EVERYTHING YOU NEED TO KNOW ABOUT HEADLESS CMS PLATFORMS

BRIGHTSPOT™

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INTRODUCTION

When it's time to replatform and implement a modern and flexible content management system (CMS), you'll be hearing a great deal about "headless" CMS architecture. No longer simply a trend, a headless CMS is a strategic choice for your company's content, one that affords your content creators and developers greater power, freedom and agility.

When determining if a headless CMS makes the most sense for your business, you should first understand its advantages and its challenges, and also consider the other CMS options that are available.

UNDERSTANDING A HEADLESS CMS

The role of a CMS is to create and publish content—along with house design assets (including visual layout and code).

Using a traditional CMS means your content is confined to the location locked in to its coding (e.g., WordPress for a blog, or Drupal for a corporate website). You may have a great site, but you lack the ability to share its content in the display you want when a potential customer checks her smartphone or accesses a page on a tablet.

To solve this problem, many organizations are turning to headless CMS platforms. A headless CMS provides only the back end, where content is created and stored. For the front end, your business can use any design that best fits your requirements, and your content shows up accurately across multiple channels—whether it's OTT, mobile apps, wearables or even voice.

In a world where new channels and technologies are introduced regularly, the right CMS adapts quickly.

What Does a Headless CMS Give You?

It offers a host of important benefits, including incredible speed, flexibility and much more control over content delivery to each channel/device.

With a headless CMS, the CMS is responsible for back-end functions only, while front-end presentation of that data is the responsibility of your development teams. With a headless CMS, the content published is made available to any application via API data services. This is commonly known as Content as a Service (CaaS).

Headless CMS platforms offer many benefits including:

SPEED

Developers can work in parallel, with back-end and front-end developers not inhibiting one another. Front end can use various mocking techniques to avoid waiting for a back-end API to be complete, and back end can build out data models without waiting for front-end needs.

Headless allows you to cache your application at multiple layers. The back end can cache database queries and API responses, and the front end can implement a cache by producing static HTML where appropriate.

SURVIVABILITY

Back end and front end can be scaled independently, meaning if the back end goes down, the front end may continue to appear functional to users if there is cache available.

SCALABILITY

Back ends can be scaled to handle creating and serving data, while front ends can be scaled to serve traffic.

SECURITY

Access to the content is controlled through granular access controls. Data may be kept internally during the editorial process and later made publicly or selectively available.

Content, Front and Center

Above everything else, it's content that motivates initial site visits, downloads, signups and further conversions. Today's users expect to be able to access content immediately, on any device, in their preferred format.

With a headless CMS, content delivery is paramount. Content and copy composition may be done in parallel with layout and design, or sequentially.

Headless CMS systems make it easier than ever to deliver effective content that:

PROMOTES BRAND AWARENESS	LEADS TO CONVERSIONS	INCREASES CUSTOMER LOYALTY

As the number of channels and devices continues to grow, it's even more important to create content that can easily be personalized, delivered and reused.

WHAT DOES HEADLESS MEAN TO YOU?

For many years, your customers were limited to visiting your website to view and engage with your content. Today, convenience and experience mean that "push-based" delivery—where the content comes to consumers when and where they want it—has changed the architecture of the web.

What does this shift mean for you? It requires you and your front-end team to think about how to deliver great content in a "post-browser world." A headless CMS can help maintain, grow and engage audiences in real time as those audience members consume and share content in different ways and on different devices.

Why a Headless CMS Is in Demand

With a legacy CMS, your content is tied to your design, and that means the latest devices are often unable to read your data. Headless is in demand because, with your content separated from your design, you can quickly and seamlessly deliver content anywhere, in any way it's required.

The move toward digital microservices may have begun with the Unix philosophy, but it's a trend that has only progressed in agility and increased in popularity since then. The natural divide of content and technology responsibilities in a headless CMS lets the microservices shine, while allowing developers to use the latest and greatest tools and techniques available (which include serverless technologies, such as AWS Lambda). Your platform can be optimized for performance regardless of borders crossed between devices, such as:

| DISTANCES | TIMING | VOLUME | SYNCRONIZATION | INTEGRATION |

Omni-channel delivery drives today's consumer experience, and it's a nonlinear journey. A customer might switch from one device to another, then backtrack or even open two of the same applications at once. Not only does a headless CMS make this kind of journey faster and easier, but it also allows you to capture that experience from end-to-end and find new ways to support it.

