



# Lessons on Building Performant, Scalable, and Governed Digital Experiences

How 8 Organizations Got the Job Done with Drupal



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Summary and Takeaways



## The promise of a future-ready platform

Today's business leaders know that delivering a strong digital customer experience comes with a variety of challenging mandates: They must quickly and cost-effectively create more content on an ever-growing number of sites and channels. Those properties also must work as expected, be secure, and maintain brand consistency.

But for many developers, marketers, and IT team members, many or all of these objectives remain frustratingly out of reach.

Why? There are three main obstacles that keep organizations from building the digital portfolio they so badly want to own:

### 1. An inability to maximize website performance

Visitors to websites have no patience for slow-loading sites, glitchy videos, or any other barrier to accessing the content they seek.

And on the flip side, being able to create content for a powerful site gives creators so much more freedom to build innovative experiences.

Solutions that optimize website performance:

- ◆ **Prevent or minimize downtime**

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- ◆ **Maximize uptime, reliability, and resilience even during peak traffic periods**

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- ◆ **Benefit search engine optimization (SEO) efforts**

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In addition, scaling becomes easier when individual pages are optimized for performance.

## 2. An inability to scale sites quickly

Large enterprises often have to manage digital estates that consist of dozens, hundreds, or even thousands of digital properties. These could include multilingual or multi-regional sites. Building, maintaining, and optimizing all these sites can be extraordinarily difficult.

Other companies, meanwhile, may struggle to scale a simple website to a more complex one.

Solutions that support website scalability:

- ◆ **Contribute to business growth**
- ◆ **Adapt to changing business conditions**
- ◆ **Facilitate a faster time to market**

In fact, technology that enables teams to create a single web page faster will help boost efficiency and contribute toward faster scalability.





### 3. An inability to maintain governance with maximum security while working toward improving performance and scalability

Governance is a decision-making framework that enables an organization to assign ownership, set priorities, and define shared guidelines, standards, and processes for all platform users. Governance policies often include guidelines for branding and security compliance.

Solutions that permit IT to effectively govern sites:

- ◆ **Greatly reduce the risk of security and compliance incidents**
- ◆ **Give creators flexibility while ensuring content follows rules for colors, fonts, and other elements**
- ◆ **Establishes roles and permissions to ensure the right team members have access to build, launch, and edit experiences**

Delivering digital experiences at scale amplifies the need for governance and security.



Drupal's composable architecture, which is foundational in Acquia's solutions, makes it possible to achieve all these goals today. In fact, many companies are already well on their way.

This e-book features eight stories that demonstrate how organizations have succeeded in their efforts to optimize performance, boost scalability, and enforce better governance and security standards. Near the end, we spotlight a few Drupal features that help organizations maximize performance, scalability, and governance.



# Ensure Optimal Site Performance with a Multisite Approach



RI.gov, the official web portal for the State of Rhode Island, enables citizens and businesses to complete tasks online. Its previous version was less than ideal, amounting to a fractured landscape of statically maintained agency websites with multiple generations of design templates going back 15 years.

The State of Rhode Island wanted to take a different approach by creating a single platform that would allow for centralized technology management; reduce maintenance costs; better serve

citizens in the most performant and accessible way; and normalize processes where scale can provide benefits, like online form handling.

It also saw the advantages of granting content authors greater autonomy and of using a common design language to establish a more unified “voice of truth.”

The Ocean State partnered with digital experience firm Oomph to create a resilient platform that meets the State’s objectives.

Acquia Site Factory and Drupal’s JSON API allowed Oomph to

create a suite of custom modules to control asynchronous notifications to publish content hierarchically from one site to another across the network. Acquia Edge CDN and Edge Security ensure there won’t be downtime or site slowdowns due to attacks or event-driven traffic spikes.

Drupal’s flexible theming system made it easy for Oomph to create admin controls for the visual theme, storing author preferences for how they wanted their agency or department site to look.

The improved authoring experience provides real-time constituent information delivery and engagement. In addition, adopting common typography with multiple color themes in a unified design system enhances accessibility, inclusivity, and public trust.

The platform supports at least 67 sites but can easily scale. One-click deployment in Acquia Site Factory allows the State to launch new sites in mere minutes with accurate and consistent brand content.



