



Adobe Experience Manager Mobile

Using Experience Manager as the Content Management System

In just a few short years, enterprise mobile apps have become critical to businesses in virtually every industry.

Table of contents

- 1: Introduction
- 2: Product Overview
- 2: AEM Mobile Deployment Options
- 5: The Ultimate Goal: A Mobile App
- 7: Implementing AEM as the Content Source
- 10: Creating Content for Mobile Using AEM
- 13: Insituting Workflows for Mobile Using AEM
- 14: Integrating Enterprise Systems with AEM Mobile
- 16: App Creation and Management Workflow
- 18: Extend Functionality / Access Device Features Using Cordova
- 19: App Deployment
- 19: Additional App Services
- 21: Integration with Adobe Marketing Cloud
- 24: Conclusion

The list of mobile enterprise apps that companies rely on daily includes sales enablement tools, e-commerce apps, product catalogs and inventory tools, training apps, field service tools, internal and external communications tools, and many more.

Despite the importance of these apps, enterprise mobile app development has, to this point, been a fragmented, complicated and expensive process. Adobe Experience Manager Mobile—Adobe’s solution for building and managing mobile apps—can dramatically change this proposition. Among its many advantages, AEM Mobile offers remarkable deployment flexibility, enabling enterprises to use a variety of content sources. This white paper splits those sources into three options:

	Adobe Experience Manager (AEM) as the Content Management System (CMS)
	Custom-integrated third-party content using the On-Demand Services API —e.g., a customer relationship management system (CRM), product information management system (PIM), or a CMS other than AEM
	Ad Hoc content creation and management using InDesign, Adobe Document Cloud PDFs, or HTML

Purpose of this white paper

This white paper focuses on deployment option 1, using Experience Manager as your content management system. The discussion includes:

- What it realistically takes to get up and running for both existing and new Experience Manager customers.
- On-premise vs. managed service options.
- Connecting data sources to Experience Manager.
- How to create, deploy, and extend your app.
- Links to detailed documentation for each major step.

Structure of the paper

The first part of this paper provides a general overview of all three deployment options, including how to choose the best option for your particular needs, as well as a brief description of the downstream workflow phases following deployment. The second part of the paper is a deep-dive discussion of deployment option 1, using AEM as your CMS or data source.

Detailed discussions of deployment options 2 and 3 ([2] third-party content and [3] ad hoc content) can be found in companion white papers “Using a Third-Party Content Source with AEM Mobile” and “Ad Hoc Content Creation and Management with AEM Mobile.” Each white paper in the series charts the steps for its individual deployment path.

AEM Mobile Product Overview

AEM Mobile is Adobe’s solution for building and managing enterprise mobile apps. Enterprise mobile apps have different challenges and requirements than consumer mobile apps. AEM Mobile is designed to meet these challenges. It allows organizations to:

- Accelerate time-to-market with business critical apps.
- Develop native mobile apps for iOS, Android and Windows without the complexity and expense of native development. You can also deliver app content and functionality to the Desktop Web Viewer for users without a mobile device.
- Leverage content Experience Manager and other content management systems for the mobile channel.
- Centrally manage all mobile apps in the enterprise.
- Take advantage of integrated Adobe Marketing Cloud solutions alleviating the need to purchase point products for digital marketing needs.

AEM Mobile Deployment Options

AEM Mobile allows an enterprise app to display content or data from multiple sources. The result is considerable flexibility in how you create, manage, and update content that is published to your app. These are the choices you have and what we’ll cover in detail:

	Adobe Experience Manager (AEM) as the Content Management System (CMS)
	Custom-integrated third-party content using the On-Demand Services API (e.g., a CRM or PIM system) or a CMS other than AEM
	Ad Hoc content creation and management using InDesign, Adobe Document Cloud PDFs, or HTML

How should you choose your content sources?

Choosing your content source or sources will be driven by a number of questions, including:

- Where does the content that you already have come from? Who creates it? Will you repurpose that content and those resources for delivering content to mobile?
- Who will create the content for your mobile app(s), and what kind of skills do they have? Typical content creators include:
 - *A designer (web- or print-oriented, HTML, PDF, InDesign).*
 - *A non-designer marketer or producer (using CMS/templates/workflow).*
 - *A developer (HTML/database-driven, automated workflows).*
- Who will update the content, how frequently, and using which tools?
- What do you need automated based on other content updates or workflows?

Based on these factors, you could choose to use just one of these content sources or any combination of the three. Remember, you are not limited to a single path.

Scenario 1: Experience Manager as a content management and authoring system

If you are an existing AEM customer, you can leverage your investment and infrastructure for your web properties to drive mobile apps. AEM can now be your single source of assets and content for a true multi-channel operation.

Even if you do not currently use AEM, adopting it gives you an opportunity to build a robust content infrastructure that lays the groundwork for an efficient multi-channel content creation and management operation.

If you want to leverage additional custom systems such as a PIM or CRM system, or any other data source, AEM is a logical choice. AEM will act as an integration point and centralized hub to manage incoming data from any number of sources.

Please note that to effectively use AEM in your organization, it needs to be customized to your needs, and you will require a specific set of skills and resources. Many customers work with Adobe Solution Partners and system integrators to deploy, configure and customize AEM and create templates that can then be used by internal staff.

Later in this paper we will cover these resource requirements, including:

- On-premise server hosting and systems administration (or Adobe Managed Services).
- AEM developers of templates, components, and workflows.
- Content creators and managers.

Scenario 2: Third-party content sources

If you already use a content management system (CMS) for authoring and managing content for another channel, such as a web site, and you decide you want to use some or all of the assets that are already in that system for your mobile app, then it may make sense to integrate that CMS with AEM Mobile.

Likewise, if your content source is another system that is not a CMS, such as a product information management system or a customer relationship management system, your best approach may be to leverage AEM Mobile's On-Demand Services APIs to integrate your system(s) with AEM Mobile.

Scenario 3: Ad hoc content creation and management

If you don't use a CMS or another structured data system, and your team creates document- or HTML-based content, your best approach may be to simply manage your content using AEM Mobile On-Demand Services to distribute to your mobile apps.

This approach supports HTML, Adobe InDesign, and PDF content, with a direct integration with Adobe Document Cloud.

Scenario 1 will be covered in detail in this paper. Scenarios 2 and 3 are covered in separate documents.