Having the ability to push content across platforms has never been more important. It has also never been easier, thanks to the headless concept of unhooking content from design—a true Software-as-a-Service (SaaS) model. With Brightspot, we'll take care of the CMS while you focus on how your content is displayed. You don't have to worry about:

| SURVIVABILITY | SCALABILITY | SPEED |

By serving up content suited for specific experiences, a headless CMS also allows you to provide a collective content experience, also known as a "content mesh." In this scenario, each platform's strengths can be harnessed, while maintaining a cross-referenced consumer experience. With a traditional CMS, this can be challenging, since there may be several different types of content management at play, each separate from the others. Your developers may become frustrated by the amount of duplicate work they have to perform in order to get the same or similar content flowing to different channels (e.g., a tablet and a smartphone, or a laptop and a smartwatch).

Because headless is designed as content-first and front-end agnostic from the start, it avoids channel-specific concepts like "pages" and tools that work for those (e.g., drag-and-drop functionality). Thinking of content independently of presentation allows you to focus on what you want to say before thinking of how you want to say it.
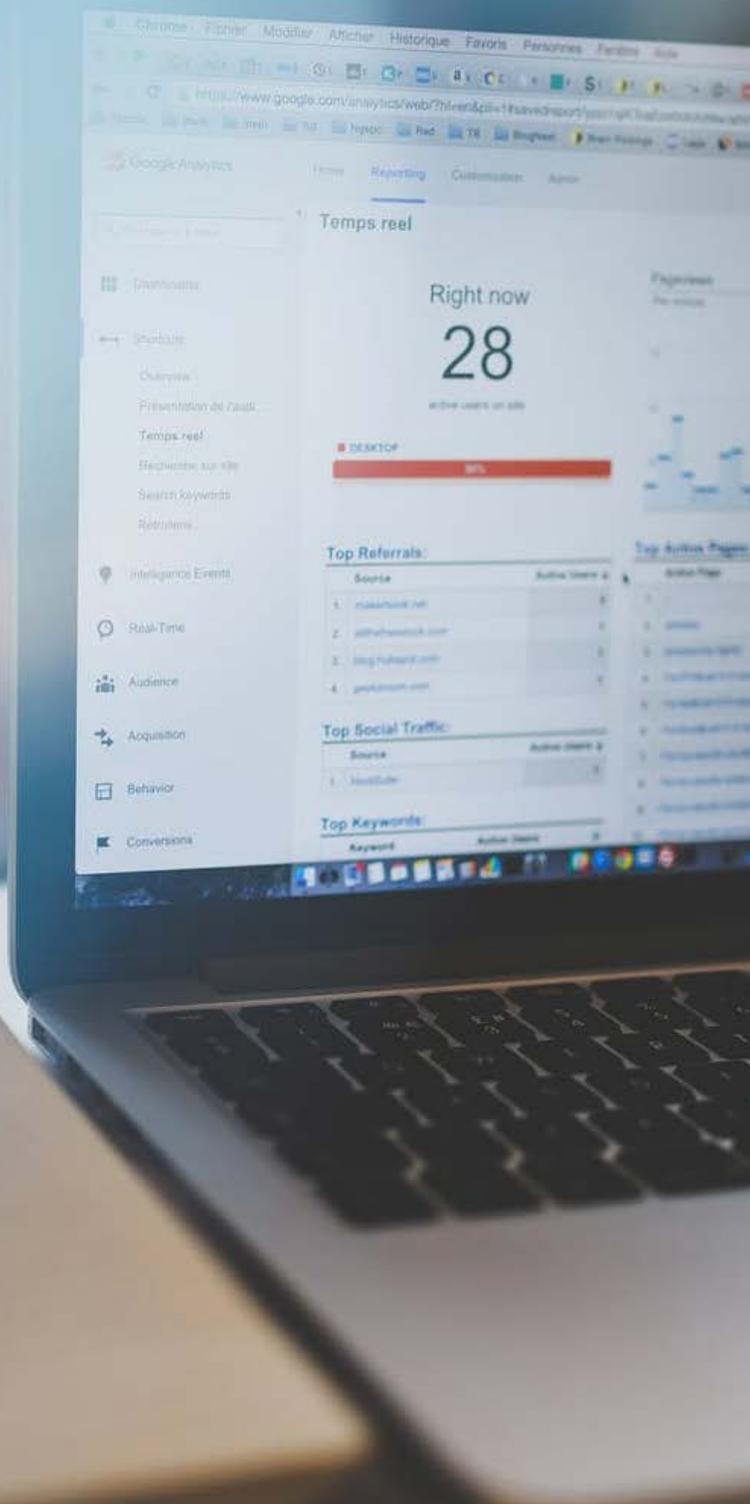
What a Headless CMS Offers

With a headless CMS, editors and developers can focus on content creation and ideation because they don't have to worry about delivery and distribution. Having your content available for any purpose not only gives you immediate flexibility, but it also allows you to act quickly when a new type of experience arises for consumers. You're not locked into any specific technology, which gives your front-end developers uncommon freedom and range to create powerful experiences for your audience.

