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# CMSの新しいパラドックス コンテンツ管理での未来対立

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プレストン・ソー ・ 2019年 12月 14日 ・ API-first Drupal 東京 2019 キーノートスピーチ

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# The new CMS paradox

## Coming conflicts in content management

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Preston So • December 14, 2019 • API-first DrupalCamp Tokyo 2019 keynote

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# 初めまして！

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プレストン・ソーはイノベーションリーダー、研究者、スピーカー、そして「*Decoupled Drupal in Practice* (Apress 2018年)」の著者です。

Decoupled Drupalの世界的なリーダーであり、Decentralized Webや会話形デザインの専門家でもあります。プレストンは、Gatsby Inc.(ギャツビー社)でプリンシパル・プロダクト・マネージャーです。

過去3回にわたり、SXSWインタラクティブで講演し、大陸にて3つの言語で基調講演をおこなう人気スピーカーでもあります。

[linkedin.com/in/prestonso](https://www.linkedin.com/in/prestonso) • [@prestonso](https://twitter.com/prestonso) • [#NewCMSParadox](https://twitter.com/#NewCMSParadox)

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# Welcome!

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Preston So is an innovation lead, researcher, speaker, and author of *Decoupled Drupal in Practice* (Apress, 2018).

A globally recognized voice on decoupled Drupal and subject matter expert in the decentralized web and conversational design, Preston is Principal Product Manager at Gatsby.

Having spoken three times at SXSW Interactive, Preston is a sought-after presenter with keynotes on five continents and in three languages.

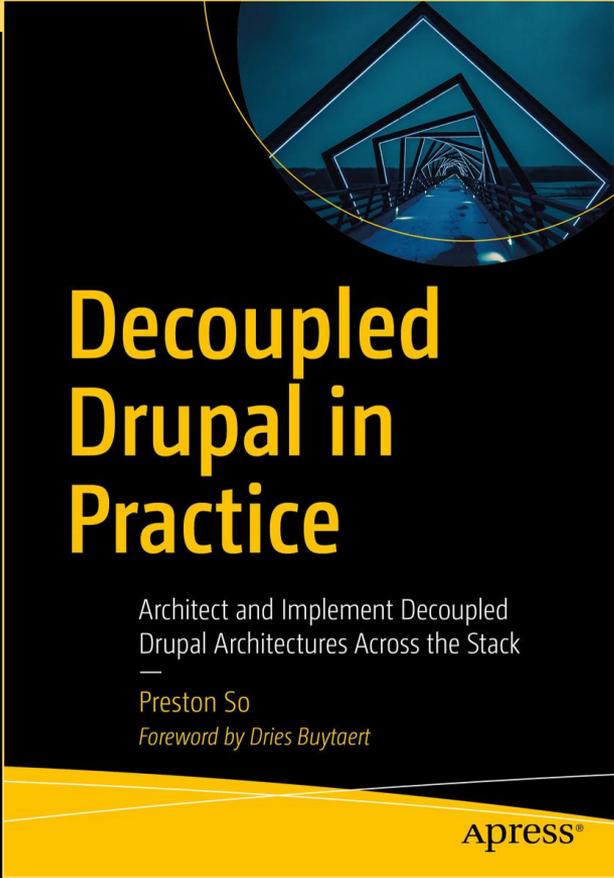
[linkedin.com/in/prestonso](https://www.linkedin.com/in/prestonso) • [@prestonso](https://twitter.com/prestonso) • [#NewCMSParadox](https://twitter.com/prestonso)

## ***Decoupled Drupal in Practice***

Available now!

[\*\*tiny.cc/decoupled-in-practice\*\*](https://tiny.cc/decoupled-in-practice)

In the first and only comprehensive guide to decoupled Drupal across the stack, with a foreword by Drupal project lead Dries Buytaert, learn everything you need to know about decoupled Drupal—from building the back end and designing APIs to integrating with front-end technologies.



# **Decoupled Drupal in Practice**

Architect and Implement Decoupled  
Drupal Architectures Across the Stack

—  
Preston So

*Foreword by Dries Buytaert*

Apress®



# DECOUPLED DAYS 2020

**New York City**  
July 22–23, 2020

## **Registration opening soon**

Visit [decoupled.com](https://decoupled.com) for more updates about tickets and our call for papers.

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For sponsorship information, reach out to our team at [decoupleddays@gmail.com](mailto:decoupleddays@gmail.com).

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# What we'll cover

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- The uneasy alliance between marketers and developers
- How decoupled CMSs have attempted to fill in the gaps
- The distributed CMS: From system to stack
- The new CMS paradox: Marketing and tech at odds
- Epilogue: Getting ready for the new CMS

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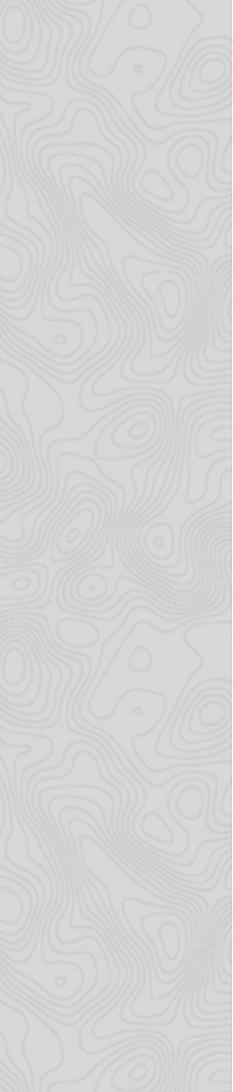
# 1 **The uneasy alliance between marketers and developers**

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**Drupal and other traditional CMSs  
are experiencing divergent priorities**

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**Marketers and content editors want  
control over non-web experiences**



Cambrian explosion



Mobile applications



Set-top boxes



Wearables

# Berlin Sightseeing

Travel Brochure



**Reichstag**  
The Reichstag building in Berlin was constructed to replace the Reichstag, the original parliament of the German Empire.



SAMSUNG

PDP Series

# Berlin Sightseeing



SAMSUNG

# Berlin Sightseeing



SAMSUNG



SAMSUNG

Samsung Network Solution  
MX Series

### 400MXn

Robust Specialty LFD Monitor  
High reliability for indoor venue display

4 Way web image selection platform



SAMSUNG

### 400MX

Robust Specialty LFD Monitor  
High reliability for indoor venue display

4 Way web image selection platform



SAMSUNG



SAMSUNG

Digital signage



**JAUME  
ARENAS  
I CLAVELL**

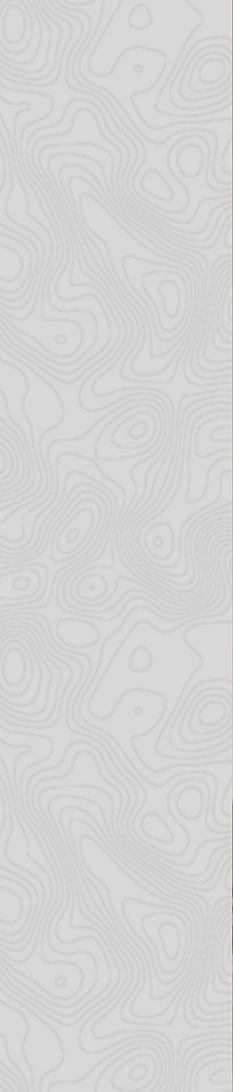
MATARO (1918-1983)

ABSTRACCIÓ, S/D  
AQUAREL·LA SOBRE  
PAPER



DESCOBREIX MÉS  
SOBRE L'AUTOR

Augmented reality



Conversational interfaces

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**Marketers and content editors want  
control over non-web experiences**



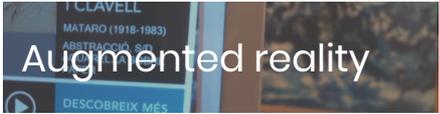
Wearables



Conversational



Digital signage



Augmented reality



Mobile



Set-top boxes



Websites



Responsive

Developers

Marketers  
Content editors

# The incongruity of content management today

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**Developers and stakeholders want  
affordability, flexibility, performance**



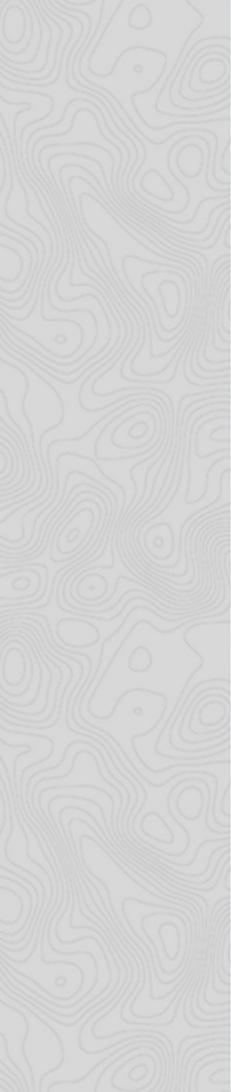
Infrastructural affordability

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# Infrastructural affordability

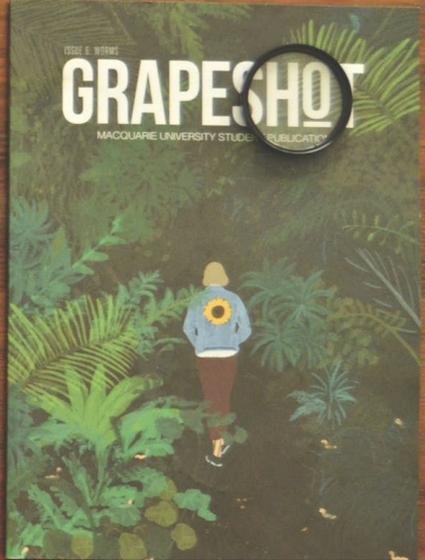
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- **TCO is increasing.** The total cost of ownership of a web infrastructure is increasing at an unprecedented rate, with many large Drupal sites now running more than \$1M per year.
- **Cloud solutions are expensive.** Serverless solutions such as Netlify and Zeit have proven to be much more affordable than established solutions like Acquia.



Hands are the main tool  
Lorem ipsum dier sit amit. This is a sample text, we use it to fill empty areas in order to make it look better.

History + Modernity  
Lorem ipsum dier sit amit. This is a sample text, we use it to fill empty areas.



Resourcing affordability

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# Resourcing affordability

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- **CMS developers are in high demand.** Demand is high for specialized skills like Drupal and WordPress, and developers command high prices that are increasingly unaffordable.
- **Resourcing is restrictive.** The amount of specialization in CMS development now results in a high barrier to entry for new developers and limited options for companies looking to hire.



Flexibility

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# Flexibility and interchangeability

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- **Monolithic CMS is not flexible.** Service integrations in Drupal and WordPress require modules or plugins; new solutions cannot be substituted easily for Drupal features.
- **Interchangeable services are in vogue.** Companies today are interested in working with more flexible vendors with less onerous prospects for replatforming.



Performance

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# Performance and speed

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- **Interactive experiences.** Today, users' expectations have far outpaced traditional CMS features, most of which lack link prefetching or image lazy-loading.
- **Performance optimizations.** Developers are increasingly seeking performance optimizations at every stage of the process, including both payload and delivery optimizations.



