Evaluating Website Technologies:

How Headless CMSes, DXPs, and Liferay DXP Compare

Introduction

If you're a digital leader looking to invest in your digital strategy, you may be evaluating whether your website technology is up to the challenge of delivering on the next phase of your transformation. Your current tool, like a traditional CMS or simple website builder, might be holding you back from accomplishing some of the following goals:

Modernize your web experiences to meet customer expectations

Increase your team's agility to address changing market needs

Evolve your website to support online purchasing and self-service transactions

Ensure consistent branding throughout different touchpoints

Improve the security of your sites and user data to protect against today's threat landscape

Build additional experiences to support your business's digital transformation

Deliver multiple websites to serve multiple markets or product lines

If you're not planning to grow your business or meet these goals, then the website tools you have now may be sufficient. However, if your current technology is limiting your ability to execute on your digital strategy, then you may need to consider other solutions.

As you evaluate the best technologies for tackling these use cases, you may have encountered headless CMSes and digital experience platforms (DXPs). In this guide, we'll dive into the best practices to meet these use cases and look at how headless CMSes, DXPs, and specifically Liferay DXP, can help you deliver on these goals.

Headless CMS vs DXP vs Liferay DXP

What are the differences between a headless CMS, a DXP, and Liferay DXP?

Headless Content Management System (CMS)

Initially, CMSes were primarily built to streamline the creation and management of websites, with content and pages tightly integrated. But as customer preferences have shifted and content was needed across different channels like mobile, IoT, or kiosks, headless CMSes emerged.

Headless CMSes manage content separately from the presentation layer using headless APIs, making it easier for marketers to manage content decoupled from where it is consumed.

Digital Experience Platform (DXP)

DXPs evolved from content-centric CMSes toward a more customer-centric approach. DXPs seek to unify the customer experience across multiple digital and physical touchpoints, retain continuity across interactions, and use data aggregated from those interactions to drive context-aware personalization.

That said, many of those touchpoints are websites, which is why there is overlap between CMSes and DXPs. In fact, many DXP vendors include CMS functionality in their platform.

Liferay DXP

As one of the most flexible DXPs in the market, Liferay DXP gives you the tools you need to build the websites you envision — and more.

Liferay DXP's unique strengths lie in its native capabilities that allow you to:

- Add commerce and self-service functionality to your websites.
- Streamline the creation of new pages, forms, workflows, and applications using low-code tools.
- Easily connect to existing and legacy technologies.

Let's examine how effectively each of these tools can help you grow your digital strategy and meet the website goals we defined earlier.

1. Modernize your web experiences to meet customer expectations

Websites are a necessary component of every business's digital strategy. Customers have grown to expect modern web experiences to be seamless and easy to navigate. Headless CMSes, DXPs, and Liferay DXP all use different approaches to help users build websites efficiently.

Build sites and pages without needing to code.

Headless CMS ✕	DXP ✓	Liferay DXP ✓

Typically, headless CMSes are responsible for content, which may be structured enough to have some control over its presentation. But ultimately this is dependent on the experience (site, app, kiosk) through which the content is delivered. Headless CMSes usually require developers to create, for example, a React app or mobile app for the front-end.

Both DXPs and Liferay DXP provide visual and graphical content builders to enable non-technical users to create everything from the hero banner to footer content, add calls to action, and adjust page layouts.

Tailor web experiences with personalization.

Headless CMS

Most headless CMS vendors assume a separate technology will provide personalization logic, which is called to determine what CMS content is delivered via API to the user.

DXP

Because DXPs are able to unify customer data from systems like a CRM or CDP, you can leverage this data and native personalization capabilities to deliver more personalized web pages.

Some DXPs offer their own CDP as part of the platform.

Liferay DXP

Like most DXPs, Liferay DXP has native personalization capabilities that can leverage both first- and third-party customer data from Liferay DXP's CDP (or your own) to drive AI-powered content and search recommendations.