You also don't have to worry about a return on investment for any tool that no longer works for your business. The focus can be on your content. What does this mean? First, you can structure content so that it is created just once and then distributed immediately to all of your channels. Second, you can balance your content between those channels by focusing more tightly on your message. Third, you can more easily share user data obtained across all of your channels, which will help you obtain more accurate, thorough metrics.

A headless CMS can push content to any device or channel with internet access. Because the content isn't bound by a predetermined user interface, you have complete control over deciding how and where your content appears. Headless means each situation can be treated as unique, offering the ultimate flexibility for your content and its display.

Choosing a headless CMS means you can build a highly specific front-end customer experience because your content is maintained in a raw state. Rethinking content as clean, structured data instead of finished copy allows the various devices on which you reach consumers to display your content.

The time and care you take in breaking your content down into smaller pieces will result in more time to spend on format and design, allowing you to more precisely align your business objectives with your messaging.

A headless platform allows you to choose—and to continue choosing—because you can change your user experience and design whenever you need to without rebuilding the back end. Because the back end and your content remain secure and stable, you also know that your customers will get a consistent message no matter which experience they view.

THE DIFFERENCES BETWEEN COUPLED, DECOUPLED AND HEADLESS CMS PLATFORMS

Despite the increasing popularity of headless CMS architecture, it's not the right choice for every business. Before you decide to "go headless," it's important to review the differences between traditional CMS architecture (also known as coupled), a decoupled option, and a fully headless system.

Relying on a legacy CMS typically meant businesses had to adhere to rules, none of which were perfect for every company. Today, CMS users have user-friendly, flexible options and no longer must be tied to a CMS that doesn't work for their needs. All Brightspot customers have the advantage of being able to design and work with a CMS that's best-suited to them, whether coupled, decoupled or headless.

Traditional CMS Architecture

In a traditional, or coupled CMS, the architecture links the back end to the front end. All of your content is created, managed and stored on the site's back end, which is also where your site design and applications live. The front end delivers and presents content to users. Blogging platforms such as WordPress, Squarespace and Wix are great examples of coupled CMS architecture.

To recap, a traditional CMS is comprised of:

• A database where content and digital assets are stored (back end)
• A content management back end where content is created (back end)
• An application where publishers and designers create and apply design schemas (back end)
• A front end that displays published content on HTML pages

Decoupled CMS Architecture

Decoupled CMS architecture separates the back-end and front-end management of digital properties: one system for content creation and storage, and another system (sometimes more than one) for consuming that data and presenting it to the user through an interface. In a decoupled CMS, these two systems are housed separately. Once content is created and edited in the back end, this approach uses flexible and fast web services and APIs in delivering raw content to any front-end device or channel design.

Although the back end and the front end function independently of one another, the front-end architecture is predetermined with a specified delivery environment (for example, React or React Native). Thus, the two systems are tightly linked and can function as one.

From a technical standpoint, a decoupled CMS is comprised of:

• A database where content and digital assets are stored (back end)
• A content management back end where content is created (back end)
• An API that connects the content management back end with the front end
• A default content publishing front end

Headless CMS Architecture

Headless architecture, or a headless CMS, is a subset of a decoupled CMS. Both have content management and storage back ends, and they deliver content from that database through a web service or API. But the key difference is the presentation layer: Unlike decoupled, a headless CMS does not have a defined front end or presentation environment.

An easy way to understand the difference is to think of decoupled as proactive and headless as reactive. Decoupled prepares the content on the back end and then can proactively deliver and present formatted content to various channels. Headless, on the other hand, has no functionality to present content to an end user. Content is created and managed, available and waiting to be called upon by an API and delivered to applications and systems.

