing the Pentaho Business Analytics platform, centralizing company data and making data analysis accessible to users across the company, WebAssign has achieved unprecedented visibility into its finances and business operations. Customized Pentaho dashboards allow users to visualize data in different ways through histograms and graphs. In a glance, WebAssign executives can see statistics on usage and student performance, enabling them to improve operations, control expenditures and help students to learn more efficiently.

To learn more about Pentaho software and services, **contact Pentaho**:

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