Liferay DXP also accounts for authorization (permissions, roles) in its personalization service, ensuring that users or visitors should be seeing the content they're offered.

Finally, Liferay DXP incorporates personalization into its built-in commerce capabilities through AI-driven product recommendations.

Design accessible websites that meet international accessibility standards like WCAG or WAI-ARIA.

Headless CMS ✗

A pure headless CMS does not deliver the presentation layer, so it can't ensure websites meet accessibility standards.

DXP ✓

Each DXP vendor has different levels of investment in accessibility, which you should evaluate.

Liferay DXP ✓

Liferay is committed both to making our DXP an accessible product and delivering features to help you build accessible websites. For example, you can leverage Liferay DXP's Page Audit tool to evaluate your website against accessibility best practices to improve usability and ensure compliance with accessibility regulations.

Deliver content to any channel needed.

Headless CMS ✓

Both headless CMSes and DXPs provide robust, headless APIs that allow content to be delivered to websites, mobile apps, chatbots, in-store kiosks, etc.

DXP ✓

Liferay DXP ✓

Additionally, Liferay DXP democratizes and accelerates API development by enabling users to create new, custom API endpoints using a no-code GUI interface, giving additional flexibility to adapt even more quickly to new requirements.

2. Ensure consistent branding throughout different touchpoints

Consistent branding can help boost your brand's overall image, especially as you create and manage more websites. A study from Forbes shows that consistent brand presentation across platforms can increase revenue up to 23%; this increase in revenue shows the link between how customers see your brand and your brand worth.[1]

Since headless CMSes don't deliver sites and pages, they can only enforce brand consistency at the content level. But DXPs and Liferay DXP provide you tools to standardize the look and feel of your sites and pages to quickly build websites that align with branding requirements.

Use pre-built templates or create custom templates to accelerate website and page creation while maintaining brand consistency.

Headless CMS ✕	DXP ✓	Liferay DXP ✓
Because headless CMSes only focus on managing content on the back-end, they do not provide any elements to dictate or guide how that content is shown or applied.	Most DXPs have some kind of page or site template functionality, but you should check vendors for their capabilities here.	Liferay DXP allows the creation of entire sites using Site Templates or individual pages using Page Templates.

1 Building Brand Recognition Through Your Content And BI Tools

Leverage a library of reusable components that you can drag and drop onto pages, such as headers, footers, or buttons.

Headless CMS ✕	DXP ✓	Liferay DXP ✓
Because headless CMSes only focus on managing content on the back-end, they do not provide any elements to dictate or guide how that content is shown or applied.	DXPs generally promote consistency through reusable page fragments for natively built websites.	Liferay DXP's no-code Site and Page Builders allow you to create a library of reusable page fragments and site elements.

Apply your design system consistently to the site.

Headless CMS ✕	DXP ✓	Liferay DXP ✓
Because headless CMSes only focus on managing content on the back-end, they do not provide any elements to dictate or guide how that content is shown or applied.	DXPs allow you to add CSS files to implement your design system, which can be applied to all of the site's reusable fragments and components.	Liferay DXP allows you to import a CSS file to implement your design system, too. Liferay DXP also provides a no-code tool called Style Books to configure typography, color palettes, imagery, and spacing for sites, pages, and content. This enables non-technical users to implement the design system.

3. Deliver multiple websites to serve multiple markets or product lines

You may already be juggling more than one website or plan to grow your digital web strategy to support multiple product lines, cater to specific regions, or build specific campaigns or initiatives. Wherever you are in your digital transformation journey, managing multiple sites can quickly become overwhelming. But the right tool will help you streamline multisite management.

Manage multiple sites from a central location.