## The results:

**300%**

improvement in page load times compared to legacy systems

**4.5**

months to launch first site

**15**

sites deployed within eight months

## The lesson:

Maximizing performance enables visitors to access more of the information they need faster.



# Deploy Compelling Digital Experiences Without Impacting Speed and Load Times



Climate Group, an international nonprofit with a mission to accelerate climate action, decided to consolidate its three websites to improve user engagement as well as cross-pollination across programs. Leadership wanted its new solution to simultaneously streamline code and empower the editorial team.

Key stakeholders at Climate Group had concerns though.

On its existing sites, poor load times for regions outside the U.S. negatively affected engagement. Would issues increase as the site grew? Would increased site traffic and conversions constrain the site's ability to perform without crashes or downtime?

The organization and the creative technology agency TPXimpact decided to combine the three sites into one Drupal 9 multisite instance on Acquia Cloud Platform.

The platform would address many of Climate Group's challenges. These include guaranteed uptime, scalability, and a geographically distributed content delivery network (CDN) that effectively serves international traffic while reducing the digital footprint. TPXimpact was able to adopt a strict pattern library approach that kept the codebase streamlined.

Climate Group now has the functionality to build, operate, and scale with ease — and all at a lower long-term cost of ownership than if it had taken a DIY approach.



## The results:

**55%**

reduction in average page weight

**50%**

decrease in average page load time, which helps boost SEO and security rankings

**40%**

increase in average visitor session time

## The lesson:

Organizations don't need to sacrifice strong performance when scaling to a more robust site.



# Construct Sites That Can Reliably Perform with High Traffic



NBC Sports Digital offers 24/7 coverage and unparalleled streaming of NBC Sports Group's extensive collection of sports and programming. Whether watching some of the highest trafficked events in the history of the web or smaller experiences like a college hockey game, sports fans simply won't stand for technology failures.

NBC Sports Digital partners with Acquia to cover more than 30,000 sporting events every year on dozens of sites including NBCSports.com, the NBC Sports Regional Networks' websites, and NBCOlympics.com.

Acquia's platform enables NBC Sports Digital to guarantee site performance and security while delivering best-in-class

digital experiences — even during the heaviest of traffic spikes. In addition, while the company is able to power some of the biggest media events that happen online, the infrastructure also allows it to successfully scale down to much smaller events.



## The results:

**93 million**

unique users visited NBC Sports Digital properties for the PyeongChang Olympics, Super Bowl LII, NHL, and Premier League events in February 2018

**721 million**

minutes of desktop video streamed in February 2018

**4.37 billion**

minutes of video consumed in total on NBC Sports Digital properties in 2018 for the PyeongChang Olympics, Super Bowl, and FIFA World Cup

## The lesson:

Brands can offer an exceptional viewing experience regardless of the size, scale, or demand of a streaming event.



# Quickly Build and Manage Hundreds of Sites From a Central Platform



Bayer Consumer Health, a division of the global life sciences company Bayer, faced a colossal challenge when its legacy platform was nearing end-of-life.

The division needed to replatform dozens of consumer brands in just 18 months — all while still allowing the platform to evolve and maximize return on investment. These brands spanned 400 sites, had unique visual identities, and were written in more than 50 languages.

The company also sought to create a consistent and accessible user experience and to publish on demand at a market level while centrally managing risk and cost.

Bayer partnered with digital customer experience professionals Coherence, which took the visuals for 23 Bayer brands and created a common design system using their underlying patterns.

It then built this into a primary design system with 60 core components in Acquia Site Studio and used Acquia Site Factory to deliver a platform driving each market site from the central codebase.

Now, all accessibility, user experience, and responsive behavior configurations are made at the centralized level with brand-specific configurations set at the site level. This consolidates governance and

helps decentralize nuance and communication.

Site Studio allows Bayer's brands to bake-in best practices while enabling distributed teams to manage their own unique content strategies — without breaking brand governance practices. Site Factory then amplifies this across multiple brands, markets, and languages without creating multiple unique codebases.





## The results:

**437**

sites in more than 50 languages delivered in 1.5 years, reaching 100 sites a month at the project's peak

**\$15 million**

in savings in IT and third-party costs over 3 years

**40%**

reduction in time to market

**2-3 weeks**

to launch new sites

## The lesson:

Using a primary design system and core codebase can help multi-brand organizations rapidly scale.