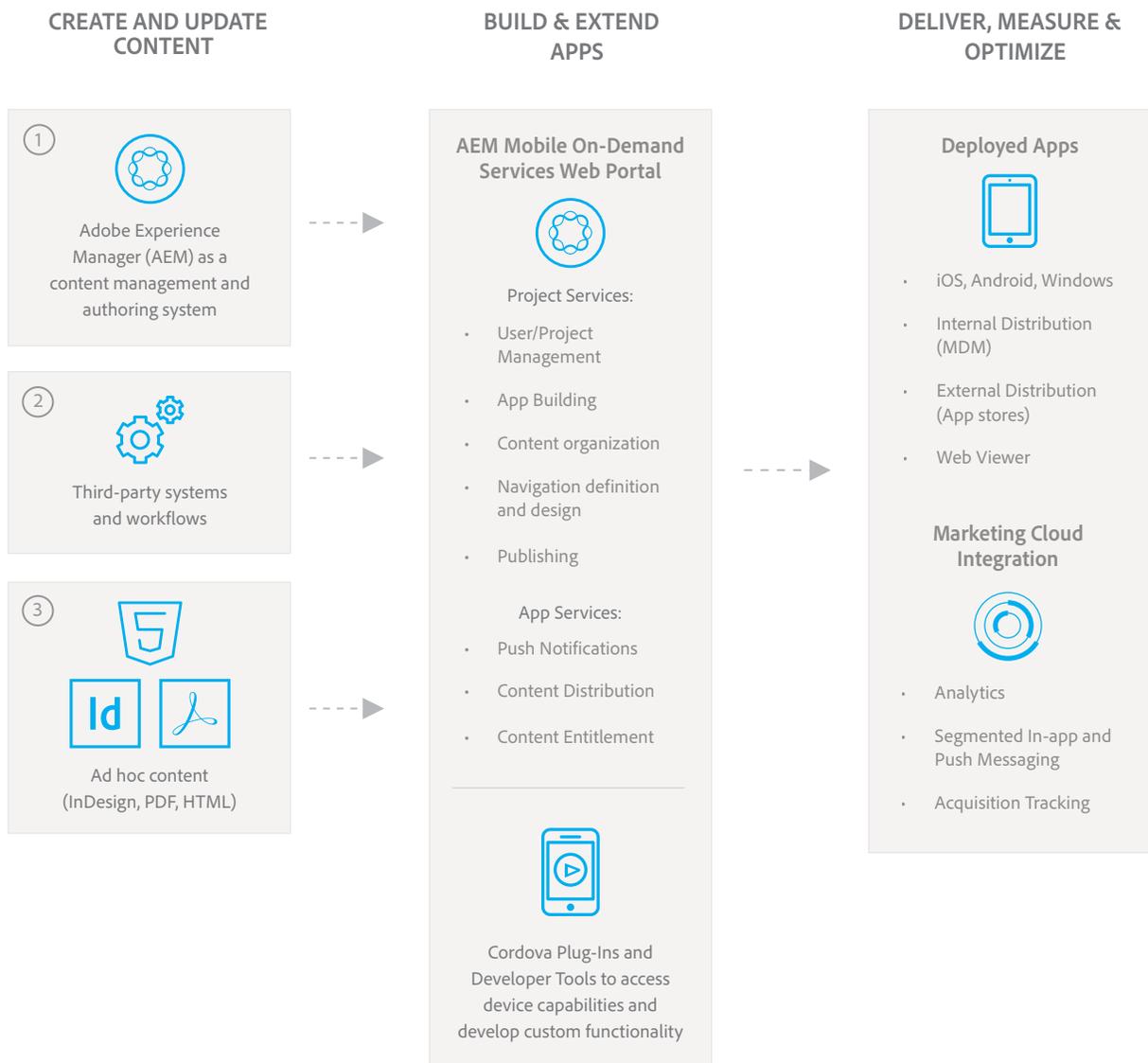
The Ultimate Goal: A Mobile App

Before describing in detail the way in which you manage the content of your mobile app, there are common shared practices in the overall app creation workflow and lifecycle of every deployment scenario. After you've built and deployed your app, you can update content to it using a number of different authoring tools without requiring a rebuild and update of the app binary.

As shown below, in a breakdown of an app's workflow:

- Content flows to the app built using AEM Mobile On-Demand Services
- Device-level functionality is introduced with Cordova APIs
- The deployed apps are measured and optimized using insight and tools offered by Marketing Cloud

Once you choose your content source, the workflow for building, extending, delivering, measuring and optimizing your apps is the same.





CREATE & UPDATE CONTENT

In this paper, we will be detailing Scenario 1: Using Experience Manager as a content management and authoring system. First, we've outlined the phases of the workflow described above, that are common across all scenarios, no matter what you choose as a content source.



BUILD & EXTEND APPS

AEM Mobile On-Demand Services are accessible via a Web browser (<https://aemmobile.adobe.com>) or through the AEM Mobile On-Demand Services API.

The On-Demand Services provide the following capabilities for building and extending apps:

- Manage projects, settings, roles, users, and access.
- Create app binaries to be deployed on individual mobile devices.
- Distribute content to mobile apps.
- Define content organization, visualization, and navigation screens.
- Manage entitlement to content (subscriptions, products, restricted collections).
- Manage text notifications.
- Expose content and notification services through AEM Mobile.
- AEM Mobile On-Demand Services API for third-party system integration



EXTENDING THE APP FUNCTIONALITY WITH CORDOVA PLUG-INS

Cordova extensibility, available in HTML articles and web overlays in InDesign-based articles, provides access to the following capabilities:

- Core Cordova plug-ins – Take advantage of core Cordova plug-ins such as Camera, Contacts, Geolocation, and File Sharing.
- Custom Cordova plug-ins – Leverage plug-ins from the Cordova/PhoneGap community or create your own plug-ins. Examples: barcode scanning and mobile databases.
- AEM Mobile specific plug-ins enabled through Cordova – Plug-ins to access specific data related to the application and the content metadata.



