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Norwegian Cruise Line Sets Its Course for Real-Time Insights

Innovative cruise company adopts predictive analytics and real-time business capabilities, with the aim of improving the guest experience and ensuring operational efficiency.

BY LAUREN GIBBONS PAUL

Norwegian Cruise Line has a reputation to uphold. Founded in 1966, the $2.6 billion, 13-ship cruise line has a track record of innovation and differentiation. The company was the first in the business to offer round-trip cruises out of Florida's Port of Miami. It also revolutionized the industry with its signature Freestyle Cruising, which gives guests the freedom and flexibility to create their own dining and entertainment activities.

No wonder, then, that an engaging and increasingly personalized customer experience is paramount to Norwegian's quest to keep up with industry trends and continue attracting the growing number of people around the world who want to book a cruise in anticipation of enjoying a one-of-a-kind vacation (see Figure 1, "Top 4 Cruise Industry Trends"). According to Cruise Lines International Association, the industry will serve 21.7 million passengers worldwide, up from 21.3 million in 2013 and 13.5 million in 2009.

But to maintain its track record for innovation, and develop offers that will resonate with different segments of customers, Norwegian knew it needed to better understand who its customers are, what they value and what they most want to do when onboard the ship.

With an eye toward increasing guest satisfaction, among other goals, Norwegian embarked in 2012 on a fast-moving journey to implement a business intelligence (BI) system aimed at delivering insights to business users. Because it wanted to analyze large volumes of data from multiple sources—and needed rapid results—Norwegian chose an in-memory platform, which aggregates and analyzes vast amounts of data from multiple data sources in real time. From its earliest days, the system has generated insights that have led to major operational cost reductions. Over time, Norwegian's real-time capabilities will aid in its ability to quickly ascertain and even predict guests' needs and desires.

"The real power of the tool comes in predicting the future and giving visibility we never had before," says Ben Lightfoot, director of business intelligence delivery systems at Norwegian.

Many companies in the hospitality/travel industry are leveraging analytics to gain a better understanding of their customers' needs and preferences. "This is what the innovators are doing," says Joshua Greenbaum, principal at EA Consulting. "It's a very competitive environment. They are taking every piece of data they have and using it to change the customer experience."

Norwegian Cruise Line at a Glance

Industry: Hospitality/travel
Headquarters: Miami
Founded: 1966
2013 revenues: $2.6 billion
Year-on-year growth: 12.9%
Initial public offering: January 2013
Number of cruise ships: 13, with four on order
Passengers carried in 2013: More than 1.6 million
Destinations visited in 2013: 114
www.ncl.com

Source: Norwegian Cruise Line

FIGURE 1 Top 4 Cruise Industry Trends

Improved technology to lower the cost of onboard communications and provide more efficient passenger servicing.
First-time passenger growth coming from younger generation travelers, especially Millennials.
Rebound in luxury cruising, stimulated by an improving economy and increased consumer confidence.
More all-inclusive options and packaging in accommodations, services and amenities.

Source: Cruise Lines International Association. www.cruising.org

Norwegian Cruise Line Business Challenges

- Legacy BI platform was slow, inflexible and complex
- Individual departments could not easily share data, leading to multiple versions of the truth
- The company needed a quicker and more effective way to validate and scrutinize financial data in real time
- Norwegian wanted to better understand customer needs and preferences to improve and personalize the customer experience

Norwegian Cruise Line Solutions

- Adopting an analytics system based on an in-memory platform, enabling real-time analysis of a large variety of data types
- Porting ERP data to the in-memory platform, followed by property management, reservations and customer data
- Implementing data cleansing, data governance and master data management processes
- Establishing a business department dedicated to BI and analytics

Voyage to Customer Insight

According to Lightfoot, the homegrown BI system had long turnaround times and performance issues, lacked flexibility and was too complex for anyone but power users and IT staff to use effectively. There was no true enterprisewide BI strategy in place and no real processes around master data management.

"We knew we needed a state-of-the-art BI platform and strategy to stay ahead of the competition," Lightfoot says. "The business couldn't wait until the next day for an answer." Further, departments maintained siloed data marts, with no way to tie the data together, adds Chad Berkshire, vice president of operations finance at Norwegian. "There was no 'one version of the truth.'"