# Spin Up Brand-Compliant Sites at Scale in Weeks, Not Months



Mars, which produces some of the world's most beloved food, candy, and pet care brands, hosts brand websites on multiple platforms. But leaders have been managing a shift to a flexible, scalable system with centralized capabilities.

The company worked with digital partner EPAM to handle its initial platform build and site deployment. EPAM created a "starter kit" of shared components that provide

Mars' brands with a well-defined process and consistent starting point for building brand and campaign pages. This infrastructure includes shared core functionality; flexible and configurable front-end display components; and a library of pre-built integrations that make it easy to launch and manage new sites. Mars partnered with Cognizant to scale the starter kit platform and then build, deploy, and operate their CPG brands' digital properties.

With a shared, configurable theme, site builders can easily apply brand-specific design guidelines into each property while maintaining an individual identity.

Acquia Site Factory provides the underlying infrastructure to drive the entire portfolio of sites from a single codebase managed by the platform development team. It also provides the interface to empower separate site construction teams to easily

create, build, and manage sites without help from developers.

Mars has been able to improve site performance and speed; maintain compliance and brand governance; and also empower external agencies and team members to use the platform independently in a self-service manner.

## The results:

**55**

brand sites launched in  
10 months

**40%**

reduction in maintenance costs  
across all sites

**20%**

combined cost savings

**20-40%**

reduction in development time

**235**

person days saved through  
automated testing

## The lesson:

Assembling brand sites with a starter kit platform rather than building them from scratch reduces development time and brings more consistency to digital systems, processes, and experiences.





# Employ Low-Code Tools to Accelerate Time to Market



After Alcon divested from the pharmaceutical company Novartis in mid-2018, the eye care company needed to migrate a large number of websites from Novartis' hosting platform within a tight timeframe.

By leveraging Acquia Site Studio, Alcon was able to put power back into the hands of content creators within local markets while enforcing brand integrity globally. While it was migrating more than 70 sites to Acquia Site

Factory, Alcon was still able to keep up with the demand for website updates — like those pertaining to product launches and new campaigns.

Alcon teams also migrated 17 externally hosted websites that had the same design but were in different languages. Business units created content and documentation, then populated the sites as fast as the team could create the page templates.

After development was completed four months later, DevOps involvement was minimal, giving the team more time back in their day. In fact, launching a site after the development phase usually requires only three weeks of work from a single part-time developer. Using Acquia's tools has also enabled Alcon to bring most of its development in-house instead of relying on outside firms for site creation and maintenance.





## The results:

**73**

sites migrated in  
14 months

**17**

additional externally  
hosted websites  
migrated in 4 months

**26%**

reduction in  
development time

**\$500,000**

in cost savings  
potential

## The lesson:

Businesses can build pages faster when developers and content creators are able to autonomously and simultaneously complete their tasks.



# Centrally Manage and Govern a Global Technology Ecosystem



Stanley Black & Decker, a world leader in tools and storage, has embarked upon an extensive digital and e-commerce transformation initiative with the goal of driving customer obsession, extreme innovation, and growth.

Part of this transformation includes the implementation of a new digital experience platform with a composable foundation. Composability enabled the digital experience agency Coherence to create a custom, flexible design system that supports the size and

scale required by Stanley Black & Decker and its multiple brands.

This modular global website platform, dubbed DUPLO, expedites site builds by empowering stakeholders within local markets to individualize their sites – including with language variations – through an intuitive, low-code user experience. These sites are accessible by design, have security standardization, and maintain global governance and brand guidelines.

Additionally, the company wanted to activate customized e-commerce sites for local markets. Cross-functional teams at the organization used Acquia Site Factory and Acquia Site Studio to create four new sites for three brands in just three weeks.

Stanley Black & Decker is leveraging composability ambitiously: It plans to build more than 200 new sites in 2023.



## The results:

**70%**

reduction in MVP time to market

**60%**

reduction in cost per market website

**30**

sites live across 6 brands in less than 4 months

## The lesson:

A composable platform offers overarching governance and security while enabling brand teams to quickly build customized, accessible websites for specific audiences.





# Enforce Brand Governance at Scale with a Templated Design Workflow



The digital ecosystem of Anheuser-Busch InBev (AB InBev), which owns more than 500 beer brands, previously posed some common technical and business challenges.