DELIVER, MEASURE & OPTIMIZE

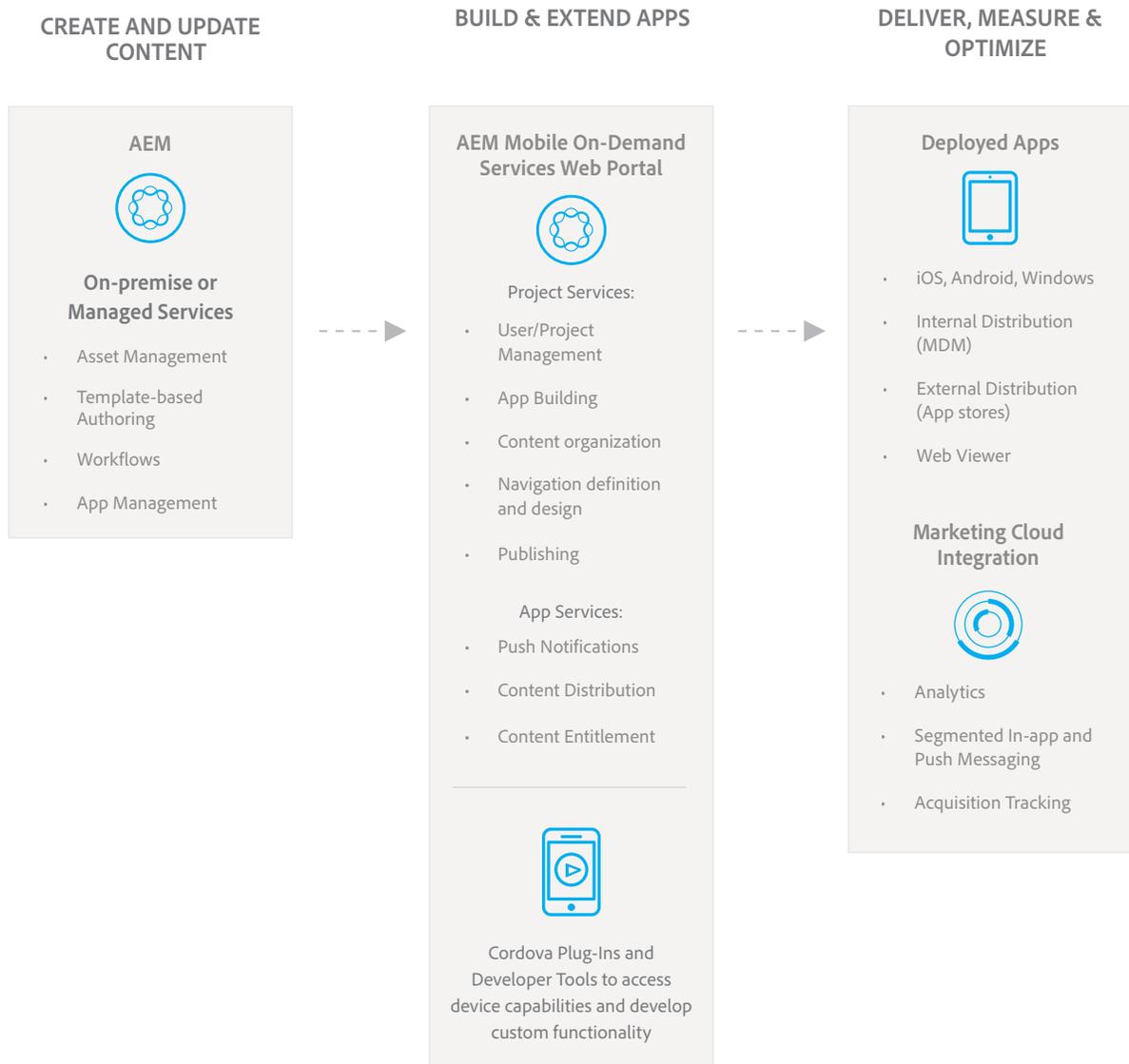
Your AEM Mobile apps can be deployed to iOS, Android, Windows as well as a Desktop Web Viewer. Apps can be deployed publicly through each platform's app store, or internally, including via Mobile Device Management (MDM) systems.

For measuring and optimizing your apps, Analytics Essentials and Push Messaging are included with an AEM Mobile license. In addition, the following products, which are part of Adobe Marketing Cloud, work well with AEM Mobile, but require additional licenses:

- Adobe Mobile Analytics.
- Mobile Marketing, including In-App Messaging, and Acquisition Tracking.

See the "App Deployment" and "Integration with Adobe Marketing Cloud" sections of this document for more information.

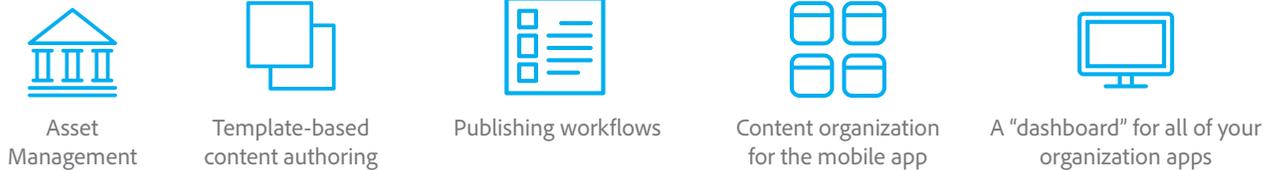
Scenario 1: Implementing Experience Manager as a content management and authoring system



This section explains how to use Experience Manager (AEM) as the content management system and data source for AEM Mobile. It provides the specific information you'll need to effectively execute this deployment approach.

Using AEM with AEM Mobile is the easiest and most efficient deployment path for enterprises that want to leverage their time and financial investment in their existing AEM infrastructure. It is also the preferred approach for companies that need an enterprise system for managing and deploying content used in a variety of output channels.

In this scenario, AEM is used to manage and author content for AEM Mobile apps providing tools such as:



System Requirements

AEM 6.1 Feature Pack 3 and later, or AEM 6.2 or later (On-Premise or Managed Service installation)

Linking AEM to On-Demand Services

The AEM instances you install need to be configured to connect to your AEM Mobile On-Demand Services account. This can be done by your system administrator.

For detailed instructions, see the AEM/AEM Mobile setup docs

<https://helpx.adobe.com/digital-publishing-solution/help/configure-aem.html>

Using an *existing* AEM installation

If you are already using AEM for Sites and/or Assets and you purchase a license for AEM Mobile, you can then use your existing "Author" instance for managing your mobile app content and pushing it to the cloud-based On-Demand Services for publishing to your app.

You will need to take into consideration the content update demands that will be added to your AEM installation by your mobile app(s). The additional authoring load for a mobile app will be similar to the load created by an additional web site. For example, adding a 10-screen app would be similar to adding a 10-page website.

Considerations include:

- The number of authoring users working with app content.
- The amount, size, and type of assets being used by the app.
- The number of uploads from your AEM Author instance to On-Demand Services.

Additional information on AEM capacity planning can be found at the following links:

<https://docs.adobe.com/docs/en/aem/6-2/manage/managing-projects/concept-planning.html#Capacity%20and%20Volume>

<https://docs.adobe.com/docs/en/aem/6-2/manage/capacity-guide.html>

Please note that the mobile apps themselves download content from On-Demand Services, not from your AEM instances directly. The cloud-based AEM Mobile Delivery Service hosts the mobile app content and distributes the content to app users via CDN (content delivery network) edge servers.

New AEM installation

If your organization is new to AEM you will need your own AEM installation.

If needed, you can engage the services of an Adobe Solution Partner or Adobe Global Services to help define your unique requirements, install, and configure your instances.

Adobe Solution Partner finder	https://solutionpartners.adobe.com/home/partnerFinder.html
Adobe Services	http://www.adobe.com/marketing-cloud/service-support/professional-consulting-training.html

AEM can be deployed either on your own servers via the “on premise” option, or via an Adobe Managed Services option:

AEM On-Premise

AEM instances can be installed on your own servers or servers you control. You will have to monitor, manage, and system-administer these servers.

Required Skills and Resources

- Systems administration.
- Server infrastructure.
- Server monitoring and operations.

