Liferay Digital Experience Platform Mobile Features

Everything you need for a successful mobile project

Table of Contents

The Strategic Advantage of Mobile First Design 1

Liferay DXP for Mobile Experiences 1

- Responsive Design 1
- Hybrid and Native App Support 2
- Mobile Device Rules 2
- Liferay Service Builder 3
- Adaptive Media 3
- Liferay Sync 4
- WeDeploy 4

Liferay DXP for Mobile App Development 5

- Liferay Screens 5
  - Liferay Screens for native mobile app development . 5
  - Liferay Screens for offline scenarios 5
  - Liferay Screens for hybrid mobile app development . 6
- Liferay Push 6
- Liferay Mobile SDK 7
- Liferay DXP Mobile Suite 8

Conclusion 8

Moving Forward 8


“
Liferay DXP tools can help you build an intuitive mobile experience (be it a website, intranet, mobile app or other kind of interface) that embraces mobile first design in order to meet the expectations of modern audiences.
Welcome
Email Address
Password
Login
Welcome
Email Address
Password
Login

Mobile experience solutions in Liferay Digital Experience Platform (DXP) enable responsive design and native and hybrid app development with different Liferay instances and applications. Brands around the world have already used Liferay's mobile solutions to create innovative websites and applications, including both customer-facing and internal experiences.

The following Liferay DXP mobile and application products can be used to design a wide variety of experiences suitable for any industry. This whitepaper will give you an overview of these many different solutions, how they can be used to build your ideal experience and how they can function together to create a robust and effective digital presence.

The Strategic Advantage of Mobile First Design

Responsive website design is now a common expectation for audiences who interact with brands via many different types of devices. However, mobile first design strategy approaches site creation by first focusing on how a website will function on a smartphone, which is often the most difficult stage for design work, followed by all other devices. This approach to design can help make responsive website strategies more effective in both immediate and long-term goals.

The following Liferay DXP tools can help you build an intuitive mobile experience (be it a website, intranet, mobile app or other kind of interface) that embraces mobile first design in order to meet the expectations of modern audiences.

Liferay DXP for Mobile Experiences

Responsive Design

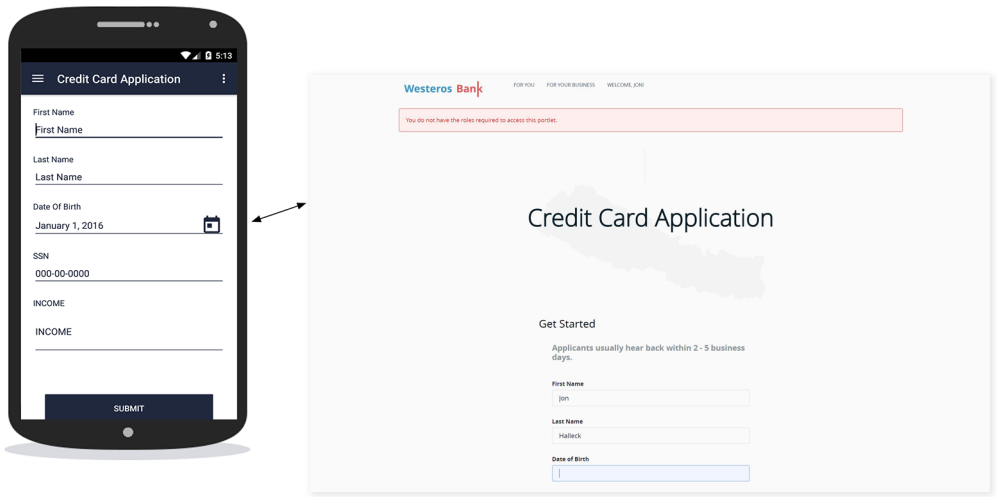
Liferay DXP's CSS framework is responsively designed to work with browsers on all platforms from mobile to tablet to desktop. Website administrators have the ability to quickly and easily preview a website in mobile layout, which is possible on all pages. Users are able to quickly access layouts on the most common configurations, but are also able to configure any screen size in need of testing.

In addition, features and frameworks are available to define different platform behaviors based on device type. Sets of device definitions for most mobile device platforms (such as iOS and Android) are built in and an optional device detection database is available for purchase.

