



KELLEY BLUE BOOK NETEZZA IN ACTION

Kelley Blue Book increases ad revenue with better, faster data analysis and ad price optimization

In the early 1920s, the owner of Kelley Kar Company in Los Angeles began distributing to other dealers and banks a list of automobiles he wanted to buy and the prices he would pay. Demand grew for “Kelley’s Cash Price List” as the trade recognized Les Kelley’s ability to predict market values accurately. In 1926, Kelley’s inventory wish list became the *Blue Book of Motor Car Values*, offering factory list prices and cash values for thousands of vehicles, and establishing “Blue Book value” as the standard of car valuation referenced by sellers and buyers.

More than eighty years later, Kelley Blue Book (KBB) is still innovating and transforming itself. The publisher that has long provided a reliable mechanism for buying and selling cars is rapidly becoming an analytics-driven information powerhouse that facilitates the buying process for consumers while providing qualified leads and market insights to dealers and OEMs (original equipment manufacturers). The company estimates that each month its website, KBB.com, experiences more than 16 million visits making it a top online destination for car shoppers. Because three of every four visitors are “undecided,” KBB.com is also a “must buy” on the advertising media plans of every OEM. Car dealerships count on a steady flow of leads from consumers who generate more than 30 million pricing reports monthly.

Analytics: the heart of KBB’s strategy

From “Kelley’s Cash Price List” through today, KBB at its core has always been a data company; but until three years ago, analytics played a minor role in most decisions. That is changing, according to Vice President of Analytic Insights Dan Ingle: “Now analytics are at the heart of KBB’s strategy. We use analytics to optimize lead generation, and analytics enable us to maintain a very low error rate in forecasting vehicle valuation. With Netezza, we’re able to process all of our forecast models in a day, compared with the previous three to four days. This enables us to produce vehicle values that we can deliver in near real-time to the marketplace instead of waiting up to two weeks to push those values out to KBB.com,” he said.

It is in online advertising sales, however, where analytics capabilities arguably have become the most important differentiator available to websites in highly competitive ad-driven markets. The fractured, fast-growing online ad business still depends largely on ad server technology and workflow conceived in the 1990s to solve simpler problems than today’s data-intensive riddles, such as inventory forecasting, impression and page revenue yield management, audience-based targeting and ad price optimization.



Kelley Blue Book
THE TRUSTED RESOURCE

Company Profile

- Kelley Blue Book (KBB): Premier provider of vehicle values to the automotive marketplace and resources for consumers researching new and used autos for purchase
- Website (KBB.com) reaches 13-million consumers who generate 35-million pricing reports monthly

Business Challenges

- Advertising data volumes exceeding capability of SQL Server environment, slowing data loading and queries
- Need for greater computational power to accurately estimate advertising inventory availability for each advertiser for a full year in advance

Applications

- Advertising Reporting Tool to accurately estimate and allocate advertising impressions from ad and site traffic data

Solution Benefits

- Increased ad revenue from better ad analysis, forecasting and fill rate
- Improved profitability from optimized ad pricing and search engine marketing optimization
- Customer satisfaction from faster, more accurate publication of auto valuations and alignment of ad and consumer data for more targeted ad delivery decisions
- Initial deployment in 2 days

“Data from our Netezza-powered Advertising Reporting Tool and from Search Ignite [SEM platform] are now in alignment so that we consistently deliver ‘committed’ impressions. Our inventory forecasting accuracy is up, which has reduced our penalties for shortfalls.”

Karen Simmons,
Senior Director of Data Warehousing,
Kelley Blue Book

“Netezza is a critical component in the tech stack that we use to analyze our DART data and generate more ad revenue using existing data. It is one of the best investments we have made within our database infrastructure.”

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Like ad server technology designed for less complex tasks, KBB’s existing SQL Server environment also proved to be inadequate. Advertising data volumes would swell to 10 terabytes, and data loads and queries were taking too long. Other critical business centers faced similar performance challenges; for example, the legacy system used to set vehicle values was antiquated. The time had come to build a data infrastructure that could handle the current load and scale with KBB’s aggressive goals.

KBB decided to implement MicroStrategy as their business intelligence (BI) platform to improve reporting and visualization capabilities. However, with MicroStrategy pulling data from the SQL Server warehouse, the fastest queries would still take hours to days to complete, or would time out and never return at all. At the same time, these queries were taxing the server and negatively impacting other processes that needed to run. Many of the MicroStrategy features, such as automated dashboarding capabilities, were rendered useless due to the processing time needed through SQL Server.

KBB knew that it was time to evaluate a new data warehouse platform to empower their BI capabilities. After evaluating the performance, total cost of ownership (TCO) and ease of implementation of data warehouse appliances, KBB decided to move forward with Netezza. Netezza offered fast analytic performance, integrated seamlessly with KBB’s existing MicroStrategy and SAS environments, and represented lower TCO than similar competitive products in terms of pricing, licensing and maintenance costs.

