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{whitepapers}

# An end-to-end newsroom transformation with Australia's leading media company

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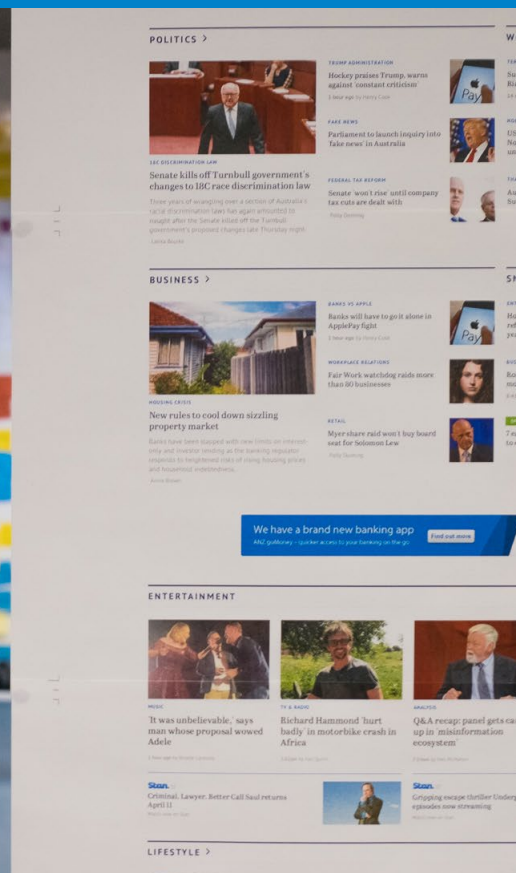


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# 01 THE FAIRFAX MEDIA JOURNEY

After 20 years, and over a million articles, Fairfax Media find the best publishing experience for a modern enterprise media organisation, with WordPress.





Fairfax Media is one of the largest and most influential media companies in Australia and New Zealand.

Their portfolio includes **The Australian Financial Review**, **The Sydney Morning Herald**, **The Age**, **Brisbane Times** and **The Dominion Post**.



The journey for the media giants began in 1841, when John Fairfax purchased *The Sydney Morning Herald*; the longest running newspaper in Australia and a globally recognised news brand. Since then, Fairfax has continued to expand its presence to various mediums - radio, television, and online. For over 185 years, Fairfax has delivered independent journalism through metropolitan, rural, regional and community mastheads; and today, it's one of the most iconic media companies in Australia and New Zealand.

Despite their heritage brand, Fairfax are committed to innovation, and in 2016 they engaged Human Made in one of the largest modernising changes the brand has implemented to date. Our experience in the enterprise publishing industry has included projects with [The Sun](#) and [USA Today](#), two of the most widely read newspapers in print and online in the UK & USA respectively.

They wanted a tech partner to support them through their digital transformation, and a team with the practical experience to implement the best tech solutions for their biggest pain points. And they had a large-scale initiative: creating a custom CMS based on headless WordPress, with a publishing workflow, and an audience facing React.js based front-end (both of which were developed in-house).



Left:  
**The Fairfax team** in their Sydney, Australia office.