Headless CMS ✕	DXP ✓	Liferay DXP ✓
Headless CMSes have the concept of Spaces, which are collections of content. These could be logically mapped to individual sites so that authors know what site they are creating content for. But site creation is a separate process, independent of the headless CMS.	Most DXPs have ways to create and manage multiple sites from within the DXP. Some DXPs also allow you to add logical "channels" that are not created natively in the DXP but are sources for customer data or destinations for content and personalization. These could be social media channels, digital kiosks, sites built in other CMS/DXP technologies, or independently built front-end applications (e.g., in React).	In Liferay DXP, you can create and manage multiple sites using our native Site Builder. In addition, you can create parent and child sites, where the child sites inherit pages and content from the parent site but are allowed some degree of variation or additional content. This might be useful, for example, when a corporate team wants to give each branch or franchise location a local website while retaining control over the majority of the content.

Support multilingual content.

| Headless CMS ✔ | DXP ✔ | Liferay DXP ✔ |

Most headless CMSes and DXPs have multilingual support and can integrate with external translation services.

Liferay DXP further accelerates localization with native integration to AI-assisted translators.

Access a unified asset library to leverage assets between multiple sites.

| Headless CMS ✔ | DXP ✔ | Liferay DXP ✔ |

Assets can be stored within a CMS or DXP's central repository to be shared across different sites.

In addition to Liferay DXP's native DAM capabilities, Liferay DXP is designed to easily integrate multiple sources of digital assets and leverage them across sites, right alongside assets from Liferay DXP's native DAM.

Localize global sites.

| Headless CMS ✔ | DXP ✔ | Liferay DXP ✔ |

All vendors in this space have capabilities that allow you to account for locale differences, such as date format, region-specific spelling, culturally appropriate images and copy, etc.

4. Increase your team's agility to address changing market needs

In a recent IDC survey of North American IT leaders, nearly two-thirds said that a lack of skills has resulted in missed revenue growth objectives, quality problems, and a decline in customer satisfaction. IDC predicts that by 2026, more than 90% of organizations worldwide will feel the pain of the IT skills crisis, amounting to some $5.5 trillion in losses caused by product delays, impaired competitiveness, and loss of business.[2]

You may be feeling some of these pain-points in your own organization, with your IT team swamped with tasks, leaving them unable to quickly help with website needs like updating content, launching new products, or creating promotions and discounts. Which of the three tools can help reduce the burden on IT and empower business users to manage and update your websites independently to be able to address changing market needs more efficiently?

Use low-code tools to quickly create new pages, applications, and sites.

Headless CMS ✕	DXP ✓	Liferay DXP ✓
Headless CMSes don't provide visual builders to create pages, applications, or sites.	DXPs provide low-code tools to accelerate website creation. Some DXPs may provide even more powerful low-code tools to build forms with custom fields and validation rules.	Liferay DXP provides powerful low-code tools to help non-technical users not only build static web pages but also applications and forms. Quickly update the experiences that allow your site visitors to return orders, make updates to subscriptions and services, or submit service requests — without relying on your developers.

2 IT Skills Shortage Expected to Impact Nine out of Ten Organizations by 2026 with a Cost of $5.5 Trillion in Delays, Quality Issues and Revenue Loss, According to IDC

Streamline page and content creation with workflows.

Headless CMS —

Most headless CMSes provide pre-defined publishing workflows with some limited degree of customizability.

DXP ✓

Robust DXPs provide the ability to define and customize workflows to support more sophisticated publishing and approval processes.

Liferay DXP ✓

Liferay DXP gives full flexibility to create complex workflows for the most sophisticated publishing and approval processes. Liferay DXP's graphical workflow builder is easy to use for non-technical users. Built-in notifications can automatically alert team members to take action to move the process forward.

Liferay DXP also provides workflow metrics to evaluate performance against defined SLAs and allows you to identify bottlenecks and areas for optimization.

Scale your websites as business needs grow.

Headless CMS ✓

DXP ✓

Liferay DXP ✓

All three tools are able to scale as your business grows through headless architecture or cloud-native infrastructure.

Accelerate content creation with AI.

| Headless CMS | — | DXP | — | Liferay DXP | ✓ |

CMS and DXP vendors are incorporating GenAI capabilities in their products, to varying levels of maturity and usefulness.