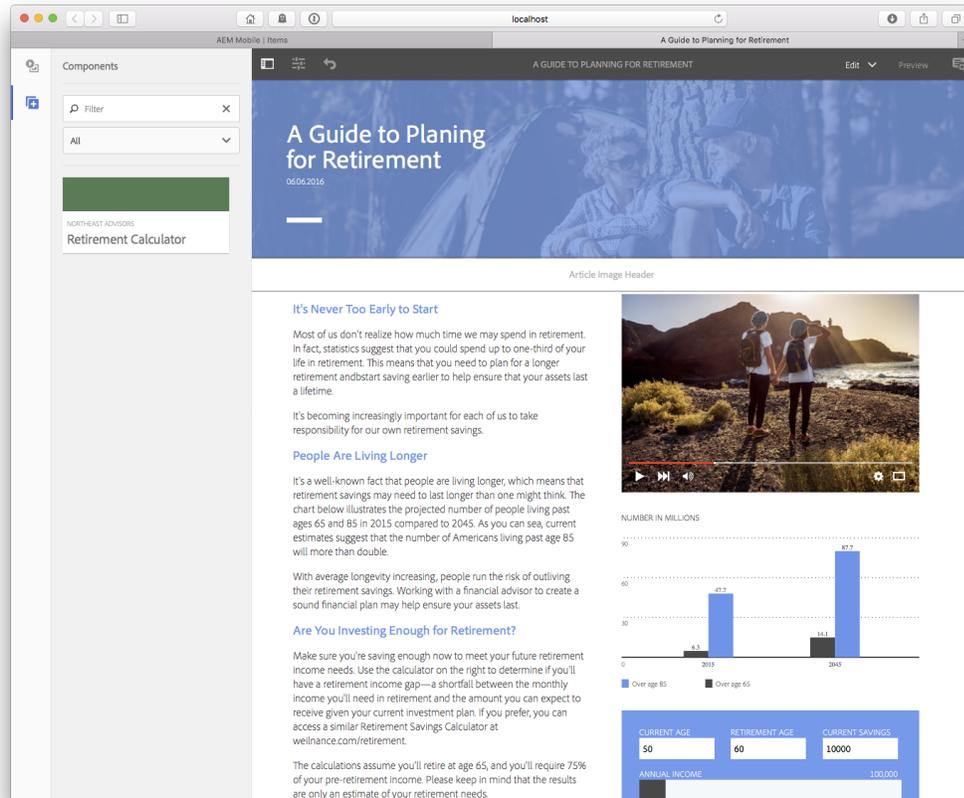
Detailed information about deploying and maintaining AEM on premise, including technical requirements, installation, and setup	https://docs.adobe.com/docs/en/aem/6-2/deploy.html
Detailed information about AEM administration, operations, and monitoring	https://docs.adobe.com/docs/en/aem/6-2/administer.html
More information on managing AEM projects, hardware sizing, and capacity planning	https://docs.adobe.com/docs/en/aem/6-2/manage.html

AEM Managed Services

Alternatively, you can purchase [Adobe Managed Services](#), which install, configure, customize, monitor, and manage your AEM instances in a hosted environment. Consider this option if you need to lighten the load on your IT department. The time and resource savings will reduce your time to market and increase your ROI.

Creating Content for Mobile Using AEM

New to AEM: Using AEM as a Content Authoring Environment



AEM provides you with two environments—author and publish. The only environment required and used for distributing content to AEM Mobile On-Demand Services is the author environment.

The author environment provides the mechanisms for creating, updating, and reviewing this content before actually publishing it. An author creates content using templates, and then publishes the content to the On-Demand Services.

AEM comes with sample templates for authoring content, but you will likely need to customize these templates to your content needs, or create new templates, which require an AEM developer. If you don't have AEM developer resources in-house, you can choose to engage a knowledgeable partner (<https://solutionpartners.adobe.com/home/partnerFinder.html>) or refer to learning resources referenced below to train your own staff.

Required Skills and Resources

- UX / Graphic Design.
- Web development (HTML, CSS, JavaScript, HTTP request-response).
- Java development.
- AEM development.
- Content authoring/updating (with basic knowledge of AEM authoring).

AEM-specific developer training	https://training.adobe.com/training/courses.html#solution=adobeExperienceManager&product=adobe-aem-sites
AEM content authoring	https://training.adobe.com/training/courses.html#solution=adobeExperienceManager&product=adobe-aem-sites

If you're starting from scratch, you'll need to:

- Have a UI or web designer design how you want your content to look. This can be done in Photoshop, HTML, etc., depending on your design resources.
- Provide designs to an AEM developer who can translate that design into a working AEM template and components:

AEM Development	https://docs.adobe.com/docs/en/aem/6-2/develop.html
Templates	https://docs.adobe.com/docs/en/aem/6-2/develop/templates.html
Components	https://docs.adobe.com/docs/en/aem/6-2/develop/components.html

- Have an AEM developer instrument how the template creates an article file that can be uploaded to the AEM app:
- Content Sync/Content Export/Articles.
- Content Sync/Content Export/Shared Resources.

AEM Mobile On-Demand Connector	https://docs.adobe.com/docs/en/aem/6-2/develop/mobile-apps/apps/mobile-content-delivery-connector.html
--------------------------------	---

- Those templates/components can then be used by an AEM author (marketer, producer, non-developer) for the purposes of creating new content (or updating it) using the provided template, and leveraging media assets and text stored in AEM.
- An AEM author can then upload content to the AEM app without requiring app rebuild.

AEM authoring	https://docs.adobe.com/docs/en/aem/6-2/author.html
Uploading/managing assets:	https://docs.adobe.com/docs/en/aem/6-2/author/assets/managing-assets-touch-ui.html
	https://docs.adobe.com/docs/en/aem/6-2/develop/mobile-apps/apps/mobile-content-delivery-connector/app-dashboard.html

Existing AEM: Leveraging existing assets, templates, and workflows

There are ways you can reuse assets you already use from AEM for other channels. However, you'll need to pay attention to the unique requirements for publishing content to mobile apps that necessitate the creation of mobile-specific templates as outlined below.

An AEM developer can make appropriate changes to templates and components. In many cases, a new version of a template is made specifically for the mobile app.

AEM development

<https://docs.adobe.com/docs/en/aem/6-2/develop.html>

The AEM developer dictates how the template will create an article file that can be uploaded to the AEM app.

AEM Mobile On-Demand Connector

<https://docs.adobe.com/docs/en/aem/6-2/develop/mobile-apps/apps/mobile-content-delivery-connector.html>

The templates/components in question can then be used by an AEM author (marketer, producer, non-developer) for the purposes of creating new content (or updating it) using the provided template, and leveraging media assets and text stored in AEM.

AEM authoring

<https://docs.adobe.com/docs/en/aem/6-2/author.html>

Uploading/managing assets

<https://docs.adobe.com/docs/en/aem/6-2/author/assets/managing-assets-touch-ui.html>

The AEM author can then upload content to the AEM Mobile app without requiring app rebuild.

<https://docs.adobe.com/docs/en/aem/6-2/develop/mobile-apps/apps/mobile-content-delivery-connector/app-dashboard.html>

Instituting Workflows for Mobile Using AEM

AEM allows you to create custom workflows to automate the creation of mobile content and the uploading of this content to On-Demand Services.

The Workflow Engine, part of AEM's core, can:

- String together AEM processes in any fashion.
- Interact with external systems.
- Incorporate manual process steps like approvals.

The actual code that gets executed by a workflow is called a "Workflow Model," and can consist of pre-built workflow steps, or custom Java or JavaScript code.

"Trigger Events" launch a workflow based on rules, creating an instance of a Workflow Model.

Workflows are typically created by an AEM Administrator, but require Java or JavaScript developers to create custom workflow steps, and backend developers to integrate with external systems.

