



Achieving Success with Headless and Hybrid CMSs

How organizations have moved beyond traditional content management systems to deliver exceptional digital experiences.



03

Introduction

05

Offer Access to
Content Through
Conversational
User Interfaces

08

Create a Best-in-
Class Storytelling
Platform

10

Empower
Communications
Specialists to
Deploy Content

12

Push Information
to Digital Signage

14

Create an
Innovative
E-Commerce
Experience

16

Power Smart
TV Apps

18

Boost Conversions

20

Deliver an
Exceptional Fan
Experience

23

Summary and
Takeaways





Choose From Three Modes of Content Management

Today, organizations can offer digital experiences that once only lived in the brains of visionary marketers. Content management systems (CMSs), which create, store, manage, and publish content, play an integral role in delivering these exceptional experiences.

But, companies face a quandary: Which CMS architecture will best allow them to execute on their vision?

A traditional CMS has its front end connected to its back end. That architecture makes it difficult to publish and reuse content across multiple channels beyond a website or mobile app.

Brands that seek more flexibility and agility for omnichannel digital publishing could benefit from leveraging a CMS with a different kind of architecture, like a headless CMS or a hybrid CMS.



With a headless CMS, users create content through an editor and store it in a database. The system publishes the content to a variety of channels and devices via API endpoints. Headless is typically more developer-focused and isn't as user-friendly as a traditional CMS.

A hybrid CMS draws from the best of both a headless and traditional CMS. Users create and store content in a database. That content can be served flexibly, either through the existing, unified front-end rendering layer

or retrieved by a completely separate, decoupled front-end layer via APIs. The approach enables organizations to serve content through any digital channel in their stack today as well as to new channels that may arise.

This e-book features eight success stories from organizations that are using headless or hybrid Drupal to deliver powerful and effective customer experiences on websites, apps, and other digital channels.



Headless: Why the scary name?

A traditional CMS has two ends:

- ◆ **The back end is where content is created, managed, and stored.**
- ◆ **The front end renders content. This is sometimes known as the “head.”**

A headless CMS has only a back end. This gives an organization the flexibility to select or build a front end presentation layer that is more tailored to their content and to executing on their high-level mission.

Offer Access to Content Through Conversational User Interfaces



Organizations can use a hybrid CMS to serve content through any digital channel, including emerging ones like conversational user interfaces.

The Georgia Technology Authority (GTA), which is the digital services agency of the Peach State, wanted to build a platform that provides citizens better access to government information and services. As a part of this upgrade, they wanted to provide access to

their content by simply chatting with an Amazon Echo device. Two important criteria were that Georgia.gov's editorial staff should not be burdened by the addition of conversational content and that editing a web-based piece of content or conversational content would be indistinguishable from an editor's standpoint.





GTA worked with the digital agency Phase2 to migrate, rebuild, and redesign the CMS. They built a multisite architecture that promotes consistency and flexibility across all agency sites and created a custom responsive, mobile-first search application.

The hybrid CMS's architecture even enables content to be served to "heads" that go beyond Georgia.gov, like Alexa devices. Acquia built an Alexa skill that people with an Amazon Echo device can use to find information.

The content is provided by the Georgia websites via an API. This information can be updated in a single place and updated everywhere. Now, when an Amazon Echo user asks a question regarding a popular topic, this vocal input is converted into a text-based request that is sent to the Georgia.gov website. The search results are fed back to the Amazon Echo user in a convenient form that is navigable using a conversational flow.

The results



Launched 55 agency sites in 12 months and an Alexa skill in 3 months



The Ask GeorgiaGov skill means that Georgians of all backgrounds and abilities can access the information they need



Estimated savings of \$4.7 million over five years

The lesson

A hybrid CMS enables organizations to take a standardized approach for managing all web properties and to move “beyond the browser” to meet the evolving needs of their visitors.



Create a Best-in-Class Storytelling Platform

Publishers can use a headless CMS to push content to multiple channels beyond their websites.

Penn State News, the official news source of Penn State University, stores more than 60,000 stories and 100,000 images. Iterating and optimizing all that content on its previous platform was difficult.

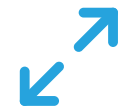
The News team needed a more flexible solution to create and maintain pages for specific departments, organizations, and institutions to shape the user experience.

They also wanted to create a compelling, mobile-first experience for readers across the community.

The publisher partnered with open-source product agency Mediacurrent to migrate Penn State News from a monolithic architecture to a decoupled architecture that blends the publishing power of Drupal with a future-flexible front-end framework, Gatsby and React.



The results



Penn State News has a content authoring experience that is secure, reliable, and scalable.



The platform is optimized for speed and marks a new chapter in performance for the News team to achieve its editorial ambitions.

The lesson

A headless architecture allows content creators to work quicker, collaborate in real time, and enhance the digital storytelling experience they offer today and in the future.