This means that a headless CMS is "UI anything;" in other words, it can push content to any device or channel with internet access. It can publish the same content to a website, an app, a wearable device or any device connected via Internet of Things (IoT) because the content isn't bound by a predetermined user interface.
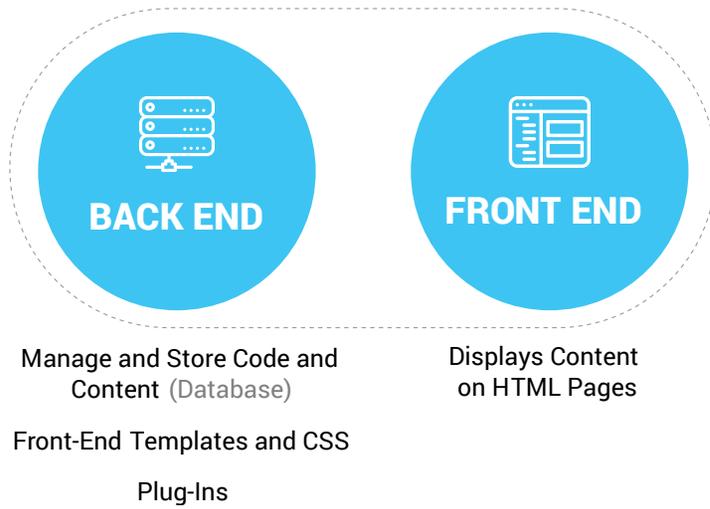
Of course, headless doesn't stay headless. Since you'll want to publish the content you create and manage, you'll need a user interface. But with a headless CMS, it's not attached by default, and it need not be dictated by the content itself.

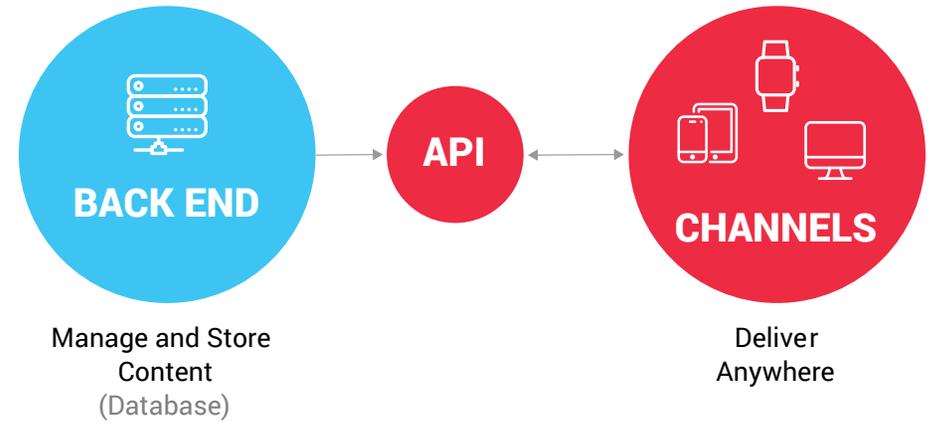From a technical standpoint, a headless CMS is comprised of:

• A database where content and digital assets are stored (back end)
• A content management back end where content is created (back end)
• An API that connects the content management back end to any device or channel
• The ability to connect to any publishing front end, allowing organizations to have the front-end technology of their choosing

Some legacy CMS platforms will claim to be headless, but they likely got that way through acquisitions and the cobbling together of existing solutions. These solutions often lack a friendly way of publishing to different channels, such as phones and tablets. In some cases, users can end up multiplying their workload by having to create distinct versions of every piece of content for each channel.
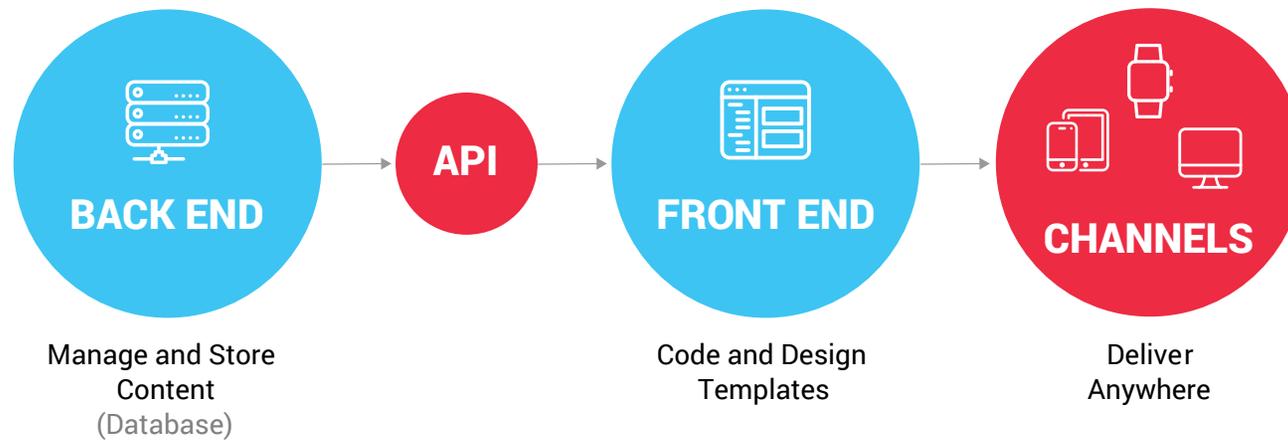
TRADITIONAL