Administering Workflows	https://docs.adobe.com/docs/en/aem/6-2/administer/operations/workflows.html
Creating Workflow Models	https://docs.adobe.com/docs/en/aem/6-2/develop/extending/workflows/models.html

Examples

Multi-channel publishing workflow: Creating content for AEM Sites automatically kicks off a workflow that uses the same assets but with mobile-specific templates. Adobe customer Hartford Funds automated their mobile workflow by extending their existing AEM Sites review/approval/publish workflow. Read more about the Hartford Funds app and how they built it in the following links.

Overview	https://blogs.adobe.com/aemmobile/2016/03/new-app-helps-hartford-funds-reach-financial-advisors.html
More details	https://blogs.adobe.com/digitalmarketing/mobile/hartford-funds-shares-path-successful-mobile-mobile-app-deployment/

AEM developers can start by creating basic workflows and then add capabilities. Here are some examples of the open-ended possibilities that help streamline process or make for robust integrations:

- Insert assets and content fragments into templates.
- Incorporate incoming data from other systems like CRM.
- Integrate with high-volume data from Product Information Management systems (PIMs).
- Create custom UI "tiles" in the AEM dashboard for AEM authors.
- Automate workflows via explicit user actions.
- Create custom workflows with AEM Commerce.

Integrating Enterprise Systems with AEM Mobile

Many companies need to connect their mobile apps with existing enterprise systems other than their CMS – for example, a Product Information Management (PIM) or Customer Relationship Management (CRM) system. There are two approaches for integrating enterprise systems with AEM Mobile: Connecting the system to On-Demand Services or connecting it to AEM.

Integrate Your Enterprise System with On-Demand Services or AEM?

When to choose AEM

- Already have AEM or AEM Assets
- Enterprise system can't create packaged HTML or PDF content
- Want to re-purpose content for multi-channel use

When to choose On-Demand Services

- Using a non-AEM source with data that can output a format compatible with On-Demand Services (packaged HTML or PDFs)
- No need for multi-channel strategy

Connecting a system to On-Demand Services

The On-Demand Services APIs allow a developer to integrate with the On-Demand Services. This can enable, for example, an enterprise system to push content to your mobile apps via On-Demand Services. The APIs are REST-based APIs and can be implemented with any programming language. Adobe has provided a reference using the PHP language*.

Required Skills and Resources

- Backend development.

See the following links for more information:

Integrating with On-Demand Services	https://helpx.adobe.com/digital-publishing-solution/help/integrating-dps.html
* On-Demand Services SDK for PHP:	https://helpx.adobe.com/digital-publishing-solution/help/content-producer-service-sdk.html

Connecting a system to AEM

You can also develop custom integrations and workflows directly with AEM.

Why go this route?

You may want to consider this approach if you already have AEM and AEM Assets, your third-party system does not have the ability to create packaged HTML or PDF content, and you want that content to be used for other purposes (multi-channel).

For example, if your Product Information Management (PIM) system has raw metadata and images, and you want to get this structured product data into your mobile app, you would create a custom integration from the PIM system to AEM Assets, and then manipulate this data into AEM templates via custom workflows. A major benefit of this scenario is that the structured PIM data can also feed your websites.

Required Skills and Resources

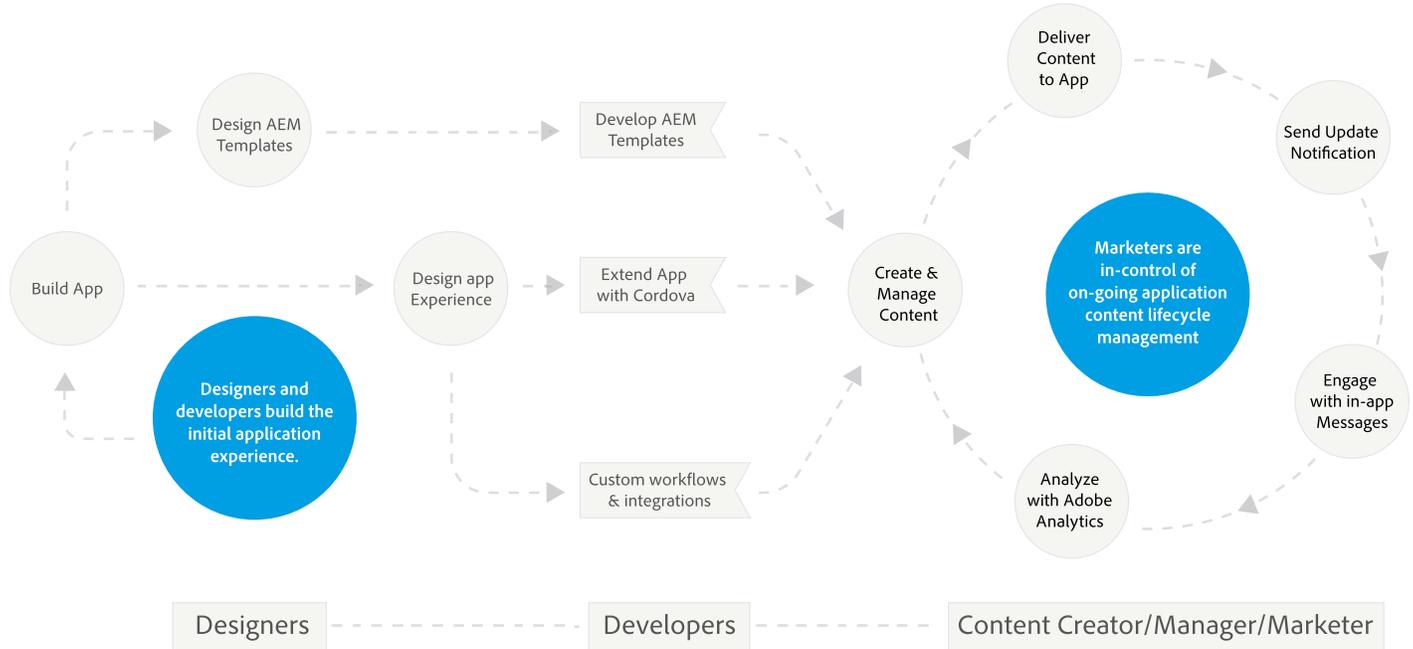
- Backend development.
- Note: Integration with any third-party system with AEM directly requires an AEM Assets license.

See the following links for more information:

Integrating with a Product Information Management (PIM) system integration (leveraging the AEM Commerce module)	https://docs.adobe.com/docs/en/aem/6-2/administer/ecommerce.html
Integrating with a third-party system using the Adobe Marketing Cloud API Assets	https://docs.adobe.com/docs/en/aem/6-2/develop/extending/mac-api-assets.html

App Creation and Management Workflow

Creating and managing an AEM Mobile app entails using On-Demand Services to build an app, design its basic interface, and then manage the app's content updates, messaging, and analytics.