Daniel Case  
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Security

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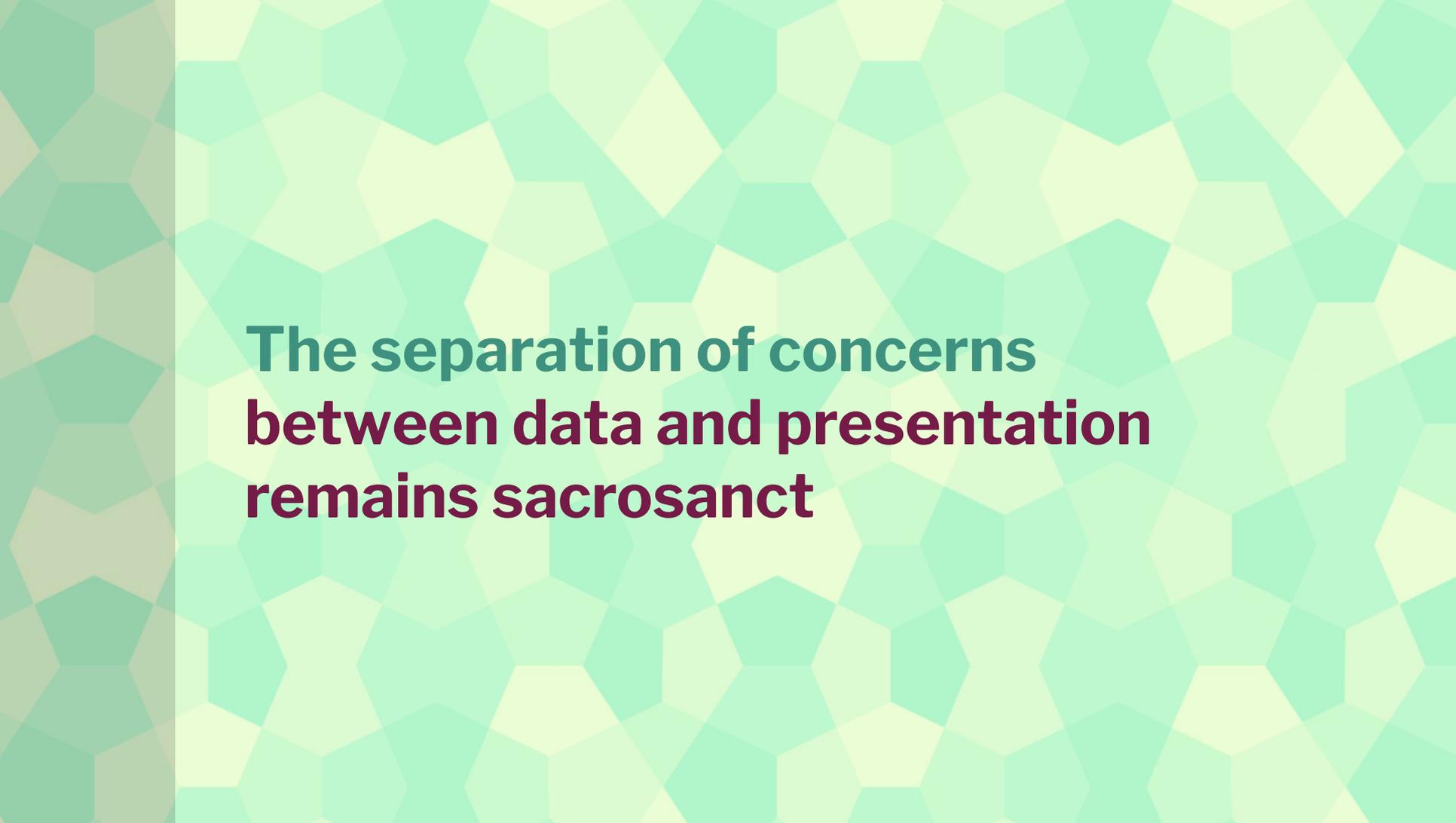
# Security

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- **Vulnerabilities are growing.** Security advisories are increasing in both Drupal and WordPress due to their popularity.
- **Decoupled aids security.** Decoupled architectures can help lock down CMS layers and prevent outside access to certain services.

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**Is it possible to satisfy the needs of  
both marketers and technologists?**



**The separation of concerns  
between data and presentation  
remains sacrosanct**

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# 2

**How decoupled CMSs  
attempt to fill in the gaps**

## The first wave

1995–2006



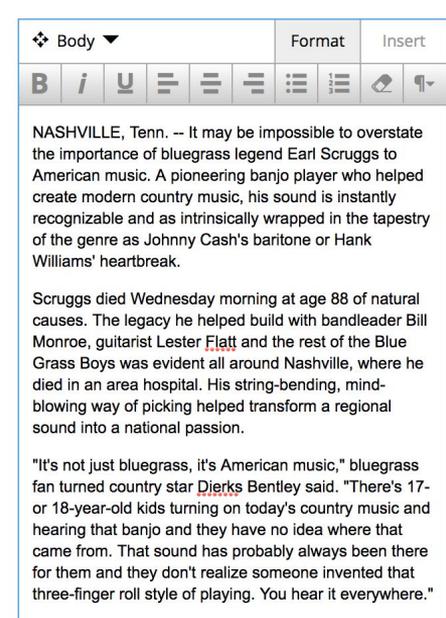
the **static** CMS

- Essentially glorified static site generators with rudimentary templating
- Application building was rudimentary; mostly leveraged to build content-rich websites
- No interactive client-side behavior

## The second wave 2002–2014

- Dynamic server-side applications for the first time
- Extensive abstraction from the data layer to the templating layer
- Rudimentary interactive client-side behavior (see Drupal's Ajax API)

## the dynamic CMS the monolithic CMS



The screenshot shows a CMS editor interface. At the top, there is a toolbar with a dropdown menu labeled "Body" and buttons for "Format" and "Insert". The toolbar includes icons for bold (B), italic (i), underline (U), bulleted list, numbered list, link, unlink, and a redaction icon. Below the toolbar is a text area containing the following text:

NASHVILLE, Tenn. -- It may be impossible to overstate the importance of bluegrass legend Earl Scruggs to American music. A pioneering banjo player who helped create modern country music, his sound is instantly recognizable and as intrinsically wrapped in the tapestry of the genre as Johnny Cash's baritone or Hank Williams' heartbreak.

Scruggs died Wednesday morning at age 88 of natural causes. The legacy he helped build with bandleader Bill Monroe, guitarist Lester Flatt and the rest of the Blue Grass Boys was evident all around Nashville, where he died in an area hospital. His string-bending, mind-blowing way of picking helped transform a regional sound into a national passion.

"It's not just bluegrass, it's American music," bluegrass fan turned country star Dierks Bentley said. "There's 17- or 18-year-old kids turning on today's country music and hearing that banjo and they have no idea where that came from. That sound has probably always been there for them and they don't realize someone invented that three-finger roll style of playing. You hear it everywhere."

## The third wave 2012–2020

- Dynamic client-side applications for the first time, thanks to web services and universal JavaScript and owing to channel explosion
- Full **architectural** decoupling between structured data and presentation
- Complex interactive client-side behavior made easier and integrations with JavaScript frameworks (see Prismic edit button)

the **headless** CMS  
the **decoupled** CMS

Content model > Article



Article

Edit

Actions ▾

Save

+ Add field

Fields (7)

JSON preview

Duplicate

Delete



**Title** Short text

Entry title

Settings



**Body** Long text

Settings



**Media** References, many

Settings



**Author** Reference

Settings



**Tags** Short text, list

Settings



Contentful

Work

Planned ▾

Archived

Search

Christmas release status 🔒  🔓

Type ▾ Authors ▾ Tags ▾ Status ▾ 🇫🇷 Write ✎

State	Name	Type	Last update	Author
<span style="color: orange;">🔥</span>	The Basics Of Buying A Telescope	Blogpost	10/18/2016 / 12:12	<input type="radio"/>
<span style="color: grey;">⚠️</span>	The Basics Of Buying A Telescope <span style="background-color: #f1c40f; padding: 2px 5px; border-radius: 3px;">TO TRANSLATE</span>	Blogpost	12/23/2016	<input type="radio"/>
<span style="color: grey;">⚠️</span>	How To Look Up <span style="background-color: #f1c40f; padding: 2px 5px; border-radius: 3px;">TO TRANSLATE</span>	Blogpost	09/25/2016	<input type="radio"/>
<span style="color: orange;">🔥</span>	The Basics Of Buying A Telescope	Blogpost	09/02/2016	<input type="radio"/>
<span style="color: orange;">🔥</span>	Asteroids	Blogpost	07/20/2016	<input type="radio"/>
<span style="color: orange;">🔥</span>	How To Look Up	Blogpost	07/01/2016	<input type="radio"/>
<span style="color: orange;">🔥</span>	Astronomy Or Astrology	Blogpost	07/19/2016	<input type="radio"/>

**Christmas release status** 🔒  🔓

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Publish options
Private members

i This release will be published in 2 day (27 fevrier 2016) [Edit](#)

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▶ Publish now

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🕒 Unschedule

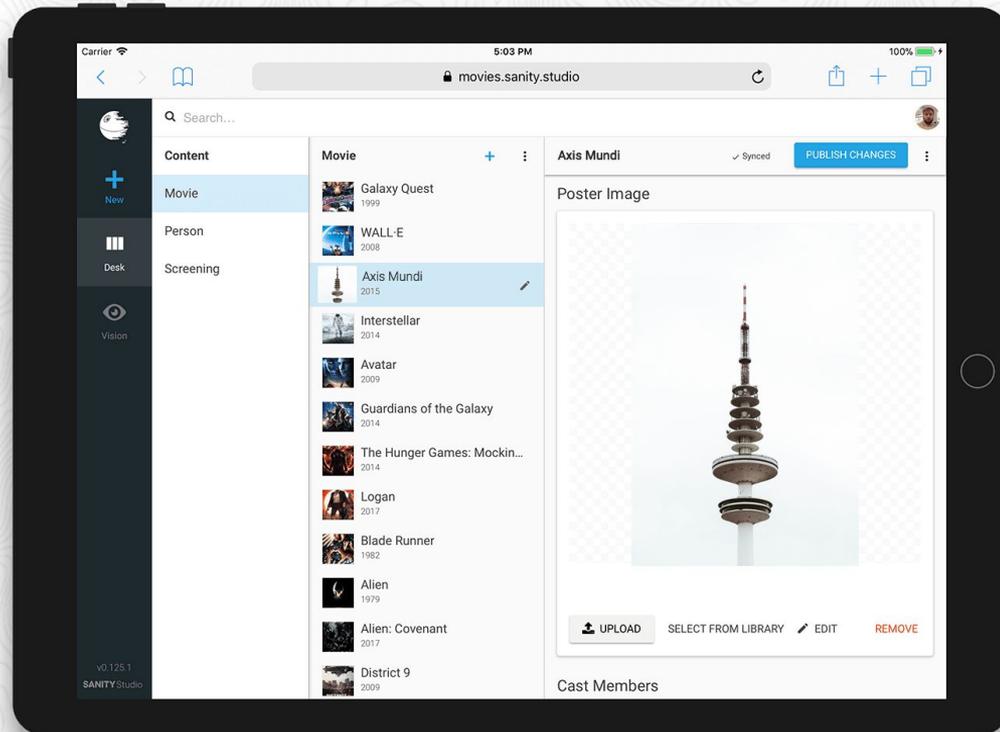
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👁 Preview

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✖ Delete this release

Prismic



Sanity.io

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## Developer Resources

Browse: [Home](#) / [REST API Handbook](#) / REST API Handbook



### CHAPTERS

1 [REST API Handbook](#)

2 [Reference](#)

- Posts
- Post Revisions
- Categories
- Tags
- Pages
- Comments
- Taxonomies
- Media
- Users
- Post Types
- Post Statuses

## REST API Handbook

The WordPress REST API provides API endpoints for WordPress data types that allow developers to interact with sites remotely by sending and receiving [JSON](#) (JavaScript Object Notation) objects. JSON is an open standard data format that is lightweight and human-readable, and looks like Objects do in JavaScript; hence the name. When you send content to or make a request to the API, the response will be returned in JSON. This enables developers to create, read and update WordPress content from client-side JavaScript or from external applications, even those written in languages beyond PHP.