Natively, Liferay DXP provides integration with powerful AI tools to generate content and images.

Liferay DXP also provides AI-enabled translation tools to accelerate content localization.

AI tools will continue to evolve. And as new tools emerge, Liferay DXP makes it easy to connect to new technologies through an extensive set of headless APIs and batch-processing capabilities.

5. Improve the security of your sites and user data to protect against today's threat landscape

Security is paramount for the websites you launch, especially as the frequency of cyberattacks continues to increase. See how the following tools can help you build secure websites that control who has access to edit your website, protect your users' data, and comply with regulatory demands.

Secure through the cloud.

Headless CMS ✔

Cloud-based headless CMSes can take advantage of secure infrastructure offered by vendors like AWS or Azure.

Some headless CMSes may also provide protections against API security threats, like bot-based usage of APIs. But because headless CMSes don't deliver the website experience, they can't fully address front-end security vulnerabilities such as DDoS attacks.

DXP ✔

Similarly, cloud-based DXPs leverage services from the top cloud providers for robust infrastructure security, and they integrate additional security tools to protect against API and front-end vulnerabilities.

Some vendors may leverage relationships with third-party security vendors to enhance their security.

Liferay DXP ✔

With Liferay PaaS and Liferay SaaS, you can launch your websites even more securely. Our cloud deployment options are backed by Google Cloud, and customers get to take advantage of Google Cloud's world-class secure infrastructure and technology.

Additionally, customers gain access to exclusive benefits from Liferay's relationship with leading security vendors like Palo Alto Networks, Mandiant, and Rapid 7, through which Liferay DXP provides vulnerability scanning, ML-enabled DDoS protection, and more.

Control what users can access and do within your sites.

Headless CMS ✓

DXP ✓

Liferay DXP ✓

Many headless CMSes and DXPs can enable role-based access control (RBAC), like assigning Admin, Editor, or Contributor roles, but are limited in how much those roles and permissions can be customized to meet specific business requirements.

CMSes and DXPs also typically support multi-factor authentication (MFA) and allow for single sign-on (SSO), which enables seamless, secure access across multiple systems through integration with external identity providers.

Recognized by analysts as a leader in application security, Liferay DXP offers robust authentication and access control with MFA, SSO, fine-grained permissions, and industry-standard authorization and user provisioning.

Liferay DXP provides support for MFA through SSO integration with SAML, OIDC, and OAuth2.0-based authorization, which is important for extensibility. Additionally, Liferay DXP offers SCIM integration to automate user provisioning and standardize user identity management.

Regarding RBAC, Liferay DXP uniquely gives you the ability to create your own roles and assign extremely granular permissions to users, further securing your site and preventing users from accessing something not meant for them. For example, you could assign a dealer only the permissions necessary to edit certain pages without being able to see or edit another dealer's page.

Liferay DXP also provides an audit framework that can be used to ensure transparency and accountability, with additional built-in security protections to mitigate risks from XSS, CSRF, and SQL injection.

Secure user data.

Headless CMS ✔

Since headless CMSes separate the back-end from the front-end, this helps to improve data protection and reduce entry points for attackers. But API security remains important and should be evaluated.

Headless CMSes don't usually deal with customer data, so tools to comply with data protection regulations aren't applicable to them.

DXP ✔

The most secure DXPs help protect user data through data encryption. Look for vendors that have security certifications that validate their commitment and ability to protect user data.

Some DXP vendors may provide tools to comply with data protection regulations, but be sure to confirm this in your evaluation.

Liferay DXP ✔

Liferay follows the OWASP Top 10 (2017) and CWE/SANS Top 25 lists to ensure that Liferay DXP meets the security requirements necessary for protecting enterprises against known vulnerabilities and attacks. Additionally, Liferay is certified in ISO/IEC 27001, ISO/IEC 27017, ISO/IEC 27018, and many more.

