

Transforming Enterprise Applications for Mobile Users

Inside the PowWow Application Transformation Process

Application Transformation

Despite the rapid proliferation of mobile devices, mobility is still a work in progress in the enterprise workplace. Business and IT leaders dream of an environment in which people work productively from any location or any device. In reality, however, three factors keep the mobile enterprise from becoming a reality.

First, custom development of mobile enterprise applications is difficult, especially for heavily configured or custom applications with significant back-end integrations. Many enterprise applications feature large numbers of screens, with application logic embedded in the user interface. Few businesses have the application developer resources available to develop the hundreds or thousands of applications their mobile users may need.

Second, enterprises can only rely on application vendors to deliver the most common applications on mobile devices. When vendors do release mobile apps, they only work on the latest platforms, requiring the business to accelerate complex upgrades. The enterprise is responsible for reworking any customizations for each desktop and mobile version.

Third, forcing an enterprise application onto a mobile device isn't enough for today's mobile worker. VDI, Remote Desktop applications or web application rendered in mobile browsers deliver terrible user experiences. People don't want to use them, so adoption is low.

PowWow Mobile offers a different approach to mobilizing enterprise applications. Instead of forcing enterprise apps onto mobile devices or requiring developers to write new code from scratch, PowWow transforms enterprise applications for the native mobile environment. Rather than writing custom code, enterprises design the business process and user experience and let PowWow do the rest, delivering native mobile applications into production in days not years.

Using PowWow's *Enterprise Application Transformation* process, a business can deploy a fully native mobile application in ten business days.

Using this process, IT organizations create native mobile applications without writing one line of code. This paper discusses PowWow's patented process for transforming applications into native mobile apps.

Enterprise Application Transformation

delivers native mobile applications by transforming the logic and integrations of existing Windows and web application clients, rather than writing new applications.

The Application Transformation Process

At a high level, the application transformation method works as follows:

1. Mobile application design begins with business user needs. Start by defining the mobile users' business process and identifying the applications in use today. Often, mobile users need to access subsets of multiple existing Windows or web applications.
2. Using tools from PowWow, the IT organization runs the target application(s) through a three-phase transformation process. The end result is a profile that defines how data and controls are transformed from the current enterprise application to the new mobile app in real time.
3. The profile is bound to a container to create a mobile application (an IPA file for iOS, APK for Android or XAP for Windows). The end result is a native application that works within enterprise app stores and security systems.

This paper describes what happens in Step 2 above, as the application is transformed. Specifically, it covers PowWow's patented Deconstruct, Transform, and Reconstruct (DTR) process.

PHASE	WHAT HAPPENS
Deconstruct	PowWow identifies the various components of the user interface from the enterprise application(s).
Transform	PowWow transforms desktop-centric fields and controls to mobile equivalents. The business can customize and fine-tune these transformations.
Reconstruct	Using templates bound to the transformed data and controls, the businesses defines the process and experience for the new mobile app.

Deconstruct: Identifying User Interface Components

In the Deconstruct phase, PowWow tools automatically analyze the enterprise application's client to identify specific components of the interface, including menus, checkboxes, radio buttons, dropdown lists, list boxes, toggles, dialog boxes, controls, and other components.

The PowWow Deconstruct engine includes platform-specific logic for identifying components in Windows, Java, SAP, and other web applications, old and new. For example,

- PowWow uses Windows accessibility and automation APIs to identify specific components of the Windows interface.
- If the application is designed for a browser, PowWow uses the Document Object Model (DOM) to identify interface components.

PowWow uses similar methods for other types of applications. At the end of this process, PowWow has a complete list of all of the components used to build the user interface.

Transform: Mapping Desktop to Mobile Interfaces

Having identified the various components of the user interface in the first step, the Transform step maps the data from those components to appropriate mobile controls.

Transforming Controls

PowWow automatically transforms controls into their mobile equivalents. For example, menus are converted to navigation controls, while dropdown lists are converted into the appropriate type of picker.

Sun Mar 29	9	45	
Mon Mar 30	10	50	
Tue Mar 31	11	55	AM
Wed Apr 1	12	00	PM
Thu Apr 2	1	05	
Fri Apr 3	2	10	
Sat Apr 4	3	15	

This transformation happens in real-time based on the dynamic data in the application. This is particularly important for applications like SAP, in which a selection in one field controls which other options or fields are visible. The PowWow transformation detects the dynamic state of each control and updates the mobile application accordingly, preserving the logic of the original application.

PowWow also allows some items, like charts or graphs in a trading application, to pass without transformation through to the mobile app. In these cases, the interactions are transformed, such as replacing mouse clicks in a desktop browser with touches on an iPad, or resizing windows with pinch and zoom gestures.

Customer Controls

The Transform process offers the opportunity to specifically identify any custom controls and configure the appropriate transformation. Use this approach to combine multiple fields, such as combining separate day, month and year inputs into a single date picker.

