University of Notre Dame
Deploys Snowflake for Data-driven Fundraising

CUSTOMER University of Notre Dame

PARTNER Snowflake

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Founded in 1842, the University of Notre Dame ranks among the nation's top 25 institutions of higher learning. With over 10,000 undergraduates, professionals and gradu-ate students, Notre Dame is both a teaching and a research institution.

The university relies heavily on the generosity of its 135,000 alumni to fund its educa-tion and research. "Because the alumni play such an important role, it is extremely vital for us to stay connected with our alumni network," Notre Dame's manager of business intelligence, Chris Frederick, said. To enable its fundraising efforts, Notre Dame used an on-premises, legacy data warehouse to assist them with targeted outreach to Notre Dame's alumni.

THE CHALLENGE: HARNESSING BUSINESS INTELLIGENCE FOR ALUMNI OUT-REACH

Notre Dame needed new ways to connect with alumni since younger alumni prefer social media over traditional communication channels. "The goal was to find ways to bring all of this information together, learn from it and be first to market with our alumni outreach," Frederick said. "We understood we had to engage everybody to help with stewardship of the university so we could bring in top professors, fund research and make education more affordable for students. It's our alumni that help us make this happen."

REACHING ALUMNI FASTER

Notre Dame's legacy data warehouse for alumni outreach was eighth years old when IT recognized it was time to take advantage of the latest and greatest technology.

"We ran out of time when we originally did that project, and as a consequence, we were left with systems where it took many hops to get data into the warehouse," Fred-erick said. "It also took a long time to

load data, and the data wasn't normalized to where it would work well in the three-dimensional relational database model we were using."

A second challenge for Notre Dame was achieving faster query results so the universi-ty could identify likely donors and engage them quickly. Data grew over

time. Queries took between 30 and 90 minutes to complete. This forced users to schedule reports to run overnight. "One user even had a T-shirt that read: 'My query is running', which she eventually changed to: 'My query is still running!'" Frederick said.

THE DECISION TO MOVE TO A DATA WAREHOUSE BUILT FOR THE CLOUD

Notre Dame determined a cloud-built data warehouse was the best solution. The university needed to easily and quickly load and process many different types of struc-tured and semi-structured data. And, it also had to automatically scale to as many as 300 Tableau users during peak alumni campaign periods, without impacting perfor-mance.

The university also wanted zero system maintenance – built-in performance with no infrastructure to tweak, no knobs to turn and no tuning required. "And we didn't want to spend numerous hours preparing

data so it could be entered into the database. We also didn't want to consume time figuring out how to get this data out to end users," Frederick said.

Other traditional, "cloudified" data warehouses Notre Dame tested only delivered frus-tration. In one case, they reduced IT maintenance but the cost of the system was too high. Another option reduced overall maintenance and delivered initial performance better than the university's legacy, on-premises system. But when IT tested the solution with many concurrent users, performance deteriorated.

SNOWFLAKE'S DATA WAREHOUSING AS A SERVICE

Still dissatisfied, Notre Dame turned its attention to Snowflake.

Processing complicated data for faster query times

Notre Dame stress tested Snowflake without re-factoring any of the data—a process that would have made the data easier and faster to process. "With as many as 16 queries running serially, we saw remarkable performance gains," Frederick said. "In one minute, Snowflake processed a query that typically took 30 minutes with our exist-ing data warehouse. In fact, one of our business analysts actually said: 'I don't believe this is actually working', but it was."

Exceeding concurrency needs

Snowflake easily handles hundreds of Notre Dame's concurrent users and rapidly processes their queries during peak usage periods.

Driving down usage and system maintenance costs

Notre Dame can easily scale any job – user queries, data loads, development and testing – up and down automatically or with a click of a button so the university pays only for the storage and compute it actually uses. Snowflake also minimized Notre

Dame's maintenance costs. "We threw some of the most complicated data and appli-cation code at Snowflake, and it processed it easily and with excellent results," Freder-ick said. "This assured both our IT and end users we would have the agility needed to process new forms of data as social media and other data channels continued to evolve."

Providing technology leverage

Snowflake also enabled the university to leverage opportunities beyond supporting alumni outreach. It also serves as a platform for applications such as administering, tracking and querying Notre Dame's student database. "We want to move all of our da-ta into a centralized data repository," Frederick said. "And Snowflake dramatically re-duces the time needed to make data-driven decisions thanks to the velocity with which it delivers query results to our users."

WHY SNOWFLAKE

Dramatically reduced data to insight to decision

A 30-minute query in Notre Dame's previous, on-premises data warehouse now pro-cesses in less than one minute with Snowflake.

Easily scales up and down on the fly

Snowflake can increase and decrease the size of any compute cluster for any job at any time so the university only pays for what it uses.

Concurrency without impacting performance (scale out)

Snowflake successfully handles hundreds of concurrent users without impacting performance.

Technology leverage

With Snowflake Notre Dame has fundamentally altered how it uses data to enhance its fundraising efforts. The university also plans to use Snowflake for subsequent data warehouse applications, such as its student database.

IT time and effort savings

Notre Dame has almost zero maintenance with Snowflake. IT staff now focuses on strategic data initiatives instead of constantly tinkering with a legacy, on-premises sys-tem to get adequate performance.

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Snowflake is the only data warehouse built for the cloud. Snowflake delivers the per-formance, concurrency and simplicity needed to store and analyze all of an organiza-tion's data in one location. Snowflake's technology combines the power of data ware-housing, the flexibility of big data platforms and the elasticity of the cloud at a fraction of the cost of traditional solutions.

Snowflake: Your data, no limits. Find out more at **snowflake.net**.