Required Skills and Staff

The following roles and underlying skills are needed to create and manage an AEM Mobile app:

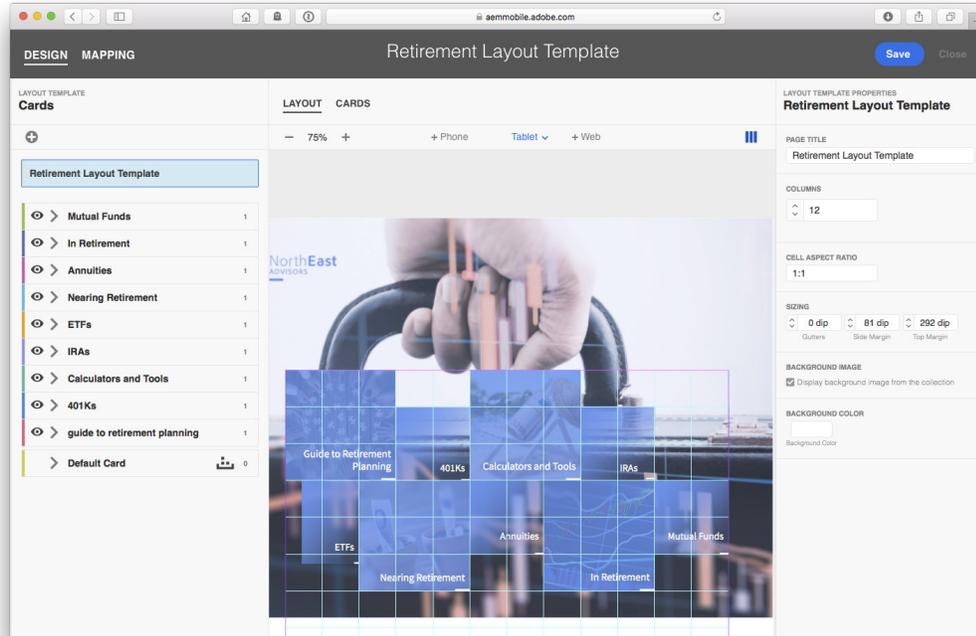
Designers:	Developers:	Content Creators/Managers/Marketers:
<ul style="list-style-type: none"> User Experience Design (for app experience) Web/Graphic Design (for content templates) 	<ul style="list-style-type: none"> HTML/JavaScript/CSS (to extend the app's functionality and leverage Cordova plug-ins) Back-end development (to integrate with other enterprise systems or entitlement services) 	<ul style="list-style-type: none"> Content Authoring and Management Direct Marketing Business Analysis

These resource and skill requirements depend on the nature of your app. The simplest app might not require custom workflow or back-end development. A single person may perform activities across more than one of the above skill sets.

App Creation Workflow

Anyone can use the simple app building wizard in the On-Demand Services to generate pre-built native apps for iOS, Android, and/or Windows. Please note that:

- Apps are branded with icons and splash screen graphics
- Apps require appropriate platform-specific certificates for signing the apps prior to installing on devices, using a provided signing tool



Designing cards & layouts in On-Demand Services

The app experience is determined by the navigation screens and content delivered to the app. Please note that:

- Designers can create app navigation screens using the WYSIWYG Layout Tools.
 - *Alternatively, custom app navigation screens can be created using HTML/JavaScript/CSS.*
- Developers can extend the app via HTML/JavaScript/CSS:
 - *Dynamic/interactive app screens.*
 - *Native device capabilities via Cordova APIs.*
- Developers can develop custom and dynamic article templates within AEM. They can:
 - *Create custom templates to address specific devices and/or to include specific business logic.*
 - *Create custom components to be included into screen templates.*
- Developers can build custom workflows and logic within AEM to manage app updates automatically.
- Back-end developers can build Integrations with enterprise systems such as ERP, CRM, or other systems.

Content Creation and App Management Workflow

Marketers or content creators can create and deliver content to the app using these template-based workflows in AEM:

- Template-based drag-and-drop authoring within AEM.
- Assets stored in AEM that are used for other channels, such as Sites or Commerce.
- Updates delivered via a global Content Delivery Network (CDN).

Marketers can send in-app messages and push notifications to app users to notify and engage users, and pull in users who haven't opened the app in some time.

Analysis and Iteration Workflow

Marketers or business analysts can glean app usage insights from Adobe Analytics. With this solution:

- App content/UI/logic/functionality can be iteratively updated.
- Content and app UI updates do NOT require a new build of the app, and therefore do not require resubmission to app store review processes.

Extend Functionality/Access Device Features Using Cordova

Apache Cordova is an open-source framework for leveraging and extending mobile device capabilities through the use of simple HTML, CSS, and JavaScript. A host of Cordova core plug-ins can be activated or called from AEM Mobile apps using the appropriate JavaScript functions.

Core plug-ins embedded in AEM Mobile applications include:

File Access	Allows read/write access to files on device
File Transfer	Provides functionality to upload and download files
Notification Dialogs	Provides access to native dialog UI elements
Network Information	Provides information about device cellular and wifi connections
Geolocation	Provides info about device location
Camera	Access the device's camera
Contacts	Access the device's contacts
Device Info	Describes the device's hardware and software
Device Motion	Provides access to the device motion sensor
Device Orientation	Provides access to the compass
Media	Provides the ability to record and play back audio files on a device
Media Capture	Provides access to device audio, image and video capture capabilities
Globalization	Provides access to operations specific to the user locale, language, and timezone
Vibration	Access to vibrate the device
WKWebView	Uses WKWebView instead of UIWebView for HTML Articles and Web Overlays on iOS9

These core plug-ins are available to use in any of your AEM Mobile applications. To take advantage of these plug-ins you must first enable them on the app settings page for your iOS, Android, or Windows application.

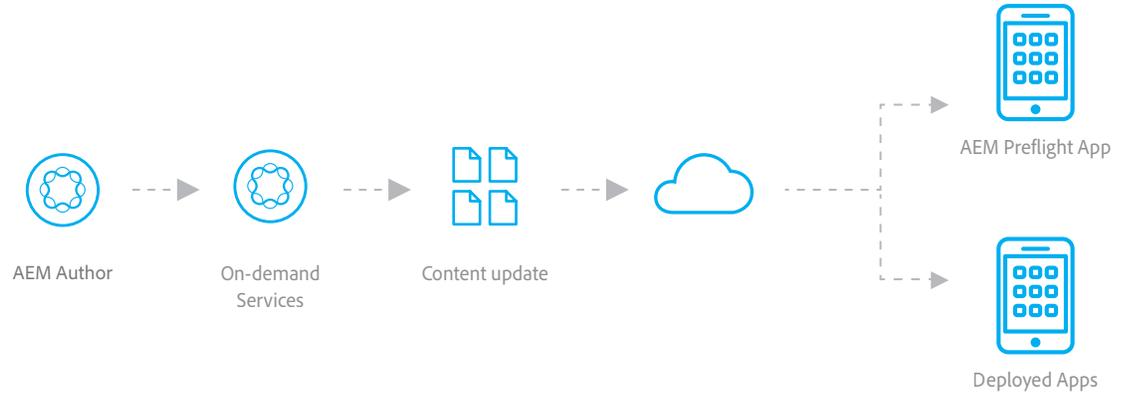
For more details <https://helpx.adobe.com/digital-publishing-solution/help/cordova-api.html>

Beyond the standard set of core Cordova plug-ins, there is an extensive developer community focused on creating Cordova plug-ins. Additional plug-ins built for platforms such as PhoneGap, or Ionic may also be compatible with AEM Mobile applications, as these platforms are also based on the Cordova framework.