### TOPICS

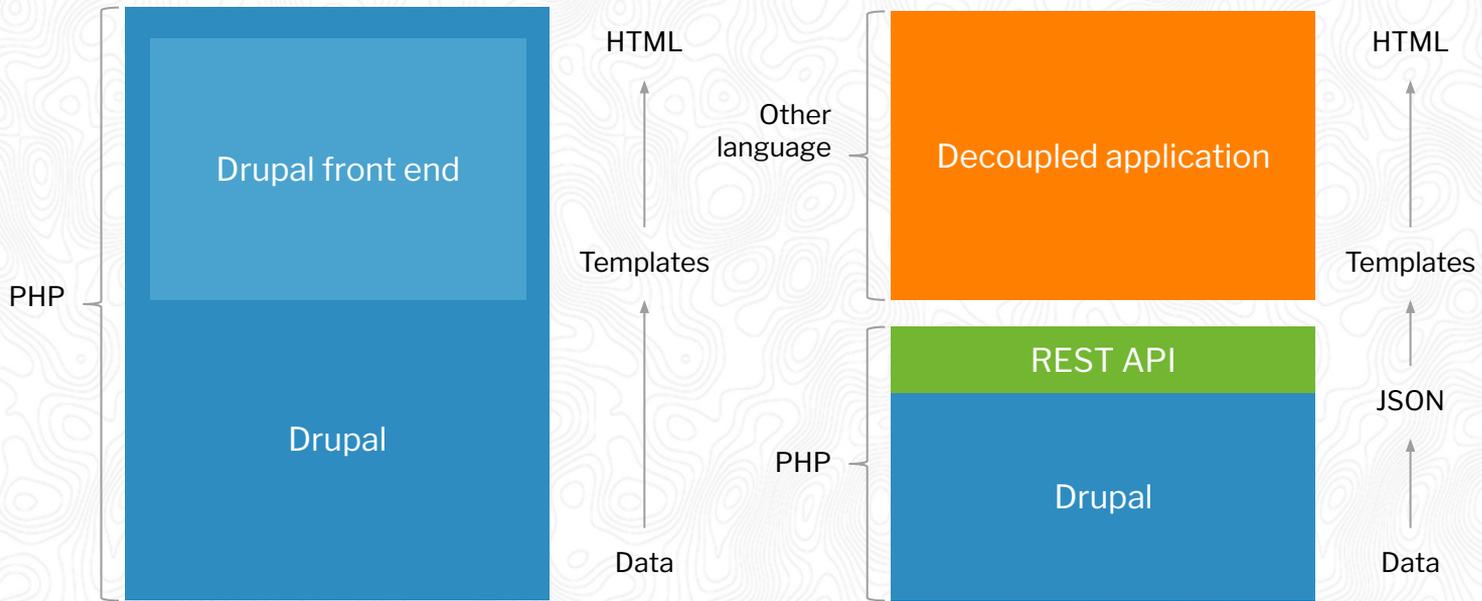
#### [Why use the WordPress REST API](#)

#### [Key Concepts](#)

- [Routes & Endpoints](#)
- [Requests](#)
- [Responses](#)
- [Schema](#)
- [Controller Classes](#)

## Headless WordPress

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## Decoupled Drupal

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**Decoupled Drupal is the use of  
Drupal as a content service for  
consumer applications**

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**Evolution catalyzed by dual forces of  
innovation in front-end development  
and in digital experiences**



Interchangeable parts

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## Traditional development



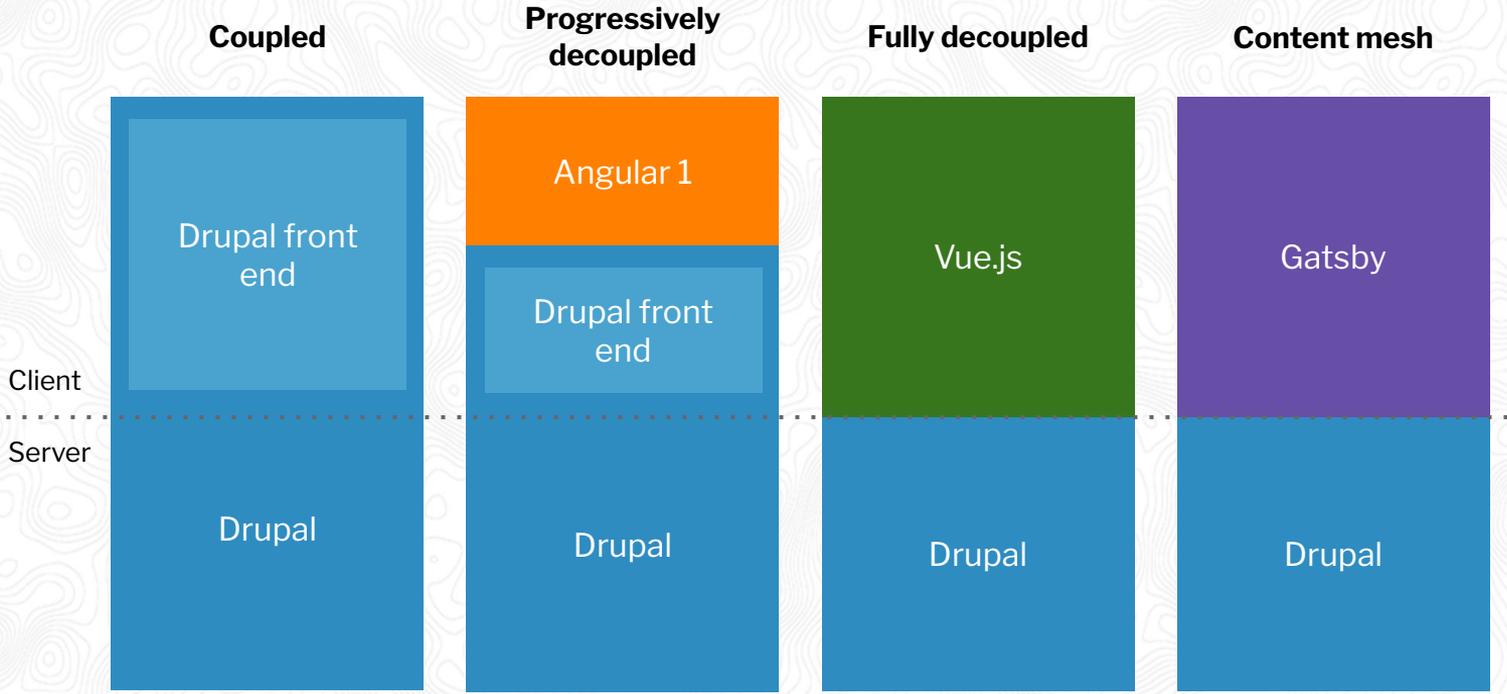
## Pipelined development



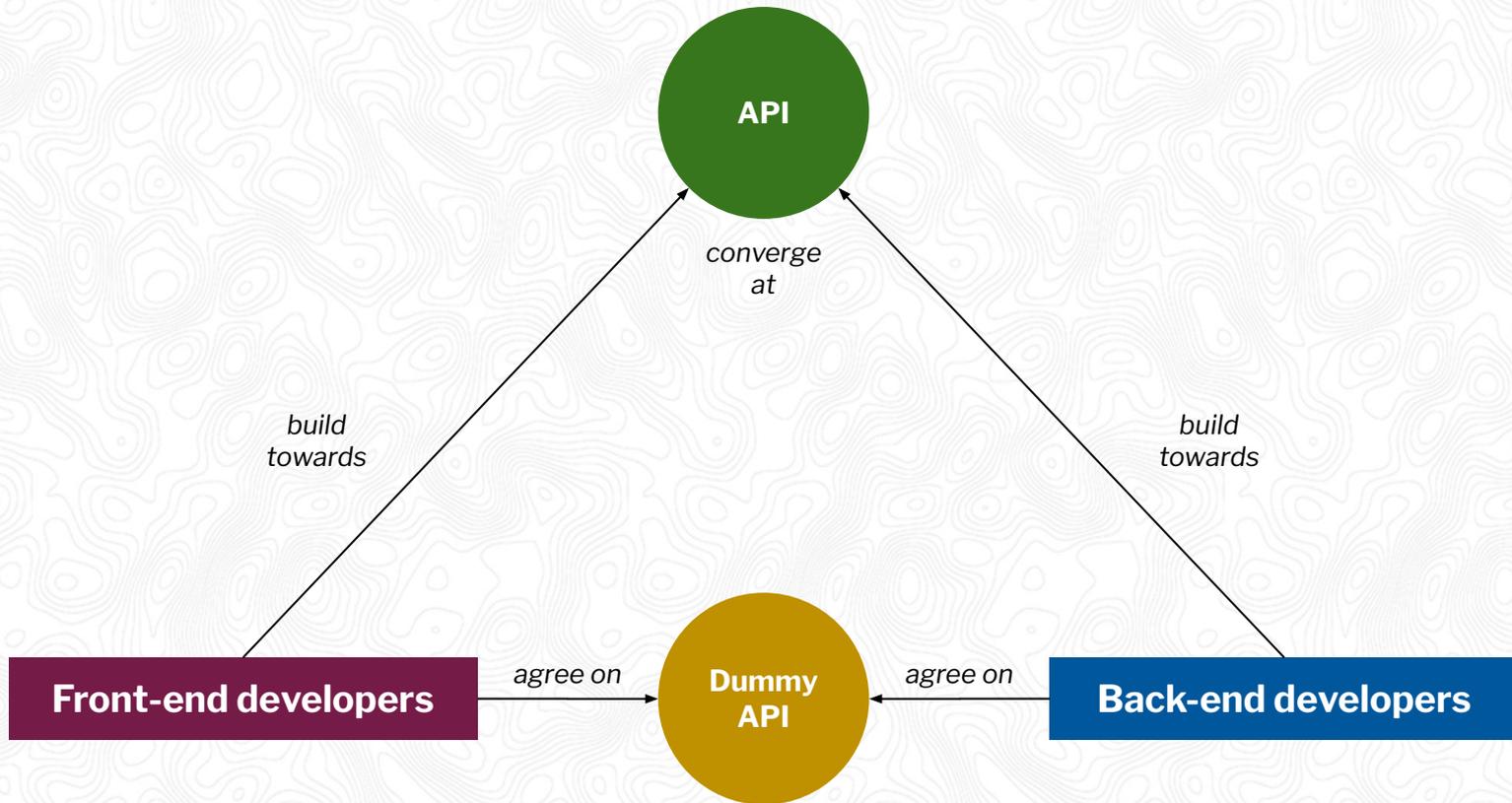
Project duration

Pipelined development

Time →



Interchangeable presentation layers



API convergence

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### Coupled updates

	Monolithic update	Monolithic update
<b>Drupal 6 front end</b>	<b>Drupal 7 front end</b>	<b>Drupal 8 front end</b>
<b>Drupal 6 back end</b>	<b>Drupal 7 back end</b>	<b>Drupal 8 back end</b>

