



Cincinnati Zoo improves customer experience and enhances performance

Analytics provides new insight into weather data and customer behavior, boosting attendance and increasing retail and food sales

Smart is...

Analyzing customer behavior and predicted weather patterns to optimize the visitor experience and fuel sustainable profits.

Cincinnati Zoo wanted to build on its world-leading reputation by personalizing the customer experience for each visitor. However, data on attendance, sales and customer behavior was housed in several disparate systems, making it difficult to provide the kind of real-time analysis required to achieve the Zoo's ambitions.

The Zoo embedded analytics across all aspects of its business by consolidating its admissions, membership, food and retail point-of-sale systems into an enterprise data warehouse, leveraging the power of IBM Cognos Business Intelligence. As visitors scan their membership card at an entrance, exit, store, restaurant or attraction, the solution captures and analyzes their behavior in real-time. It then integrates relevant data from other sources such as weather forecasts and mapping services to help the Zoo tailor its services to changing conditions. The results are a more satisfying customer experience and improved financial performance.

Founded in 1873, the Cincinnati Zoo & Botanical Garden is one of the world's top-rated zoological institutions, with a particularly strong reputation for conservation and preservation, as well as a highly successful captive breeding program. The Cincinnati Zoo is a pioneer in global conservation, with many "firsts" in animal reproductive biology, as well as innovative and ground-breaking field research and programs which have played key roles in saving species around the world. It is also one of the nation's most popular attractions, a Top 10 Zagat-rated Zoo, and a Top Zoo for Children according to Parent's Magazine. Each year, more than 1.3 million people visit its 71 acre site, which is home to more than 500 animal and 3,000 plant species.

Although the Zoo is a non-profit organization and is partially subsidized by Hamilton County, more than two thirds of its \$26 million annual budget is generated through its own fundraising efforts.

"The Cincinnati Zoo has the lowest public subsidy of any zoo in Ohio, and one of the lowest in the country – which fosters a forward-leaning 'for profit' culture at the Zoo," comments John Lucas, Director of Operations at the Zoo. "We're proud of our ability to support ourselves without being too much of a burden on local taxpayers, and we believe that more non-profit organizations should adopt the same mindset. Taking ownership of fundraising creates a more dynamic organization. You have to be constantly looking to increase revenues – and the best way to do that is to increase attendance by enhancing the service you offer to your members and visitors. The result is basically a win-win for the Zoo, its customers, and the taxpayers."

Gaining clearer insight

As part of its ever-present drive towards self-improvement, the Zoo's senior management team embarked on a comprehensive review of its operations. Lucas explains:

"One of the most important things we realized was that our understanding of what was actually happening in the Zoo on a day-to-day basis was severely crippled: we just didn't have access to operational data except at the most basic level – how many people came through the gates every day, and what the total revenue was in terms



Business Benefits

- Helps the Zoo understand visit, usage and spending patterns down to the level of individual customers, and take time- and geographic-relevant action to enhance the visitor experience while maximizing revenues.
 - Enables segmentation of Zoo visitors based on their spending and visitation behaviors so that marketing and promotions can be specifically tailored to each visitor segment – greatly enhancing loyalty and retention.
 - Identifies low-spending visitors and targets them with strategic direct mail offers, while also rewarding loyal customers with creative marketing and recognition programs.
 - Provides a 360 degree view of customer behavior that helps to optimize marketing decisions, resulting in savings of more than \$40,000 marketing dollars in the first year, while driving enhanced and measurable results.
 - Saves the Zoo more than \$100,000 per year using geoanalytics that showed that a number of legacy promotions and discounts were not achieving desired outcomes, allowing resources to be redeployed to more productive initiatives.
 - Increases overall attendance, prompting at least 50,000 new “visits” in 2011 through enhanced marketing.
 - Provides insights that enhance operational management – for example, that ice cream sales peak just before closing time, leading to a decision to keep more ice cream stands open until the Zoo closes. This boosts revenues by as much as \$2,000 per day in summer.
 - Contributed to 30.7 percent growth in food sales and 5.9 percent in retail sales compared to the previous year.
 - Enables the Zoo’s executive team to drive better decisions with no IT interaction or support necessary.
 - Brings analytics into the boardroom, with an intuitive set of tools that puts the power of data into the hands of those running the business.
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of admissions, membership, retail and food service. To make matters worse, each of these four income streams ran on different point-of-sale platforms, and in the case of the food service business, we were still reliant on manual cash registers. Food service brings in \$4 million per year, but management had to sift through paper till receipts just to understand daily sales totals.