Netezza’s data warehouse was selected to help gather, analyze and distribute data from many different sources much faster and in multiple applications. The logical first application that KBB deployed in production on Netezza was their Advertising Reporting Tool (ART), which was up and running in a matter of days. “Netezza is one of the best companies I’ve ever worked with – a true cohesive relationship. They delivered on what they said they would, got us up and running, and then they stayed after to make sure the team understood how to use it and how we could do special things with the data,” said Karen Simmons, Senior Director of Data Warehousing at KBB.

Once Netezza was deployed, KBB found they could take advantage of MicroStrategy features that were previously inaccessible due to performance issues. Michele Hinojosa, Manager of Web Analytics at Kelley Blue Book stated, “Netezza made a world of difference. All of a sudden, queries that took days came back in minutes. With SQL Server, the more you tried to narrow down your data, the slower it would come back. With Netezza, the opposite is true: the more filters you use, the faster your performance gets. We built out the ART system to allow granular access to the data, so the ability to dive into detailed data quickly made Netezza a huge success. As we continue to develop our data warehouse, Netezza is going to allow us to combine advertising data, revenue data, and site traffic data – we can merge several different data sources and get a multi-channel view of our business.”

ART: accuracy and speed provide path to higher ad revenue

As a result of the legacy of television advertising buying schedules, auto makers traditionally plan and buy much of their online advertising according to an “upfront” schedule. For Kelley Blue Book, this means using historical ad and site data – site visits, page views, historical trends and granular ad impression history – as early as March to forecast and allocate advertising inventory for each OEM for the next 12 to 24 months. There are consequences for miscalculating; if KBB delivers more ads than estimated, they receive no additional revenue for the overage. If they deliver fewer impressions than estimated, KBB returns money to the advertiser. In both cases, poor forecasting can hurt credibility and the relationship with the client. Netezza helps Kelley Blue Book mitigate financial risks.

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Impressions analysis improves forecasting capabilities

KBB experienced its first big win with Netezza after migrating impressions data to the Netezza appliance, which provided better forecasting capabilities. Before Netezza, extracting impression, click and rich media data from Kelley Blue Book’s DoubleClick DART ad server into SQL Server required one to two weeks and much tuning. A high level SAS optimization analysis that would take one or two days in SQL Server now runs on Netezza in one or two minutes. Queries that took SQL Server an hour take just three seconds on Netezza. With Netezza, KBB can update its forecasts faster, using more data and resulting in higher accuracy.

Because so many of KBB’s ad revenues are sold upfront, having the ability to create accurate and reliable impression forecasts is helpful in generating ad revenues and establishing trust with clients. “Now our clients are always telling us that our forecasts are among the best within our competitors,” said Hinojosa. “We’ve had auto makers and competitors asking for insight into how we’re able to forecast as accurately as we do.”

According to Ingle, “The company’s ability to pinpoint estimated impressions is worth millions to KBB. We have much more flexibility with Netezza. More of our analysts have access to more accurate data than ever. Our models now generate accurate forecasts quickly for OEMs that literally would have taken months before.”

The integration of SAS and Netezza also is allowing Kelley Blue Book to automate much of the forecasting process. “Upfront forecasting is not a one-time effort each year,” said Hinojosa. “As a result of different clients’ timing, it is an almost 9-month long project. Being able to automate the update of the models frees up resources for other projects.” In fact, Simmons noted that with Netezza’s ability to gather, analyze and distribute data faster from many different sources, there is now a clear path to more efficient site monetization: “Netezza is a critical component in the tech stack that we use to analyze our DART data and generate more ad revenue using existing data. It is one of the best investments we have made within our database infrastructure. More accurate analysis of ads enables us to increase the ad ‘fill’ rate, which translates into higher revenues for KBB.”

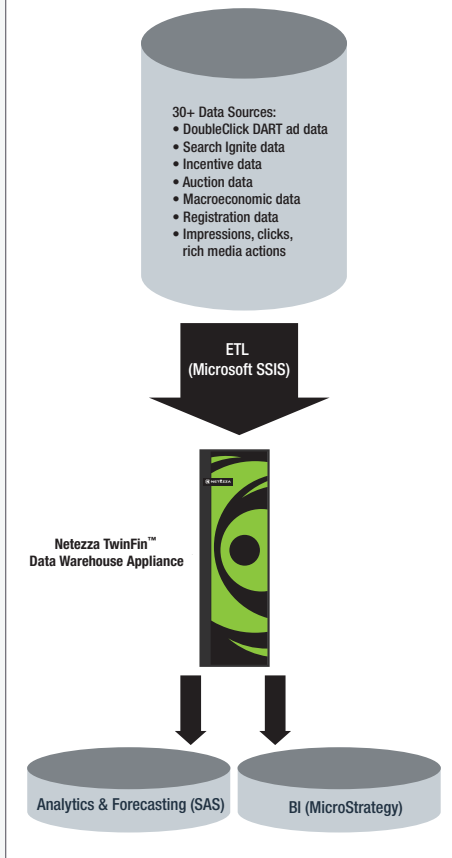
Simmons cited an example of a negotiation with an OEM: “Let’s say our sales executive is working with an OEM. She asks us how much inventory is available for that OEM and how and where it should be spent to maximize their investment and our returns. Before, we had to pull the data manually and painstakingly compare it with its competitors, one by one. Thanks to Netezza, now we can compare that OEM optimized inventory with all of its competitors and make more informed decisions much faster than ever before.”

