OIT Mobile First Strategy 2013

Enabling Technology Solutions Efficiently, Effectively, and Elegantly

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Executive Summary

There are currently 6 billion mobile subscribers worldwide, equating to 87% of the world population.

In the US, 25% of internet users are mobile only.

The world is re-imagining itself. Everything from business process to health care is evolving at a rapid pace as businesses deliver services to a mobile society. The State of Colorado has the desire to ensure Coloradans receive government services in a way that is most convenient for them. It is expected that mobile technologies will connect to over 10 billion devices by 2016. Tablets are predicted to overtake laptop sales by that same year. We are clearly moving toward a mobile society and government needs to bring their services and applications to that platform as quickly as possible. To this end, the State of Colorado is adopting a Mobile First Strategy for its citizen-facing applications.

The Mobile First Strategy will align our resources, designs and applications around mobile platforms first, web browsers and other technology platforms secondly. This realignment in design considerations will guide our offerings by focusing on two areas:

- Ensuring services for all government entities are compatible with the way in which Coloradans can interact with us.
- Building in a design requirement that all technology (purchased or custom) were purposed first to run on mobile technologies, including smartphones and tablets.

Typically, mobile services and applications require more attention to design, since these devices normally have a smaller area of real estate, such as smaller screens, within which to work. Differences, such as tapping the device instead of clicking, affect up front design decisions in order to create an environment

that meets user expectations and abilities. By developing a Mobile First strategy, we will commit to design our applications to run seamlessly and intuitively on these smaller devices. The goal of the Governor's Office of Information Technology is one of enabling the State's business through the use of technical solutions that run efficiently, effectively, and elegantly. We believe a Mobile First strategy delivers just that.

The State of Colorado Mobile Footprint

Currently, a vast majority of State of Colorado applications do not support mobile technologies when delivering services to citizens. We have various platforms including client/server and web browser to mobile, that support both internal and external customers. But mobile solutions remain isolated and siloed. The Chief Technology Office has published standards for mobile platforms, but there is not an enterprise strategy defining the situation and need to build or buy them and they are often considered an afterthought. The Mobile First strategy intends to standardize all new development and purchases around mobile technologies, with other supporting platforms designed secondarily. In some cases, it may make sense to build a supporting platform (such as a pure browser), but that will remain an exception, not the rule.

Colorado Mobile First Goals

The Colorado Mobile First Strategy has three simple goals, which align with the overall Enterprise Architecture Roadmap for 2011-2014.

- Increase Service Usage and Adoption

  With 25% of internet access constrained to mobile, not having mobile services available creates a wall between our customers and the state

  Residents and Visitors to Colorado will likely have a smartphone and/or a tablet, but may not have a laptop with internet access if visiting places such as our state parks and mountains.

- Ensure Appropriate Design

  Mobile First will enforce the design or purchase of a service/application to be mobile platform compliant

  Mobile design is often more efficient and elegant than its web browser counterpart due to device constraints

- Deliver Solutions Efficiently, Effectively and Elegantly

  Efficiently: Mobile design requires explicit design around performance, since the mobile devices cannot handle the size of data larger than a laptop.

  Effectively: Mobile design requires shorter navigation steps and processes, so more thought is given to how a user will interact with the application.

  Elegantly: Simpler solutions and simpler data equal simpler time to market.

Decision Framework for the Colorado Mobile First Strategy

Delivery Models

There are two primary delivery models for mobile applications: native and web. Each of these has distinct properties that are outlined below.

Native

"Native" refers to creating a mobile application targeting a specific device. The state standard is to adopt a particular platform when it reaches 10% of market share. As such, the state has currently adopted two platforms: Apple iOS and Android (various versions). Unfortunately, in order to offer a particular service on these devices, developers must code to two different languages and deploy through two different application (app) stores. If other platforms, such as Windows, begin to take more than 10% market share, the state will need to consider writing natively to this platform as well. Standards around each of these platforms will be kept at the Colorado Information Marketplace (data.colorado.gov), so this document will not address particulars.

There are good reasons to go "native":

- Performance: Native applications have proven to be much better performing than using HTML5 for mobile development. See the standards for particulars, but in general, any transaction based application will likely need native operating system support.
- Native Functions: Because web based mobile development with HTML5 may not be supported in all browsers, if native functions, such as Geolocation services, are required, native platforms may be required.
- App Stores help ensure standards: App stores adhere to strict standards, which can benefit end users.

Weaknesses for native applications include:

- More expensive as you are supporting multiple devices because you must write the code multiple times.
- Users may be on different versions, which can cause issues and be difficult to troubleshoot.
- App store approvals can delay launch and bug fixes moving forward.

Web

Web development for mobile platforms is based upon HTML5. This allows a developer to "code once, use anywhere" for all mobile devices.

The reasons to use HTML5 are:

- Write once, run anywhere. HTML5 can be 'linked' and requires no deployment to app stores, such as iTunes.
- No Download: There is no need for a user to download an application onto their device, so a wider audience can be reached.
- Can be released immediately: No need to wait for an app store approval.

Weaknesses for mobile web applications include:

- Some device functions are inaccessible. It can be more difficult to detect.
- Multiple browsers may not support all the functionality, so the user experience can be different depending on browser and device.
- Performance is degraded versus native.
- Users may have a harder time finding the application. App stores offer search capabilities, but mobile web apps are across the World Wide Web.

While the specifics to decide which platform is best for a particular application are left to the state's Architectural Decision Matrix incorporated in the project management process, some general questions noted below can help guide selection:

- Is the application using native functions, such as the device camera?
- Will the budget accommodate multiple builds / maintenance?
- Does the application also include an internet application that could reuse some of the mobile web application?
- How critical is performance?
- Are there resources available for the particular languages?

For standards, please refer to the Colorado Information Marketplace at data.colorado.gov under 'Governance' to view the standards as they progress.

Security and Privacy Standards

The Colorado Mobile First Strategy will adhere to all policies and standards set forth by the Chief Information Security Officer for the State of Colorado.

Policies are found here:

http://www.colorado.gov/cs/Satellite/OIT-Cyber/CBON/1251575408771

Information security standards are found here:

http://www.colorado.gov/cs/Satellite/OIT-Cyber/CBON/1251575408786

The Government Data Advisory Board is responsible for enterprise privacy standards. These can be found here.

http://www.colorado.gov/cs/Satellite/OIT-EADG/CBON/1251579896288

Conclusion

The State of Colorado continuously strives to improve its services to Coloradans. By adopting a Mobile First Strategy, we can offer services to our citizens anywhere at anytime, thereby improvroving the citizen experience for those who can only access our services using mobile technologies.

The world is re-imagining everything and this new imagination relies on mobile technology:

- Healthcare is re-imagining how patients combine small sensors with smartphones/tablets to monitor areas of concern.
- Classrooms are relying more heavily on mobile technologies to improve interactions among students and teachers, as well as offering 24 hour availability.
- Farmers are able to access government subsidies via mobile devices, rather than wait in long lines, reducing productivity.
- Business is re-imagining business processes, collaboration tools, human resources, and so on.

The world is re-imagining itself. It only makes sense that we do the same.