### Decoupled updates

	Gatsby update	Gatsby update
<b>Gatsby v0</b>	<b>Gatsby v1</b>	<b>Gatsby v2</b>
<b>Drupal 7</b>	<b>Drupal 8</b>	<b>Drupal 9</b>
	Drupal update	Drupal update

## Updates and maintenance

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# 3

## The distributed CMS From system to stack

## The fourth wave

2018–

● the **distributed CMS**

- Richly interactive and performant universal JavaScript applications with initial server-side rendering
- Full **presentational** decoupling with interchangeable services and data source agnosticism
- Complex interactive client-side behavior as a **first-class concern**

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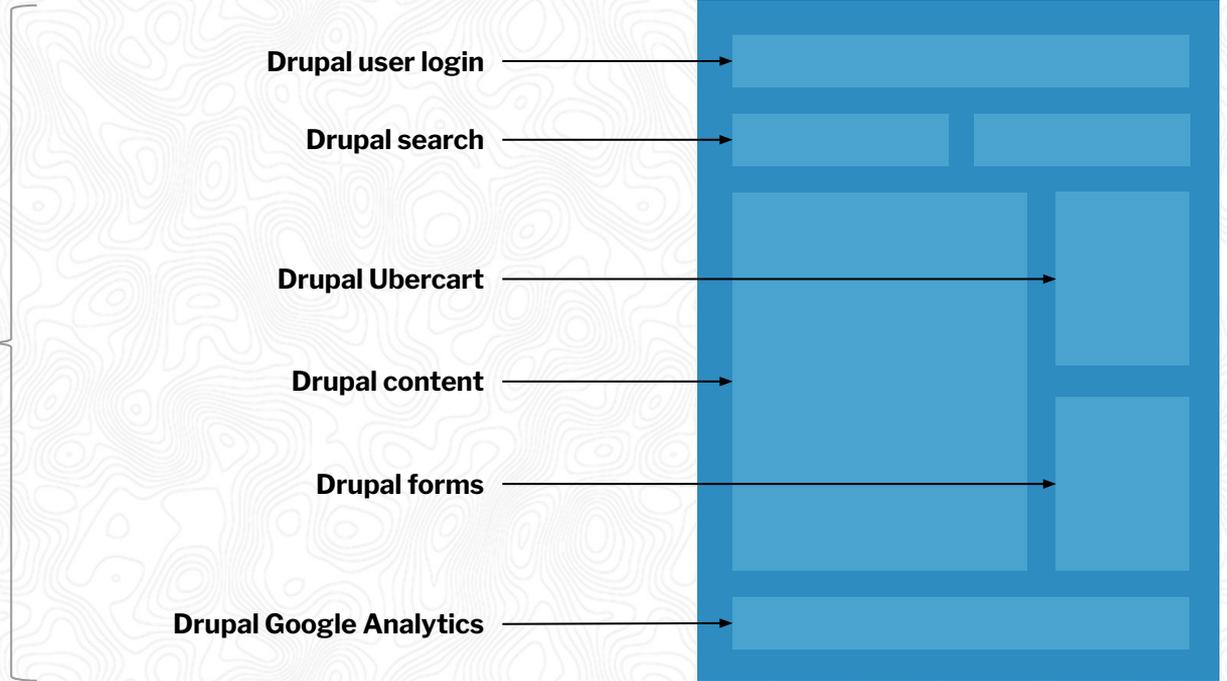
**Microservices and orchestration  
introduced the idea of a service mesh**

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**A content mesh pairs services with  
an agnostic front-end layer**

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**As a result of using the content mesh  
the *page* becomes decoupled too**



Traditional CMSs handled all concerns at the expense of simplicity

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Auth0

Algolia

Drupal

Snipcart

Contentful

Typeform

Segment

Auth0 authentication

Algolia search

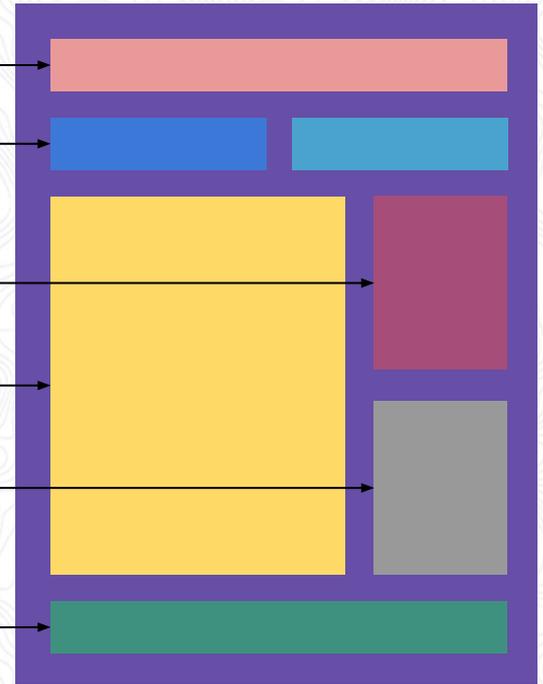
Snipcart cart

Contentful content

Typeform forms

Segment analytics

## Gatsby

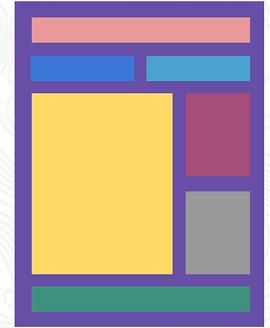
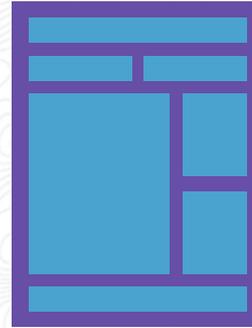
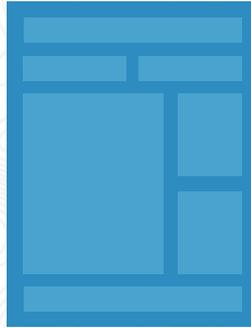


But the content mesh allows you to choose your services arbitrarily

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Time →

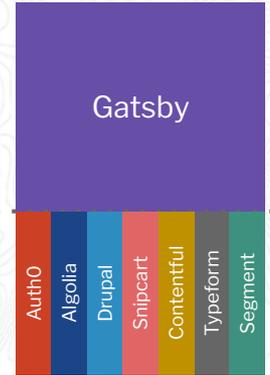
Pages



Architecture

Client

Server



From monolithic CMS to decoupled CMS to distributed CMS



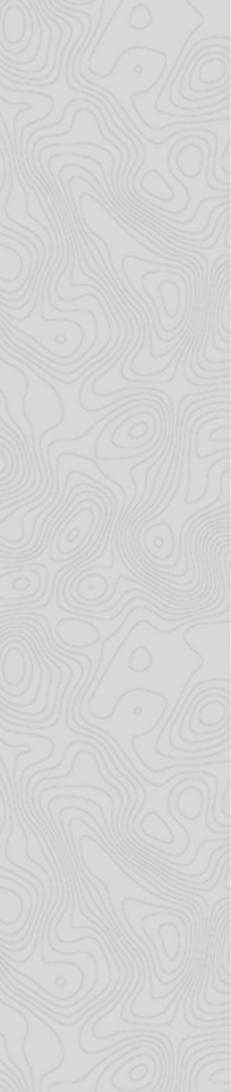
Infrastructural affordability

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# Infrastructural affordability

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- **TCO will decrease.** The distributed CMS will reduce your total cost of ownership by bringing your hosting costs to near zero and allowing vendor flexibility without lock-in.
- **Serverless solutions are cheap.** Netlify and Zeit offer powerful free tiers, and AWS is entering the space as well.



Resourcing affordability

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# Resourcing affordability

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- **JavaScript developers are easier to find.** In today's web community, JavaScript is the language of choice and React, Vue.js, and GraphQL the technologies of choice.
- **Resourcing is less onerous.** JavaScript developers are more affordable, more available, and are often more accustomed to approaches like pipelined development.



Flexibility

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# Flexibility and interchangeability

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- **Distributed CMS is flexible by design.** Interchangeability of services means that decoupled *pages* are possible, with flexible services.
- **Limit scope to plug and play.** With a more focused and services-oriented approach, many feature-based services are seeing success and velocity, such as Algolia, Snipcart, and Typeform.



Performance

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# Performance and speed

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- **Progressive enhancement and interactivity.** Gatsby and other distributed CMS technologies have full support for accessibility and progressive enhancement in addition to interactivity.
- **Performance optimizations.** Thanks to serverless solutions and CDNs, it is now possible to achieve unprecedented levels of performance.