BACK END

FRONT END

Manage and Store Code and
Content (Database)

Displays Content
on HTML Pages

Front-End Templates and CSS

Plug-Ins

HEADLESS

BACK END

API

CHANNELS

Manage and Store
Content
(Database)

Deliver
Anywhere

DECOUPLED

BACK END

API

FRONT END

CHANNELS

Manage and Store
Content
(Database)

Code and Design
Templates

Deliver
Anywhere

The following chart outlines the differences between headless and traditional CMS architecture:

	HEADLESS CMS	TRADITIONAL
CONTENT CREATION AND EDITING	Flexibility for content creation, with the ability to preview content across multiple channels	Content preview typically limited to website only
PERSONALIZATION	Built-in personalization capabilities, with out-of-the-box features ready to use	Personalization options are limited, often resulting in an additional layers to the architecture of the application
ORGANIZATION	Open, lean architecture and endless options for APIs	Closed architecture and specific APIs, resulting in more dependencies
WORKFLOWS	Built-in, customizable workflows with permissions, notifications and admin controls	Workflows are not native to the platform and are, in turn, hard to build and maintain, resembling a static waterfall with permissions
STORAGE	Built-in digital asset manager (DAM), digital rights management (DRM), video, even editorial calendars	Stores images only with the DAM, lacking automated DRM
CONTENT DELIVERY	Content is managed separately and is front-end undetermined, resulting in nearly endless delivery options via APIs	Managed content has already been assigned to the delivery system—the only one available to you, which is the attached front end
CONTENT PRESENTATION	Control how content appears on any specific type of device, allowing you to build project- or content-specific single page apps (SPAs) that contribute to improved user experience	Limited to the templates and tools available, requiring proper coding and/or plug-ins and add-ons to adjust presentation

The Pros and Cons of Traditional, Decoupled and Headless CMS Platforms

Each CMS architecture has specific environments in which it works well. Which will best suit your business? It depends on your resources, needs and audience. However, given the difference between the slower, more encumbered legacy CMS and the faster, stripped-down modern CMS capabilities, the choice is often clear.

TRADITIONAL CMS

Traditional CMS architecture remains ideal for blogs, personal sites and basic business websites. Owners can develop, manage and publish text-based content quickly. Design is also simplified within a traditional CMS platform, with built-in themes and templates, as well as a front end that can be customized as needed.

However, a traditional CMS restricts the type of content (i.e. video, audio and advanced imagery) editors can publish, as well as where that content can appear. Since the front end and back end are locked together, the programming framework can quickly become limited, resulting in slower customization. This interdependence also translates to more time and money required for maintenance and enhancements.

DECOUPLED CMS

In a decoupled CMS, the back end and front end are housed separately. A decoupled CMS is front-end agnostic, and it takes advantage of web services and APIs to deliver content in its raw form to any front-end design, anywhere. Many consider decoupled to be the best of both worlds: You have templates to work with as in a traditional CMS, but you gain the flexibility of a headless implementation. A decoupled CMS, however, is more complicated than a traditional CMS, requiring some extra development work, especially in building the front end.

HEADLESS CMS

Since a headless CMS is a subset of a decoupled CMS, it shares almost all of the benefits. However, without a designated front end, a headless CMS provides the greatest flexibility to publish content on different platforms. Unlike decoupled platforms, a headless CMS allows you to publish dynamic content to any device connected via the IoT. Of all three CMS architectures, a headless CMS offers the most control over how and where your content appears.

On the other hand, a headless CMS lacks content-presentation functionality and OOTB templates or themes, which means you'll be seeking additional technologies to serve as the "head." Headless CMS platforms are best-suited for companies with a robust team of developers who prefer to use their favorite frameworks and tools.