Liferay DXP also helps accelerate compliance with region-specific data protection laws like GDPR by providing tools to help users with data portability and deletion.

6. Evolve your website to support online purchasing and self-service transactions

As your business needs evolve, you may find that you want to expand your website to include some self-service functionality to help customers operate more independently or commerce capabilities to enable online purchases. How can these three tools help you expand the scope of your websites?

Implement commerce capabilities, like product management, catalog management, order fulfillment, or upselling/cross-selling.

Headless CMS ✕	DXP ➖	Liferay DXP ✓
Most headless CMSes do not have native commerce capabilities; although products and content have some similarities, there are many details to managing products that make product information management (PIM) a separate category.	Depending on the DXP's heritage, some DXPs don't provide commerce functionality out-of-the-box.	With native digital commerce capabilities including product catalogs, price books, order fulfillment, and product recommendations, Liferay DXP makes it easy for you to add online payments/purchasing, orders, and returns to your website experience.
You will need to integrate a separate commerce tool to be able to deliver purchasing experiences.	Other DXPs provide commerce capabilities to help you deliver engaging shopping experiences without needing to integrate with a third-party commerce tool.	

Deliver self-service experiences, like ticket submissions for issue resolution and account management.

Headless CMS ✕

Since self-service capabilities are usually delivered to an authenticated user at the experience layer, headless CMSes don't explicitly support self-service actions, though the content in them could certainly be delivered to users who request it through the self-service experience or application.

DXP —

Some DXPs include self-service features to manage accounts, access information, and resolve issues independently.

Liferay DXP ✓

Liferay DXP is particularly differentiated when it comes to supporting self-service experiences, especially for known customers who authenticate on your site. Empower your visitors to get product support, find answers to questions, resolve issues, and submit help requests, broadening the scope of your website's role in building the customer experience.

7. Build additional experiences to support your business's digital transformation

Your digital strategy may require supporting interactions beyond a typical website. Instead of acquiring different technologies to address these needs, you can build multiple solutions on a single platform with Liferay DXP.

Build multiple solutions on a single platform.

Headless CMS ✕	**DXP** ➖	**Liferay DXP** ✓

Most headless CMSes are only designed to deliver websites or website-like experiences through mobile and other channels. The focus is on content authoring and delivery, rather than supporting customer interactions, self-service, or account management.

Depending on the DXP's heritage and focus, they can provide more capabilities for delivering different solutions, like an authenticated portal.

One of Liferay DXP's greatest strengths and what separates it from other vendors is the ability to build multiple solutions on the same platform. Although you might initially use Liferay DXP to build a website, it's easy to build additional solutions such as a customer self-service portal, intranet, or supplier portal.

This is possible because of Liferay DXP's out-of-the-box digital experience-building features. You can leverage CMS, commerce, analytics, personalization, search, low-code, AI, and other critical capabilities in a single subscription. So you don't need to add on another tool or technology whenever you need to build something new. This helps consolidate your tech stack, reduce the strain on IT resources, and achieve greater solution synergy and efficiency with solutions built on the same digital foundation.

Which Tool Will Best Suit Your Digital Needs?

Depending on what you want to accomplish with your websites, consider which of the three tools we've discussed will empower you to meet your digital strategy goals.

A headless CMS or DXP can help you deliver effective web experiences, but Liferay DXP is uniquely suited to enable you to evolve your website with self-service and commerce capabilities *and* expand your digital strategy with additional solutions built on the same platform.

If you're ready to invest in your digital strategy and start delivering more effective websites, book a demo here to see how Liferay DXP can help you.

Liferay®

Liferay helps organizations build for the future by enabling them to create, manage, and scale powerful solutions on the world's most flexible Digital Experience Platform (DXP). Trusted globally by over a thousand companies spanning multiple industries, Liferay's open-source DXP facilitates the development of marketing and commerce websites, customer portals, intranets, and more. Learn how we can use technology to change the world together at liferay.com.

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