

DATABASE

TRENDS AND APPLICATIONS

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Loma Linda University Health Care Deploys Pentaho BI

Leading California-based health care provider opts for open source instead of proprietary solution.

Loma Linda University Health Care (LLUHC) is the management service organization that supports the many programs and services provided by more than 600 faculty physicians employed by Loma Linda University professional corporations. It is affiliated with an extensive medical network and LLUHC physicians make up what is known as the faculty practice plan. They specialize in family practice, general medicine and general pediatric primary care specialists, as well as various medical and surgical specialties and subspecialties. The faculty practice plan of Loma Linda University accounts for over 40,000 patient office visits a month.

Access to Information

Like many health care institutions, for years, many of the financial and operational IT systems used at LLUHC were supported by the MUMPS data management platform which has long had a wide following in the health care community. As is often the case with legacy systems, extracting data for reporting purposes can be challenging with MUMPS.

Over time, LLUHC began to use a modern, commercial version of MUMPS, which made the data more accessible. The decision support systems services team began to look for ways to create financial and operational reports for the physician practices they support. "Our initial objective was to produce and distribute simple reports to our clients through Microsoft Access and Excel," said Darrin Blocker, a decision support analyst who worked on the project.

The goal was to create and facilitate centralized reports that were not accessible through the billing and finance system, such as custom aging buckets of accounts receivable, determining posting lag times by tracking the time from when a service is rendered to when it is entered into the system until it is billed, changes in the mix of services being rendered by the physicians, changes to the community of payers for health care and so on. "We have all this data coming from disparate systems," Blocker said.

Going Open Source

At first, LLUHC explored a commercial system for reporting. "It was a very simplistic silo application," Blocker said. "We knew we needed another solution."

While exploring alternatives, Blocker discovered Kettle, an open source ETL tool that extracts data and transforms it into a dimensional data model for analysis. Kettle is part of The Pentaho BI Project, which provides enterprise-class reporting, analysis, dashboards, data mining and workflow capabilities that help organizations operate more efficiently and effectively. The software offers flexible deployment options that enable use as embeddable components, customized BI application solutions, as well as a complete out-of-the-box, integrated BI platform. Moreover, Pentaho is the primary sponsor and owner of popular open source projects including Mondrian, JFreeReport, Kettle, and Weka. "Kettle is very user friendly and very popular. A lot of facilities are using the tool to extract the data and transform that data," Blocker said. "Pentaho came along with a terrific product and we were able to get all our data into one repository and centralize our reporting at one OLAP location."

The idea of moving to an open source solution initially raised some concerns. "It was new for the IS department," Blocker said. "They had never worked with an open source product on a large scale like this." Blocker addressed those concerns in several ways. First, as an open source product, he was able to download the products and create several proof-of-concept projects. He could demonstrate it worked. Second, LLUHC generally relies on its commercial vendors for technical support. Blocker showed LLUHC they could get the same level of support from Pentaho.

Up and Running

LLUHC's data warehouse, which includes data from a range of operational systems, runs on Microsoft SQL Server 2005 database. The

Pentaho platform is currently used for analysis and reporting. In the future, LLUHC plans to incorporate Pentaho's scheduling, workflows and filtering components.

"Getting the initial Pentaho application, which looked at the aging of accounts receivable, up and running did not take very much time", Blocker said. "We had already started to build our data warehouse and I put the first application up in about a week."

Working with Pentaho

"Working with the Pentaho support team has been great," Blocker said. Pentaho worked very closely with LLUHC on resolving security issues and integrating the application with the active directory serve to enable single sign-on. Moreover, Blocker noted, several of his suggestions for the Pentaho platform will be included in the next release of the platform. Consequently, he is eagerly looking forward to the next version of Pentaho's rapid application development tool, which, he anticipates, will empower end-users to create their own reports. In the final analysis, he said, it's less risky working with open source than with commercial products. "With commercial products you don't know if you are getting what you want, but with open source you can create proofs-of-concept. And the TCO is so much lower."

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