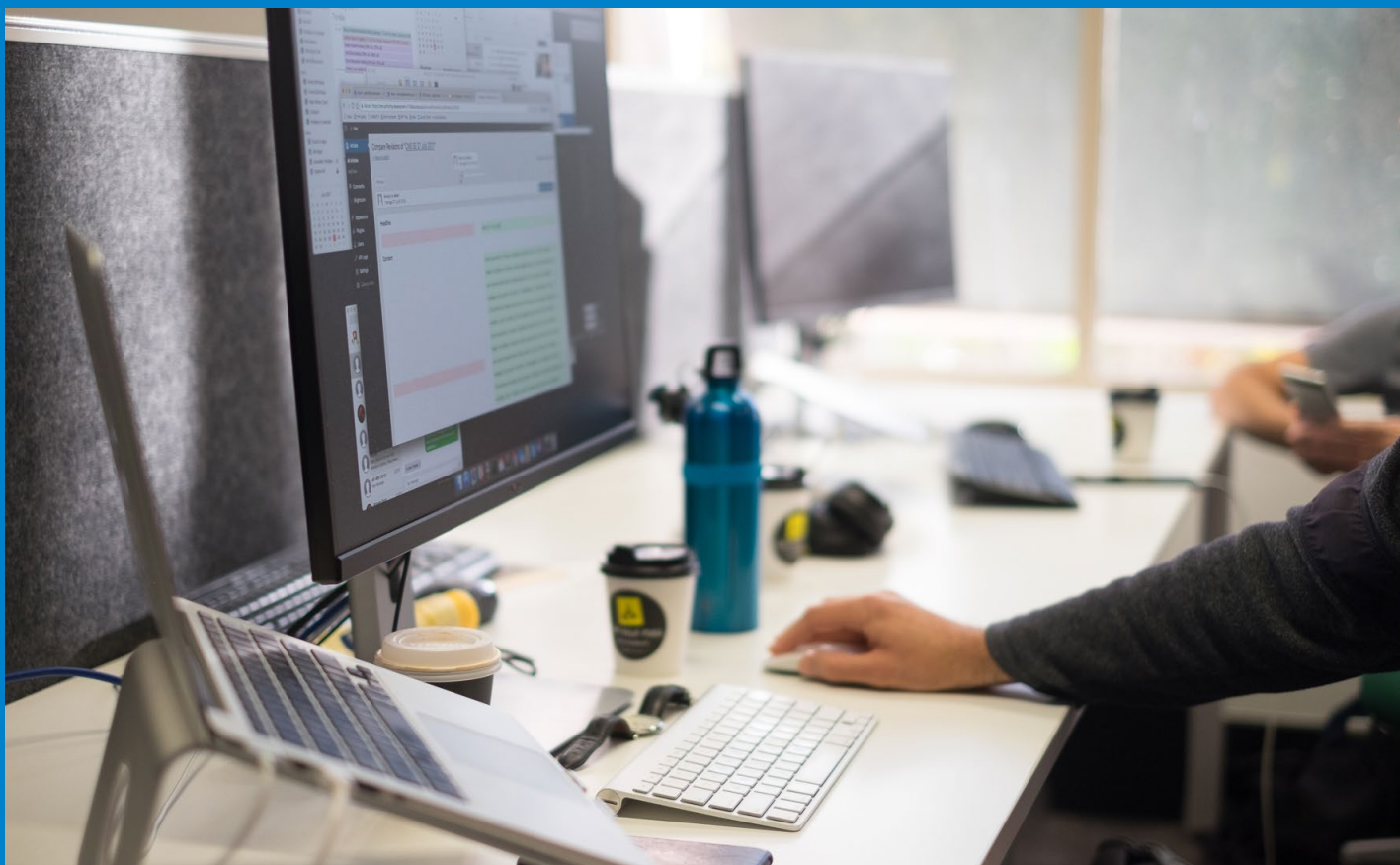
Fairfax's dedication to digital transformation meant the project developed quickly, from a POC, to a full scale integration of their content to WordPress, and a new and tailored publishing workflow for journalists. The speed at which the project moved was crucial: the size of the organisation and the demands on the business meant the digital team had to test ideas quickly, without pouring resources

into features or platforms that wouldn't hold up alongside long-term objectives and business goals. Compared to their previous proprietary CMS, WordPress' open source nature kept the project flexible; and our application of Agile (Scrum) methodologies kept the project iterating quickly, with optimal transparency and feedback loops to ensure nothing we built was surplus to requirement.



*Left:  
Photo from our  
on-site meeting  
with the  
**Fairfax team**  
in Sydney,  
Australia.*

# 02 BUILDING BRIDGES: LEGACY CONTENT AND A NEW CMS





Open source technologies like WordPress are reliable, stable, and secure and they're adept at supporting an active and expanding business in the long term.

