



The Computerworld Honors Program

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Final Copy of Case Study

Status:

Laureate

Year:

2013

Organization Name:

City and County of San Francisco

Organization URL:

www.sfwater.org

Project Name:

Street Lights Mobile App

Please select the category in which you are submitting your entry:

Mobile Access

Please provide an overview of the nominated project. Describe the problem it was intended to solve, the technology or approach used, how it was innovative and any technical or other challenges that had to be overcome for successful implementation and adoption. (In 300 words or less.)

We are the Public Utilities Commission (PUC) of the City and County of SF. This project covers 14,000 PUC lights, and reaches out to 800k residents within the City. It allows the general public to locate a light anywhere in the City, report a problem, and track the ticket. It provides residents an easier way of submitting streetlight-related tickets to 311.org with their phone. We used cutting-edge mobile development technology, developed this in-house application using Google Map, GPS, Titanium Studio, JavaScripts, etc. technologies. This feature is missing from 311.org and residents weren't able to locate a problem light or report a problem from their phone. Information captured from the phone calls and even from the web interface weren't accurate since 311 doesn't store the inventory of all the 14,000 lights while PUC does. This caused our DPW department extra time and effort in finding the problem light as well as fixing it. We solved the challenge of the GPS inaccuracy issue. We found out from our field trips to different city locations that, due to tall buildings, big parks with no buildings around and districts with very condensed amounts of lights that GPS can be up to 30 feet off. We

designed a "purple" button on the map that people can drag and drop at any place on the map on the phone, if the GPS shows the light at a wrong location. We also designed three different views of the map -- Hybrid, Satellite, and Standard -- to help residents locate the light, by easy view of streets and surrounding buildings. Tickets are submitted to 311.org and tracking is done so that people get updated when a ticket is updated. This is the first mobile app for Streetlights on the market in SF.

When was this project implemented or last updated? (Please specify month and year.) Has it incorporated new technologies and/or other innovations since its initial deployment? (In 300 words or less.)

This mobile app was implemented this month (Jan 2013) into testing and staging. Since it's initial build in May 2012, we upgraded the Titanium Studio mobile development platform. We integrated with 311.org to generate real-time tickets and tracking mechanism. We implemented a picture taking feature while submitting the ticket and attach the picture to the ticket.

Is implementation of the project complete? If no, please describe the project's phases and which phase the project is now in. (In 300 words or less.)

Implementation is complete but only in testing. Currently we are at testing stage, being tested by Power Enterprise of the SFPUC. Groups of testers from Power are testing the app and all its features. These groups are led by the executive director of Power Enterprise and a number of managers with teams they lead. This project is sponsored by our CFO, who is also an executive of SFPUC.

Please provide at least one example of how the technology project has benefited a specific individual or organization. Feel free to include personal quotes from individuals who have directly benefited from the work. (In 300 words or less.)

This project will enable 800k San Francisco residents to easily submit a ticket for a problem of a streetlight, one near their home, or one they want to revisit and log a ticket after leaving the area -- through mobile. Issues include light bulb problems to avoid accidents and safety issues around the area due to not enough lights, a graffiti issue, damaged light or light pole, and all other types of issues. It also benefits the Power Enterprise of SFPUC to save the time and effort of finding a problem light, due to an inaccurate date entered by people on the phone or through on-line. The inaccuracy of the location of a light is caused by 1) people not being able to describe the location well on the phone (we capture by longitude and latitude once the pin drops on a certain location on the map), or 2) people being outside and not having computer access right at the moment, so that they put in the wrong location when back-logging the problem, or 3) people only log an intersection in which the problem light is located while there are 4 corners and multiple lights; DPW people have to check all of them to identify the problem light, or 5) when a light is out in a park, people are not able to tell by intersections and cause DPW to drive around for hours to find the light, etc. It also helps lawsuits and complaints for both PUC and PG&E when people can't tell if it's a PUC light or a PG&E light since lights are owned 50/50. People sue the wrong organization and a lot of confusion and work has been caused due to the ownership of issues and the situations.



Would this project be considered an innovation, a best practice or other notable advancement that could be adopted by or tailored for other organizations and uses? If yes, please describe that here. (In 300 words or less.)

It's a complete innovation since there are no alike mobile apps available to the public from anywhere else. It's also one of the first in-house mobile development project, not only within ITS (> 80 employees) in PUC -- a 2,400-employee department -- but also one of the first mobile development done in house within the entire City and County of San Francisco (30,000 employees). The very first project was also done and implemented by my group, which was a smaller scope mobile development project. This project was also done with a complete open-source software, being a complete innovation in this area for the entire City and County of SF.

If there are any other details that the judges should know about this project, please note them here. (In 300 words or less.)

We accomplished this project with very limited resources -- 2 developers and myself as the technical project manager, and each handling multiple major productions systems as full time engagement, including the Time Entry Payroll system that includes iFMLA PeopleSoft system integration piece and also the HR Position Control System for all PUC positions, PUC HR Learning system, as well as Financial and budget systems. We all contributed hands-on to this app dev. We used our own devices, phones we own, our own Mac machine, and stored the public-facing web service on our own web server to get the project going. We started off with absolutely no knowledge about mobile development, and now 8 months later, we are able to develop such a large scale and public facing mobile app, being able to figure out using Apple Enterprise License for iPhone testers, deployment for both Android and iPhones, and tweaks between different versions of each type, etc. While rolling out to iPhone testers, we ran into a situation that people refused to continue with the loading of the app on their iPhone, since iPhone install requires a complete backup of personal content onto the laptop that we load the app from, or changing the profile on the phone to work around it. People didn't feel comfortable about it and completely backed out. We researched and eventually found a solution with Apple Enterprise License which is design for testing within an org, that it creates a web link, and people can simply type in the link on their iPhone and load the app. Android didn't have any of this problem. Getting the Enterprise license took 4 months of paperwork. We are proud that we overcame all challenges and are pushing it out!