



## **SQLstream analyzes e-Commerce clickstream data in real-time**

SQLstream improves Time to Information by overcoming the limitations of traditional ETL and eliminates the bottlenecks associated with batch processing of user clickstream data in a data warehouse

Our client is a leading provider of predictive models for targeted internet advertising. Internet businesses strive to optimize marketing investment and to minimize advertising waste. Ideally, only those consumers who are likely to purchase a particular product will be shown the advertisement. Accurate modeling for predicting consumer interest and purchasing behavior is a business imperative.

With over 300 customers, our client is experiencing outstanding growth. Their success is built on an innovative business model coupled with a reputation for accurate and effective modeling of consumer purchasing behavior.

### **Success brings pain**

Our client publishes updated models to its customers each day. Clickstream data were collected in the data warehouse and batch processed once at the end of every 24 hour period. With over 250 million events per day to filter and aggregate, the pre-processing in the data warehouse took all night to complete.

Such a significant delay became a critical business issue that could be quantified in terms of lost revenue for our client's customers – better predictive models result in increased Internet purchases.

The business requirements were clear: the client needed to publish its predictive models much more quickly at the end of each business day, and to implement a solution that would scale to address even greater data volumes in the future.

## The solution – real-time streaming analytics

The main bottleneck was the time taken to aggregate the raw clickstream data. SQLstream provided the ideal solution. SQLstream operates on event data in real-time and delivers filtered and aggregated data directly to the client's Analytics Engine. This approach eliminates entirely the batch pre-processing in the data warehouse. SQLstream continues to populate the data warehouse with raw and aggregated data to support data mining and other historical analysis activities.

## Mission critical scalability

Scalability and future-proofing are important considerations for a business critical system. Our client is aware of the limitations with traditional ETL approaches – long latencies, a lack of real-time response, scalability issues due to intermediate staging of data and inflexible architectures. SQLstream is demonstrating that its innovative approach provides the long-term scalability required, but also a platform that is simple to configure using existing IT skills. This gives our client the confidence to migrate their performance critical processing from the data warehouse into SQLstream.

## Next steps – real-time traffic analysis

Subsequent phases will seek to improve on the previous business model, for example, including traffic analysis in addition to e-commerce behavior modeling. Traffic analysis queries are simple and quick to specify in SQLstream. Typical queries would include calculating average click rates and page load times, frequency of button clicks and the number of failed downloads.

## Increasing revenue through timely availability of purchasing behavior models

SQLstream reduces the time required for data aggregation to a minimum, while providing a future-proofed, scalable solution. The ability to configure their own aggregation rules is also important to our client. SQLstream makes this possible using existing in-house SQL skills. The end result is the timely generation of new predictive models at the end of each day, enabling our client to provide optimal information and ultimately helping to drive increased revenue for its customers.

## About SQLstream

SQLstream delivers business answers from dynamic information, generating results as soon as the input data arrives, continuously and in real-time. SQLstream reduces business latency, enabling you to react immediately to changing market conditions and to generate business outputs sooner. Based on industry standards, our intuitive approach enables streams of real-time data to be analyzed using continuous queries. We call it Query The Future®.

### At a glance

#### Our client

- Leading provider of predictive models for targeted internet advertising

#### Business problem

- Large volumes of event data
- Batch processing in the data warehouse was a bottleneck
- Delays quantifiable as lost revenue

#### Solution

- Streaming analytics
- Eliminating the traditional ETL and data warehouse bottlenecks

#### Benefits

- Reduce business latency
- Increase revenue through earlier availability of business information
- Enterprise-class scalability
- Flexible, standard-based solution utilizing existing IT Skills