	TRADITIONAL	DECOUPLED	HEADLESS
PROS	• Simple; ideal for text-based content • Built-in themes and templates • Customizable front end	• Fast and flexible content delivery with a specified delivery environment • Rapid design iterations and simpler deployments • Easy and secure third-party integrations • Fewer dependencies on IT • The best of both worlds in a CMS (structured back end and flexible front end) • Future-proof (integrates easily with new technology and innovations)	• Fast content delivery • Provides complete control over how and where your content appears • Easy and secure third-party integrations • Allows developers to use their favorite tools and frameworks • Future-proof (integrates easily with new technology and innovations)
CONS	• Content types and delivery channels are limited • Limited programming framework • More time and money required for customization, maintenance and enhancements	• More complex than traditional to configure and deploy • Front-end development work required for design	• No presentation functionality • Impossible to see an accurate live preview • Reliant on additional technologies for its "head"

WHICH FRONT END MATCHES YOUR BUSINESS NEEDS?

The Case for a Decoupled CMS

Headless CMS platforms may be the future, but before you make the change, remember certain things about a decoupled CMS:

- You might prefer working with an in-house development team due to the size of your endeavor or the collaborative nature involved.
- A decoupled CMS offers a few easier paths to SEO strength, though that is rapidly changing, and soon headless systems will offer the same or even better.

The Benefits of Going Headless

Once you understand the differences between a decoupled and headless CMS, it's time to consider if a headless CMS is the right choice for your business. Going headless can offer a number of benefits to your organization. The following outlines why headless might work for you.

Televisa, the largest media company in the Spanish-speaking world, decided it was time to replatform at the end of 2017. They sought a new CMS to streamline all back-end functions, enabling them to focus on front-end design. They wanted a solution that would give the company complete control over the look and feel of all of its sites.

Over the course of five months, Televisa's front-end developers and editorial teams worked side-by-side with the Perfect Sense team to learn Brightspot. After migrating all of Televisa's content and creating a headless model site launch (Las Estellas), a total of nine sites were replatformed to Brightspot in just five months. A custom-built tool called Style Selector now gives Televisa the ability to preview and control every output of Brightspot code. Today, Televisa manages nine sites—eight of which are headless—from one powerful, multi-site CMS, which saves the organization both time and money.
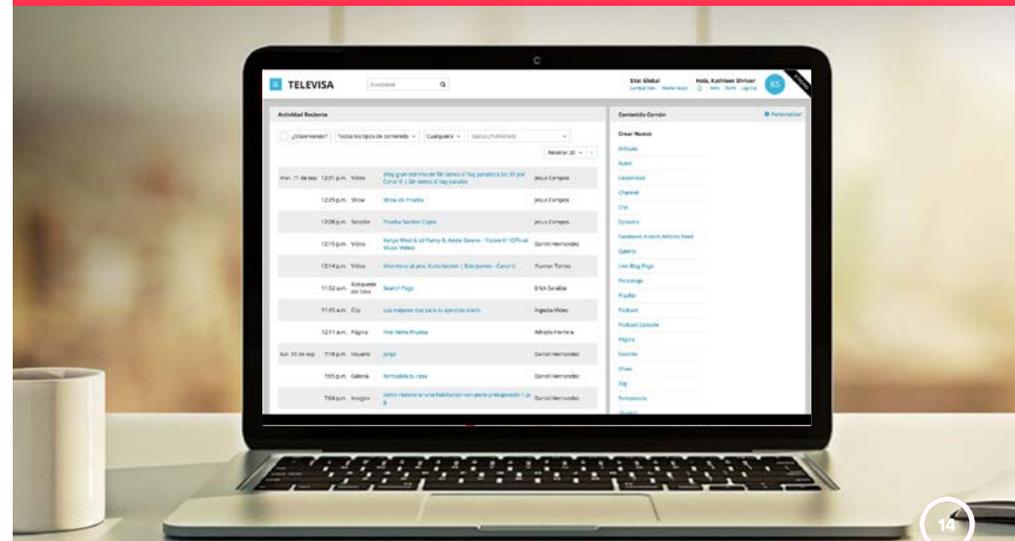
A Headless CMS Is a Developer's Dream

Headless is the most developer-friendly of CMS options. With a headless CMS, your development team can create a custom front end that works for your project, your brand, your company and your end users. Developers can use any of their favorite frameworks and tools and are not limited by the back end of your CMS.

Headless Provides Complete Control and Flexibility

Headless offers flexibility to do what works for your business while maintaining control over your content and your front end. As a content-only data source, a headless CMS can push content to any device or channel with internet access. This means headless provides you with **the ultimate choice in deciding how and where your content appears**—including design, display of content, delivery of content and content build. This gives you—and your developers—the freedom to focus on content creation and distribution instead of content management.

With a headless CMS, your content will not be locked in by a particular vendor, which means you can have as many front ends as you like. Since you can change the front ends as often as you want or need to, the possibilities are infinite. You can allow APIs to handle content presentation and not worry about deployment, while your marketers and content creators can test new platforms and devices without being limited by templates.