Hybrid and Native App Support

When considering how to create a mobile application, brands must determine whether to develop a native or hybrid app. While these applications both have their own unique advantages and disadvantages, it is crucial that every business take the time to understand which will help them best meet their unique goals. Although native apps can be fine tuned to a specific operating system, they require complete redesigns for each OS that a brand wants to use. For hybrid apps, one application can be possibly applied to all operating systems, but can run into complications due to OS differences.

In either case, with Liferay's app products you are not forced to decide whether to build a hybrid or native app at the beginning of your mobile project. Developers can start native (or hybrid) and then incorporate hybrid (or native) features later on. Liferay Screens allows you to have native and hybrid content simultaneously, helping your company create the experience they want.



Customer information on the mobile app automatically syncs with your Liferay DXP site.

Mobile Device Rules

Liferay provides features and frameworks for defining different platform behavior based on device type with a built-in set of device definitions for most mobile device platforms. In addition, an optional device detection database is available for purchase. By designating a mobile device family, which describes a group of devices, developers can have a greater degree of control regarding the appearance of their website and focus on mobile-first design.

Developers can configure mobile device family rule sets to alter the behavior of the instance based on the device being used, such as changing how a Liferay-built web page appears on a tablet versus a laptop. Family prioritization is also possible in order to determine results from page requests.

Liferay Service Builder

Service Builder generates most of the common code needed to implement, create, read, update, delete and find operations on a database, which can be consumed by your apps via Mobile SDK. This will allow you to focus on the higher level aspects of service design. The tool is easy to use and can save developers a large amount of development time while still allowing for customizations concerning applications and added business logic.

Service Builder generates a service layer through object-relational mapping (ORM) technology for a clean separation between object model and code for the underlying database. This allows for the freedom to add the necessary business logic for your application.

Developers often use Service Builder for portlet and plugin development. The tool can generate distinct model, persistence and service layers, local and remote services, Spring and Hibernate configurations and related infrastructure without requiring any manual intervention by developers. It also allows basic SQL queries and finder methods to be generated and used to filter results, taking Liferay's permissions into account. Service Builder provides support for entity and query caching to save both initial development time and time that would have to be spent maintaining, extending or customizing a project. Finally, Service Builder is not a restrictive tool: it allows custom SQL queries and finder methods to be added and it also supports dynamic query.

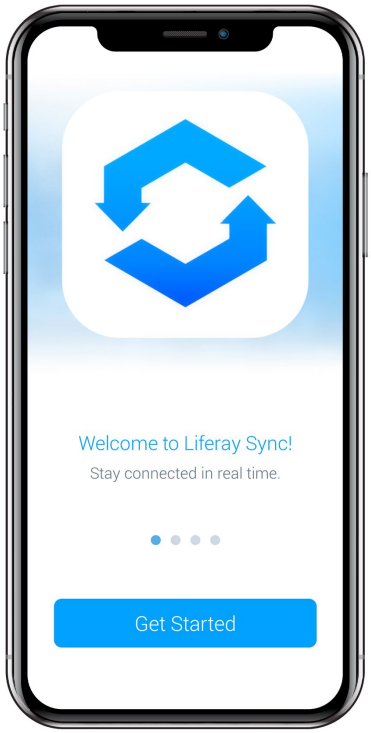
Adaptive Media

The Liferay Adaptive Media app is designed to prevent complications caused by websites being displayed on a wide variety of devices and screen sizes, as well as how these image load times are affected by network speeds varying between users and entire countries. The app gives administrators control over the resolution of images based on the resolution of the device displaying them and the network speed. In addition, the Liferay Adaptive Media app dynamically adjusts images to best fit the screen size of the device being used.

Administrators are able to edit and generate image resolutions as well as define which devices should trigger various resolutions while still maintaining the original aspect ratio. This level of control can help provide consistent experiences that avoid poor page layouts and slow load times.

Liferay Sync

Liferay Sync is a product that synchronizes files between sites and devices to create easy access and the ability to publish content online without needing to use a browser. Via Sync, files can also be updated in order to reflect the latest changes made to them. An app version of Liferay Sync for Android and iOS is also available, which provides the convenience of sharing and viewing files in tandem across your devices while still having access to most of the capabilities possible on the desktop version. Liferay Sync for mobile devices can connect the user to one account at a time and allows him or her to choose files instead of automatic downloads in order to save storage space on a device.



