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Reinventing the Digital Core: How NordVPN Scaled Global Content and Customer Experience



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Introduction

The content management system (CMS) landscape is undergoing a significant transformation, shaped by the rapid adoption of cloud-native and software-as-a-service (SaaS) platforms, the rise of composable and headless architectures, and the growing integration of AI-powered capabilities. These shifts are redefining how organizations manage digital content and deliver customer experiences at scale.

In this evolving context, NordVPN, a flagship brand under Nord Security, a global company in cybersecurity solutions, faced the challenge of modernizing its digital presence to meet increasing demand for speed, flexibility, and personalization. Serving millions of users across more than 100 countries, nordvpn.com functions as the company's primary digital storefront and a critical revenue driver. With over 10,000 pages, 26 locales, and a diverse product suite, the platform required a robust and scalable solution to support its global operations.

In 2021, NordVPN launched a multi-year digital transformation initiative aimed at overhauling its website infrastructure, streamlining content management, and enhancing the overall customer experience. Central to this effort was the adoption of Storyblok, a headless CMS selected for its ability to accelerate content delivery, enable seamless localization, and empower marketing teams with greater agility.

ORGANIZATION:
Nord Security

ORGANIZATIONAL CHALLENGE:

- To modernize the company and the digital presence of its flagship brand, NordVPN, to meet increasing demand for speed, flexibility, and personalization

SOLUTION:
Storyblok's headless content management system (CMS) enhanced with custom plugins

PROJECT DURATION:
A multi-year digital transformation project started in 2021 (two years with Storyblok)

BENEFIT:

- Content creation improved in real time, addressing specific workflow requirements
- A culture of innovation developed across IT and lines of business (LoBs)

This case study explores the drivers, implementation, and outcomes of NordVPN's website transformation, highlighting the challenges of scaling content operations, the role of AI and automation, and the lessons learned in building a future-proof digital platform.

Gaining Insights

Effectively integrating AI into content management strategies involves selecting a flexible and scalable headless CMS that supports extensive localization and dynamic content needs, as

demonstrated by NordSec's use of Storyblok. AI-driven CMS is fundamentally reshaping how organizations deliver digital experiences, with IDC forecasting the worldwide web content management software market to grow from $3.29 billion in 2024 to $5.79 billion in 2029, with EMEA leading the way, at a compound annual growth rate (CAGR) of 12.6%. The importance of CMS lies in its ability to unify content creation, personalization, and omni-channel delivery, enabling businesses to engage customers with timely, relevant, and tailored experiences. As organizations modernize their content supply chains and adopt modular stacks, CMS platforms are becoming strategic engines for customer engagement, compressing cycle times and linking every content change to measurable business outcomes.

IDC predicts that, by 2029, cloud-native and AI-augmented CMS platforms will dominate, with generative AI automating content creation, tagging, and governance and public cloud revenue surging at a 17.4% CAGR through 2029. Companies are responding by accelerating migration to cloud and hybrid headless CMS, standardizing metadata and workflows, and embedding compliance features as configurable options. The adoption of AI-powered answer engines and modular architectures is enabling organizations to deliver more personalized, secure, and measurable digital experiences. These trends and statistics underscore the strategic importance of CMS as both a driver of customer engagement and a linchpin for security and compliance, especially in regulated markets, where the ability to deliver trusted contextualized content is a key differentiator. As in the case of NordVPN, AI plays a critical role in accelerating content creation through generative tools for rephrasing, spell checking, and image generation, but human oversight remains essential to maintaining brand consistency and complying with privacy regulations.

Challenges

Legacy Limitations and Strategic Imperatives

NordVPN's innovation strategy is rooted in delivering superior user experiences and operational efficiency. However, by 2021, the company's legacy WordPress-based website was struggling to keep pace with business needs. The infrastructure, supporting thousands of pages and complex backend integrations, was slow, costly, and inflexible. Marketing teams faced bottlenecks in launching campaigns, updating content, and experimenting with new offers.

> *"Any changes or issues on the website significantly impact the business, highlighting the importance of providing an optimal user experience."*
>
> Herman Zargaryan, senior engineering manager at NordVPN

The company's transformation road map to build a new search foundation called for a composable web architecture based on a modular and scalable infrastructure and capable of supporting rapid experimentation. The main business objectives were to deliver speed, seamless content management, faster time to market, and enhanced flexibility, all while maintaining business continuity.