## **A flexible future with open source**

One of the first tasks we undertook was to create a custom feature to allow journalists to search the Fairfax Content API for wire feeds from other new sources. This allows journalists to select an article that is then injected into WordPress for editing, customisation and publishing.

The decision to use an open source CMS rather than a proprietary one was clear from the beginning. Fairfax wanted to maintain control

of the editorial workflow, and the journalistic process, without being tied down to any particular software. And the benefits were numerous; the flexibility to adapt to Fairfax's individual business needs and the speed at which we could iterate on open source software was crucial, and in-line with their brand values as a modern media publisher. The flexibility to extend WordPress through integrations with external services also played a huge role in Fairfax's decision, and meant they could maintain ownership of their material without compromising on their CMS of choice.

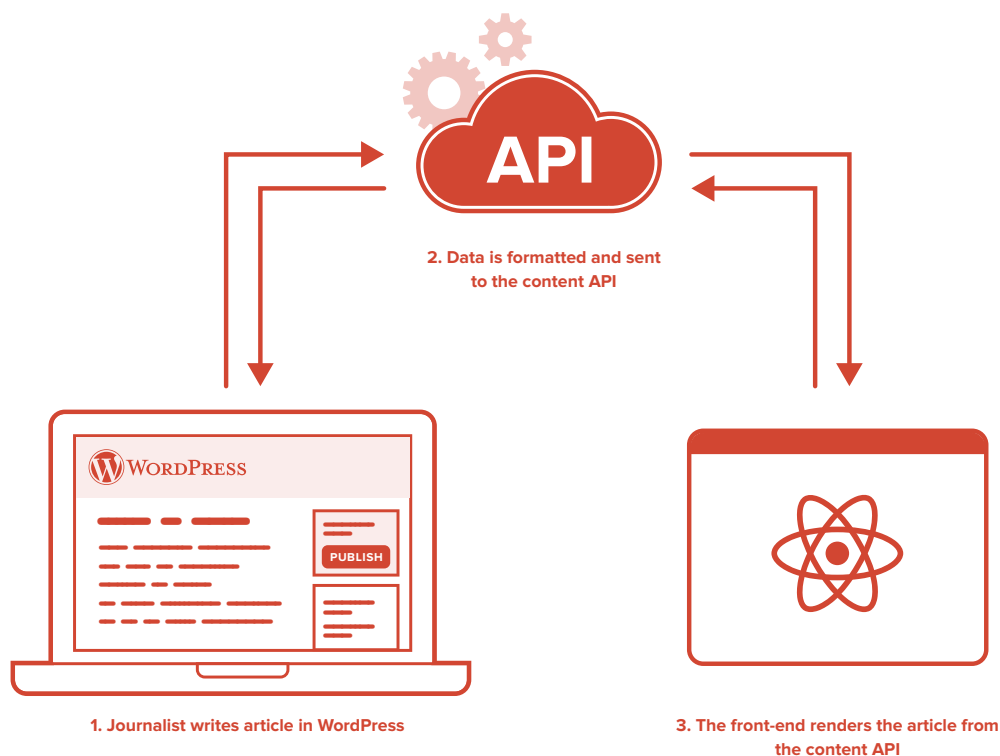


## Managing one million articles with the Content API

The integration with WordPress occurs through a series of touch-points, beginning with querying the Fairfax Content API. The React front-end then communicates with the Content API to display data sent by WordPress. This automatically displays imported data to a predefined and consistent standard. The content is imported in two formats; either fully, with

the entire content of the article (including images), or partially, by importing text from the article and inserting it into a newly created post in WordPress.

WordPress does make use of the WordPress database, but before data can be published it must be pushed to the Fairfax API and database. When a journalist or editor modifies the version stored, they are modifying the content in the WordPress database. Once they publish the changes the content is pushed through the Fairfax API and database.