In addition, Sync stores files locally so that they're always available, even when a client is offline. Files are then automatically synchronized across all configured Sync clients and in your Liferay instance upon the client's reconnection.

Sync files are treated the same as any ordinary file. Credentials, Sync folder location and other options are configured in the client, while native notification events, menus and task bars keep users informed and in control. Liferay Sync integrates completely with Liferay DXP so that features such as authentication and versioning function in the supported environments.

WeDeploy

WeDeploy is a cloud platform for developers used to scale small sites to complex applications. WeDeploy is a Mobile Backend as a Service (MBaasS) and makes mobile friendly services possible with little effort in order to create Android and iOS mobile apps. Through this tool, developers can also implement authorization features, manage data in realtime and send or check the delivery status of emails.

Through the new WeDeploy iOS and Android SDKs, developers are able to build apps for iOS, watchOS, tvOS and macOS, as well as Android phones and tablets, Android Wear, Android TV, Android Auto and any platform that supports Java. WeDeploy offers ready-to-use services for storing data in the cloud, search and

stream content in real time, authenticate users, send emails to your users and so much more. WeDeploy allows secure application assembly using out-of-the-box services for applications.

Liferay DXP for Mobile App Development

Liferay Screens

Liferay Screens for native mobile app development

Liferay Screens rapidly develops native Android and iOS apps with a collection of fully native mobile components called Screenlets, using all the power of your Liferay platform as an enterprise grade mobile backend. A Screenlet is a visual component that you insert into your native app to leverage Liferay DXP's content and services. Screenlets are available to log in to your portal, create accounts, submit forms, display content and more, available in both iOS and Android development. In addition, Liferay Screens can access any backend system, not just those built on Liferay.

Developers can use any number of Screenlets in an app and their independent nature means they can be used in a modular fashion. Screenlets also deliver UI flexibility with pluggable views that implement elegant user interfaces. Since Screenlets already contain the code required to call your Liferay instance - and a complete UI - all you need to do is insert and configure them in your app. You can also customize each Screenlet to fit your specific needs, or write your own Screenlet. Screenlets leverage the Liferay Mobile SDK to make server calls, which is a low-level layer on top of the Liferay JSON API.

Liferay Screens now provides more than 20 different types of Screenlets, including login, sign up, DDL form, web content display, image gallery, video display, asset display and more. These can be customized and extended to adapt to specific needs. In addition to these preexisting types, developers can create their own Screenlet in order to provide new business solutions.

Liferay Screens for offline scenarios

Native mobile app developers can find help through Liferay Screens' ability to support low connectivity scenarios. With Liferay Screens, remote content is accessible and forms and surveys are editable while offline. In addition, offline data can be synchronized with the remote source. When synchronizing, conflicts between local and remote versions are detected and resolved.

Liferay Screens for hybrid mobile app development

Hybrid mobile development has been a hot topic amongst developers since the very beginning of mobile technologies. By avoiding the need to create and maintain the same app more than once, developers can save both time and money. There are many different approaches to hybrid app development. These include:

- **WebView Based**: The app contains a single web browser and an optimized website shown inside it. Cordova is the most famous technology in this group.
- **Cross-Platform Compilation**: The app is coded using one programming language, which is then compiled to native apps for iOS and Android. The native code is then compiled using standard tools. Xamarin is one of the most extended frameworks using this approach.
- **Virtual Machines**: The app's code is interpreted by a virtual machine or interpreted in the actual app. React Native is the most used framework in this group.

Liferay Screens supports several of these approaches:

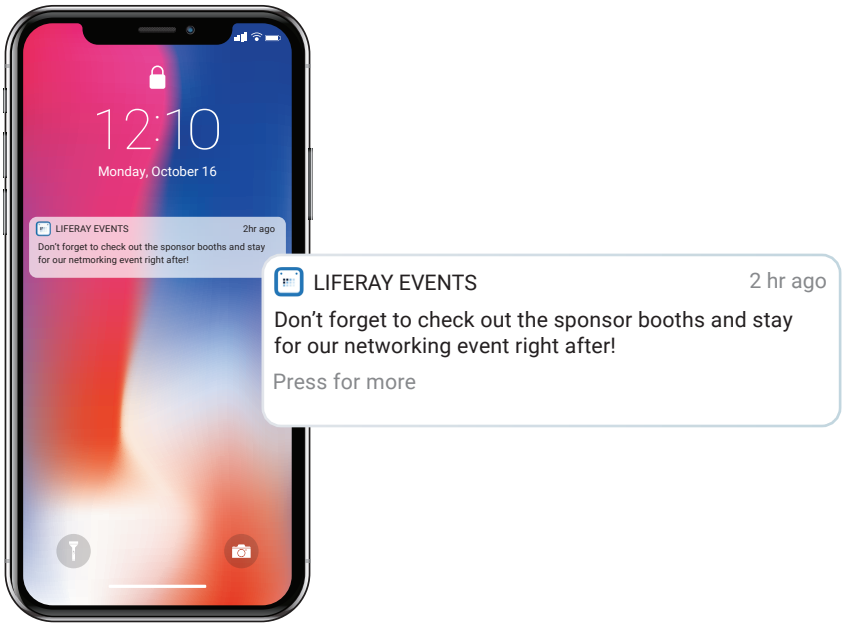
- **100% Native Liferay Screens**: Liferay Screens allows 100% native application development for both iOS and Android. Developers are able to create applications that are fully compatible with Android Studio or XCode and also connect with any custom back-end system.
- **Liferay Screens for Cordova**: Liferay Screens embeds a full Cordova engine, leveraging the use of Cordova plugins and features in hybrid web pages. These web pages can be served by a regular Liferay server or any other kind of web server. Any web page retrieved can be customized in the mobile-side using regular CSS and Javascript code.
- **Liferay Screens for Xamarin**: Liferay Screens allows developers use of regular Screenlets with C# in regular Xamarin.iOS and Xamarin.Android apps. These Screenlets have full capacity to access native features.

Liferay Push

Liferay Push allows developers to send push notifications from the Liferay platform to native Android and iOS apps. Using the Liferay Push app, sending notifications to your app's users is straightforward and developers can specify the user IDs along with the message content.

Beyond notifications, Liferay Push can be used to update the content on your apps or their local databases as change happens. In order to ensure that your notifications are effective in the ways you want them to be, Liferay Push also includes a Control Panel portlet that can send test push notifications to ensure that it is working properly.

In addition, Liferay Push Client for Android streamlines registering a device with a portal for receiving and sending push notifications. Developers can attach a listener to store the registration ID or to process the notification sent to the activity. They can also register a receiver and service to process the notification.



Liferay Mobile SDK

Liferay Mobile SDK is a framework for building native mobile apps that integrate with your different Liferay DXP instances and their portlets. SDK provides the means for your mobile apps to easily consume Liferay DXP's core web services and the web services of your custom portlets. It wraps Liferay JSON web services, takes care of authentication, makes HTTP requests (synchronously or asynchronously), parses JSON results and handles server side exceptions.

Liferay Mobile SDK bridges the gap between your native app and Liferay services and is available as separate downloads for Android and iOS. Developers can also build additional Mobile SDK to leverage custom portlets' remote services.

Liferay DXP Mobile Suite

		
Liferay Screens	**Liferay Push**	**Liferay Mobile SDK**
Pre-built interfaces connect to Liferay DXP for instant authentication, registration, localization and more.	Send push notifications from Liferay DXP to your native Android and iOS apps.	A package of tools to create native mobile apps for iOS and Android that take advantage of Liferay's platform services.

Conclusion

Whether you are developing an application or are in need of a new website, better interconnected experiences are possible with Liferay DXP. Our software can be used to build both your mobile experiences and your desktop websites, helping to create an omnichannel experience that your audience now expects.

Moving Forward

Learn how Liferay Digital Experience Platform can be used to create the mobile web experiences and apps that you want. Visit liferay.com/solutions/mobile.

Speak with a Liferay expert and schedule a demo of our software.
Visit liferay.com/request-a-demo.

Liferay makes software that helps companies create digital experiences on web, mobile and connected devices. Our platform is open source, which makes it more reliable, innovative and secure. We try to leave a positive mark on the world through business and technology. Hundreds of organizations in financial services, healthcare, government, insurance, retail, manufacturing and multiple other industries use Liferay. Visit us at liferay.com.

181026