Therefore, a headless CMS allows you to provide consistent brand messaging across all platforms and channels without duplicating content input. Consumers receive accessibility in a device-agnostic way. A headless CMS works literally everywhere.

A Headless CMS Is Fast

Being first to market is a big benefit, but a headless CMS means you race as both hare and tortoise, because the speed you gain doesn't compromise the quality of your services in the long term.

CoStar™

Since 1987, CoStar Group, Inc. has been a leading provider of commercial real estate information, analytics and online marketplaces, producing and maintaining the largest, most comprehensive database of real estate information.

The CoStar project with Brightspot was particularly focused on their news gateway, a subscription-only service with sites in the U.S., Canada and the U.K. CoStar sought an enterprise CMS to serve as an authenticated gateway for these sites. Overall, they were already happy with their front-end experience, but they needed to improve the back-end editorial experience for a global team of writers. At the time, their team was using two different legacy CMS platforms that required users to manipulate raw HTML in order to publish content.

With a headless implementation of Brightspot, CoStar has increased efficiency and greatly improved the publishing experience for their multigenerational team of editors and reporters. CMS users can now submit and publish stories faster and more easily than ever, benefiting from Brightspot's intuitive, easy-to-use platform, best-in-class editorial tools and robust admin features.
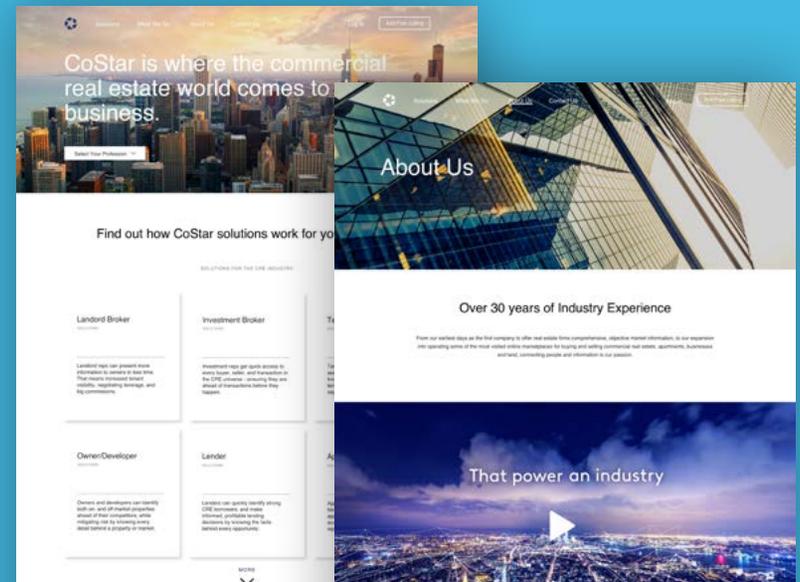
The concept behind the free Coleman Get Outdoors app is to help users plan camping trips quickly and easily. Before the app could launch, Coleman needed a powerful CMS that would aggregate everything users needed into one place.

With the app, powered by Brightspot, users are now able to browse potential camping destinations, read gear recommendation guides, access educational articles and videos, get packing tips from experts and more. Internally, Brightspot enables stakeholders to publish content once, from a single authoring tool, and have it automatically publish to two versions of the app—on iOS and Android.
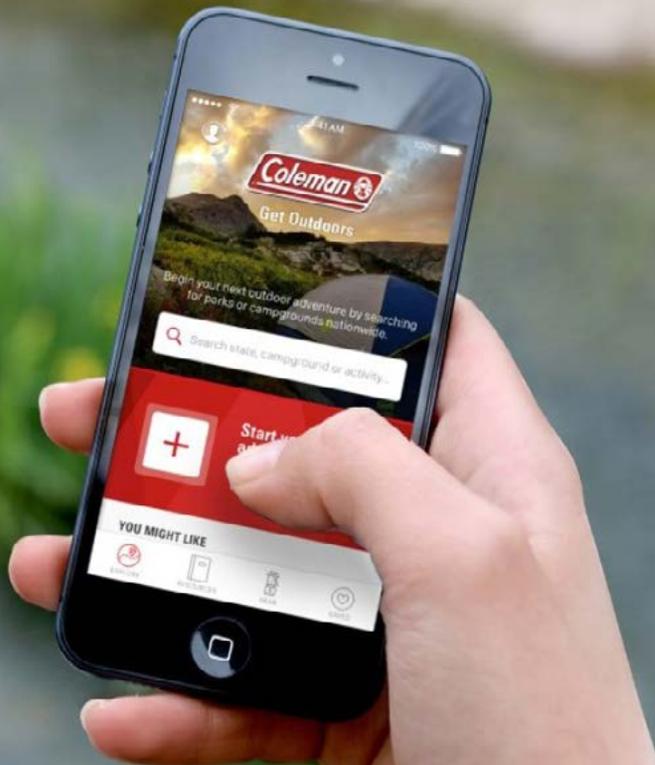
With a headless CMS, you can publish your content to multiple platforms and devices quickly, making immediate delivery choices depending on the brand experience required. The ability to produce content and make front-end changes simultaneously saves you time and money—which can accelerate projects by weeks or even months.