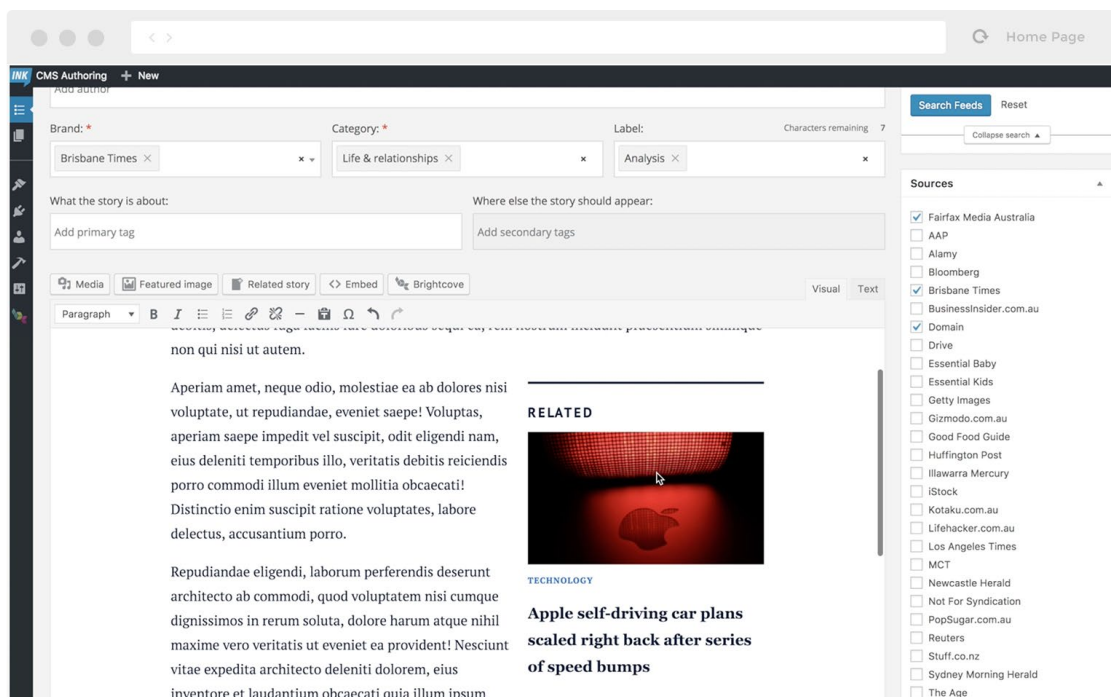


# Visualising and authoring content

Fairfax's authoring team had struggled with the limited formatting options available to them. They hadn't been able to easily preview articles, and lacked any type of visualising tool for their content, making it difficult to see how articles would display on the front-end. Now, we're able to send edits to the content API and label them unpublished. The front-end then accesses the unpublished version

if the URL includes a code and preview querystring. This enables editors to instantly visualise draft articles as published news stories, and keep doing so between drafts and minor editorial changes.