App Previewing and Deployment

Once you start flowing content into On-Demand Services and designing the app interface, you can preview the end-user experience using the AEM Preflight tool. AEM Preflight is a publicly available app downloadable from app stores that allows you to test all functionality and flow of your app.

When you are ready to go live, you build your app using On-Demand Services, you publish your content, and you deploy your app. Content and app interface updates can be made to your deployed app without requiring app rebuild and redeployment.



The AEM Preflight app for each platform can be found at the following links:

iOS	https://itunes.apple.com/us/app/adobe-experience-manager-mobile/id1042687518?mt=8
Android	https://play.google.com/store/apps/details?id=com.adobe.dps.preflight&hl=en
Windows	https://www.microsoft.com/en-us/store/p/adobe-experience-manager-mobile-preflight/9nblggh5wmxq

Details for building and distributing apps for each target platform can be found at the following links:

iOS	https://helpx.adobe.com/digital-publishing-solution/help/building-ios-apps.html
Android	https://helpx.adobe.com/digital-publishing-solution/help/building-apps-android.html
Windows	https://helpx.adobe.com/digital-publishing-solution/help/building-windows-apps.html
Desktop Web Viewer	https://helpx.adobe.com/digital-publishing-solution/help/web-viewer.html

Additional App Services

In addition to the robust range of services described to manage content, build, design, and deploy apps, AEM Mobile also provides the following:

Global Content Distribution Network

The AEM Mobile Delivery Service hosts your content for distribution to your end users. When an end user downloads content, the content is fetched from edge servers on a content delivery network. For information on this and other related topics, see:

AEM Mobile On-Demand Services Security Overview	http://www.images.adobe.com/content/dam/Adobe/en/security/pdfs/aem-mobile-security-overview.pdf
---	---

Notifications Service

Push Notifications can be sent to the devices of all users that have installed your app, or targeted to a specific set of users. These messages do not require users to currently be running your app. Push notifications can trigger content downloads or display text notifications to users.

Once configured, a non-technical user can compose, target, and send push notifications through the AEM Mobile web portal.

See more

<https://helpx.adobe.com/digital-publishing-solution/help/push-notifications.html>



Authentication Integration

If you want to add a sign-in function to your app, you can implement and control the authentication process. The custom authentication sign-in experience appears in the app as a full-screen web view that you design. We support the following protocols:

- SAML 2.0, including MFA/OKTA support
- OAuth 2.0, including support for social sharing logins such as Facebook or Gmail

For example, you can allow your sales representatives to login to the app using their email and password plus OKTA verification (SAML 2.0). Or, you could allow customers to log in to the app using their Gmail or Facebook account (OAuth 2.0). The app obtains authorization tokens from these identity providers, which you can use in your entitlement service to grant users access to content.

AEM Mobile also provides support for Generic identity providers, including a setAuthToken API. You can take advantage of custom authentication without having to use SAML or OAuth. Generic identity providers allow two alternate authentication use cases, including:

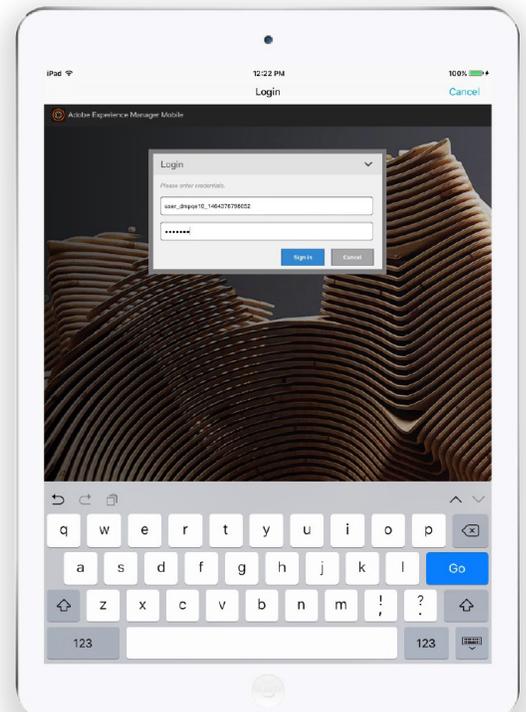
- Providing a custom UI such as an HTML form instead of using the standard user name and password prompt
- Building a sign-in experience within an article rather than through the standard authentication process.

These enhancements let you expand your authentication capabilities, such as including multiple authentication methods within the same app.

For more information, see:

Use Custom Authentication in AEM Mobile Apps

<https://helpx.adobe.com/digital-publishing-solution/help/identity-providers.html>



Entitlement Support

By setting up your own entitlement service for your app, you can allow authenticated users to become entitled to specific content. Adobe has provided example code for a basic entitlement service. Instructions for editing this sample code and uploading it to your server are found at:

Set up an entitlement service

<https://helpx.adobe.com/digital-publishing-solution/help/direct-entitlement.html>

Integration with Adobe Marketing Cloud

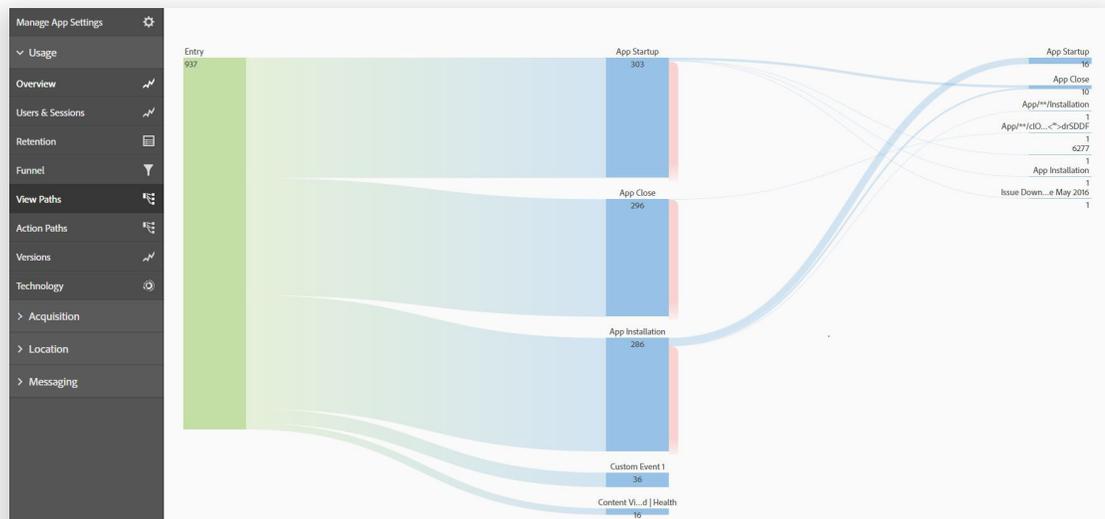
AEM Mobile integrates with Adobe Marketing Cloud to add powerful analysis, marketing, and messaging capabilities to your apps. Analytics Essentials is included with all AEM Mobile contracts. In-app messaging and acquisition tracking are provided through the Mobile Marketing SDK and require an additional purchase through the Adobe Marketing Cloud.