Securing Data

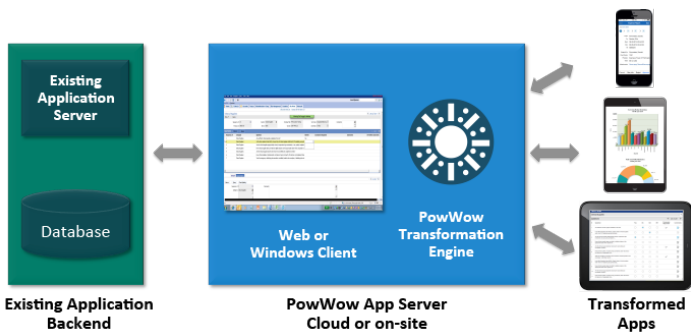
The Transform process gives the business a chance to filter and control which data passes through to the mobile device. For example, when transforming an application that accesses a customer's Social Security number, the business might filter the data to only display the last three numbers. Because filtering happens on the application server, the sensitive data is never sent to the mobile device, preventing any possible interception in transit or if the mobile device is lost or stolen.

Reconstruct: Designing the Mobile App

In the final Reconstruct phase, the transformed components are assembled into a native application that the user can interact with. This reconstruction is controlled by a device-specific template that defines how the components are displayed in the mobile application.

The Reconstruct phase offers significant flexibility in designing the mobile experience. In the Reconstruct phase, application designers use existing templates or create new ones. The Reconstruct phase can handle the following situations:

- **Using a slice of the application:** Often the designer may only use a subset of controls and data from the original app to support a complete mobile business process. In this case, you can select and transform (using the DTR process) only the needed components into the new mobile app
- **Break an application into multiple screens:** Enterprise applications are often too complex to function well on a mobile device. The mobile designer may break a complex screen into multiple screens on a mobile device. For example, a tablet version might use three screens, while the same app may require five or more screens on a phone.



- **Using more than one application in your mobile app:** The mobile application designer may require controls and data from more than one application in the mobile app. DTR allows the use of the Deconstructed and Transformed controls from several applications to be Reconstructed into a single mobile application.
- **Using functionality native to the device:** Finally, the app designer can access any of the native functionality of the mobile app. For example, a transformed application may use speech-to-text functions for comments to avoid excessive typing on the mobile device. An expense reporting application might access a phone's camera for photos of business expense receipts.

This flexibility is made possible by the fact that the components of the application have been prepared for mobile use in the Deconstruct and Transform phases. Instead of writing an application, with all the corresponding logic and connections between components, application designers can access a pallet of transformed components from the DTR process to build a new mobile application. These transformed components access the logic and behavior of the original application to drive the mobile application.

To create the mobile views of the application, the transformed components are assembled using a device-specific application template. This template accounts for important differences between mobile devices, including:

- Device type (iOS, Windows, Android)
- Screen sizes (tablet, phone, different sizes of tablets and phones)
- Native user interaction capabilities (pinch & zoom, date pickers, etc.)
- Native device capabilities (cameras, storage, microphones, etc.)

Starting with the transformed components of the application, the business can quickly and easily create templates for all the different devices that people carry, creating mobile apps without writing new code for each device.

For more information please contact:
877-800-4381
sales@powwowmobile.com

Fine-Tuning & Maintaining Transformed Applications

The overall process of creating a mobile application takes five to ten days, depending on the length of the requirements-gathering phase and the time spent testing/validating the running application to mobile devices.

But rapid deployment isn't the only benefit of the mobile enterprise transformation approach. Maintaining transformed applications is simple because so much of the DTR process is automated.

For example, if an application manager upgrades data in drop-down lists in an enterprise application, PowWow automatically updates the drop-down lists in mobile apps, without requiring any hands-on updates. If fields are dynamically generated based on prior user selections, those fields are updated automatically in the mobile app.

Using PowWow's DTR process to transform rather than re-develop mobile apps delivers the native mobile app faster while leveraging existing integrations to significantly lower maintenance costs.

Because the application transformation is fast and automated, IT can focus on maintaining essential Windows and web applications, and let PowWow handle updates to the mobile apps with no new integrations, no new logic, and no resetting of lists in multiple places.

Summary

Using PowWow's application transformation processes, it takes only a few days to create native mobile versions of enterprise applications based on current business processes. And with automated transformation processes, maintaining the mobile portfolio is straightforward and simple.

Using Enterprise Application Transformation to create mobile apps addresses the key barriers to enterprise mobility, reducing application development efforts by two orders of magnitude. IT no longer has to pick and choose which users get mobile applications or which devices people can carry based on the availability of mobile apps. Because any desktop application runs on any mobile device, business users don't have to keep switching between devices to get their jobs done, resulting in better productivity for individual business users and the enterprise as a whole.

For more information or to request a demonstration, please visit www.powwowmobile.com.



Founded in 2012 by a team of mobile experts, PowWow Mobile is focused on transforming enterprise applications into native mobile apps in 10 business days. To learn more, please visit us at www.powwowmobile.com.

PowWow Mobile Headquarters
One Tower Place, Suite 300
South San Francisco, CA 94080
www.powwowmobile.com