Customer Experience and Content Management Pain Points

The previous content management process was slow and error-prone, lacking preview capabilities, reusability, and scalability for launching new pages. This led to delays, inconsistencies, and missed opportunities in global campaigns. The need for robust localization, dynamic pricing, and personalized landing pages further exposed the limitations of the legacy CMS.

Implementation

Partnering with Storyblok: Toward a Composable Architecture and Integration

After extensive research and prototyping, NordVPN selected Storyblok for its headless architecture, scalability, and localization features. The team initially tested Storyblok on a smaller site, nordvpn.org, which supports journalists and human rights activists. Subsequently, they scaled up to the main website, leveraging Storyblok's live visual editing, diverse APIs, and extensibility. The SaaS nature of Storyblok allowed NordVPN to focus on its core business while benefiting from a platform that evolves with new features. For nearly two years, engineers and marketers ran the old and new systems side by side, ensuring business continuity while rewriting the digital core.

The project began with a core team of six or seven people and expanded to include other product branches as the scope grew. The new website was built as a composable web application, using Storyblok as the CMS and Astro/Node.js as the rendering framework. Integration with external systems was critical to cover custom internal integrations by a dozen plugins. The team also integrated a third-party digital asset management (DAM) platform, Bynder, to handle the scale and professional requirements of visual content.

Storyblok's flexible approach enabled the reuse of content blocks across pages, with shared references allowing global changes from a single place. The process involved developing custom plugins to support specific workflows, such as advanced translation and content reuse. Throughout deployment, strong collaboration between vendor partners and internal teams was maintained, supported by ongoing training and clear guidelines to ensure organizational readiness. Challenges related to data privacy and brand consistency were addressed by combining AI-generated content with human oversight. Continuous feedback loops and monitoring key performance indicators enabled iterative improvements, resulting in enhanced content quality, efficiency, and user engagement.

Project Phases and Milestones

The transition was a multiphase effort spanning almost two years:

- **Early 2023:** project kickoff with the creation of the design system and CMS components
- **End of 2023:** the incremental launch of the new system to ensure smooth integration

- **2024:** scaling operations, refining functionalities, and enhancing localization, performance, experimentation, search engine optimization (SEO), analytics, and monitoring
- **Early 2025:** full transition completed, with the new platform supporting all business objectives

A core team, which had by that time become 20 plus professionals, led the transformation, expanding to include other product branches. The team balanced ongoing business needs with the complexities of transforming a website with over 10,000 pages across 25+ locales.

Overcoming Technical and Operational Challenges

As the website scaled to thousands of pages, the team encountered significant limitations in the platform's API, particularly affecting content management and update processes. While the initial performance was stable, the increase in volume introduced technical constraints that required targeted intervention.

Collaboration with Storyblok engineers and a dedicated partner has been continuous, with an engineering lead serving as a Storyblok ambassador to facilitate communication and issue resolution. This approach allows the company's marketing team to exercise greater autonomy in its everyday decision-making. Live visual editing, reusable content blocks, and low-code/no-code workflows enable campaigns to be launched faster, with reduced reliance on engineering. Localization has become more manageable, even as the site has grown to support 26 locales and multiple currencies. In addition, weekly submitted and tracked bug reports and feature requests have contributed to ongoing platform improvements.

Business value and measurable results:

- 10,000+ pages managed across 100+ countries and 26 locales
- Significant improvement in website performance, with faster load times directly boosting sales
- Reduced time to market for campaigns, enabling timely global rollouts
- AI-powered content tools for rephrasing and spelling correction, accelerating content creation
- Personalized landing pages and dynamic pricing strategies, increasing campaign effectiveness

The overhaul was not a one-to-one replacement but an opportunity to incorporate new business requirements and simplify workflows. The new system supports all previous functionality with simpler, faster flows and more features. Employing the same CMS across different product websites has enabled content and localization teams to operate with greater efficiency.

Ongoing challenges and lessons learned:

- **At Nord Security, safeguarding user privacy is the foundation of everything.** This goes well beyond a regulatory checklist; it is a core principle that shapes every decision. The integration of AI into the company's content management system is guided by a

proactive security strategy designed to protect sensitive information and uphold the highest standards of data integrity. Regulatory compliance, such as with the EU's General Data Protection Regulations (GDPR), is considered a natural extension of the company's ethos. In adhering to robust governance protocols and industry best practices, Nord Security aims to reinforce the trust users place in it and to guarantee that delivering advanced technology does not necessitate a compromise on privacy.