“It was clear that we needed to modernize and move to a single platform for our point of sale systems – but we didn’t stop there. The more we understood about the value of gaining real-time access to operational data, the more we realized that introducing a central business analytics solution could transform almost every aspect of how the Zoo operates.”

To take one example, the Admissions team had compiled a spreadsheet that collected visitors’ ZIP codes, with a view to enabling geographic and demographic analysis. If this data could be combined with insight into visitor activity at the Zoo – what attractions they visited, what they ate and drank, and what they bought at the gift shops – it could be an enormously powerful tool for the Zoo’s marketing team. To achieve this, however, the Zoo needed a centralized analytics solution.



Starting at the finish line

The senior management team decided to embark on a major business analytics initiative, and started by defining exactly the specific outcomes they wanted to achieve.

“The single factor that made this project such a success is that we started at the finish line and worked backwards,” comments Lucas. “We defined the measurable outcomes that we wanted to see from the solution, and performed a full return-on-investment analysis to help us understand exactly how much we could save and how much

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— John Lucas, Director of Operations,
Cincinnati Zoo & Botanical Garden

additional revenue we could generate. Only then did we start looking at the technical infrastructure that could achieve our aims. This was absolutely key: start from the business end and use technology to solve the problems, instead of putting a technical capability in place and then deciding what to do with it. I honestly don't believe that any organization will get optimum value from a business analytics project unless they approach it this way.”

Building a solution

The management team's forecast predicted that the solution would deliver a full return on investment within the first quarter after deployment, so the project was immediately put in motion. The first step was to replace the four legacy point of sale systems with a single platform – Galaxy POS from Gateway Ticketing Systems. Next, the Zoo worked with IBM and BrightStar Partners (an IBM Premier Business Partner) to build a centralized data warehouse and implement IBM Cognos Business Intelligence to provide real-time analytics and reporting. The goal was an integrated, connected organization armed with the data to make better decisions and achieve its goals, both short- and long-term.

“We recently upgraded to the latest version of Cognos, which is fantastic,” comments Lucas. “The Business Insight feature, which empowers business users to build and edit their own dashboards without help from IT is a huge advantage; every user can see exactly the information that they want to see, and if they decide that they want to monitor a new performance indicator or present the results in a different way, they can do it in seconds with a few mouse-clicks. We are also currently taking a serious look at IBM Cognos Mobile – if I could access my dashboard and perform onsite analytics on my mobile, I would use it for everything.”

Zoo staff spend much of their time out on the grounds during busy periods, and remaining connected to the insight IBM Business

Smarter Entertainment Enhancing visitors' experience with real-time analytics



Instrumented

Behavioral data is collected each time a Zoo visitor scans their membership card or a visitor uses the Zoo's Loyalty Rewards card.



Interconnected

This data, combined with other information such as membership records, geoanalytics and weather forecasts, is analyzed in real time and shared with decision-makers in management teams.



Intelligent

Greater insight into each visitor's movements and spending patterns helps the Zoo optimize operations and provide a more personalized experience. For example, predictive analysis of weather helps assess likely attendance levels and adjust inventory and staffing levels to maximize customer service – and revenues.

“Once our visitors start scanning the card, we can gain a very accurate picture of how they spend their time at the Zoo and what they spend money on. This has given us insight into a number of areas that are key to maximizing revenues and providing a better customer experience.”

— John Lucas, Director of Operations,
Cincinnati Zoo & Botanical Garden

Analytics offers without having to go back to the office would make management more impactful and effective.

The value of analytics – whatever the weather

Like all outdoor attractions, Cincinnati Zoo & Botanical Garden is a highly weather-dependent business. If it rains, attendance drops sharply – potentially leaving the Zoo overstaffed and overstocked. Equally, if the weather is unusually hot, sales of certain items – bottled water and ice cream, for example – are likely to rise sharply, and supplies may run short. Having intelligent insight into these possible outcomes helps the Zoo turn issues into opportunities.