Its websites and other digital properties existed on different hosting platforms and multiple domains, faced several security issues, and featured inconsistent brand messages.

AB InBev envisioned a fresh solution that would leverage

composability and enable it to easily govern many digital experiences on a global scale in one place. It also sought to configure all security requirements and replicate them across sites.

In addition, AB InBev wanted site creators to have access to low-code tools and a set of components that could ease content creation, standardize the process, and ensure both quality and brand consistency.

At the heart of this new approach is a design system AB InBev created using Acquia Site Studio to create websites faster, at a lower cost, and more efficiently. Called the Da Vinci Digital Factory, the design system includes more than 70 components and gives creators flexibility to create unique pages within rules-based controls.

By relying on a component library, Labatt Brewing Company was able to build 12 individual websites in a mere three months.

In addition, it only took seven months for the digital marketing agency Just Digital and AB InBev to develop the beer giant's biggest activation in history for Budweiser, aligned with FIFA World Cup events.

The result was that AB InBev was able to launch a site that could handle millions of visitors. It offered both a multilingual experience globally with regional adaptations and a consistent experience from the real world to the digital world.



## The results:

**40%**

time-to-market  
optimization of MVP  
Brazil site

**58%**

development cost  
reduction of MVP  
Brazil site

**12**

sites launched in 3  
months for Labatt

**7**

months to launch a  
high-traffic  
promotional site  
for Budweiser in 13  
countries

## The lesson:

A composable platform enables brands to deliver multisite, multilingual, and multi-brand experiences that maintain brand governance and meet security standards.



# How Drupal Helps Organizations Maximize Performance, Scalability, and Governance

Features inherent to Drupal make it an ideal solution for enterprises that want to maximize performance, scalability, and governance. They include:



## Caching:

An effective caching strategy can greatly improve performance by storing pages, page elements, and other resources so a cached version renders quickly rather than a newly generated version.



## Content delivery network (CDN):

This network of servers delivers web pages to visitors based on the geographic location of each visitor and the origin of the pages. Using a CDN allows web page load times to be faster for global audiences regardless of their location. Drupal supports multiple CDNs.



## Load balancing:

Consistent performance requires a platform that keeps traffic loads manageable, both globally and locally. Load balancing helps ensure that there's no single point of failure even when the application scales to support millions of page views. Effective load balancing also features failover functionality to provide resiliency in case of DDoS attacks.

**JavaScript aggregation:**

Drupal aggregates JavaScript files to improve the front-end performance of a site by ensuring that each page load gets the assets it needs as cacheable and reusable files.

**CSS aggregation:**

Likewise, Drupal combines CSS files to speed up page loads.

**Horizontal scaling:**

Scaling horizontally decreases the load on the server, which boosts the performance of the system and application.

**Vertical scaling:**

Scaling vertically increases the capacity of a website to accommodate more users while minimizing the addition of server resources. This benefits organizations by maintaining outstanding performance without a proportionate increase in expenses.

**Multisite management:**

This approach uses a single platform to enable technical and non-technical web content developers to manage hundreds or even thousands of web properties — and publish new content quickly and easily while maintaining proper governance.



## Take the First Steps Toward Building an Improved Customer Experience

A composable architecture makes it easier for developers, marketers, and IT teams to achieve their goals related to performance, scalability, and governance.

Without these foundational capabilities, organizations could face a host of risks that include losing business to unsatisfied customers, damaging their brand reputation, and facing fines related to a lack of security standards.

Organizations today simply can't afford to use a platform that isn't performant, scalable, and governed.

Some advantages to using Drupal and Acquia solutions for building and managing a digital portfolio include:

- ◆ **Agility:** Create new sites within minutes with one-click site creation. Clone an existing site and use it as a template for new sites.
- ◆ **Efficiency:** Reuse and customize styles, templates, and UI components across sites and pages with ease.
- ◆ **Ease of use:** Gain unrivaled page assembly and access to editing tools for designers, not just developers.
- ◆ **Project speed/efficiency:** Build and maintain sites up to 4x faster.





# How to Achieve Superior Scaling, Performance, and Governance Capabilities

See how Drupal and the Acquia DXP can help your organization improve the experience creation process.

[Request A Demo](#)



# Acquia

ACQUIA.COM

## 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.