Empower Communications Specialists to Deploy Content

A headless implementation enables brands to create rich multimedia experiences and to seamlessly update content.

LiveWire, an electric motorcycle brand, previously relied on a custom-built AngularJS application, which offered a highly interactive user experience. However, the tight coupling of code and content created inefficient workflows.

LiveWire required a more sustainable content management process and a solution that could

support robust content localization and translation capabilities.

LiveWire and the enterprise software consulting firm EPAM transformed the static LiveWire application into a dynamic CMS-backed Drupal website that retained its AngularJS front end. Content structures were modeled within Drupal, and a robust set of APIs were designed and exposed to the front end. The teams subsequently launched five European websites based on a brand new ReactJS/NextJS front end.

Now communications specialists can seamlessly update media and its related content. Thanks to an integration with a translation partner, LiveWire can also deliver content across multiple languages.

In addition, the new data-driven back end of the site supports easy management of the company's rapidly expanding set of physical locations. A Solr-backed proximity search encourages test drives and participation in other activities, for example.



The results



LiveWire has been able to integrate Drupal content into two versions of the website - improving overall site performance and further boosting customer experience and satisfaction.



Media-rich pages effectively capture the emotion and experience of riding LiveWire motorcycles.



The site's stunning Bike Builder allows customers to experience motorcycle customization options without needing to visit a showroom.



Preorders for a new bike model sold out about 20 minutes after the preorder page launched.



The lesson

Brands can use a headless CMS to deliver sophisticated digital experiences on retrofitted sites as well as those built from the ground up.

Push Information to Digital Signage

Organizations can use a hybrid CMS to publish real-time data and create a consistent experience across multiple digital properties.

The Metropolitan Transportation Authority (MTA) wanted to use the same CMS that powers its website to push content and data to 1,800 digital signs in more than 400 stations in New York City.

In partnership with Acquia Professional Services and digital agency CivicActions, the MTA built the front-end experience

using React.js. It built the React application within a Drupal theme, so data displayed on the front end can still be informed by the Drupal content model. Yet, it maintains the flexibility of a decoupled solution.

By using Drupal as the brain behind its digital systems, the MTA can pull data from various feeds and APIs, and push it to multiple networked devices and screens in real time. Drupal not only centralizes the content, but it also manages tailored message

distribution. For example, displays at Columbus Circle inform passengers only about trains arriving at that station.

Now, even non-technical users can create, manage, and publish digital content and experiences.



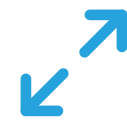
The results



MTA is able to deliver content and data to 1,800 digital signs in more than 400 stations in New York City.



Open source technology enables the MTA to display critical data to customers and commuters in a cost-effective manner.



Giving non-technical teams the capability to actively manage content on hundreds of signs across a large metropolitan area is a revolutionary change for the MTA.



The MTA now delivers a dramatically better customer experience, enabling passengers to easily access transit information, news, and alerts throughout their commutes.

The lesson

A hybrid implementation enables organizations to provide users with the right experience, on the right device, at the right time.



Create an Innovative E-Commerce Experience

Brands can leverage a headless CMS to connect different parts of a tech stack via API and push content from those pieces to different “heads.”

For its updated online experience, the eyewear brand IOLLA had three objectives:

- ◆ **Design and develop an e-commerce platform that customers could access with ease, agnostic of their chosen device or environment**

- ◆ **Improve the back-end management of customer journeys and data — and drive efficiency through the use of automation**

- ◆ **Enable the marketing team to deliver tailored communications to customers, harnessing the ability to create digital campaigns and update web content quickly and easily**

IOLLA partnered with digital agency Access, which used Drupal CMS with Acquia Site Studio as IOLLA’s front end, relying on ReactJS apps for more dynamic API-driven features.

With e-commerce as the main driver, the team retained Shopify as the back-end headless order management system.



iOLLA



The results



IOLLA's in-house marketing team can quickly produce campaign landing pages and update content without requiring developers.



Intuitive search gets visitors the information they need faster, and multiple keyword search options provide a tailored results page.



An optimized checkout process with a "sticky" cart feature, more routes to payment, and an automated and simplistic form for prescription details has reduced friction for customers.



Using Shopify to capture both online and offline purchase data helps IOLLA achieve a 360-degree customer view that it can use to customize marketing messages.



Presenting more product imagery and lifestyle videos, as well as hidden navigation to keep the user focused on the product, has improved product perception.

The lesson

A headless approach enables brands to continually incorporate innovative features that improve the customer experience.



Power Smart TV Apps

With a hybrid approach, Drupal can serve as both the front and back ends for an organization's website while operating as only the back end for over-the-top (OTT) applications where APIs serve content.

