Hewlett Packard Enterprise

Big data analytics boosts HPE customer satisfaction

By leveraging big data analytics, HPE deepens its understanding of customer experience and how improving it drives loyalty, retention, and referrals

Objective
Drive revenue growth by improving customer loyalty and increasing the number of customer referrals

Approach
Implement an enterprise big data platform to enable business units to pool customer data, and then analyze it to identify ways each business can improve the customer experience

IT Matters
- Analysts can answer complex questions about customer experience in 5-10 minutes, instead of needing weeks or months to gather and correlate data from siloes
- HPE can more effectively contain and quickly remediate with the ability to detect emerging issues in near-real time
- BU analysts can access the data directly from query forms, giving them control and allowing them to move more quickly on business directives
- Automation reduces risk of human error, improving data quality and freeing analysts from the need to perform extensive data validation

Business Matters
- Richer, more complete view of customer experience and how it correlates to account ROI enable HPE to pinpoint opportunities to improve customer loyalty and boost revenue
- Reduced lag between customer experience and HPE view into that experience help ensure issues are remediated promptly
- Graphical dashboards enable executives to quickly visualize customer experience data, enabling them to better manage customer experience initiatives

Hewlett Packard Enterprise (HPE) knew that if it focused the right resources on improving customer loyalty, it would drive revenue growth. Gathering and analyzing the vast amounts of data on HPE's customer-related processes and touch points presented a challenge. The solution was to create a customer experience analytics platform by leveraging HPE IDOL and HPE Vertica.

When Meg Whitman took Hewlett Packard Enterprise's helm in 2011, she made a number of decisions about the company's course. One of the most important of her decisions was to re-invigorate HPE's relationship with its customers.

On an individual, person-to-person level, HPE has always been a customer-centric company. However HPE is also enormous, with some 300,000 employees spread across every region of the globe. Its corporate structure is mature. Its portfolio of products and services is vast. HPE recognizes that, amidst such a complex organization, individual or even department-level customer-focused initiatives can become diluted or even lost altogether. HPE needed a way to pool all the information that feeds into it across its entire corporate landscape; knit that information together; and then generate meaningful and actionable insights that would help it serve its customers more effectively—and drive top-line growth and bottom-line savings.

"If you ask different 10 HPE employees what we should be doing to improve the customer experience, you'll get 10 different answers, because everyone views the question based on his or her area of responsibility. The HPE analytics platform lets us transcend this limitation. It gives us a picture that spans the entire customer engagement, and that is based on data, not subjective perceptions."

– Karl Lieber, Project Manager, EG Quality Reporting, HPE

Setting the hardest goal: improve customer loyalty and referrals

HPE knows that the first step to any kind of process improvement is data. It needs metrics to understand how customers view the company at any point in time; to determine where to invest to drive improvements; and the effects of those improvements.

HPE therefore adopted the industry standard Net Promoter Score® (NPS) as a tool to benchmark how HPE customers view the company. NPS, developed by Fred Reichheld, Bain & Company, and Satmetrix, measures the loyalty that exists between a provider and a customer, and correlates to provider revenue.

Next, HPE needed to implement a customer experience management system so that it could measure how it influences the company's NPS over time. "Our goal is to do more than improve customer satisfaction," explains Johannes Biermann, Sr. Director, HPE Customer Advocacy. "We want to increase customer loyalty. We want to increase the number of customers that advocate for HPE and refer other customers to us based on their great experiences in working with HPE."

The Customer Advocacy teams began by examining the lifecycle that customers follow when they interact with HPE, from initial research of HPE's products, services, or solutions through purchase, delivery, implementation, and support. HPE documents customer touch points along this customer lifecycle, but the data capture typically happens within HPE business units (BUs) and regions. As a result, different pieces of data related to a single customer are often tracked by different HPE departments.

"The customer experience economic analysis gives us the ability to understand the relationship between NPS and revenue. That is the magic."

- Tina Weatherford, Customer Experience Program Manager, HPE

The data also originates in many different forms. Some is structured data generated by HPE's business and enterprise resource planning (ERP) systems. Some is unstructured, such as social media and survey responses. And there is useful data that resides outside HPE's internal systems. What are people saying to each other about HPE on industry forums? What comments are they leaving on news sites and blogs?

HPE needed a way to pull all of its customer-related data into a centralized repository, and then create a set of analytics services its business units can use to improve the company's NPS.

HPE leveraged a solution from its own technology portfolio: HPE Big Data Analytics.

Pooled data, fast queries, sophisticated analytics

The foundational piece of the HPE big data analytics solution, Hadoop, serves as the "data lake:" an enterprise repository for the large amounts of customer data along touch points with HPE, including customer feedback gathered by HPE business units.

Hadoop is well-suited for this use case. It can accommodate enormous amounts of data cost-efficiently, because it offers a high compression rate and doesn't require specialized hardware. Hadoop supports multiple forms of queries, including Java, Python, and SQL. It doesn't restrict users to one query tool.

Hadoop is also integrated with HPE IDOL Information Analytics Platform and HPE Vertica Analytics Platform.

Because the records residing in Hadoop include both structured and unstructured data, HPE uses HPE IDOL to process and index that data for classification and taxonomy. This enables HPE to convert even video or text recordings to usable data that can be correlated with other data elements. HPE IDOL also provides highly sophisticated analytics capabilities that enable HPE to maximize the value of its customer experience data. For example, HPE IDOL can mine the content of customer support emails to determine whether the people writing them were pleased or unhappy.