Your content teams can work faster, freed from time spent formatting content for different platforms and devices. Your developers can make rapid enhancements and updates, improving productivity and allowing for more effective use of stored data without risk of instability or performance issues. Your users will have a smoother and more interactive experience due to boosted load speeds and streamlined connectivity.

A Headless CMS Is Secure

Headless CMS platforms allow easy and secure third-party integrations and protect against security risks. Since the front end and back end aren't linked, no one can access the content publishing platform from a CMS database. Your system is less likely to experience a DDoS attack and be rendered offline or unable to access systems and network resources. Your headless CMS can tightly secure any administrative or data-holding areas because it is completely separate from the displayed website. This even gives you the ability to restrict IP access to the CMS.

Consider this example: A popular method of hacking a website is through SQL injections—but headless CMS systems combat that by running on a server without SQL or even without being connected to SQL. When a developer creates a unique CMS from scratch, nothing about that CMS is a known entity.

A Headless CMS Will Survive

Technology is always evolving, and a headless CMS enables you to evolve along with it. The additional levels of security keep you protected, while the flexibility means that no matter what new device or platform emerges, your content will be ready. **A headless CMS is inherently designed to accommodate new channels as they arrive**. Keep up your innovation cadence and integrate new technology into your stack quickly and easily as you go along—without a great deal of lag time.

HOW TO ARTICULATE THE VALUE PROPOSITION

What Organizations Need Today

Few businesses worry about how a headless CMS actually grows and changes, but all businesses care about the many platform choices available to their customers. A great example is that of e-commerce. Each day (or so it seems) brings a new interface and new ways to attract customers. Your company won't want to wait to recode or buy an expensive, limited plug-in when, with the headless option, you can take advantage of microservices immediately.

Headless CMS performance will definitely progress over time, and once you've put yours in place, you'll be able to take advantage of performance optimization across the board. As a result, you can focus on content creation and content display—instead of content management.

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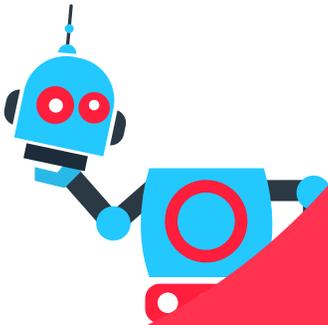
The Benefits of Brightspot

As the need for new delivery methods for your content continues to grow—almost daily—you want to make the choice that's right for your company. Brands that continue to spend time, money and effort to make outdated, unwieldy legacy CMS platforms work for today's content needs will eventually fall behind in the modern market.

Nothing else offers you the channel-specific capability, multi-channel delivery options, developer-friendliness, flexibility, control, scalability, speed, safety, security and future-proof technology like a headless CMS. Unlike a traditional CMS, a headless CMS places no constraints on innovation, so you can quickly grow and personalize experiences for both your team and your varied audiences with speed and ease. There are also no concerns about vendor lock-in because your brand has complete control.

Brightspot offers the ability to build, launch and deliver enterprise-grade experiences using a headless CMS that works twice as fast as any other provider. You can have a working website or relaunch up and running within weeks, instead of months. We offer a pre-built back end comprised of more than 80 standard elements, with preconfigured connectors that support fast, easy system integration. You have the freedom to select the front end of your choice for each project and deliver your content however you want because our headless CMS is easily integrated into any API.

Is a headless CMS right for your business? Learn even more about our headless CMS options today at **brightspot.com**.

PERFECTSENSE | BRIGHTSPOT

Founded in 2008, Perfect Sense is a visionary technology company created to deliver enterprise web publishing solutions and digital consulting services in a more impactful way. We empower the art of digital possibility through Brightspot, a content management and distribution engine built for high-volume media, brand and portfolio publishers.

Perfect Sense serves many marquee brands including Walmart, Johnson & Johnson, Sotheby's, Univision, U.S. News, Politico and Scripps Networks Interactive.