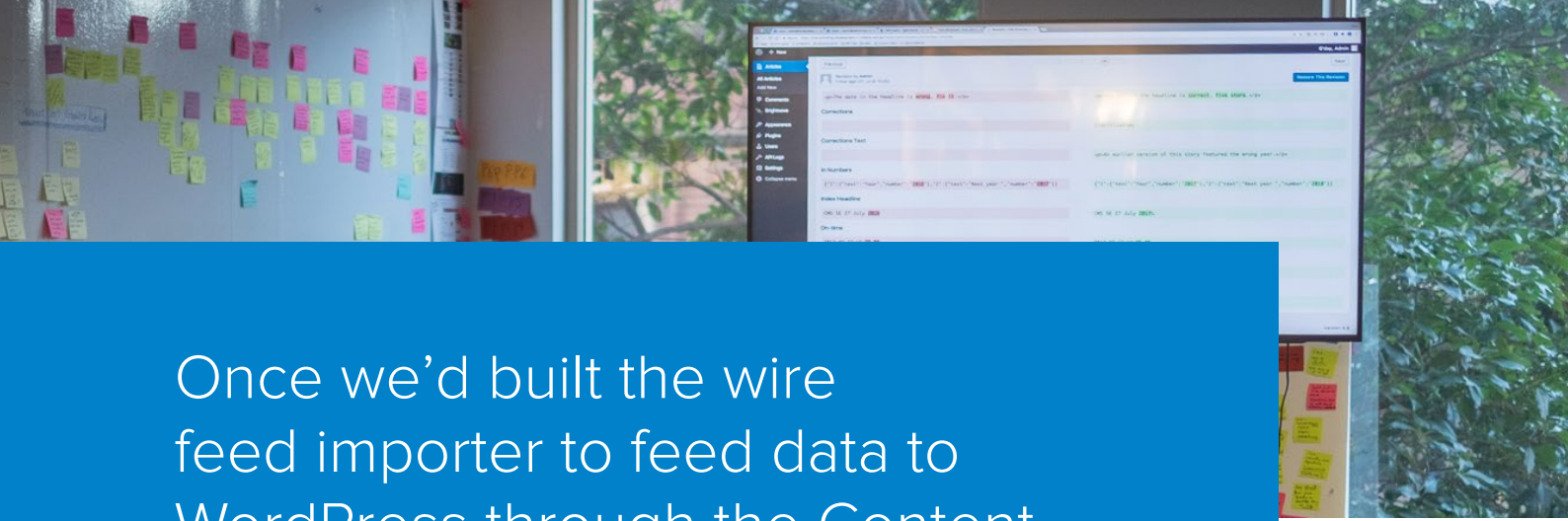
This capacity for visualising demonstrated WordPress' native ability as an authoring tool, improving the speed and efficiency at which news stories could be produced and published, and giving editors the confidence to push content with a clear idea of the user facing result.



Left: **New Editor – Article view.** Authors can now add different content blocks such as Tweets or visual links to related articles and get a preview of their look directly in the editor.

# 03 PUBLISHING WORKFLOWS FOR A NEW AGE





Once we'd built the wire feed importer to feed data to WordPress through the Content API, we began to refine other areas of the editorial process.

Fairfax wanted to move quickly towards new and more effective publishing workflows for their team of editors and journalists. They needed a publishing workflow with custom features, such as legal approval processes, that could match the exact needs of the organisation.

## **Saved searches: a research assistance tool for journalists**

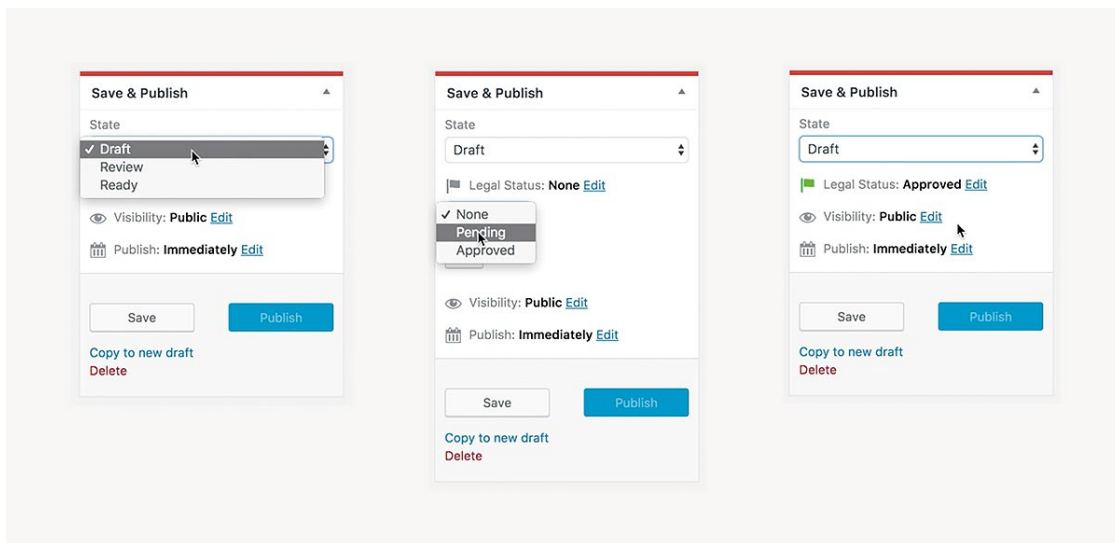
Journalists often work in a particular niche and very often they'll type the same search terms when researching an article. Having