Analytics

Analytics in AEM Mobile apps is provided by Adobe Marketing Cloud. You can access these integrated analytics tools as follows:

- If your company has an Adobe Analytics account, you can specify that account information in Master Settings (requires a Master Admin account). Doing so links your projects to the Adobe Analytics account.
- If you do not have an Adobe Analytics account, you can request a complimentary Analytics Essentials account through Master Settings.

The capabilities of full Adobe Analytics enable sophisticated analysis of your apps, including the paths that users take through your apps, and even the behavior of different groups of users over time.



Adobe Analytics Pathing Analysis

By visualizing common paths that users take through your app, you can determine, for example, if you should move a piece of content or functionality so that it's easier to access.

Date	M0	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11
June 2015	9,249	8,735 94.44%	6,619 71.56%	5,634 60.91%	4,476 48.39%	3,823 41.33%	3,393 36.69%	3,006 32.50%	2,708 29.28%	2,439 26.37%	1,999 21.61%	1,723 18.63%
July 2015	17,445	11,242 64.44%	8,977 51.46%	7,153 41.00%	5,966 34.20%	5,337 30.59%	4,649 26.65%	4,230 24.25%	3,866 22.16%	3,242 18.58%	2,825 16.19%	
August 2015	7,907	4,303 54.42%	3,084 39.00%	2,445 30.92%	2,142 27.09%	1,911 24.17%	1,730 21.88%	1,529 19.34%	1,220 15.43%	1,068 13.51%		
September 2015	6,021	3,066 50.92%	2,263 37.59%	1,850 30.73%	1,601 26.59%	1,454 24.15%	1,278 21.23%	1,076 17.87%	925 15.36%			
October 2015	4,507	2,312 51.30%	1,676 37.19%	1,417 31.44%	1,205 26.74%	1,091 24.21%	902 20.01%	773 17.15%				
November 2015	3,971	2,031 51.15%	1,479 37.25%	1,228 30.92%	1,101 27.73%	844 21.25%	692 17.43%					
December 2015	3,232	1,715 53.06%	1,217 37.65%	1,043 32.27%	786 24.32%	681 21.07%						
January 2016	4,032	2,049 50.82%	1,532 38.00%	1,206 29.91%	997 24.73%							
February 2016	3,200	1,663 51.97%	1,073 33.53%	860 26.88%								
March 2016	3,018	1,464 48.51%	1,037 34.36%									
April 2016	2,825	1,261 44.64%										
May 2016	2,398											

Adobe Analytics Cohort Report

Retention analysis using a Cohort Report shows how likely it is for users that first installed your app during different time periods to return to the app over time. With this data, you can see how changes to the app and content over time impact users' engagement with the app.

See more <https://helpx.adobe.com/digital-publishing-solution/help/analytics.html>

You can also purchase additional Marketing Cloud capabilities such as In-App Messaging and Acquisition tracking.

Push Notifications

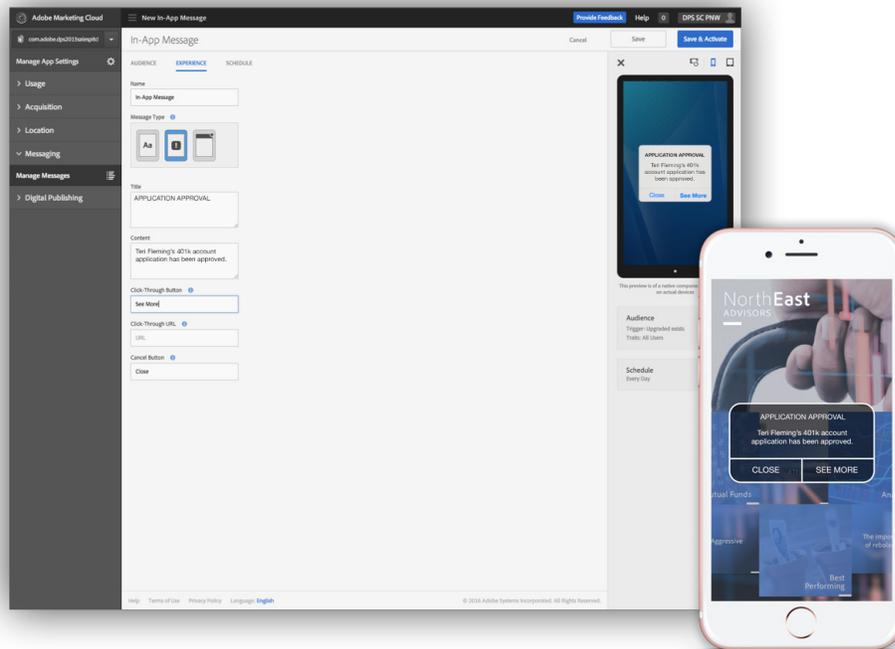
The ability to send push messages from the Marketing Cloud is complimentary to the Notifications Service, which lets you use the On-Demand Services Portal to send push notifications to app users. Use the Adobe Mobile Marketing Cloud to send push messages to both iOS and Android app users. Push messages appear outside of your app, making them useful for re-engaging passive users or conveying time-specific and location-specific information. Marketing Cloud-based push messages use Google Cloud Messaging (GCM) for Android apps and Apple Push Notification Service (APNS) for iOS apps. You can target push messages to users by specifying Analytics segments or custom segments.

See more

https://marketing.adobe.com/resources/help/en_US/mobile/t_create_push_message.html

In-App Messaging

By leveraging the capabilities of the Mobile Services SDK non-technical users can easily create, manage, publish, and measure custom messages that appear within AEM Mobile apps. You can specify sophisticated triggers and targeting for in-app messages, allowing you to offer targeted product suggestions, cross-promote related apps, or serve up relevant content.



Adobe Analytics Cohort Report

See more

https://marketing.adobe.com/resources/help/en_US/mobile/t_in_app_message.html

Acquisition Tracking

For publicly available apps created with AEM Mobile, Acquisition Tracking can help you understand exactly which campaigns are driving the most app store downloads, and help you understand the effectiveness of your overall user acquisition efforts.

See more

https://marketing.adobe.com/resources/help/en_US/mobile/acquisition_main.html

Conclusion

Using Experience Manager together with AEM Mobile is an efficient, cost-effective, multi-channel solution for deploying enterprise mobile apps. Understanding the challenges and requirements of this deployment path as detailed in this paper is essential for maximizing the potential of this approach.

From connecting Experience Manager and leveraging the system's content authoring tools, to securing the right people, to customizing your workflows for AEM Mobile—following the recommended steps and procedures will help ensure that you make the most of this powerful solution for deploying your enterprise mobile apps.

If you have additional questions about this deployment path, refer to the detailed documentation and videos cited throughout this document or consult with your Adobe Representative or Adobe Solution Partner.



Adobe

Adobe Systems Incorporated
345 Park Avenue
San Jose, CA 95110-2704
USA
www.adobe.com

Adobe, the Adobe logo, Adobe Experience Manager, Adobe Experience Manager Mobile, Creative Cloud, Document Cloud, Marketing Cloud, Illustrator, InDesign, and Photoshop are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and/or other countries.

© 2016 Adobe Systems Incorporated. All rights reserved. Printed in the USA.

9/2016