For example, the Zoo has integrated its IBM Cognos solution with a weather forecast data feed from the National Oceanic and Atmospheric Administration (NOAA) website. This enables the Zoo to compare current forecasts with historic attendance and sales data during similar weather conditions – which supports better decision-making for labor scheduling and inventory planning.

Getting closer to customers

An even more important aspect of the solution is the greater insight it provides into customer behavior, as Lucas notes:

“The number one thing we want to know is: who is coming to the Zoo? How often do they come? What do they do and what do they buy? Now we can have this information down to the individual level. About 54 percent of visitors are members of the Zoo. They have a membership card that they scan at different places in the park – on entry, at attractions, at retail outlets, at restaurants, and so on. The membership card also functions as a Loyalty card by accruing points towards benefits – for example, discounts on food or free rides, which encourage additional spending and visitation.

“To capture similar information for non-members, the Cincinnati Zoo has rolled out the Loyalty program to non-members as well. When they come to the Zoo, we ask them to enroll for the day and we capture their name, address, email and number of kids. We immediately give them a card that offers them discounts during their visit – there’s no waiting time. As a result, a very large proportion of visitors sign up.”

This unique loyalty program, coupled with the power of analytics, is one of the Zoo’s top-performing tools for enhancing customer service and driving new revenues. The IBM Cognos solution enables the Zoo to get instant insight into the results of this program: on average, loyalty card holders purchase 25 percent more than those who are not members of the Rewards program.

“Once our visitors start scanning the card, we gain a very accurate and immediate picture of how they spend their time at the Zoo and where they spend their money. This has given us insight and driven decisions

Solution Components

Software

- IBM® Cognos® Business Intelligence

IBM Business Partner

- BrightStar Partners, Inc.
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that have proven critical to maximizing revenues and providing a better visitor experience.

“For example, it is a long-known fact in the attractions industry that the spending patterns of members and non-members are very different. Contrary to what you might think, members actually spend much less than non-members. However, nobody has ever been able to quantify the difference between the two groups before. With Cognos, we can see the exact variance. Looking at per capita income, in the first quarter of 2011, the average non-member spent \$3.48 on food service and \$2.67 on retail per visit to the Zoo. Members only spent \$1.03 on food service and \$0.77 on retail! With 1.3 million visitors a year, this two-dollar gap makes a huge difference, and shows us that we need to come up with some new strategies to encourage our members to spend more.”

The IBM Cognos solution has also shown the Zoo that in the first five months of 2011, 13,000 people have visited and spent nothing at all except the price of admission.

“This is a huge opportunity for us, which previously went unaddressed,” says Lucas. “Cognos has enabled us to segment the people who spent nothing, and we have just executed our first marketing campaign for them – a discount offer for some of our restaurants and gift shops. If we could encourage each of these people to spend \$20 on their next visit to the Zoo, that would be \$260,000, which is almost one percent of our entire budget!”

Enabling more targeted marketing also saves costs. Instead of sending a special offer to the entire mailing list, the Zoo can focus tailored campaigns on a smaller, more relevant group of customers, ultimately reducing costs and scoring a higher hit-rate. As a result, the Zoo has been able to cut \$40,000 from this year’s marketing budget.

Deeper analysis brings rewards

By providing real-time access to daily sales data, the solution also helps the Zoo understand important trends such as time of purchase for different items and services.

“Here’s one neat example,” comments Lucas: “From experience, we were aware that food sales tend to tail off significantly after 3pm each day, and as a result, we used to start closing some of our food outlets at that time. But with the more detailed analysis we get from Cognos, we have discovered that there are some exceptions to the 3pm rule. For example, there is a big spike in soft-serve ice cream sales in the last hour before the Zoo closes. The outcome? We now keep our soft-serve outlets open for the entire day. One day recently we took \$2,100 on ice cream in that last hour. Without analytics, most of those stalls would have been closed, and that revenue opportunity would have been lost forever.”

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— John Lucas, Director of Operations,
Cincinnati Zoo & Botanical Garden

Significant increase in sales

Ice cream is just one example. As a result of the Zoo’s new ability to make better decisions about how to optimize operations, it has seen dramatic improvements in sales. Comparing the six-month period immediately following the deployment of the IBM solution with the same period of the previous year, the Zoo achieved a 30.7 percent increase in food sales, and a 5.9 percent increase in retail sales.