Daniel Case  
CC BY-SA 3.0

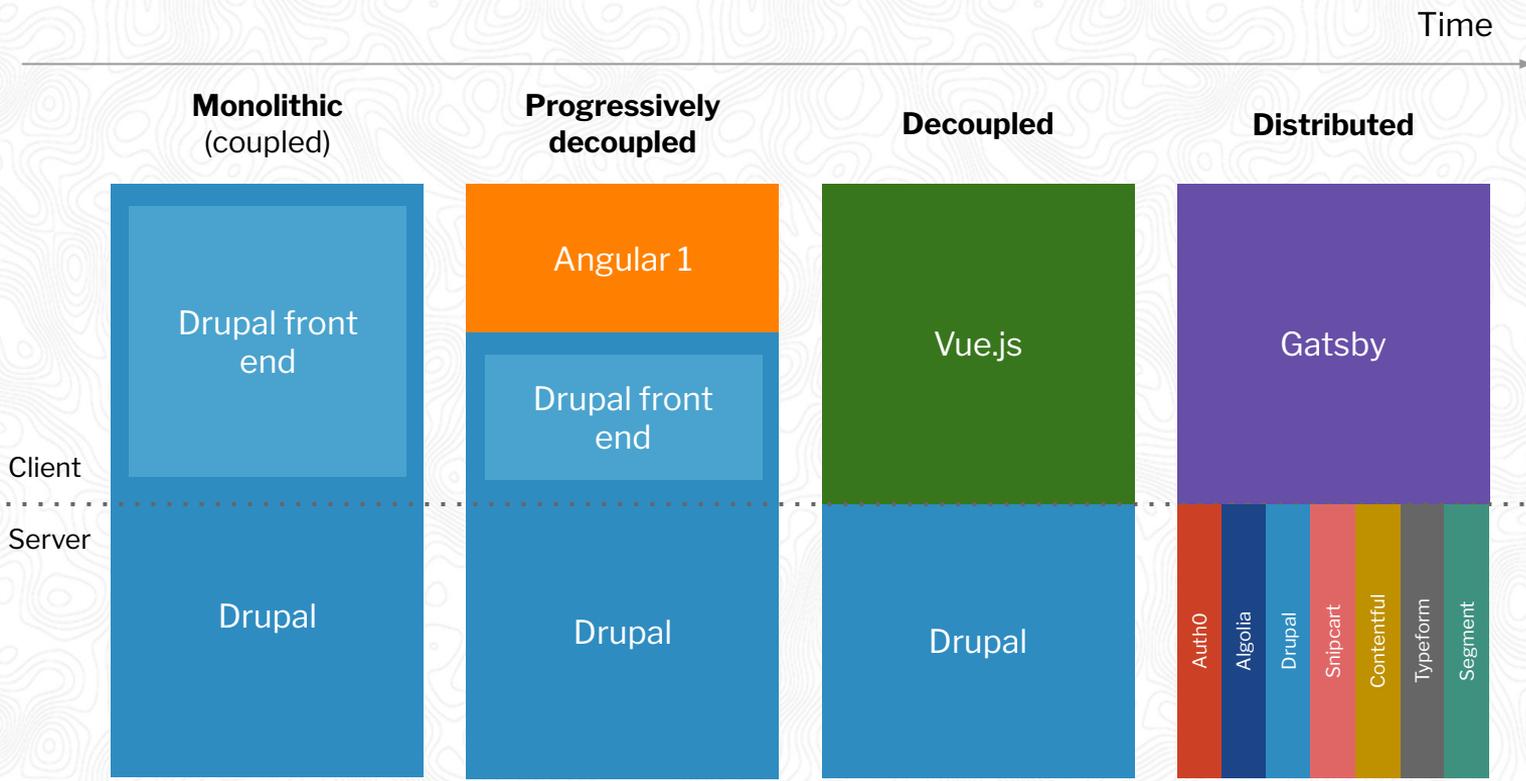
Security

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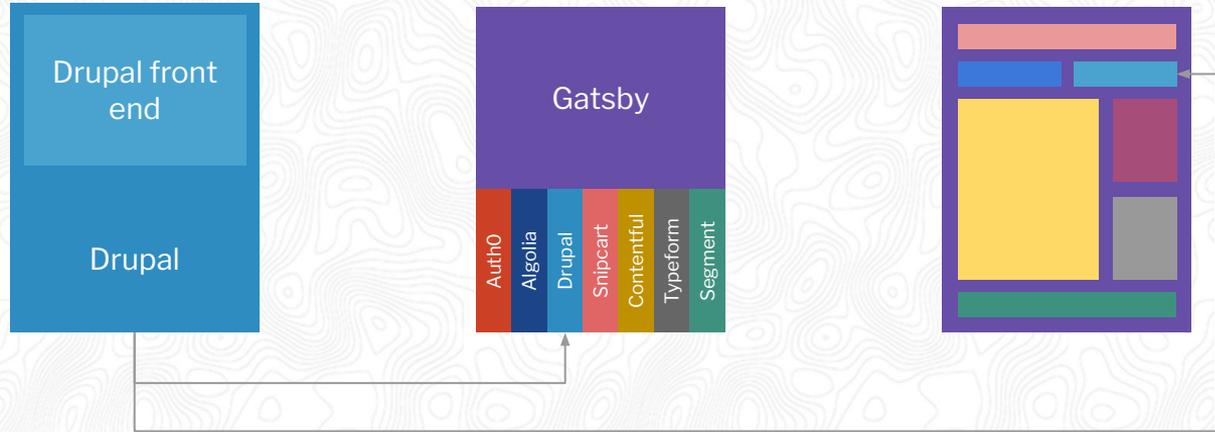
# Security

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- **Spread vectors across services.** Multiple interchangeable services makes it more difficult for attackers to access critical parts of your CMS architecture (e.g. delegate forms to Typeform and cart functionality to Snipcart).
- **Lock down your CMS.** With web compilers like Gatsby, it's possible to build a fully functional website consuming Drupal without your Drupal site ever needing to be online or accessible.



Evolution of content management systems/stacks over time

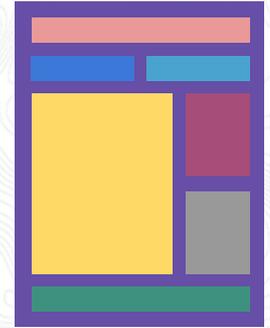
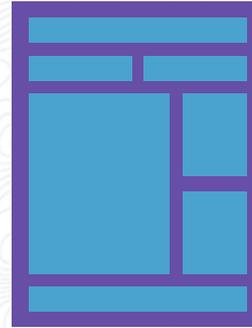
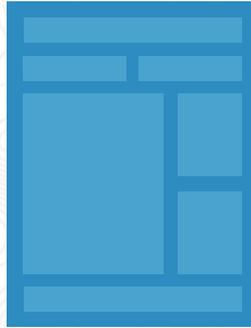


From decoupled CMS to distributed CMS: content management stack

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Time →

Pages



Architecture

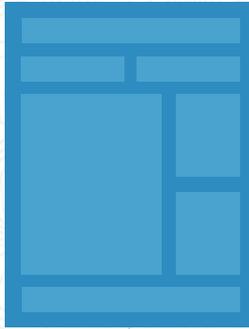
Client

Server

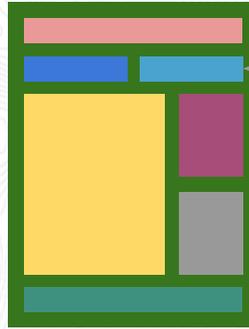


From monolithic CMS to decoupled CMS to distributed CMS

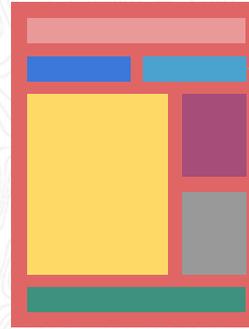
Drupal front  
end



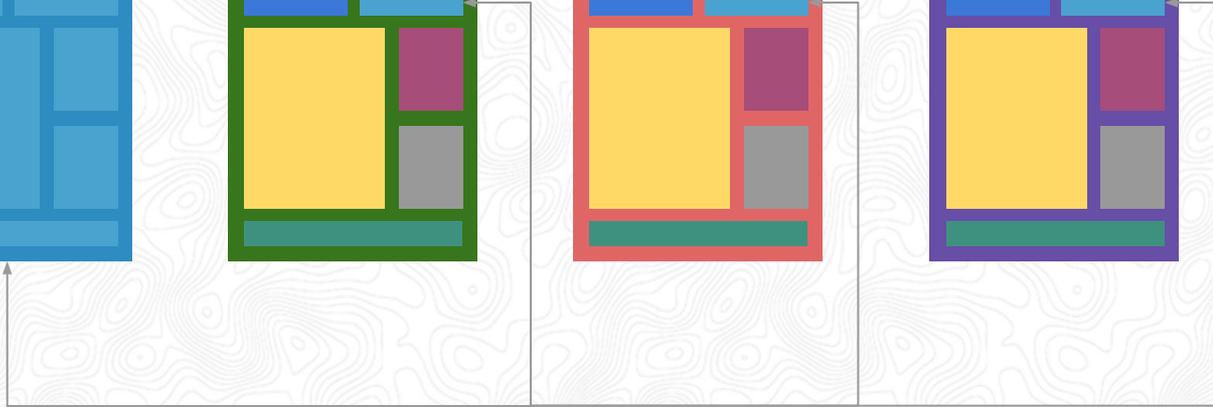
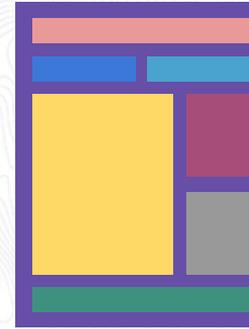
Vue.js



Ember.js

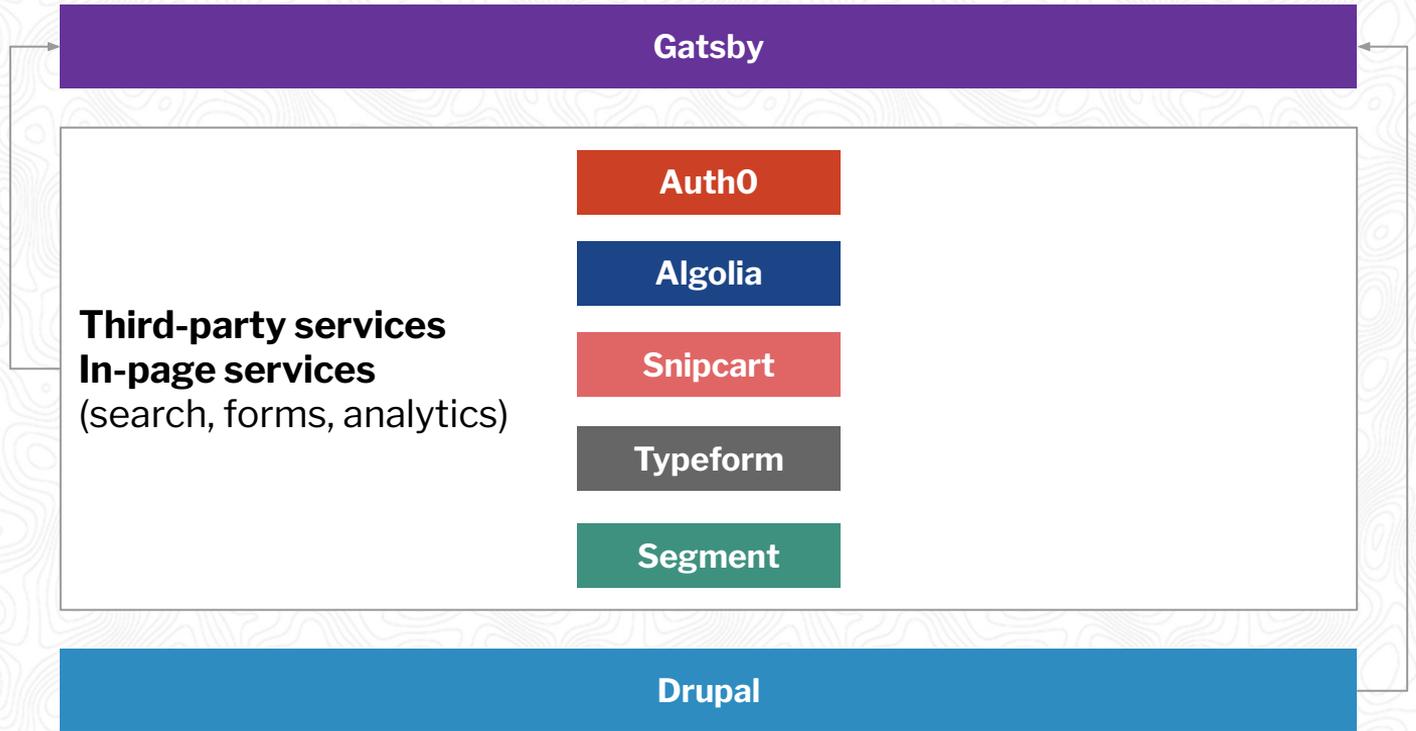


Gatsby



From content management systems to content management stacks

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## Distributed CMS: Content management stacks

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**The new content management system  
is not a single, contiguous system**