these terms already saved speeds up this laborious process, and provides a research assistance tool to already burdened journalists and writers. This seemingly small tool speeds up the editorial process at the very start, and streamlines the research process. The wire feed importer was the first feature we built that communicated directly with Fairfax's database and their old infrastructure, demonstrating the power of WordPress and visibly speeding-up the publishing workflow at several stages.

## A rigorous editorial review framework

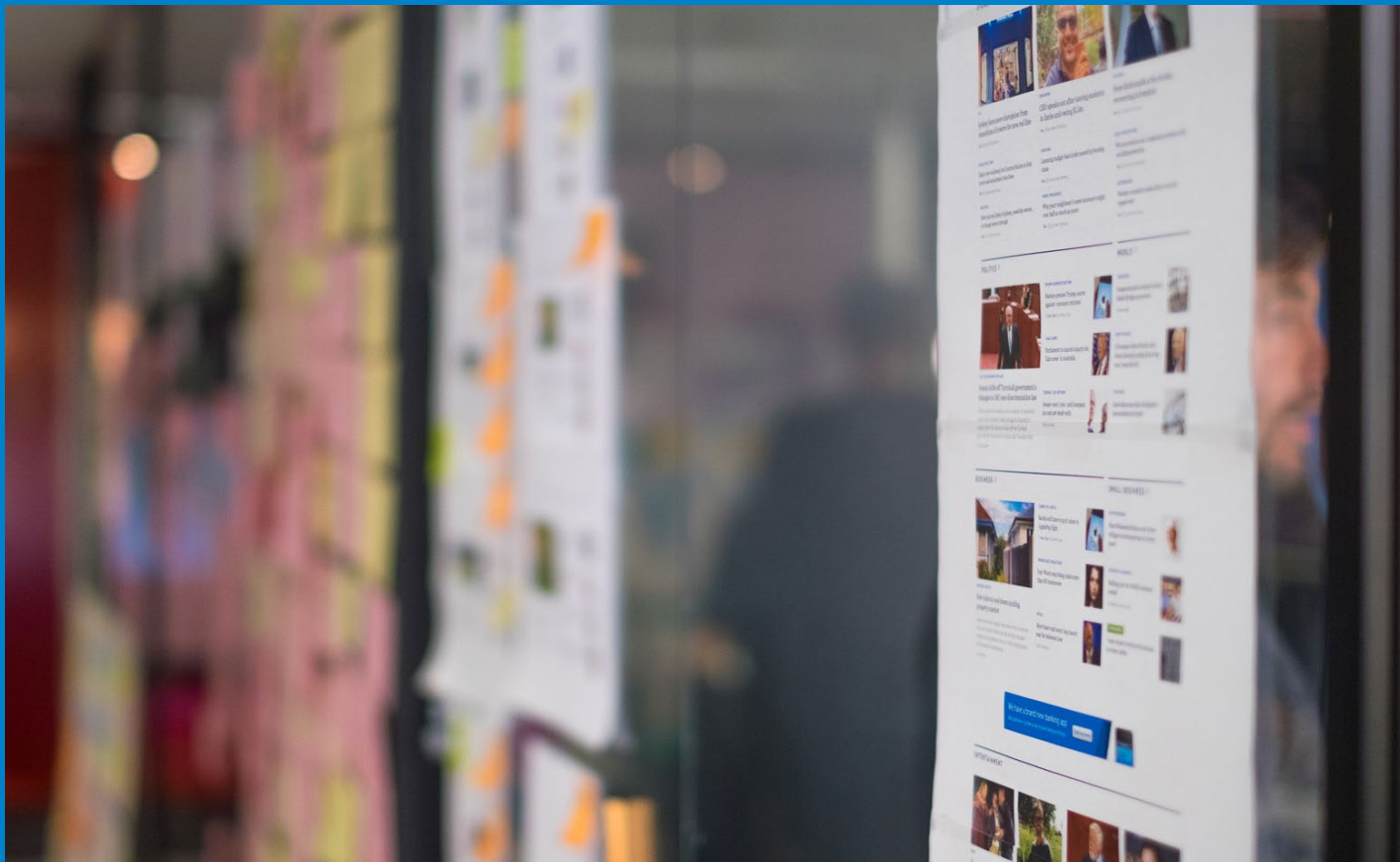
We streamlined WordPress’s native editorial process, tailoring it to Fairfax’s needs. We started by stripping back some of the standard WordPress publishing functionality, completely removing the publish meta box and replacing it with a custom publish box built on JavaScript. From here we added