In late 2012, Norwegian began its quest for a platform that offered performance, self-service for business users and streamlined decision-making. "We knew this couldn't be a project that dragged itself out for the next three to five years," Lightfoot says. "The BI platform needed to produce results within a year. This platform would be a game-changer as to how users consumed and performed data analytics. Changing our organizational culture around data needed to begin right away."

The team selected the system in June 2013, and implementation progressed quickly. The ERP system was the first data source to move onto the platform, with the property management and reservations systems slated for future phases. Along with data cleansing, data governance and master data management, another major change was the creation of a new corporate department for BI delivery, headed by Lightfoot.

"One of the other huge contributing factors to the success of the implementation was the decision to create the BI department under the business umbrella," he says. "This shift from the norm allowed the BI department to align itself with the business, immerse itself in the business culture and drive home the necessary business requirements." It also ensured system usability at all levels of the enterprise. "I wanted users to have a true self-service platform that would allow them to swim through their data without any concerns around the data they were consuming," Lightfoot says.

FIGURE 2 **Swimming Through the Data**

Norwegian leverages its BI solution, powered by in-memory computing, for a host of data types in real time.

Financial data. Norwegian's BI system elucidates and authenticates the financial data in its ERP system, something it was not able to do previously, according to vice president of operations finance Chad Berkshire. Now, business users can swim in the detailed transaction data behind the financials.

Inventory data. Norwegian uses analytics to keep a closer eye on food/drink inventory aboard its cruise ships, spotting trends and heading off waste. In the future, it will use the system for inventory planning and forecasting.

Guest data. Currently, Norwegian uses analytics to segment and better understand its guests. In the near future, it will use the system to predict which guests and prospects are most likely to go on a cruise in the near future.

Source: Norwegian Cruise Line

Financial Reality Check

The first use of the system was to provide a reality check for financial data. "We needed to deliver the transactions that made up the numbers in the ERP system," Berkshire says. The increased scrutiny was a natural part of Norwegian's becoming a public entity in January 2013. "We needed to talk to potential shareholders about specific financial goals and performance," he says.

With the system in place, Norwegian could begin to obtain the coveted "360-degree view" of its guests. Under the legacy data warehouse, guest data was maintained in multiple data marts, and understanding the correlation between pre- and post-spend was becoming increasingly difficult. Guest information was sourced from the reservations system, property management system, casino system and guest satisfaction. However, there was no way to bring all of this together without complexity. The new system is changing that, giving everyone the same view of guests, enabling them to provide a better customer experience (see Figure 2, "Swimming Through the Data").

Benefits of In-Memory Computing at Norwegian Cruise Line

- Operational cost reductions as high as 6 percent in purchasing
- Expected revenue improvements driven by improved ship configuration and new food and entertainment packages
- Improved scrutiny and validation of financial data
- Improved inventory planning and forecasting
- Holistic customer views, leading to improved segmentation and prediction of needs

1. Sloan, Gene. "Norwegian Cruise Line tests all-inclusive packages." *USA Today*, July 31, 2014. http://goo.gl/opYCzx.

Early Wins

Soon after the system went live Berkshire was able to see how much money was spent annually on individual vendors across purchasing systems. "It turned out there were five different departments all using one vendor," he says. "We had been negotiating in siloes," says Berkshire, whose team worked with the vendor's representative to reduce the bill by 6 percent.

Purchasing was a fertile area for more hard returns as the purchasing department obtained visibility across multiple systems. "We discovered that a significant number of services we were buying were not running through a purchasing system. They were being negotiated without purchasing being involved," Berkshire says. Purchasing has reestablished oversight of services purchases, driving additional cost reductions and greater efficiency.

The system would also potentially highlight problematic areas on the ships related to revenue. "We might change the way the casino floor is laid out, or place assets in different places as a result of looking at the asset spend across the casino floor," Lightfoot says.

The biggest impact for guests so far has been the creation of onboard food and entertainment packages based on common spending patterns. "We make it convenient for them to buy it in one package while also gaining savings," Berkshire says.