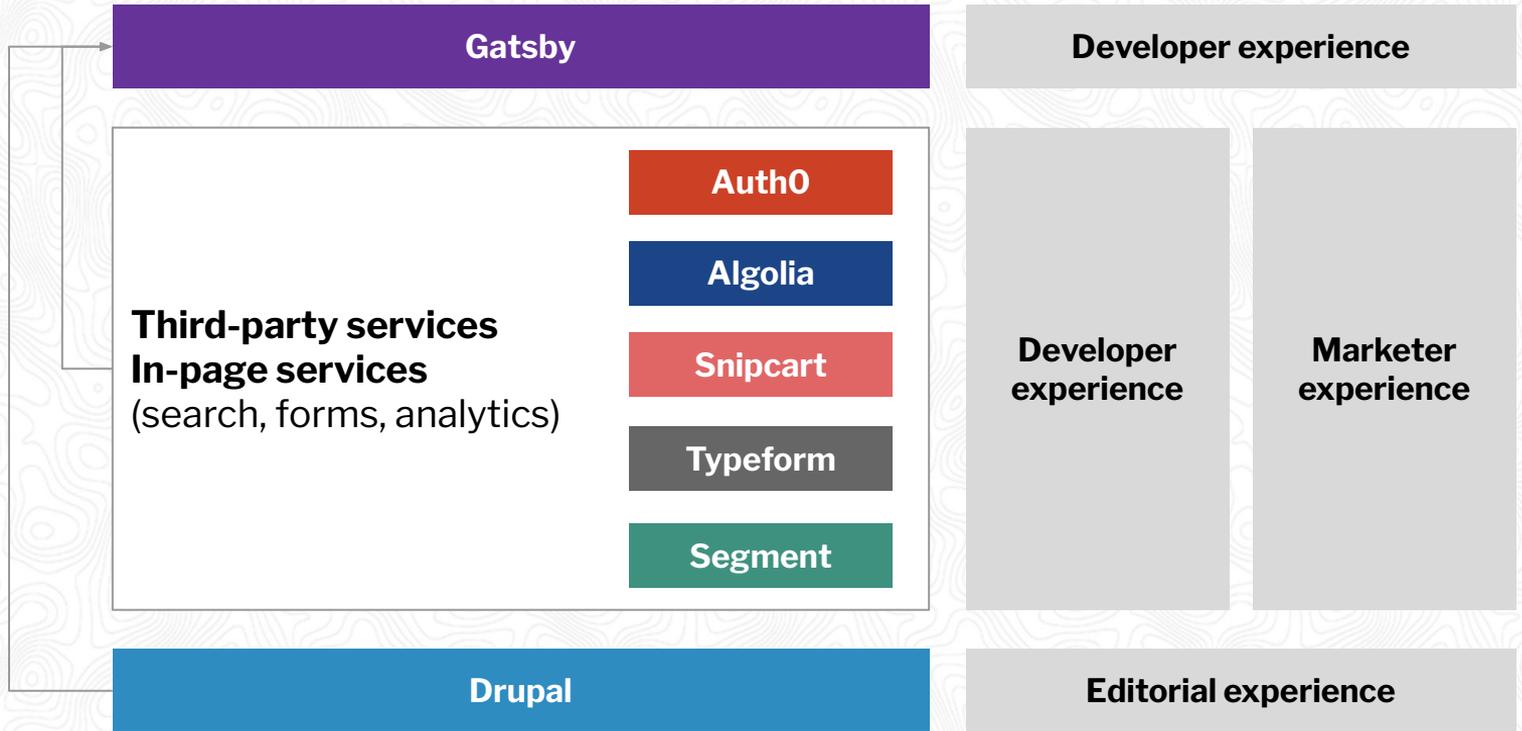


**The content management *stack*  
is a distributed, multifaceted milieu**

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# 4

## The new CMS paradox Marketing and tech at odds



## Distributed CMS: Content management stacks

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**In distributed CMS, editors can keep  
their existing editorial interfaces**

[+ Add content](#)

Content

Comments

Files

[Home](#) > [Content](#) > [Ada Lovelace](#)

Edit

# Ada Lovelace

Title (required)

Ada Lovelace

Cos

**B** **I**       Format  Source

**Ada Augusta Byron King, comtessa de Lovelace**, (Londres, 10 de desembre de 1815 - 27 de novembre de 1852) és la primera programadora en la història dels computadors. Matemàtica i física, va col·laborar amb Charles Babbage en el disseny d'una màquina analítica capaç de resoldre equacions diferencials.

A les seves notes de treball sobre aquesta, va incloure el que ara es considera el primer algorisme que es va intentar que dugués a terme una màquina. És per això que se la denomina la primera programadora.

La vida d'Ada Lovelace va transcórrer a la primera meitat del segle XIX, sota la influència de les idees clàssiques de la societat victoriana, molt arrelades a l'alta classe social a la qual pertanyia però a la vegada amarades dels ideals romàntics. El coneixement científic ja no era una referència de prestigi social, sinó la manera de no quedar-se al marge del "progrés", autèntica font de riqueses.

Save

Last save

08/20/2017 - 16:37

Author

admin

Published

Preview

Delete

MENU SETTINGS

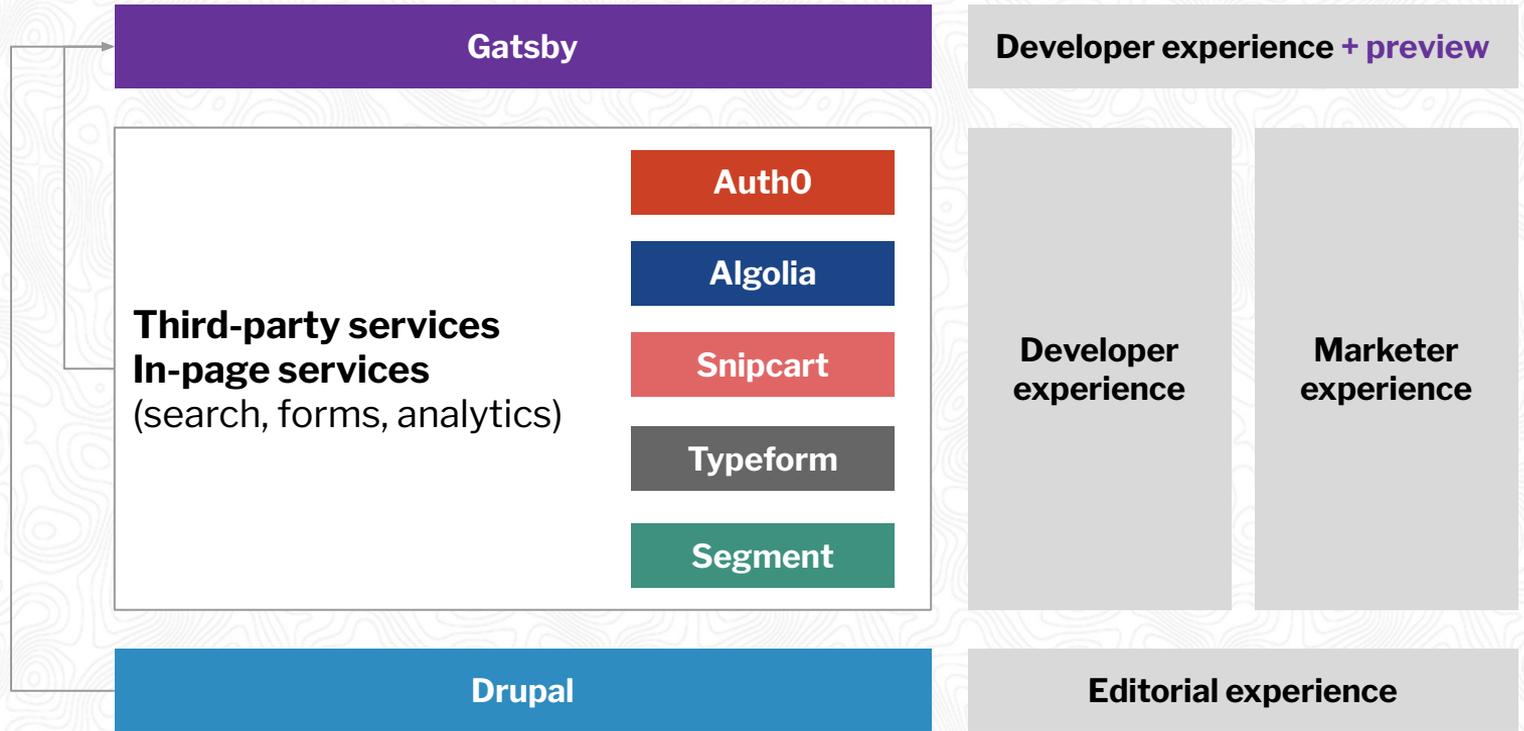
Provide menu link

COMMENT SETTINGS

Admin UI Initiative (ckrina)

---

**For marketers, diversifying into  
new front ends can be challenging**



## Distributed CMS: Content management stacks

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Not Secure | dev-gatsby-preview-test.panttheon.io/en/node/17/edit

This site is intended for demonstration purposes.

Content | Structure | Appearance | Extend | Configuration | People | Reports | Help

I can update it yess

Text format: Basic HTML

Image

**Add or select media**

The media item has been created but has not yet been saved. Fill in any required fields and save to add it to the media library.

	<p><b>Name</b> 1-q4NpI_400x400.jpg</p> <p><b>Alternative text *</b> <input type="text" value="wink"/></p> <p>Short description of the image used by screen readers and displayed when the image is not loaded. This is important for accessibility.</p>
---	---

[Save and select](#) [Save and insert](#) 0 of 1 item selected

Remove

IMAGE

No media items are selected.

