Hewlett Packard Enterprise

HPE Vertica powers real-time data analytics at Empirix

EMPIRIX

Objective
Partner with HPE Vertica to provide Big Data platform for mobile and telecommunications business analytics

Approach
OEM partnership with HPE Vertica to deliver Empirix IntelliSight

IT Matters
- Analyze billions of rows of subscriber data and return results in seconds, a task that was not possible in the past
- Provide visibility into all subscribers
- Prevent over-the-top apps from taking down networks

Business Matters
- Boost subscriber service quality
- Reduce customer churn
- Identify and target customers with revenue-generating offers
- Predictive analytics improve customer ROI
- Ability to simultaneously load and query data enables expansion into mobile

Recently named for the fifth time to the Inc. 5000 list of fastest-growing private companies, Empirix Inc., based in Billerica, Mass., provides comprehensive end-to-end testing, monitoring and analytics solutions that ensure the quality of complex contact center and unified communications systems. Its customers include mobile and telecommunications companies, banks, insurance companies, cable operators, and airlines. Among its offerings, Empirix has an OEM partnership with HPE Vertica to help power Empirix IntelliSight, a Big Data platform for mobile and telecommunications business analytics. IntelliSight is designed to boost service quality, reduce customer churn and increase ROI.

In today's connected, fast-paced and competitive world, mobile and telecommunications companies face increasing demands associated with massive amounts of data. Empirix IntelliSight, powered by HPE Vertica, is an analytics and predictive tool that can for example intelligently rank network issues to ensure excellent customer experiences. Empirix IntelliSight also enables forward-thinking companies to make the most of valuable information contained in mountains of data. For instance, operators can understand their customers better—from identifying usage trends to gaining insights into preferred applications, services and devices. They also can learn which revenue-generating offers will be most appealing.

Case study
Empirix

Industry
Service Quality
Assurance

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– Navdeep Alam, director of engineering for analytics and prediction, Empirix

Predictive analytics

Navdeep Alam, director of engineering for analytics and prediction, heads up the Empirix Predict Team, which is comprised of one dozen engineers and data scientists in the U.S. and in Edinburgh, Scotland. When Alam began working at Empirix over a year ago, the company relied on MySQL. While HPE Vertica also was onsite, it was primarily used for passive monitoring, with Empirix's own probes, for capturing data and as a place to hold data for reporting. While Alam had not used HPE Vertica before joining Empirix, he was familiar with it and was confident that it would serve Empririx well, so he and his colleagues began leveraging HPE Vertica for analytics.

 "Empirix is dealing with astounding amounts of data—billions of rows of subscriber data sets," says Alam. "With HPE Vertica, we can query and get a response in five to seven seconds. In the past, we didn't even run these types of queries because it would have been ridiculous to tackle that. Now we can do real-time analytics."

There is a tremendous amount of data in telecom and data com, especially with the huge growth around mobile, and much of it is rich data. "In the past, Business Intelligence applications tried to see what was running in the network and where the issues were, such as identifying 50 things that were wrong,"

Alam continues. "We have taken it to the next level to intelligently rank or sort issues. We can tell our customers which issues are affecting a certain number of subscribers, and determine how to solve the problems. Or, we can identify which two issues are the most important things to fix to provide a better user experience. We are taking analytics to the next level, to be truly predictive, and improve customers' ROI."

HPE invests in Empirix

Initially, the factor that drove wider adoption of HPE Vertica at Empirix was the analytics platform's ability to load and query data simultaneously, something it could not do with MySQL. "We couldn't expand into mobile and not be able to load and query simultaneously," Alam says. "A lot of people think of Oracle and SQL Server as the systems they can believe in. HPE Vertica gave us an overview, showed us use cases, sat with our engineers, and worked collectively with us on our OEM arrangement. HPE had an investment in Empirix's success, so it has been not just a matter of making it work, but a cultural shift," Alam explains.

In many industries today including mobile, there is a vast amount of data generated by millions of subscribers with billions of devices around the world. "With Big Data there are massive correlation and analytics challenges," Alam says. "If a set of devices has a negative

Customer at a glance

Application
Enterprise Software—Analytic Database
Management

Software
- HPE Vertica Analytics Platform 6.1.2
running on SUSE Linux Enterprise
Server 11 Service Pack 2

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impact on the network, or if a VIP is having a problem, you don't want to lose that customer. There are ways to make sense of the data, and you need a system that brings it all together."

As an OEM partner, Empirix engaged with the beta program and took an early look at what HPE Vertica is doing with the platform, moving more toward R and data-mining. "The OEM partnership with HPE Vertica has had an impact on our roadmap. Movement of data takes time. We want HPE Vertica to be the place for analytics. Subscribers can't wait overnight. Our roadmap is about real-time analytics. With HPE Vertica, we can load data quickly, correlate, aggregate, and we can do that in seconds to a couple of minutes," Alam says.

Optimizing user experience, increasing ROI

One of the important things Empirix IntelliSight provides is churn analysis. For example, it can look at the kinds of experiences customers are having and, if there is a problem in one region of the U.S., optimize those customers' experiences. "Empirix IntelliSight collects data, taking a range of data, including third-party data, correlates it, runs analytics, and helps find the needle in the haystack," Alam continues.

Another benefit Empirix IntelliSight provides is greater visibility into over-the-top apps that use a ton of bandwidth and magnify revenue loss. In the past, providers generated revenue through phone calls or texts. Since the introduction of data plans and alternative services like Skype, there are more choices about how to make calls, which has resulted in a revenue shift. With the Empirix IntelliSight platform, powered by HPE Vertica, it is possible to characterize how many millions of customers are using certain apps that require more bandwidth than others, cost a lot to deliver, and drain revenue.

"What's important is that with HPE Vertica we have a real-time data analysis engine, which allows more insight into the network and it is faster than before," Alam says. "We can resolve problems and predict problems before something goes wrong, such as an over-the-top app that can take down the network. We can get value out of data that was hidden."

Alam explains that analytics and prediction also have the potential to increase revenue. By understanding what customers like, it is possible to target offers. For instance, if a customer doesn't use talk minutes, a provider can offer a different plan that is more appropriate.

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"We are trying to drive ROI in the context of business," Alam concludes. "The analytics and prediction piece adds value for our customers. We made an investment in in-memory analytics, and having a 360-degree view of the customer is key. We are leveraging HPE Vertica to solve problems."