California Mobile Gallery

NASCIO Category: Government to Citizen

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B. Executive Summary

What do the nearly 39 million California's love as much as their cars...their mobile devices. It's no surprise that mobile access to the internet has exploded over the last few years, but the numbers truly tell the story. Mobile device access to Ca.Gov websites now averages nearly 35 – 40 percent month to month and has increased over 8 percent year over year since 2011. There were approximately 360,000 mobile visits to Ca.Gov websites per day, totaling over 11 million visits in April 2015.

Designed in 2011, the mobile gallery was a single webpage that provided little more than a "Carousel" of mobile apps for the public. The original gallery webpage, which was the first state gallery of its kind, had been in production with very few updates or revisions in the design as technologies advanced (both mobile and web design technologies). The webpage did not provide a consistent display of the apps, was not searchable, did not have analytic capabilities, and, ironically, was not in a mobile friendly format or design.

Additionally, the support of the gallery was not centralized, The development and support of the gallery was fragmented across multiple units and became labor intensive and time-consuming. With the fragmented support it could take 1 – 2 days to get the apps listed within the gallery. The delays, lack of consistency, and inability to easily locate apps within the gallery created reluctance by the departments to list their apps within the gallery. Simply put, the mobile gallery no longer met the needs of the state or the public. The redesign effort provided an opportunity for business process reengineering to streamline the internal processes and provide the necessary efficiencies moving forward.

Design concept discussions began early in 2013 with the developers researching existing app hosting solutions within the public and private sector. The development team looked for industry standards or best practices in app hosting solutions that would not only increase the user experience, but reduce the time-to-market in listing the apps. Keeping "Mobile First" foremost in the design, the end result was a total redesign of the gallery with a separate web-enabled application allowing staff to add or change apps within the gallery from their smart devices wherever they are.

Implemented in August 2014, the *California Mobile Gallery* now provides a truly enterprise solution for the state's exploding mobile app development efforts providing the following benefits:
- Reduced time-to-market from days to minutes
- Remote support for the gallery and app posting
- No cost increase from the previous solution
- Centralized support providing increased efficiencies

In addition, the following functionality was implemented:consistent look and feel, responsive design, search engine optimization, analytics, public feedback, ratings/reviews and video tutorials. This effort not only meets, but exceeds, California's IT Strategic Goal of a *"Responsive, Accessible and Mobile Government"*

C. Description

Business Problem

The California Department of Technology supports the statewide centralized hosting of mobile apps as the single point of contact for nearly 39 million people of the state. These apps provide critical information and services to the public which include health, safety, jobs, training, education and more. With the increase of mobile apps added to the webpage carousel, it became very difficult to navigate and locate the mobile apps. The gallery did not provide a consistent display of apps, was not searchable, did not have analytic capabilities, and was not in a mobile friendly format.

Barriers/Challenges

The original gallery had been in production since 2011 with very few updates or revisions. In the early stages of app hosting, the gallery was exceptional. Howeveras the number of apps increased with the explosion of the mobile movement (smartphones, tablets, etc.) and the technologies behind them, it became apparent that there was a real need to update the gallery. The webpage/carousel format was not designed to accommodate the massive expansion of mobile apps. In addition, the support of the gallery and internal processes for posting the mobile apps had become labor intensive, creating delays.

The support of the gallery was not centralized and included staff from multiple divisions in the development, testing and posting of the apps to the gallery. Development and support of the gallery became labor intensive and time-consuming. The delays, lack of consistency, and inability to easily locate apps within the gallery created reluctance by the departments to display their apps within the gallery.

Opportunities

This effort not only provided an opportunity to improve the delivery of services and information to the public, but allowed for business process reengineering to streamline the internal processes and consolidate the support within one division of the department. The effort afforded the development team the opportunity to start with a clean slate. It allowed them to take advantage of new mobile and web technologies since the release of the gallery as well as utilize existing technologies and infrastructure.

Communication and a collaborative environment are key aspects for any project. The development team was able create a new solution from the ground-up without the restriction of attempting to modify the existing webpage, a very important factor in the success of the project. The project was completed and implemented with very minimal and a relatively young "Millennial" taff .It was important to provide an open, collaborative and flexible work environment. The vision and support was provided by the executive sponsor, while the technical aspects of the solution were left entirely up to the developers.