[Add media](#)

The media item remaining

**Add Text** Paragraph Content

Current state: Published

Change to: **Published**

[View this item's page](#) [Preview](#) [Delete](#)

Gatsby Preview Test

## I think we're ready!



I can update it yess



Gatsby live preview with Drupal

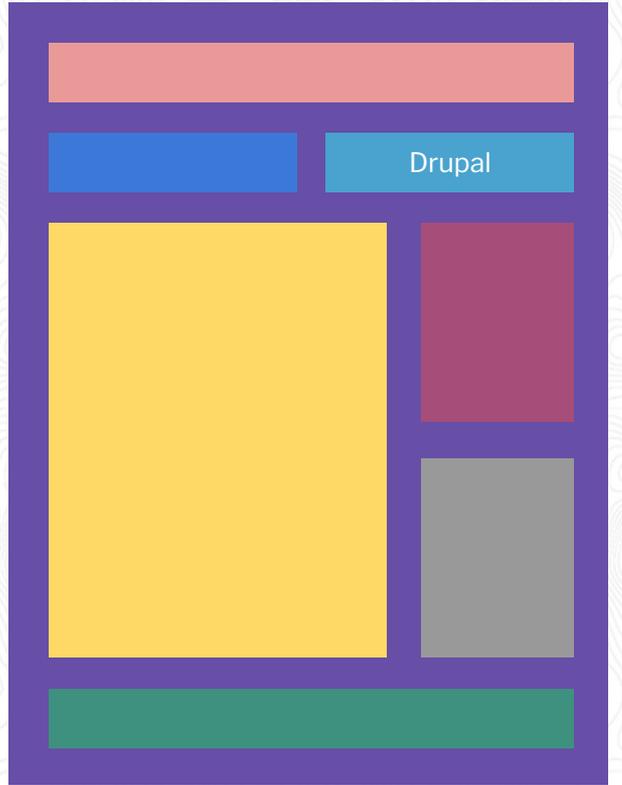
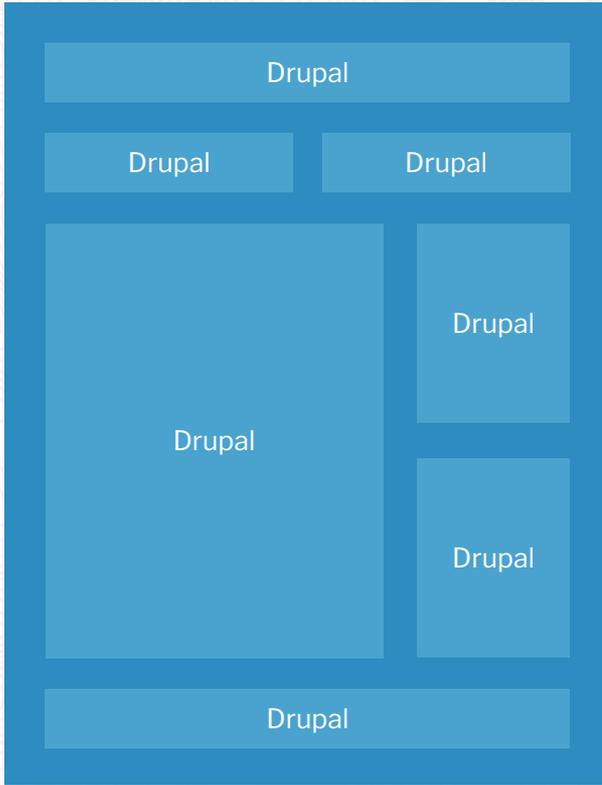
Call it oatmeal, porridge, hot cereal, or just plain oats, it is loved the world over; but recently, the getting a funky makeover. Long gone are the days of stodgy breakfast bowls of thick gloop, because

---

**In distributed CMS, marketers can  
access other powerful services easily**

---

**For marketers, diversifying services  
with flexible options can be proactive**



---

**But they can also lead to the loss of  
nonnegotiable marketing features**

---

# Core CMS marketing features

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- **Preview.** Preview is becoming more of a solved problem, but user interfaces that are easy to use for marketing teams are still distant.
- **Layout.** With a clean separation between data and presentation, how can marketers create, select, and manipulate layouts?

---

# Core CMS marketing features

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- **Contextual links.** Drupal has long been famous for its in-context links that point to administrative pages in the CMS. How will we account for these?
- **In-context editing.** Though Quick Edit in Drupal is used less frequently than before, how can we replicate a similar experience for marketing teams?

---

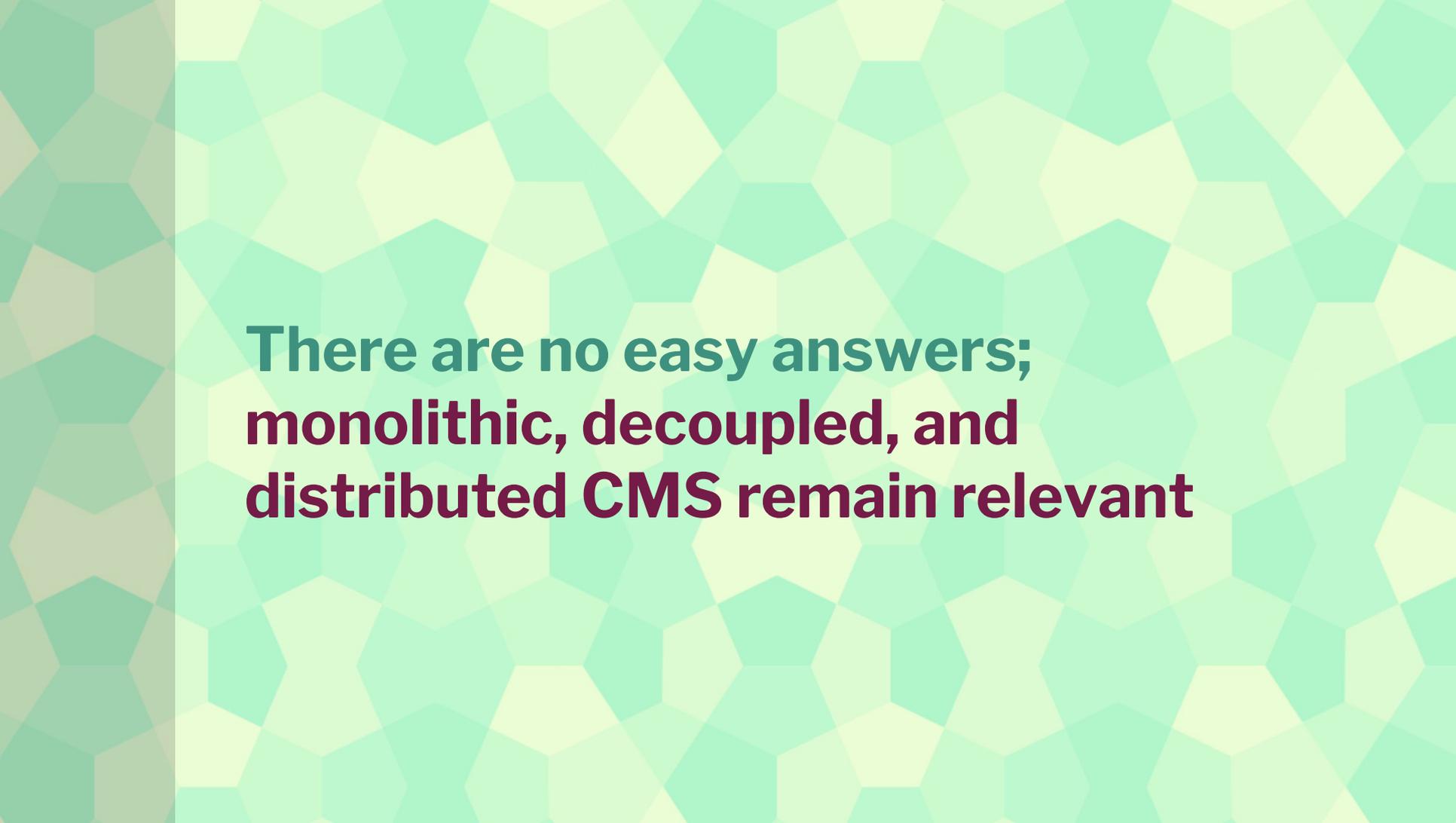
**Should CMSs decouple by default and  
anoint one front-end framework?**

---

**Should CMSs refrain from handling  
aspects of presentation altogether?**

---

**What happens when marketers are  
subjected to intensifying feature loss?**



**There are no easy answers;  
monolithic, decoupled, and  
distributed CMS remain relevant**

# The distributed CMS: How the decoupled CMS endgame will impact your organization

June 6, 2019

The decoupled content management system (CMS) is both reinventing the way we think about content management and evolving how we implement and deploy the software architectures surrounding it. Today, what I call the third wave of the content management system, namely the proliferation of headless or decoupled CMSs that focus on a separation of concerns between structured content and its presentation, is in full swing. But the next wave, the distributed CMS, is just around the corner.

Organizations everywhere are now contending with two seemingly divergent trends: a *channel explosion* in which users expect content at their beck and call on every device and every form factor, and an *architectural decoupling* in which CMSs are no longer contiguously interconnected software systems but rather networks of interchangeable services with limited purposes. In short, they are seeking *distributed* content management, not simply decoupled content management.

*Looking for even more about distributed CMS?*  
Watch for new content on my blog preston.so and @prestonso