“In our business case for Cognos, we forecast about a five percent increase in food sales, and we would have been more than happy with that,” says Lucas. “Five percent would still have meant that the project delivered return on investment in the first quarter after deployment. 30 percent is just incredible! In fact, when I do presentations to other people in the industry, I sometimes leave this slide out because I’m afraid they simply won’t believe it.”

Looking to the future

Although the Zoo’s achievements are already impressive, the management team feels that this is only the beginning of its journey with business analytics.

“We have some really big ambitions for phase two,” says Lucas. “For one thing, we’ll introduce real-time surveys to learn more about people’s experience in the park. We’ll build the surveys in Cognos and use Zoo staff with iPads to interview people on the ground. That way we can get a near real-time view of survey data, comparing responses to last week, last month, last year, and so on.”

One point that the Zoo has noticed from existing surveys is that its Net Promoter Score (a zero-to-ten rating on how likely a given customer is to recommend the Zoo to a friend or colleague) tends to decline in certain situations, such as when the weather is extremely hot. When the real-time surveys are introduced, the Zoo will be alerted quickly whenever the score starts to drop, and will be able to react and conduct immediate service recovery efforts.

“One idea is that we can step up certain types of activity to keep visitors interested,” says Lucas. “For example, we have Zoo staff who go around the site with handleable animals, so visitors can get up close and really learn about different creatures. It’s always very popular, and makes a nice distraction if visitors are getting tired of walking around the Zoo in hot weather.”

The Zoo is also exploring how IBM Business Analytics can help take the Zoo’s industry-leading sustainability efforts to the next level. For example: already an innovator on advanced energy and utility optimization, the Zoo plans to use IBM Business Analytics software to help predict peak demand utilization, which can save the Zoo money all year long and also help protect the planet.

“The analytics project with IBM and BrightStar has proved that almost anything can be achieved if you have access to the right information – so we are fully convinced that analytics is going to have a significant role to play in our future.”

— John Lucas, Director of Operations,
Cincinnati Zoo & Botanical Garden

Customer-facing analytics

Early in 2012, the Zoo plans to introduce some customer-facing analytics, which will enable further personalization of the visitor experience.

“We have 52,000 member households, and currently, when we market to them, they all get the same stuff,” says Lucas. “It’s not personalized for them. But now we have started creating customer segments based on each visitor’s favorite animals and the frequency of their visits. For example, Person X has been a member for three years; he comes 10+



times per year, and he always visits the cheetah exhibit. Next time he renews his membership, we’ll give him a membership card with a picture of a cheetah and give him a special discount on cheetah toys in the gift shop. This is easy to do with the technology we currently have. The next step will be even better: when he comes to the Zoo and scans his card, we can give him a personalized welcome – for example, giving him special seats at our world-famous cheetah show!”

With these more visitor-specific initiatives, the Zoo expects to see attendance increase by 50,000 over the next 12 months. This will drive revenues that will help it embark on further innovative projects. The Zoo has recently built the largest urban, accessible solar array in the world, and plans to invest in other large-scale sustainability initiatives in future.

“We’ll keep striving to offer a better experience to our members and non-members alike, while maintaining our reputation as one of the most innovative and successful zoos in the country,” concludes Lucas.

“The analytics project with IBM and BrightStar Partners has proved that almost anything can be achieved if you have access to the right information, and as a result we know that analytics is going to play a significant role in our future.”

To learn more about Cincinnati Zoo & Botanical Garden, visit cincinnati.org

About BrightStar Partners

BrightStar Partners, an IBM Premier Business Partner, is a technology-based, global IBM Business Analytics consulting and software development organization. BSP helps its clients improve their business performance through maximizing their investment in technology and processes to drive better information throughout the enterprise. With broad technical and business experience, BSP helps clients realize the benefits from their reporting, analysis, dashboarding, data warehousing, planning and consolidation solutions to drive true business value.



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With IBM software, companies can spot trends, patterns and anomalies, compare “what if” scenarios, predict potential threats and opportunities, identify and manage key business risks and plan, budget and forecast resources. With these deep analytic capabilities our customers around the world can better understand, anticipate and shape business outcomes.

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Business Analytics software



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