Solution

The California Mobile Gallery was designed with two separate web applications: the public facing display of the mobile apps within the gallery and a separate web application for the maintenance and support of the gallery (administration functions). The applications were created entirely by state staff with various skillsets and areas of expertise. This approach allowed us to utilize the specific talents of the team, reducing development time and resources, while providing a collaborative team environment.

The technologies used in the development are widely known, increasing the ongoing support capabilities of the interfaces. The new design not only provides a modern presentation layer for the public, but allows the maintenance and support to be provided remotely from any device. The platform is extensible and allows changes to be completed in the most efficient and cost effective means available.

Platform
The public facing gallery was developed utilizing an open source tool to create responsive web layouts for desktop and mobile platforms (smart devices and tablet technologies). The tool allows the developers to utilize common interface elements such as navigation lists, horizontal tabs, buttons, progress bars and much more. Additionally, the tool allows each of the elements to be customized with unique cascading style sheets (CSS) by the developer. The look and feel of the public facing application was designed specifically with ease of use for the user while presenting a consistent look and feel throughout the gallery.

The public application utilizes responsive design to resolve on any device (mobile devices, tablet, or desktop) without requiring custom pages for each type of device. The creation and listing of apps can now be completed remotely on any smart device or PC, which saves considerable time in development and support. The mobile gallery is not only delivered across device platforms, but is supported through multiple devices (smart device or PC) providing Californians with access to government services at their convenience, wherever they are.

The admin interface utilizes JQuery mobile for mobile-friendly functionality. This application was developed using Microsoft Visual Studio .Net and SQL Server. The database was modeled using a free data modeling product reducing cost, time, and resources. The interface was developed to provide staff the ability to add, change, and delete not only the apps but the individual listings and categories within the gallery. This provides a quick-to-market approach for the ongoing support of the gallery.

Promotion / Adoption
The California Mobile Gallery is the state's enterprise solution and single point of contact for mobile apps that provide vital services and information to the state. Year over year, there has been over a 20 percent increase in mobile apps added to the mobile gallery. Since the release of the California Mobile Gallery in August 2014, the adoption rate has well exceeded 30 percent and growing. Currently, over 60 state entities have nearly 80 free mobile app versions available to the public that include mobile web, iOS, and Android. The redesign not only saves resources, but allows the

mobile web apps to be created and listed within the gallery in hours and provides a quick-to-market approach in mobile app development for the state.

In May, 2015 a category for local government was added to the gallery and presented to the California County Information Services Directors Association (CCISDA) as a mobile app hosting solution for the counties. The response was overwhelmingly positive with Ventura County requesting that their apps be listed within days of the offer. Since that time the City of Palo Alto has also included their apps within the mobile gallery. The extensible design of the gallery allowed the addition of local governments to be developed, tested, and implemented within hours. The California Mobile Gallery now has the capacity, support, and infrastructure to provide a true statewide enterprise solution for mobile app delivery to the public, not just at the state level but at the local level for the counties and cities within the state.

D. Significance

With the eight largest economy in the world, nearly 39 million people, 58 counties and well over 130 local districts and entities – California has accomplished a major feat in mobile consolidation. The California Mobile Gallery now provides the public with a centralized, one-stop shop for mobile information and services for the state as a whole. This is a monumental accomplishment that was made possible through the efforts of this project.

The California Mobile Gallery is the state's single point of contact for mobile apps. These apps include information and services such asmental health services, unemployment information, student aid information, current traffic incidents, the environment (recycling, etc.) and recreation, to name a few. The redesign saves resources and allows mobile web apps to be created and listed within the gallery in hours compared to days, weeks, or months required of device specific app development. The Mobile Gallery redesign provides a quick-to-market approach in mobile app display for the state. This benefits the public, as taxpayers, with a cost-effective solution in providing mobile information and services.

The effort provided the ability to post and edit mobile apps remotely from any device. The California Mobile Gallery provides the following benefits to the public:

- Consistent look and feel
    - Each app displayed in the gallery has a standard look, feel, and functionality
- Responsive Design
    - Displays/resolves on mobile devices, tablets, & PCs
- Search Engine Optimization
    - Increasing public accessibility, visibility, and transparency
- Analytics
    - Fully incorporated into the Gallery
- Internal development and support
    - Entirely by Enterprise Solutions staff

- Transparency
  - Suggestions, input, and feedback, as well as ratings and reviews for each app

Public feedback has been overwhelmingly positive regarding the redesign. The ratings and review feature allows the public to provide valuable input regarding the features, data, and information within the apps. The suggestions feature has already contributed to the development of apps, with many others in review.

