



TURNING DATA INTO INSIGHTS IN SAN JOAQUIN COUNTY

Like most counties, San Joaquin County, Calif., collects a vast amount of data about its operations and the community it serves. But until recently, the county couldn't put that data to use.

"We couldn't tap our data to collect meaningful metrics and insights that would help us be better at what we do," says Jerry Becker, assistant county administrator for San Joaquin County. "One of our board's priorities is to improve operational efficiency. We wanted to mine our data and pull out key facts that could help us make better business decisions, but we didn't have the tools to do so."

In 2016, San Joaquin County hired Graviton Consulting Services to upgrade its existing on-premises PeopleSoft enterprise resource planning (ERP) system. During implementation, Becker discussed his data challenge with the Graviton team. For years, county leaders had talked with Oracle representatives about Oracle's business intelligence solutions, though budget constraints prevented them from committing. But when the Graviton team told Becker about Oracle's new subscription-based analytics solution, he was intrigued.

In 2018, San Joaquin County agreed to work with Graviton and Oracle on an Oracle Analytics Cloud (OAC) proof of concept. Leveraging a data lake and OAC would give the county a low-cost way to apply analytics across its vast troves of data — whether that data resided in cloud-based or legacy systems.

DIVING INTO DATA

The county focused the proof of concept on its biggest expense — personnel.

"Personnel are our most valuable resource, and also our most costly resource," says Becker.

The proof of concept project analyzed sick leave use for 7,200 county employees.

Leveraging OAC, the county culled its data and built dashboards and heat maps to display a variety of information, including which days employees were most likely to call in sick and how much sick leave was used by certain job classifications.

"It was a tremendous eye-opener for us," says Becker.

The county identified several unexpected trends, including the fact that some personnel waived sick leave benefits in exchange for cash payouts, or did not use any sick leave at all for multiple years. Unused sick leave creates a future expense for the county because employees can cash that leave out at retirement. The county didn't want to needlessly drive up that balance and create a large future liability.

"Some employees were using other types of leave when they were sick," says Becker. "The OAC product helped us realize we had some education to do."

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— Jerry Becker, Assistant County Administrator, San Joaquin County

Based on findings from the proof of concept, the county made changes that will ultimately reduce its risks and expenses.

“We knew some of these things before, but until we implemented OAC we didn’t have an all-inclusive look,” says Becker. “It allows us to bring together a wide variety of information, and if something looks odd, we can dive in and take a closer look.”

“Performing some quick, easy analytics on its data helped county leaders think about how they could improve productivity and increase efficiencies,” says Vineet Srivastava, president and CEO at Graviton Consulting Services. “Just by bringing data into OAC and animating it, the county pulled out insights it wouldn’t normally be able to see.”

The original proof of concept created an appetite for additional analytics projects among San Joaquin County’s executive staff. Over the next several months, the county launched two more analytics projects, including one at San Joaquin General Hospital, a county-run hospital and trauma center.

San Joaquin General Hospital is required to produce multiple reports, including a Public Hospital Redesign and Incentives in Medi-Cal (PRIME) report required by the state of California. The PRIME report is critical to the county because it’s tied to state funding, but it requires hospital personnel to spend hundreds of hours collecting data. Using OAC, the county can now automatically gather structured data from its electronic medical system and unstructured data such as doctor’s notes, charts, pdfs and more from hundreds of thousands of hospital records. That reduces the time and effort required by hospital staff to create the PRIME report and improves the report’s accuracy because it reduces the potential for human error.

The county also used OAC to evaluate overtime pay at San Joaquin General Hospital. The county recently made personnel changes and hospital leadership wanted to evaluate how those changes affected expenses. Using OAC, they could see how much overtime they were paying staff and make further adjustments to lower costs.

“Just that little bit of analysis through OAC can help us more accurately project future costs,” says Becker.

The county eventually plans to leverage OAC within the hospital to build machine learning algorithms that can predict patient needs and outcomes more quickly. In the

long run these efforts could help the hospital run more effectively and efficiently and further reduce costs.

“The fact that we can bring large quantities of disparate data into OAC and turn it into structured, intelligible data we can use is extremely valuable,” says Becker.

The third OAC project underway is using analytics to examine the county’s homeless population and evaluate each person’s fit for rehabilitation programs. That project is still in its infancy, but Becker and team have developed data sharing agreements with multiple service providers throughout the county.

“We have about a dozen different systems that collect information about homeless individuals, so there is a tremendous amount of data that can be shared to give us a more holistic view of our homeless population,” says Becker. “Bringing that data together from what were siloed systems gives us insights we previously didn’t have. It has allowed us to ask new questions and better understand how we can interact with our homeless population and get them the services they need to be successful.”

OBSTACLES AND OPPORTUNITIES

Becker says one of the biggest challenges he’s faced with each of the OAC projects is getting agencies to share data. Managing that challenge required him to focus on the positive and push through initial resistance.

“I sat down with department heads and asked them to focus on what we could share,” says Becker. “We’re not going to focus on the barriers; we’re going to focus on the things we can move forward on. Then we’ll work our way through the barriers.”

Becker says strong partnerships with Graviton and Oracle have also been important to the county’s success.

“It was helpful that we had such a powerful initial start,” Becker says. “We saw how quickly they were able to bring the data in and create meaningful results.”

San Joaquin County leaders are currently expanding the volume and types of data they’re feeding into OAC to create other types of insights and examine other areas where they can apply OAC’s analytics and machine learning capabilities.

“It’s exciting to see how OAC can help us analyze how we’re delivering services and determine where there are opportunities for improvement,” says Becker.

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