

**NUCLEUS
RESEARCH**

CASE STUDY E65
June 2004

ROI ANALYSIS YOU CAN TRUST™

ROI Case Study: Teradata Harrah's Entertainment

THE BOTTOM LINE

To better understand and leverage data on customer relationships across various properties, Harrah's undertook a data warehousing initiative based on Teradata technology. Key returns for Harrah's are profits on increased revenue and the ability to design and develop sophisticated promotional campaigns without adding staff.

ROI: 389%

Payback: 4 months

THE COMPANY

Founded in 1937, Harrah's Entertainment, Inc. is a recognized and respected brand name in the casino entertainment industry. The company operates under the Harrah's, Harvey's, Rio, and Showboat brand names. Harrah's mission is to provide greater customer service in exciting and entertaining environments and build lasting relationships with its customers, which it achieves through operational excellence and technology leadership.

THE CHALLENGE

To support its profitability growth mission, Harrah's implemented a data warehouse based on Teradata as early as 1997. While significant benefits were being derived from the initial usage of the Teradata warehouse, Harrah's recognized that there were ongoing areas for potential improvement in the benefits.

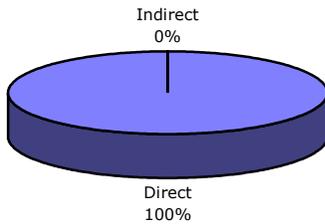
Like most other players in the casino and entertainment industries, Harrah's viewed and analyzed relationships with customers by individual property instead of looking at customer relationships and interactions across the entire spectrum of brands and properties. Under this model, Harrah's viewed customers as entities that were somehow attached to one specific casino that they visited most often, failing to take into account their interactions with other, less frequently visited properties.

In 2000, Harrah's realized that considering customer relationships across various properties would help drive additional revenues. The company realized that changing the way it interacted with guests would require a data warehouse-based system capable of supporting more holistic analysis and reporting of customer trends.

THE STRATEGY

To address its need for a new system, the company undertook an initiative using an infrastructure comprising Teradata and Cognos reporting and querying tools to help it understand guest interactions across all properties. It then accordingly designed incentive programs to drive customers to spend more. This incentive system, called the Total Rewards program, hinged on data and analysis derived from Harrah's CRM deployment, which

BENEFITS



3-YEAR TOTAL: \$208M

constitutes a major component of the data warehouse and overall strategy. Today, Harrah's Teradata Warehouse is a repository of customer, transaction, and sales and marketing data. Transaction data stored in the data warehouse is available by casino, hotel, customer, event, gaming product, and other categories. The warehouse stores daily detailed customer data for 90 days, monthly information for 24 months, and yearly information back to 1994.

KEY BENEFIT AREAS

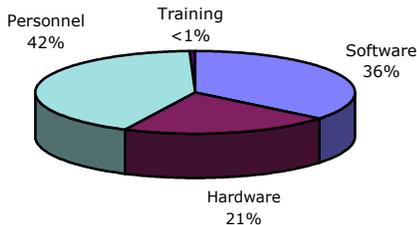
Users from areas such as database marketing, call centers, financials, analytics, and market research can run ad hoc and scheduled queries to access detailed customer data on a daily basis. Nucleus has quantified the following key returns associated with more efficient and comprehensive availability of data and analysis:

- Profit on increased revenues. Harrahs has systematically tracked revenue trends following the deployment of the warehouse. Because of the closed-loop revenue cycle associated with TotalRewards incentive programs, the company has also been able to correlate revenue to special offers made to customers. Harrah's has attributed significant annual increases in revenue to the programs that were developed and executed through the intelligence and data delivered by the warehouse.
- Personnel cost avoidance. With the data warehouse, the database and customer marketing teams can perform segmentation and scientifically develop incentive programs with comparative ease. In the past, they were spending all their time collecting and aggregating data rather than analyzing it. By enabling a level of analysis not possible before, the data warehouse has essentially helped the company avoid the cost of hiring additional analysts per property.

KEY COST AREAS

Key costs included personnel, hardware, consulting, software, and training. Personnel made up the largest cost category, accounting for 42 percent of total project costs. This percentage reflects Harrah's heavy reliance on its internal IT staff for implementation and ongoing development. Software costs associated with Teradata and other components of the data warehouse, such as the Cognos reporting and querying tools, made up 36 percent of the total investment. Hardware costs made up just over one-fifth of the overall investment.

COSTS



3-YEAR TOTAL: \$22.77M

LESSONS LEARNED

One of the key factors driving the speedy payback and return on investment Harrah's has received is the company's new-found ability to increase customer loyalty and grow revenues by improving the response rates for its direct marketing programs and increasing focus on customer interactions across properties.

CALCULATING THE ROI

Nucleus calculated the costs of software, hardware, consulting, personnel, training, and other investments over a 3-year period to quantify Harrah's total investment in the data warehouse.

Direct benefits calculated included avoidance of personnel hiring per property and profits on increased revenues through customer incentive and loyalty programs designed on the basis of data and analysis available through the data warehouse. The returns associated with personnel cost savings were calculated based on the annual fully loaded cost of employees.

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SUMMARY

Project:	Teradata
Annual return on investment (ROI)	389%
Payback period (years)	0.29
Net present value (NPV)	66,156,006
Average yearly cost of ownership	7,258,867

ANNUAL BENEFITS	Pre-start	Year 1	Year 2	Year 3
Direct	0	61,466,761	68,333,733	78,468,656
Indirect	0	0	0	0
Total Benefits per Period	0	61,466,761	68,333,733	78,468,656

DEPRECIATED ASSETS	Pre-start	Year 1	Year 2	Year 3
Software	5,790,100	0	0	0
Hardware	2,639,500	634,500	666,500	700,000
Total per Period	8,429,600	634,500	666,500	700,000

DEPRECIATION SCHEDULE	Pre-start	Year 1	Year 2	Year 3
Software	0	1,158,020	1,158,020	1,158,020
Hardware	0	527,900	654,800	788,100
Total per Period	0	1,685,920	1,812,820	1,946,120

EXPENSED COSTS	Pre-start	Year 1	Year 2	Year 3
Software	0	634,500	666,500	700,000
Hardware	0	0	0	0
Consulting	0	0	0	0
Personnel	0	2,924,000	3,070,000	3,223,000
Training	128,000	0	0	0
Other	0	0	0	0
Total per Period	128,000	3,558,500	3,736,500	3,923,000

FINANCIAL ANALYSIS	Results	Year 1	Year 2	Year 3
Net cash flow before taxes		57,273,761	63,930,733	73,845,656
Net cash flow after taxes		29,162,591	32,538,527	37,545,888
Annual ROI - direct and indirect benefits				389%
Annual ROI - direct benefits only				389%
Net present value (NPV)				66,156,006
Payback (years)	0.29			
Average annual cost of ownership		12,750,600	8,576,800	7,258,867
3-year cumulative ROI	779%			
3-year IRR	350%			

FINANCIAL ASSUMPTIONS

All government taxes	50%
Discount rate	15%

All calculations are based on Nucleus Research's independent analysis of the expected costs and benefits associated with the application profiled in the accompanying case. Financial modeling tool, format, and methodology copyright Nucleus Research Inc., all rights reserved.