E. Benefits California's mobile app development effort is a unique and innovative approach that addresses California's exploding population of smart-device users. The Mobile Gallery redesign allows staff to easily add, change, or delete apps within the gallery through a separate mobile friendly web application. This application allows staff to quickly maintain listings, update descriptive data, assign categories to the apps, upload screenshots and custom icons, and moderate public ratings/reviews and comments submitted by the public. The gallery allows staff to make changes remotely through their smart devices or PC and has reduced development and support time dramatically. Staff can now list apps onsite through their mobile devices and immediately display design changes to the customer.

The California Mobile Gallery continues to expand the delivery of valuable information and services focusing on Health and Safety, Jobs and Training, Education, Roads and Travel, Recreation, the environment and more to the nearly 39 million people within the state. The benefits are not restricted to the state level and now include local government as well. The response has been overwhelmingly positive with counties and cities joining within weeks of the addition. The extensible design of the gallery allowed the addition of local governments to be developed, tested, and implemented within hours and has the capacity, support, and infrastructure to provide a true statewide enterprise solution for mobile app delivery to the public, not just at the state level.

The redesign not only saves resources, but allows the mobile web apps to be created and listed within the gallery in hours compared to days, weeks, or months required of device specific app development. The Mobile Gallery redesign provides a quick-to-market approach in mobile apps for the state. Many apps created by state entities had not been listed within the mobile gallery and were obscured deep within their respective websites or a private industry app gallery such as iTunes or Google Play. The lack of analytics behind the apps made it difficult for the entities to quantify their success.

Return on Investment
Enterprise Solutions assists the state in the development of mobile web apps that provide valuable information and services to the public. The redesign effort has allowed the developers to post mobile web apps they create quickly and easily to the mobile gallery, as well as maintain the apps within the gallery remotely from any smart device.

The redesign not only saves resources, but provides a quick-to-market approach in mobile app listing for the state.

The Mobile Gallery redesign was completed, and now supported, by state resources as time permitted and as staff was available. The developers looked at existing examples of app hosting solutions in the public and private sector for standards, best practices, and innovative solutions. Design, display, and user experience being first and foremost. Once the initial design was agreed upon it took the team approximately 250 hours, as a whole to design, develop, test, and implement over a 6 – 7 month timeline.

The redesigned Mobile Gallery did not require the purchase of new software or hardware and is hosted within the state data center. The deferred cost in the development, hardware, software, licensing, and listing of the mobile apps in the gallery has not been quantified. The focus of the California Mobile Gallery, and the California Mobile initiatives, is to provide the state with a responsive, accessible and mobile government in the most efficient and cost effective means available. Support for the Mobile Gallery is very minimal and not resource intensive, as in the past. The listing of apps can now be completed remotely on any smart device or PC, which saves considerable time in development and support.

Year over year, there has been over a 20 percent increase in mobile apps added to the mobile gallery. Currently 60 state entities have nearly 80 free mobile app versions available to the public that include mobile web, iOS, and Android. The redesign not only saves resources, but allows the mobile web apps to be added or changed remotely and provides a quick-to-market approach for the state. This benefits the public, as taxpayers, with a cost-effective solution in providing mobile information and services.

The Mobile Gallery's extensible architecture allows for easy expansion and provides an opportunity for all localities within the state to list their apps within the gallery. California once again could be the leader providing a truly enterprise statewide Mobile Gallery. This would provide a statewide resource for information sharing, lessons learned, and best practices in app development as well as expand services to the local level within the state. This could benefit/save state, local and federal resources in mobile app development and providing the information to the public through a single point of contact for the state.

It is no accident that mobile access to state services has been the number one goal within the California IT Strategic Plan for the last three years. California recognizes that a "Responsive, Accessible and Mobile Government" is vital to the delivery of information and services to the public. The nation as a whole realizes this as well, as the National Association of State Chief Information Officers (NASCIO) 2015 State Chief Information Officers (CIO) Priorities once again recognizes the importance of Mobile services within its top ten as "Mobile Services/Mobility/Enterprise Mobility Management". California continues to focus efforts within the mobile arena as a leader not only within the state, but also leads the nation in Mobile apps listed within the State Mobile Apps Catalog. "The result is a government that better meets the Californians' service expectations and provides Californians with access to government at their convenience, wherever they are"