Cascade Public Media used a hybrid CMS to bring its Seattle PBS TV station, KCTS 9, into the streaming age. Cascade and the digital agency Phase2 built the streaming platform on Drupal 9, which offered both flexibility and cost-effectiveness.

After creating the website, the teams built the API that serves

the station's data to OTT apps including Roku, Apple TV, and Fire TV.

Cascade's lean team of only three developers can now easily build taxonomy-based content carousels. In addition, Phase2 used Neo4j to add a recommendation engine that automatically reorders carousels based on a viewer's preferences and streaming habits.

The platform not only tracks the viewer's watch history but identifies lookalike viewers, making recommendations for additional content the viewer

may enjoy based on what similar viewers watched. This meant that on the website and the streaming platforms, viewers could more quickly and effectively find content that matched their interests or suited their moods.



The results



The streaming app is three times stickier than the default PBS video app, based on videos played per visit.



Membership conversion has increased.

The lesson

Companies of all sizes can create a flexible, scalable, and highly reliable content delivery platform that makes it easy for lean teams to manage multiple sites and content catalogs.



Boost Conversions

Organizations can use a headless CMS to build their brand, serve content to different channels, and meet other commercial objectives.

The London Clinic, which is one of England's largest private hospitals and a registered charity, wanted a new website that could reflect its shift from a traditional B2B brand to one that is more patient-centric.

Hospital leadership wanted to empower visitors to take action with their healthcare and, in return, achieve a higher number of self-pay conversions on the site. They also wanted a new platform that would give them the ability to

share specific content through different channels — both now and into the future.

The hospital recognized the benefits of providing patients with easy and clear access to information about treatments and procedures, helping them find and book the right consultant, and offering transparent pricing and information that gives them the confidence to take the next step.

The London Clinic partnered with digital transformation firm TPXimpact to help overhaul its brand positioning, website experience, and technical

architecture. The extensibility of the Acquia platform and its API-led services enabled easy integration with other systems and a decoupled front end.



The results



Overall conversion rate increased from 5% to 9% in three months



20% increase in self-pay patient inquiries



6% decrease in bounce rate



Increased time on site, particularly on consultant pages



A headless CMS architecture with an API-first approach lets them integrate ratings content from Doctify and plan for functionalities like online booking and live chat



User testing rated the site as “extremely user friendly”

The lesson

A headless approach enables teams to choose the tools they need to create productive user experiences.



Deliver a Seamless Fan Experience Across Every Channel



A headless CMS enables brands to create a more future-ready digital experience by integrating with the latest technologies.

Pac-12 Networks, the content arm of the Pac-12 Conference that operates Pac-12.com, wanted its new network of athletic sites to focus on five key areas: team schedules, video, mobile optimization, social media and engagement, and content creation.

However, its previous web platform made innovation difficult.

Acquia worked with Pac-12 and digital agency Phase2 to develop and implement a highly integrated Drupal site that enables its content editors to store, organize, and deliver the network's vast content resources.





Phase2 also helped Pac-12 develop an API-first approach; scores, standings, and stats are incorporated through an API. In addition, Pac-12 can integrate third-party video platforms to seamlessly display high-quality video directly on the site, and school coverage can be published alongside Pac-12's content.

There are two other key integrations built into Pac-12.com. Programming is handled by the team in Wide Orbit, which broadcasts updates to the site.

And, an integration with Comcast Technology Solutions (CTS) informs connected apps about what's currently on the linear networks.

Drupal ultimately acts as the central nervous system at Pac-12, orchestrating various microservices and the flow of key data across various apps on platforms that include iOS, Android, and Fire TV.

The results



Pac-12 can deliver on the five key areas that ultimately drive the experience their fans desire.



A single web, video, and publishing platform has created a seamless fan experience from site to site and from school to school.



Pac-12 created more than 3,000 landing pages in five months.



In one year, Pac-12 doubled the number of hours people viewed video content on its site.

The lesson

Brands can take a headless approach to create a unified platform that is flexible enough to deliver engaging content in a scalable way.



Choose a CMS That Meets Current and Future Needs

While a CMS can be employed in a traditional manner, as these success stories illustrate, Acquia enables brands with omnichannel ambitions to use Drupal in headless and hybrid modes to support even grander application experiences.

Deliver A Consistent Digital Experience Across All Channels

See how the Acquia CMS Headless Starter Kit empowers you to accelerate your headless Drupal projects by up to 50% and use the front end of your choice that best supports your organization's goals.

[Learn more](#)



Acquia

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About Acquia

Acquia empowers the world's most ambitious brands to create digital customer experiences that matter.

With open source Drupal at its core, the Acquia Digital Experience Platform (DXP) enables marketers, developers, and IT operations teams at thousands of global organizations to rapidly compose and deploy digital products and services that engage customers, enhance conversions, and help businesses stand out.

