

Using Mobile Apps in Government

By Sukumar Ganapati

Apps are programs designed specifically for mobile devices like smartphones, tablets, and wearables. With the explosive growth of mobile devices, apps have become commonplace since Apple introduced them for iPhones in 2008. There are close to 4 million apps available. The app economy has burgeoned with billions of downloads. Nearly 90 percent of a mobile user's time is spent on apps.

The growth of mobile devices and apps presents new opportunities in the public sector. Schadler, Bernoff, and Ask argue that there is a mind shift in the mobile environment, in which a person expects that "I can get what I want in my immediate context and moments of need."

The proliferation of mobile phones is also narrowing the digital divide in terms of access to online services. The ownership of smartphones, and dependence on them for Internet access, is especially high among minority groups. African Americans and Hispanic adults spend more time on apps than the average user. Low-income households are also more likely than high-income households to depend on smartphones for online access. The greater accessibility of smartphones to traditionally underserved populations raises the prospects of delivering social services through apps.

There are two broad types of government apps that are discussed in the report:

- **Enterprise-focused apps** are mainly for internal use within a public organization. They are accessible only to employees and operate within secure firewalls established by the organizations.
- **Citizen-oriented apps** are intended for external use. They are accessible to anyone who seeks to use government services.

The State of Mobile Apps in Government

Mobile Apps in the Federal Government

The Obama Administration's 2012 Digital Government Strategy laid out a broad digital plan to harness information technology in federal agencies. The strategy explicitly envisaged doing mobile "right" from the beginning. It was premised on four principles to:

1. Create an information-centric government that focuses on open data and content
2. Establish a shared platform within and across agencies
3. Take a customer-centric approach in presenting data
4. Build required security and privacy measures upfront

The federal strategy required agencies to expose high-value data and content of at least two existing major customer-facing systems through Application Programming Interfaces (APIs), which are online methods for apps to access data from public agencies in order to provide value-added services in real time and place. The core strength of the federal digital strategy is that government data is a resource that can be leveraged to spur customer service innovation. All new federal agencies' systems, underlying data, and content have to comply with the open data and API policy.

Mobile Apps in State and Local Government

State and local (county/city) governments vary in their adaptation to the mobile environment because they follow their own mandates and policies. Customer service improvements are very important at the state and local levels as they are the direct service providers to citizens on a day-to-day basis (e.g., schools, hospitals, law enforcement, public works, transportation, etc.). Hence, state and local governments have created apps to facilitate citizen engagement.

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State government apps. State governments are increasingly adapting to the mobile environment.

Local government apps. Local governments vary greatly in their adaptation to the mobile environment.

Enterprise-Focused Apps

In the federal government. Customized agency-developed enterprise-focused apps for internal organizational use are in their very early stages of emergence.

In state and local governments. Similar to the federal government, enterprise-focused apps are not prominent—but rather emerging—among state and local government agencies.

The transformational use of mobile devices is in re-engineering field processes, so there is greater degree of integration between line workers in the field and back-office workers. Field case management, road and rail infrastructure maintenance, vehicular fleet management, inventory control, and supply chain management are all areas that have potential efficiency gains with mobile use. The Pennsylvania Department of Transportation's *Posted and Bonded Road* mobile app, for example, replaced manual paper-based reports, reducing the field workers' administrative duties.

The road ahead for enterprise-focused apps. Enterprise-focused apps are still in the nascent stages of growth in federal, state, and local government agencies. Indeed, enterprise-focused apps represent a lucrative growth area in private businesses as well, especially among the sales force. There is much opportunity for transforming internal operations with location-based services available anywhere in real time.

Enterprise-focused apps could enhance government productivity in several ways:

- Aid in managing mobile assets
- Increase employees' productivity, especially among routine and simple tasks that require cursory examination

- Reduce field workers' administrative onus in the back office
- Provide opportunities for collaboration and networking between public agency field offices

Citizen-Oriented Apps

Citizen-oriented apps are more prevalent than enterprise-focused apps in the federal, state, and local governments. These apps are used as additional innovative mechanisms of delivering public services, and to engage the public in decision-making processes. They include:

- Citizen-oriented apps in the federal government
- Information and news service apps
- Client services apps
- Crowdsourcing apps
- Health and safety information apps

Educational apps

Citizen-oriented apps in the state and local government. Citizen-oriented apps provided by state and local governments can be classified into four categories:

- Information on parks, recreation, and leisure activities
- Traffic and transit information apps
- Public engagement apps
- Third-party civic apps

The road ahead for citizen-oriented apps. In the years ahead, government at all levels will move toward:

- Increased support of citizen-oriented apps to enhance public services
- Increased embedded approach for citizen-oriented apps

- Increased availability of APIs for third-party citizen-oriented apps

Mobile App Design Considerations

The type of device (wearable, smartphone, or tablet) is a primary consideration in designing an app. Small devices allow greater portability, but have limited screen space for presentation and user interaction. Wearables are appropriate for personalized user needs. Smartphones are used for a range of communications and social networking activities, including location-based services. Tablets are useful devices for performing field-based activities. Apps have to be customized to the specific features of the various devices. Because operating systems vary among mobile devices, different versions of an app need to be developed for each system.

There are three types of app designs from a software perspective:

- **Native apps** are downloaded onto the device and take maximum advantage of the device's hardware features (e.g., camera, etc.).
- **Web apps** are websites using responsive web design features so the same web app can be optimized and accessed from different types of devices.
- **Hybrid apps** combine the features of native and web apps. Similar to native apps, hybrid apps are accessed through the app gateways and installed onto a device. However, these apps are developed with cross-mobile device features so they can work across different platforms.

Recommendations

The report concludes with the following three recommendations:

- **Recommendation One.** Optimize online services for mobile devices

- **Recommendation Two.** Provide open data based on common standards
- **Recommendation Three.** Assess feasibility of standard data structures across and within agencies

The road ahead for mobile app design. With the proliferation of mobile devices, public agencies need to explicitly adopt a “mobile first” strategy. Government agencies at the federal, state, and local levels should strategically assess their existing online services and engage the public in identifying those which would be most valued on various mobile devices. Because there are various mobile devices and app design considerations, apps need to be offered appropriately. Every device has its strengths and limitations. ■

TO LEARN MORE

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The report can be obtained:

- In .pdf (Acrobat) format at the Center website, www.businessofgovernment.org
- By e-mailing the Center at businessofgovernment@us.ibm.com
- By calling the Center at (202) 551-9342