- **Maintaining brand consistency and content quality emerged as a critical concern, necessitating a careful balance between automation and human oversight**. Generative AI is used for content rephrasing and spelling correction, but full-page AI generation is premature due to technical and brand consistency challenges. While AI offers efficiency in generating and managing content, editorial control remains essential to ensure outputs align with brand voice and strategic objectives. Technical adaptations to the CMS were required, including the development of custom plugins to support advanced workflows, such as multilingual content handling and reuse across digital properties.
- **Organizational readiness also influenced the success of the project.** Training programs and change management initiatives have been necessary to equip teams with the skills and confidence to work with the new systems. Cross-functional collaboration between internal stakeholders and external vendors played a key role in resolving unforeseen issues and ensuring smooth deployment. These efforts collectively supported the transition to a more intelligent and scalable content management framework.

Next Steps

Improvements to AI-driven content management strategies will continue to be part of the company's future road map — in particular, improving content creation, from automated copywriting and image generation to real-time translation and variant production, with custom plugins addressing specific workflow requirements. These enhancements will include scaling AI capabilities, improving user experience with new features (such as scam, malware, and fake website detection and personal data leak checks), and maintaining a culture of innovation through regular experimentation and vendor collaboration. Ultimately, the ability to adapt, govern, and align AI initiatives with evolving business and customer needs will determine long-term success in the digital content landscape.

IDC Perspective

NordVPN's strategic approach to website transformation demonstrates the value of headless CMS technology in enabling global scale, rapid localization, and marketing agility. Storyblok's flexibility and its collaborative partnership model were critical in overcoming the technical and operational challenges. The project highlights best practices in composable architecture, automation, and cross-functional collaboration.

Composable architecture and headless CMS have become foundational to organizations seeking to scale their content operations and enable global marketing agility. By decoupling content

management from presentation layers, businesses can more easily adapt to changing market demands and deliver personalized experiences across channels. However, as enterprises expand their digital footprints, custom integrations and automation are increasingly critical to overcoming platform limitations and ensuring seamless operations at scale. Leveraging AI and automation can further accelerate content workflows, but these technologies must be implemented with careful oversight and robust privacy controls to safeguard sensitive data and maintain compliance.

IDC research reveals that successful AI adoption demands robust governance, human oversight, and privacy controls, especially in regions with strict data regulations like Europe. Controlled or self-hosted AI models are increasingly preferred to safeguard sensitive information, and organizations must invest in continuous training, clear guidelines, and cross-functional collaboration to ensure readiness and compliance.

Successful digital transformation hinges on cross-functional collaboration and strong partnerships, enabling organizations to break down silos and drive innovation across teams. Continuous improvement and adaptability are essential as business and customer needs evolve, requiring a proactive approach to technology adoption and process optimization. By embracing these principles, organizations can position themselves to thrive in a dynamic digital landscape, delivering value to both customers and stakeholders.

Methodology

The project and company information contained in this document was obtained from multiple sources, including information supplied by Storyblok, answers to questions posed by IDC analysts directly to NordVPN's interviewed stakeholders, and IDC-published research.

MESSAGE FROM THE SPONSOR

At Storyblok, we believe that digital transformation is not just about technology, but about empowering people to work smarter and faster. NordVPN's journey exemplifies what's possible when a global brand combines a composable architecture with a content-first mindset. By adopting Storyblok, NordVPN unlocked new levels of agility, collaboration, and scalability. That's proof that a modern CMS must be both powerful and intuitive. As the CMS landscape evolves with AI discoverability, flexibility and governance become essential. Storyblok's role in NordVPN's transformation underscores our commitment to giving enterprises the freedom to innovate without compromising control. Together, we're helping teams deliver localized, secure, and personalized experiences at scale.

About the Analysts



Ornella Urso, Research Director, IDC Retail Insights

Ornella Urso is the head of IDC's Retail Insights team and leads the Customer Experience research group in Europe. Ornella conducts market research and industry analysis, proactively contributing to thought leadership at the intersection of business priorities and technology innovation in business-to-business (B2C) and direct-to-customer (D2C) strategy. In her role, Ornella is responsible for delivering research studies and custom projects, offering strategic direction and advice to technology providers and to the IT and business executives of global brands.

Ornella leads the Worldwide Retail Customer Experience Strategies program and contributes to worldwide retail commerce and direct-to-consumer research, with a focus on EMEA-specific retail and consumer good companies' business models, strategies, road maps, technology investments, and use cases across segments and countries.

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