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# 5

**Epilogue**

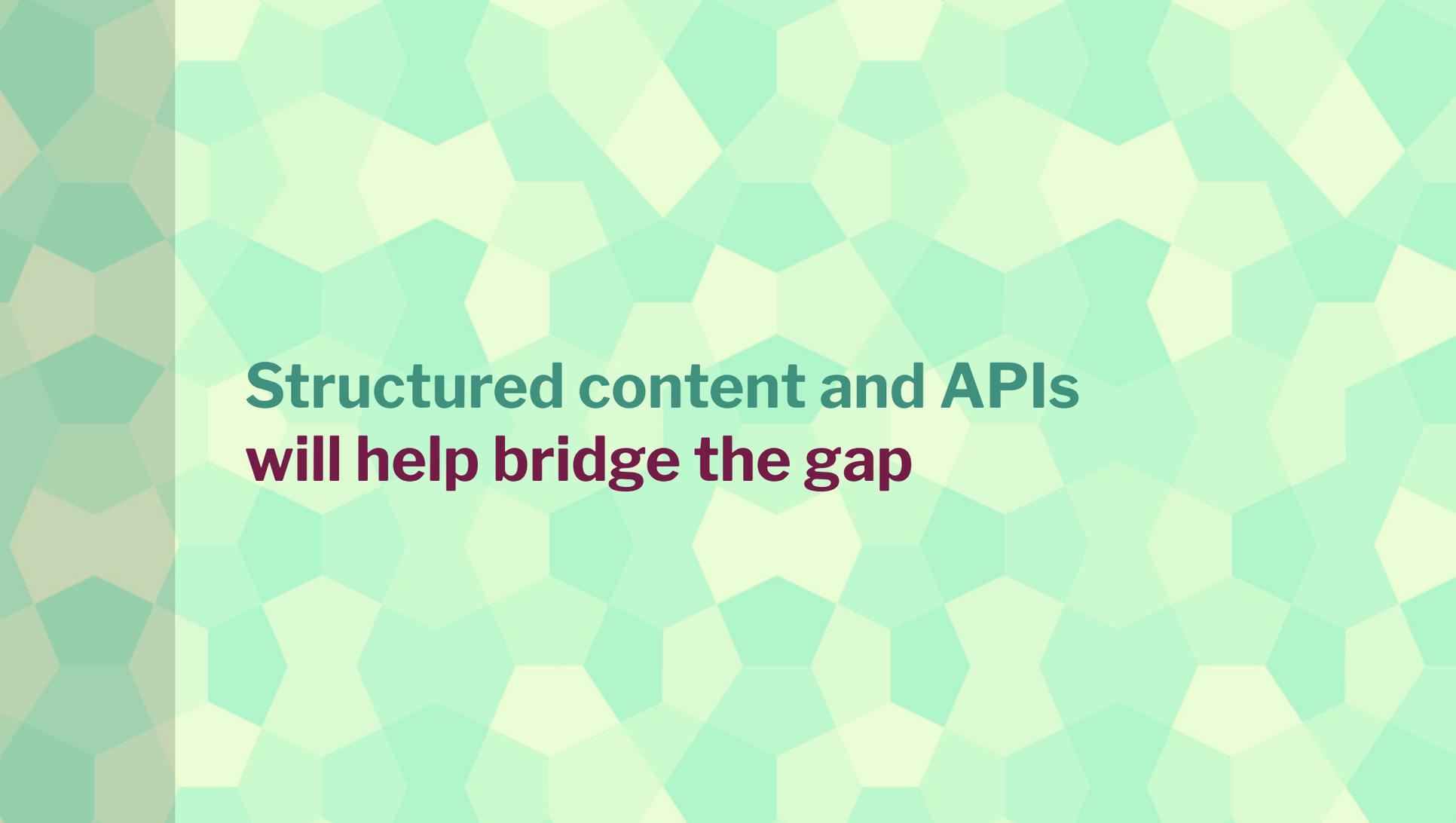
**Getting ready for the new CMS**



**A distributed CMS is a boon  
for your developers**



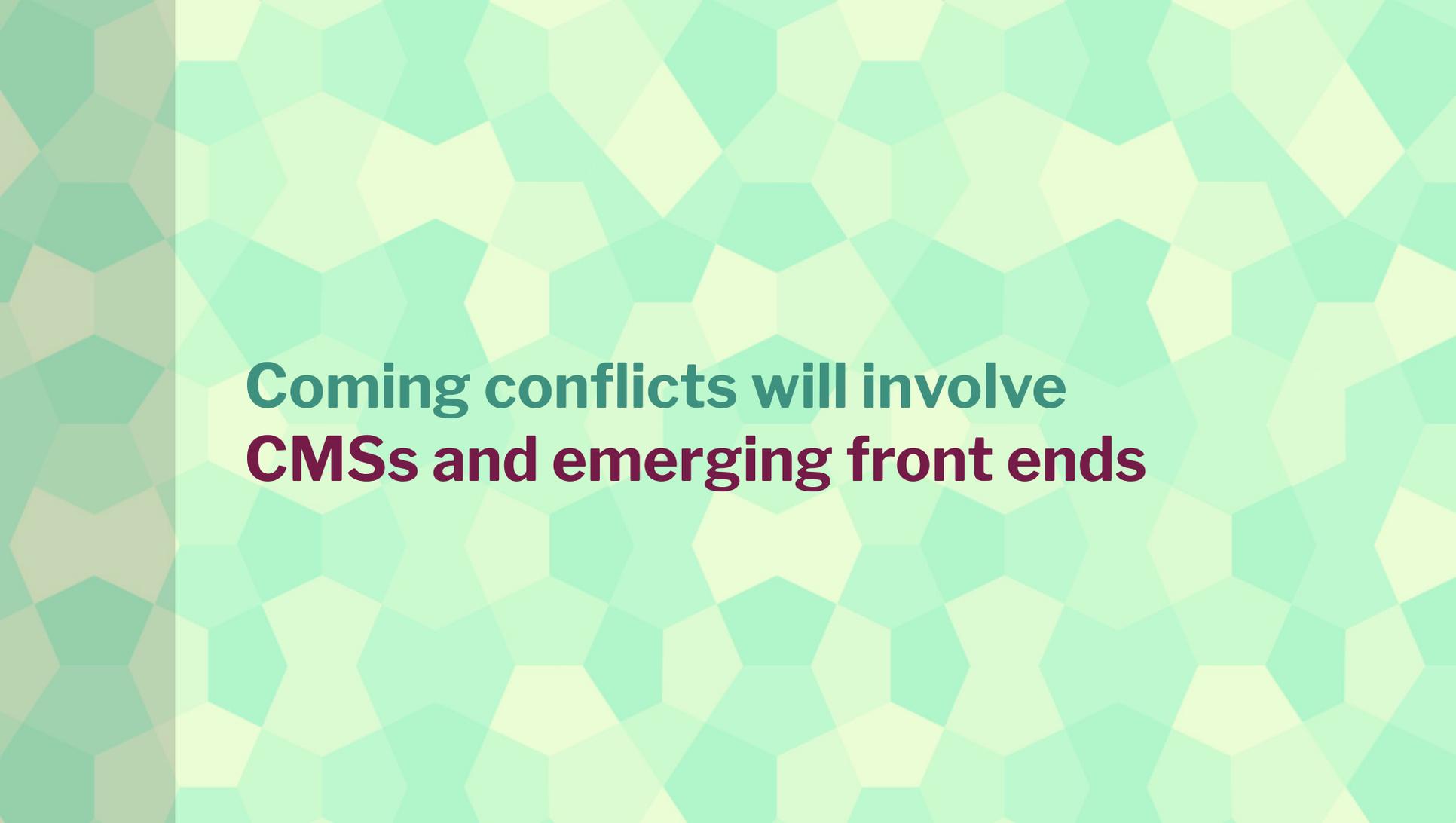
**But consider the impacts  
on your clients and marketers**



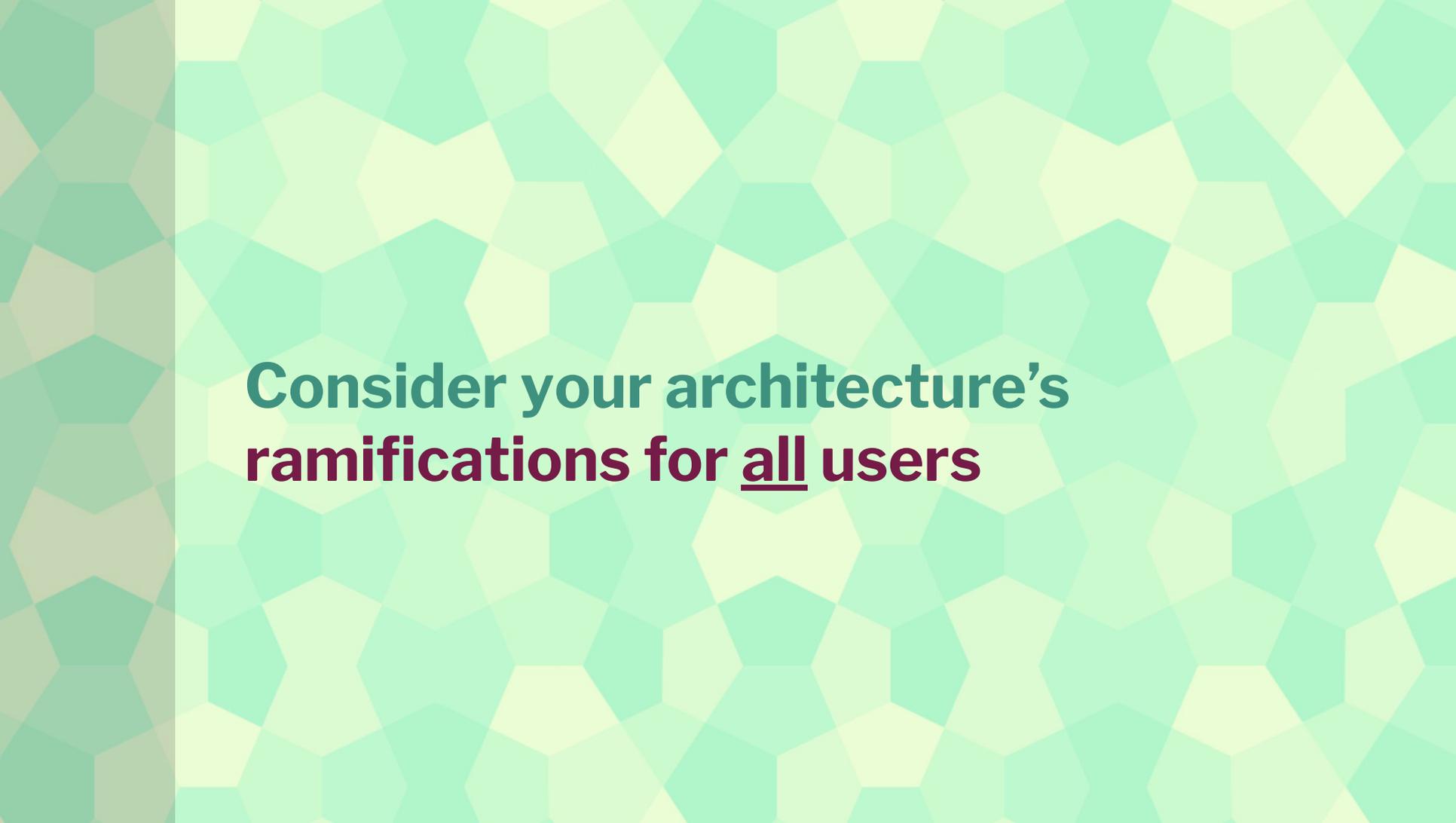
**Structured content and APIs  
will help bridge the gap**



**But we may need solutions for  
features marketers rely on daily**



**Coming conflicts will involve  
CMSs and emerging front ends**



**Consider your architecture's  
ramifications for all users**

---

# Thank you!

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Preston So is an innovation lead, researcher, speaker, and author of *Decoupled Drupal in Practice* (Apress, 2018).

A globally recognized voice on decoupled Drupal and subject matter expert in the decentralized web and conversational design, Preston is Principal Product Manager at Gatsby.

Having spoken three times at SXSW Interactive, Preston is a sought-after presenter with keynotes on five continents and in three languages.

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# ありがとうございました！

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プレストン・ソーはイノベーションリーダー、研究者、スピーカー、そして「*Decoupled Drupal in Practice* (Apress 2018年)」の著者です。

Decoupled Drupalの世界的なリーダーであり、Decentralized Webや会話形デザインの専門家でもあります。プレストンは、Gatsby Inc.(ギャツビー社)でプリンシパル・プロダクト・マネージャーです。

過去3回にわたり、SXSWインタラクティブで講演し、大陸にて3つの言語で基調講演をおこなう人気スピーカーでもあります。

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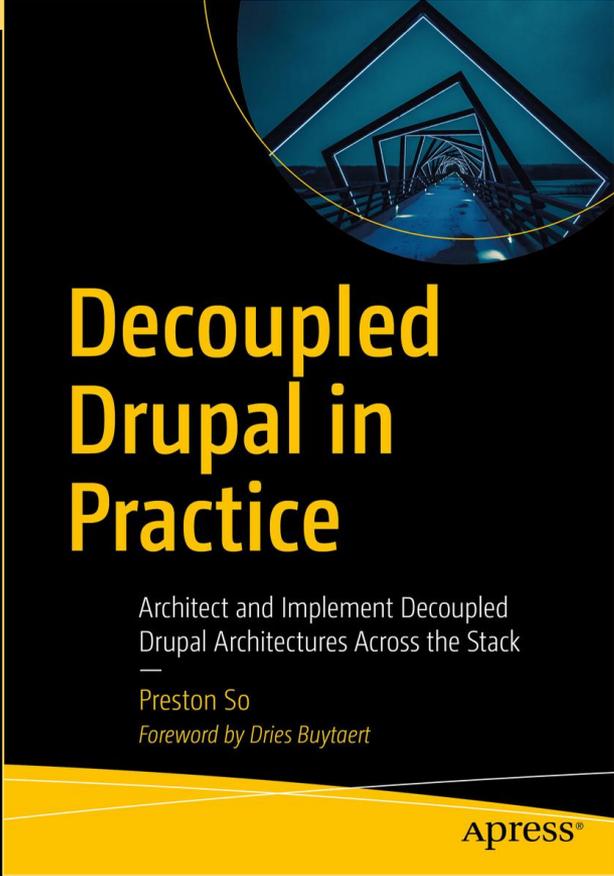
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# **Decoupled Drupal in Practice**

Architect and Implement Decoupled  
Drupal Architectures Across the Stack

—  
Preston So

*Foreword by Dries Buytaert*

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