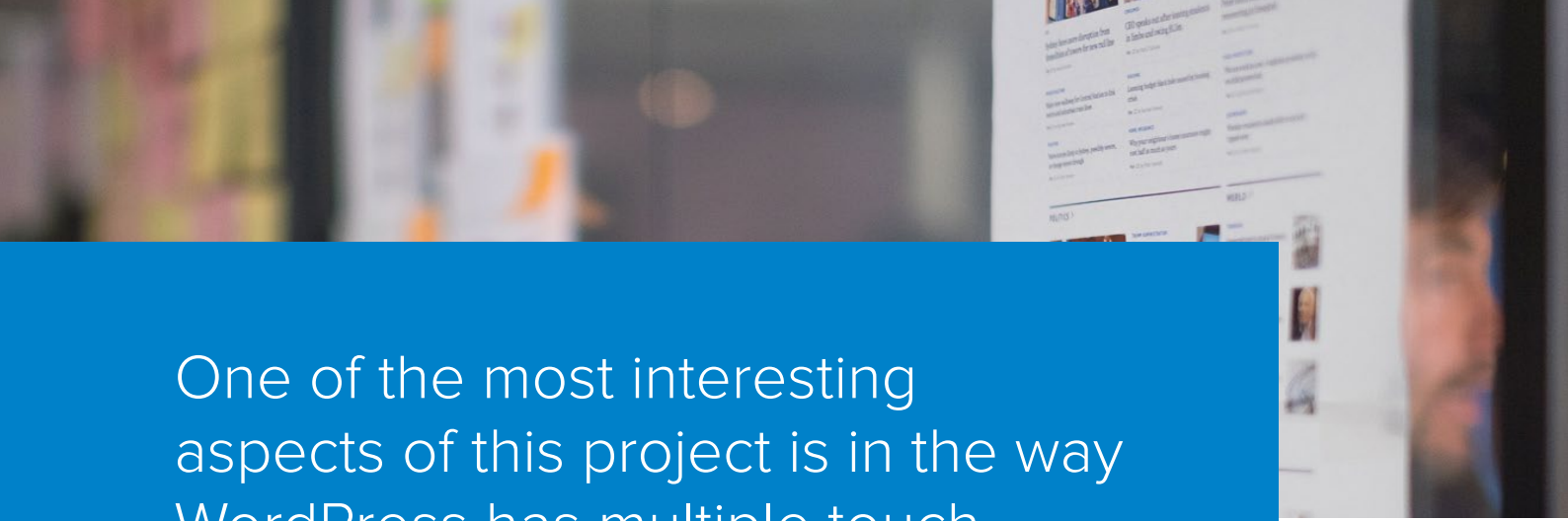
more granular publishing steps, which can take posts from draft > review > ready. This enables a more rigorous review process, but also one which works much faster. We also manipulated the editor post screen so it doesn’t require a page reload with every save, or preview. On top of this, the editorial process required a custom ‘legal status’ step, which would ensure content was parsed through the legal team and flagged with any potential issue.



