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# Project Spotlight

## California Water Service Company (Cal Water) Increases Customer Work Orders and Decreases Customer Wait Times by Utilizing Cloud, Mobile and Big Data Technologies

**Michael Luu**,
Vice President, Customer Service and Information Technology,
California Water Service Group

**RIM:**
Please briefly describe some of the innovative technologies you have recently implemented to modernize utility field operations and customer service.

**LUU:**
Cal Water, which serves approximately 2 million people in four States, deployed a new work order management system in 2015 to leverage the latest cloud, mobile, and big data technologies. We complete over 200,000 work orders annually to provide timely customer service (e.g. leak repair), collect water quality samples, and maintain approximately $1.6 billion in company assets. The new system we implemented utilizes Apple's iOS platform to provide our employees with an intuitive mobile experience. It uses Amazon Web Services for maximum availability and security, and relies on advanced APIs to intelligently route work based on past performance and predetermined business criteria. These innovative technologies work in collaboration with our award-winning customer service (Cal Water received JD Power's highest numerical rating in the West Region for Water Utilities in 2016) to improve operational efficiency and further enhance the experience we provide to our customers.

**RIM:**
What are some of the benefits to using these technologies?

**LUU:**
There were several key benefits to using the new work order management system. For example, as a result of implementing this system, our customer appointment on-time arrival rates have increased from 95 percent to 96 percent, despite a 26 percent increase in the number of appointments. Additionally, field staff completed 21.3 percent more work orders, equating to a shorter customer wait time. The ease of use of the new system has been beneficial as well, including single sign on capability, the ability to use the system while offline (making the system usable without cell reception), the integration with payroll, inventory, and vehicle mileage reporting systems and access to plat maps as built via ESRI/GIS integration from mobile devices. The smart dispatching and routing services also integrate with Google Maps and other big data technologies, which makes field service work faster and more efficient. Finally, having a usage based cost model is helpful, as well as low overhead for network and system admins and no patching or costly software and hardware upgrades.

**RIM:**
What was the timeline for implementing these technologies?

**LUU:**

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|---|---|
| Design | August-November 2014 |
| Build | November-February 2015 |
| System Testing | February 2015 |
| Integration Testing | March 2015 |
| User Acceptance Testing | April 2015 |
| Parallel Testing | May 4-22, 2015 |
| Phased Roll Out | May 26-<br>November 16, 2015 |

**RIM:**
Were the applications produced in-house or were other service providers involved?

**LUU**:
Cal Water partnered with KloudGin to implement their Intelligent Field Service Cloud and Mobile Platform. Cal Water personnel provided the functional design, technical requirements, project management, and testing/training support. Ernst & Young was our Systems Integrator and provided the necessary services to tie the Oracle CC&B application in to KloudGin. The team worked exceptionally well together and met their deliverables.

**RIM:**
What was the budget for this modernization?

**LUU:**
The total budget was approximately $1 million including software, internal labor, and consulting services.

**RIM:**
What roadblocks did you face while transitioning to the cloud and using mobile?

**LUU:**
The transition to the cloud and mobile has been a great learning opportunity. Working with NOSQL, Hadoop, and MongoDB was a new frontier for us and came with its own set of challenges. The Cal Water technical staff had to immerse themselves in understanding these newer technologies and how they could integrate with our existing platform. Fortunately, KloudGin was with us at every step to provide guidance and support. On the business side of the equation, we had to figure out the capital versus expense riddle when dealing with cloud providers. We consulted with our Finance Group and arrived at a joint decision, but it took some time to figure out the right accounting treatment for cloud investments.

**RIM:**
How have customers responded to these new technologies?

**LUU:**
With this particular project we had both internal and external customers. The internal customers are our field employees and customer service representatives (CSRs). The feedback from our field employees has been astounding. They love the ease of use of the app and ability to complete timecard and inventory entries without logging into other applications. To our employees' credit, they assembled a list of enhancements to make the KloudGin system even better, so we have our work cut out for us. Our CSRs appreciate the ability to get a Gantt chart view of all the open work orders and easily assign/reassign work. However, the new system and associated processes resulted in an increase of back office work related to documenting reasons for incomplete work orders and following up on worklist items. This will ultimately improve our recordkeeping, but it's new work.

Our external customers are equally delighted with the new application. It made more appointments available to customers since we were able to complete 21 percent more work with the same staff. We also increased our appointment on time arrival metric by using the built in Google Map integration to avoid traffic delays. All in all, this project has been a great success in upping Cal Water's top-notch customer service.

**RIM:**
Are there any lessons learned you can share that will be beneficial to other utilities?

**LUU:**
I would share three key lessons with other utilities thinking about implementing a new work order management system or deploying a mobile or cloud solution. The first lesson is to over emphasize the user experience. Hire a user interface designer if necessary, but make sure the front end is intuitive and extremely user friendly. User adoption is a key success factor. Second, spend ample time to research and define a system integration strategy considering all of the critical business systems. Select a technology that the labor market (for employees and consultants) can readily supply. And last, but not least, develop a plan on how your organization wants to use the vast amount of data you're collecting. The simple answer is to feed it into a business intelligence system to produce dashboards and reports, but the reality is the data can do much more than to depict trends. For example, a current data point combined with past history can be used to automatically trigger a work order for a field employee to conduct an investigation. My advice is to gauge your organization's expertise and appetite on the what, when, and how of big data.

**RIM:**
Do you have any other new projects on your roadmap?

**LUU:**
The next immediate step is to consolidate our work order, analytics, and other one off mobile apps into the KloudGin platform. This will help streamline security and improve the user experience by respectively reducing the number of user profiles (one less user ID and password to remember) and adopting a common user interface across all of our mobile apps. The one to three-year outlook calls for a deeper integration with GIS and a stronger push towards machine learning and task automation.

## About Cal Water

California Water Service (Cal Water) is the largest investor-owned American water utility west of the Mississippi River and the third largest in the country.

## About RIMSolutions™

RIMSolutions™ is the research and innovation practice of TMG Consulting. TMG Consulting is a vendor agnostic firm long-recognized for identifying and implementing technologies and solutions to best deliver the business goals of its utility clients. Learn more at www.tmgconsulting.com and email questions to research@tmgconsulting.com.