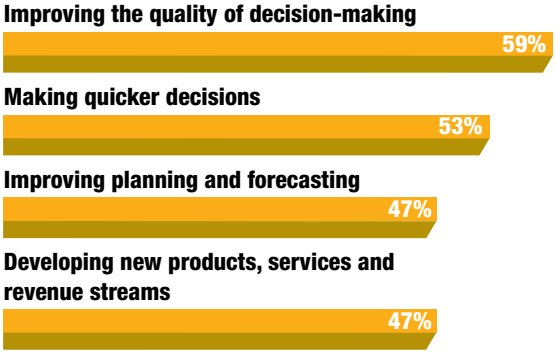
Another example of data-fueled innovation: Norwegian recently introduced all-inclusive cruising, the first of the major cruise lines to do so, according to *USA Today*.[1] With this option, available for 2015 cruises, the guest pays one price for unlimited extras, including access to specialty restaurants and alcoholic beverages, shoreline excursions and bingo games.

Predicting the Future

Currently, the crucial activity of customer segmentation is handled by an external service provider. With the new solution in place, Norwegian will take that function back in-house. "In this business, you have a fixed number of customers based on the ships and number of rooms," Lightfoot says. "We really have to get the best guests, so segmentation is really key for us."

FIGURE 3 **Better Decisions Through Data**

Business drivers for investment in analytics include the following. (% responding)



Source: IDG Enterprise Big Data Study, 2014. http://goo.gl/BNImWX

For example, guests who meet a certain threshold of spending on the gaming systems will likely be passengers who Norwegian would encourage to book another trip. Lightfoot expects the system will help his team pinpoint profitable customers and develop personalized offers (see Figure 3, "Better Decisions Through Data").

"They will be able to close the gap between someone who is interested in taking a cruise vs. someone who is onboard enjoying themselves," Greenbaum says. This is a major advantage in an industry where there are complex products, many customers and a lot of competition. "There are 100 different cruises. Being able to take all these potential products and correlate them to customers based on data—that is the perfect scenario," he says. "You can move the needle very quickly."

Norwegian's use of the system will increase over time, as will its associated benefits. "When we can begin to predict for the future, the payoff will be huge," Lightfoot says. "We are now looking in the rearview mirror. The goal is to be able to predict months in advance, so we can put together the right offers, the right experiences for the right customers."

So far, Norwegian's journey has been smooth sailing, with great things on the horizon. "A lot of hard work has gone into this," Berkshire says, "but it has really paid off." •

Lauren Gibbons Paul has written extensively on customer relationship management and customer experience management for more than 15 years.

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Real-Time Businesses Make Decisions In the Moment

Bloomberg Businessweek Research Services interviewed Steve Lucas, President, Platform Solutions, SAP SE, about transforming business operations with real-time insights.

What does it mean to be a real-time business?
Being a real-time business means being aware of the key factors that will impact your decisions and being able to make a decision in the moment that matters. In most travel/hospitality companies today, decision-makers have to wait for batch processes to run. When batch technology is replaced with real-time processing, however, companies can obtain in-the-moment insights instantaneously. They can use those insights for competitive advantage, whether to gain efficiencies, identify emerging trends, personalize offers or expand into emerging markets. That's why the SAP HANA platform exists: to enable companies to do business in the moment.

Where do you see the most value for different organizations?
The value comes from three main drivers. First, we reduce the complexity of the systems required to produce your existing results. This was one of the key motivations in designing SAP HANA: massive IT simplification. You can use the platform to feed data from all different sources into one system. Second, we enable agility by giving customers the ability to get real-time insight for decision-making. Third, we're unlocking the true potential for innovation through new business processes and models: the real-time business innovation.

As you look ahead, what new ways of doing business do you envision?
Our SAP HANA platform not only can enable customers to make decisions for today, but it also provides a powerful predictive engine. Most companies make decisions by looking in the rearview mirror. But the rearview mirror is tiny compared to the windshield looking forward. Companies will start to build forward-looking decisions into their operating models.

What is your best advice to companies that want to start their real-time transformation?
It is not just about the technology. SAP HANA is extraordinarily innovative, but the first thing we do is look at where the opportunities are to transform business processes. Then we spend time with customers rethinking how those processes are designed and how to remodel them. You have to start at zero: What would you do if you didn't have to wait for information? If you don't have to wait, there's an opportunity for massive reinvention and value creation across industries.

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