HPE Vertica gives the platform users an environment for querying the data. Because HPE Vertica's queries are extremely fast, users can build queries that return results in near real-time. They can trust that the data reflects a snapshot of customer experience metrics that is as current as it is comprehensive.

Another feature of the big data analytics platform is that it offers an application program interface (API), making it possible to integrate the platform with third party software. HPE took advantage of this capability as well, integrating its big data customer analytics platform with several third party solutions. One of these applications, Tableau, allows the platform users to visualize query results in graphical dashboards. HPE also developed and integrated a custom application that performs proprietary analytics specific to the company's customer experience requirements.

Breaking down siloes gives 360-degree customer views

As awareness grew about the new customer experience analytics platform, HPE business units became interested in leveraging its capabilities—and it proved to be both flexible and adaptable to their needs.

> "With the HPE analytics platform, we can answer critical customer satisfaction issues better and faster."
>
> - Karl Lieber, Project Manager, EG Quality Reporting, HPE

Because the big data analytics platform incorporates data from across the Hewlett Packard Enterprise, it is richer and more complete than anything BUs had access to before. It is possible, now, to generate a 360-degree view of the HPE customer experience, from the moment they begin to consider an HPE product or service, through the purchasing process, and on to post-purchase implementation and support.

"Like many companies, we have siloes of information here at HPE," explains Tom Kersnick, Chief Strategist, Architect, Customer Experience and Quality, HPE. "With our big data customer

analytics platform, we can pull in that siloed data and blend it, optimizing HPE customer engagement, experience, and management."

"Before, data was spread across so many sources. It was extremely hard to correlate it," adds Karl Lieber, Project Manager, EG Quality Reporting, HPE. "Now it's pieced together. When we run analytics, we get a truer picture of how our customers view us, so we know what we have to do to better serve those customers."

Another benefit of the platform is that it reduces or eliminates the lag between a customer experience and HPE's ability to detect and understand that experience. Before—when the data was spread out over multiple siloes—it could take weeks or even months for analysts to gather and model it. Today, analysts can leverage the aggregated data lake and HPE Vertica's querying speed to answer many complex questions in only 5 to 10 minutes.

Speedy queries often translate to measurable business value. The Hewlett Packard Enterprise Group, for example, recently detected a firmware issue based on an automated analysis of tech forums comments. "We knew about the issue before a single call came to our support center," says Lieber. "We were able to remediate before it affected more than a handful of customers."

Fast, up-to-date data also means that sales organizations know exactly where they stand relative to customer experience metrics—something that is particularly valuable when they're tasked with meeting quarterly revenue targets. The Enterprise Group also uses the HPE big data solution to improve its call center processes and drive improvements in product quality.

Because the HPE analytics solution supports multiple query forms, analysts within HPE BUs can use query languages that are familiar to them, and that best fit their organizational needs. BUs can leverage the platform themselves: they don't need to submit requests to HPE IT to load data into the system or perform queries. The BUs like that. If they decide to study a particular customer satisfaction issue, they can act on that decision immediately.

> "All of HPE's business outcomes, from measures of BU and executive performance through account team and customer support, now incorporate NPS metrics on customer loyalty and referrals. And our customer experience analytics program provide the tools to understand how to impact those metrics, so improvement actions can be focused and help close the loop with our customers."
>
> - Johannes Biermann, Sr. Director, HPE Customer Advocacy

The new customer satisfaction analytics platform automates many tasks associated with data loading and querying, and its processes are standardized, consistent, and repeatable, which reduces the risk that human error might impact data quality. BUs can spend less time on checking data for accuracy, which means they can focus on using the data to glean actionable insights.

And because the solution allows BUs to create dashboards, their executives can easily monitor customer experience metrics. This helps reinforce HPE's cultural shift by keeping customer experience in front of the company's decision-makers.

Correlating customer satisfaction to NPS and revenues

As HPE's BUs further refine their use of the HPE big data customer experience analytics platform, they're also using it to improve their planning. "We have a better grasp, now, on what return we can expect when we invest in improving customer satisfaction," explains

Case study
HPE on HPE/CX Analytics

Industry
High tech/electronics

Customer at a glance

Software

- HPE Big Data Analytics
  - Hadoop
  - HPE IDOL Information Analytics Platform
  - HPE Vertica Analytics Platform
  - Tableau
  - Custom analytics applications

Gavin DeNyse, Director of Customer Analytics, HPE. "We can predict churn and retention rates more effectively, and we can understand how churn and retention affect HPE's costs and profitability."

The HPE big data customer experience analytics platform also allows HPE to correlate its customer experience to NPS data. This enables the company to truly understand how the actions taken by its BUs affect NPS metrics.

"Early in this project, one of the questions we asked was, 'when will we see results?'" Biermann says. "If the model was right, taking specific actions in improving the NPS metrics would indicate revenue changes." In some areas of HPE, there appear to be early indications for this. So the focus on customer experience, the ability to measure and track it via an analytics platform, and taking action on it pays off.

In other words: Meg Whitman was right. "So much of succeeding in any business is about focus," Mark Mason, VP Business Operations, HPE Services, states. "What should we focus on, which touch points, which customers? What levers do we pull to get the results we want? The HPE big data customer satisfaction analytics platform is helping us focus on our customers, and today we've begun to recap the results."

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