Next-generation insight from click data and rich media analysis

After migrating impressions data to Netezza, KBB’s next steps were to get click data and rich media data onto the data warehouse appliance. By analyzing click data, KBB can evaluate its ad offerings based on where the ads run and perform in different areas of the site. It can now compare the operational costs of running and managing each ad to the revenue generated by that specific ad to determine whether or not it is worthwhile to sell that particular placement. This is a strategic application for KBB that is helping it to increase overall revenues and improve trust in KBB ad forecasting.

“The ability to analyze our product offerings and look at how they perform across the site is invaluable in improving them,” said Hinojosa. “We have been collecting this performance data since 2008, but had enough performance problems with SQL Server when it was dealing only with impressions data; adding click or rich media data was not feasible. In fact, many at KBB find it hard to believe we didn’t have access to these insights all along, because they are so crucial to understanding our ad product.”

ANALYTIC TECHNOLOGY STACK



KBB can also perform iterative analyses that lead to smarter ad pricing. As opposed to using typical rate card pricing – so much for so many impressions of this type in this content – KBB is moving to a more dynamic system in which the data will help the company price impressions based on their value to the OEM. Having access to detailed data over long histories is allowing KBB to analyze the offerings it has, identify their value, and be in a better position to negotiate rate cards. The company is able to use analytics to better negotiate pricing with OEMs, based on better insight into the value of offerings. This sets the stage for individualized, dynamic pricing.

Once KBB finishes migrating rich media data to Netezza, it will have the capability to see how people are interacting with the ads. For example, it will be able to monitor whether people are expanding the ad window, where they're hovering, how long they're viewing video ads, and more.

Next up: SEM optimization

Now that Kelley Blue Book has migrated ad and valuations data to Netezza, the next step is to integrate Web analytics and search engine management (SEM) data. This will offer KBB the ability to optimize SEM spending and align it correctly with the needs of ad sales for the right delivery of impressions to the right consumers.

With the help of Netezza, KBB will be able to filter data to Search Ignite to optimize keyword performance, a capability that will sharpen its aim, maximize its search investment, and help it deliver content that improves the consumer's overall experience on the site. This will give consumers greater confidence and comfort with the process of researching and buying a new or used car.


Paying off today, and opening the door to a data-driven future

The initial deployment of Netezza took just two days. In its first year in production, Netezza is delivering performance, results and benefits appreciated by KBB's consumers, dealers, OEMs, and employees. Hinojosa commented, "Our CEO and product managers are very happy with the interactive dashboards that they can now access directly through MicroStrategy. Product managers can run many different pre-built dashboards with drill down capabilities without requiring an analytic resource. Our analysts can focus on actually analyzing and providing insights, rather than pulling together information for a report. I don't think I'm the only one wearing my 'I heart Netezza' shirt!" Here are some of the other benefits KBB is realizing from its Netezza deployment:

- **More ad revenue** resulting from
 - more accurate and speedier ad analysis
 - improved ad inventory forecasting and fill rate
- **Increased customer satisfaction** resulting from
 - faster valuations (model processing reduced from three days to one)
 - alignment of ad and consumer data to make decisions leading to delivery of better overall experience on the website
- **More profitable operations** resulting from
 - optimization of ad pricing
 - reallocation of valuable staff time (only one part-time DBA needed to manage the environment)

These are still the early days of KBB as an analytics-driven organization. According to Ingle, "Analytics will be a primary source of our competitive advantage – and Netezza is the foundation of our data-driven strategy."

Netezza's Brad Terrell, Vice President and General Manager, Digital Media added, "High performance, low latency analysis of data translates directly into business value and competitive advantage. Kelley Blue Book is a great example of how an organization's commitment to an analytics-based future can lead to improved customer satisfaction, more revenue and greater profitability."

Media companies, take note: Analyzing more data more quickly with greater flexibility is a critical success factor for leading digital media firms. KBB's experience illustrates the value of being able to ask any question of data and getting immediate answers. 



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About Netezza

Netezza (NYSE: NZ) is the global leader in data warehouse and analytic appliances that dramatically simplify high-performance analytics across an extended enterprise. Netezza's technology enables organizations to process enormous amounts of captured data at exceptional speed, providing a significant competitive and operational advantage in today's data-intensive industries including digital media, energy, financial services, government, health and life sciences, retail and telecommunications. Netezza is headquartered in Marlborough, Massachusetts and has offices in North America, Europe and the Asia Pacific region. **For more information about Netezza, please visit www.netezza.com.**