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Headless content delivery frees developers to create innovative experiences for new and emerging digital channels, but brands need a solution that leverages their content investments and fosters collaboration with business users.

Headless Content Delivery and the Rise of the Hybrid CMS

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Questions posed by: Adobe

Answers by: Melissa Webster, Vice President, Content and Digital Media Technologies

Q How critical is headless content delivery to an overall content management strategy?

A IDC believes headless content delivery is an essential ingredient of an omni-channel strategy. Brands must engage their customers via an ever-growing array of digital touch points including websites and social properties, web and mobile apps, email campaigns, advertising, and new Internet of Things (IoT) experiences. Some of these experiences require custom-developed user interfaces (UIs). Headless content delivery frees developers from UI constraints and lets them leverage enterprise assets to create customized experiences.

Headless content delivery already plays a significant role in the delivery of both web and native app experiences:

- **eCommerce and business apps.** Headless content delivery lets developers pull merchandising and lifestyle content into ecommerce sites, enriching the shopping experience. Similarly, headless delivery lets developers incorporate content into customized "utility" web apps such as booking systems, online banking apps, and product configurators.
- **Native apps.** Many brands have developed mobile apps, and some are creating apps for smartwatches, smart TVs, in-venue digital signs, digital screens in connected cars, and other IoT devices. We also see growing interest in rich, immersive content types such as augmented reality/virtual reality (AR/VR), 360-degree video, and CGI. Headless content delivery lets developers pull content into native apps and create innovative experiences that differentiate the brand.

Developers are an important constituency, and their needs must be served by the organization's content management system (CMS). Given the vast global community of JavaScript developers and the popularity of JavaScript frameworks such as angular.js, react.js, and vue.js, we expect interest in headless content delivery to continue to grow. Enterprises should make headless content delivery part of their overall content strategy.

Q What are the biggest challenges to headless content delivery?

A Traditional CMSs enable marketers and other nontechnical business users to create, manage, and deliver global multibrand, multilingual websites; syndicate content to the organization's social properties; and push content into hybrid (HTML) mobile apps — all with a modicum of support from designers and IT. Business users can deliver responsive web experiences that comply with accessibility standards. Built-in forms and support for custom-developed components let users compose web-based experiences that interact with data. Workflow models automate routine tasks to streamline the publishing process and accelerate time to market. Integrations with digital marketing tools such as analytics, targeting, testing, and personalization help business users optimize the experiences they deliver. These are mission-critical systems that have accrued rich feature sets over the past 20 years.

Traditional CMSs, however, weren't designed to support developers building custom applications. Developers need APIs that let them easily find and retrieve the content they need (whether a single asset or a set of related assets) and bring it into their applications in a format they can immediately use and manipulate, whether JSON, XML, or HTML. Developers don't want to master a complex CMS to accomplish this.

Depending on the content model and architecture of the organization's CMS, developers will have a challenging time accessing and working with content. A legacy page-based CMS that manages HTML content really works against the developer. A decoupled CMS that essentially mirrors monolithic servers is little better. Modular, decoupled systems with robust APIs offer the best support.

Even then, the traditional CMS often falls short. For example, single-page applications (SPAs) have grown in popularity over the past few years — especially for content marketing and launch sites —and are a common use case for headless content delivery. A traditional CMS, however, lacks an SPA editor. Business users are left without an editorial UI, and collaboration with developers is hampered.

Q How are enterprises addressing these challenges today?

A We see three approaches.

In some organizations, developers just make do with whatever APIs their existing CMS provides, building custom tooling to bridge gaps.

In other organizations, developers turn to one of the "born headless" or "headless only" CMS start-ups. A headless CMS is a "content first," "API first" solution designed specifically to support headless content delivery.

Some of these solutions include an SPA editor; some also have limited site navigation functionality to support small multipage websites.

The headless-only CMS appeals strongly to developers but can create some new challenges for the business. Since the developers cannot replace the organization's existing CMS (they lack the authoring and administrative capabilities necessary to manage enterprise dot-com properties), the organization winds up managing separate systems for websites and headless use cases. Content must be synchronized between the two systems and updated in parallel whenever it changes or expires, increasing the risk that out-of-date or unlicensed content is used. Access controls and workflows must also be separately implemented and maintained. In addition, none of the integrations between the CMS and other systems (including digital marketing tools) are leveraged by the headless CMS.

Limiting the role of the headless CMS to that of a content cache can address some of these problems but sacrifices some of the value of a headless CMS — specifically, the benefits of a structured approach to content modeling.

The third approach, a hybrid CMS, combines the robust feature set of a modular, decoupled CMS with developer tooling for headless delivery, all in a single system.

Q How do you see headless content delivery changing over the next few years, and how will content management products evolve?

A From a market perspective, we expect to see content management leaders add headless delivery capabilities within the next year or two. Ultimately, the hybrid CMS will displace the traditional CMS in the enterprise. Headless-only CMS vendors will continue to find success among consumer-focused internet companies and publishers, but adoption in the enterprise will be limited and project based.

From a product perspective, the CMS will continue to evolve. There are several long-term, overlapping trends driving change that intersect with headless content delivery:

- **"Content first."** This approach to structuring content assets maximizes reuse.
- **Cloud.** Many headless-only CMS solutions are SaaS, and we expect enterprise vendors will extend their solutions with cloud content delivery services. Content at the edge is a key enabler for dynamic media and, increasingly, artificial intelligence/machine learning (AI/ML)–based content transformation.
- **Content aggregation.** Today, enterprises run a variety of different systems that manage content. Rationalizing these systems is an important step toward improving the organization's return on content investments.
- **Content strategy.** Organizations need help with content strategy. This is another area where we foresee content management vendors adding value in the future.

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Content management is a critical piece of the foundation for the emerging digital experience platform (DXP). Cloud vendors will continue to evolve their content management products to give DXP shape.

Q Considering all of this, how can enterprises future proof their content management investments?

A We recommend that enterprises assess their people, processes, and technology in light of these trends and identify gaps or areas of weakness to remediate. Top-of-mind considerations include:

- **Omni-channel delivery.** The number of channels through which enterprises must engage customers continues to grow, and new channels will emerge. Enterprises need to prepare for this event. A content-first strategy is the key to omni-channel delivery because content is managed and accessed in a channel-agnostic way.
- **Collaboration.** A siloed CMS works against collaboration and incurs heavy costs. Enterprises need a unified CMS that empowers *all* stakeholders — including marketers, designers, developers, and IT — to collaboratively create, manage, and deliver engaging digital experiences to all channels, current and future.
- **Cloud and dynamic media.** Cloud content services will become a critical component of digital experience management and not just because the cloud facilitates access to content assets from any point on the globe. Content at the edge is content that can be manipulated. The cloud will play an increasingly important role in tailoring content for diverse channels and personalized experiences. Enterprises should choose a CMS vendor that not only is investing in cloud but also can articulate a vision for dynamic media in the age of AI/ML.

Digital experience delivery needs to be thought of as a core competency and as essential for business agility. Organizations should choose a vendor that can help them make digital experience delivery a competitive advantage.

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Melissa Webster leads IDC's research on digital experience management software and cloud services. Her coverage area encompasses solutions for web content management, digital asset management, content marketing, user-generated content (UGC) harvesting and curation, mobile content apps, online video solutions, and rich media analytics to support the digital experience.

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