Left: **The legal status of an article** can be changed independently from its publishing status (Draft / Review / Ready).

# 04 WORDPRESS TOUCH POINTS





One of the most interesting aspects of this project is in the way WordPress has multiple touch-points and interacts with other databases, APIs and integrations.

Fairfax have retained control of their content by keeping it on their own database, but the experience of producing and publishing content, for their editorial team, has entirely transformed. WordPress is used as an editorial interface only and the system by which reporters' create and file stories. But it's WordPress' capacity to communicate with the wire feeds, the React front-end and Fairfax's previous database, that enabled us to create a flexible and streamlined tool for the modern newsroom. This approach was key to Fairfax. It not only enabled them to centralise their data, providing more consistency and convenience

to the newsroom workflow: it also created a clean workspace they could use as a place for data entry, making their admin area much more professional and efficient.

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**HUMAN MADE'S  
EXPERTISE IN  
WORDPRESS  
WAS KEY TO A  
SUCCESSFUL  
OUTCOME.**

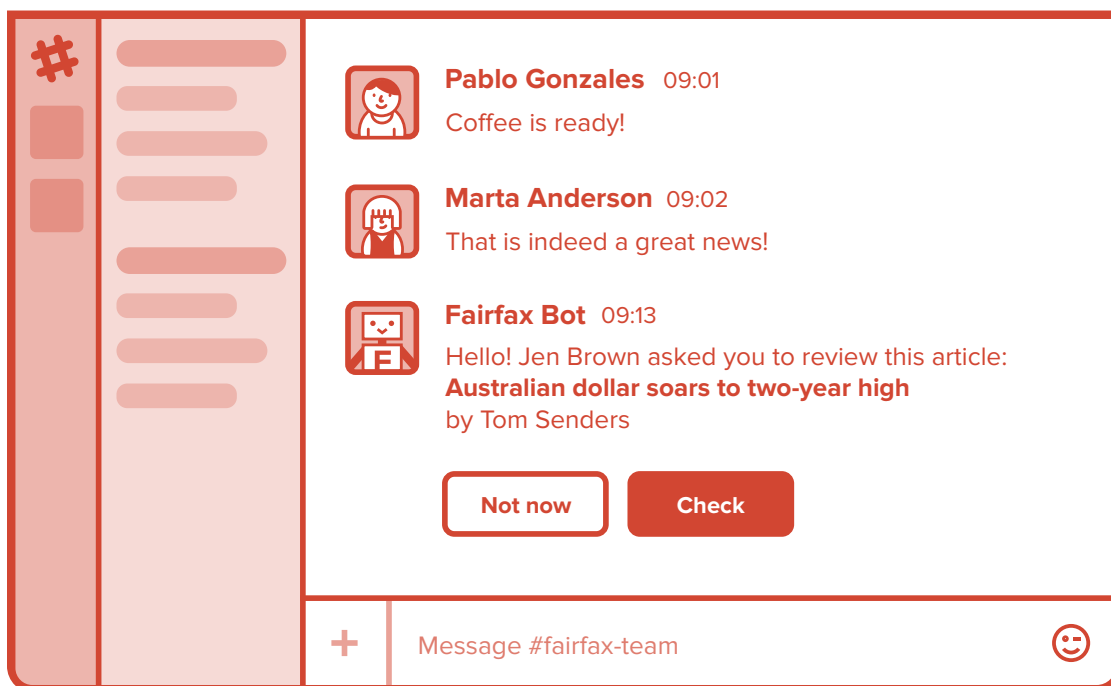
*Damian Cronan, CTO*

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## Slick Slack integration: reducing email noise

One of these touch-points was an integration with Slack, which again involved streamlining the publishing workflow. The editorial team at Fairfax were having to deal with an abundance of email notifications for any amendment or review required. We integrated

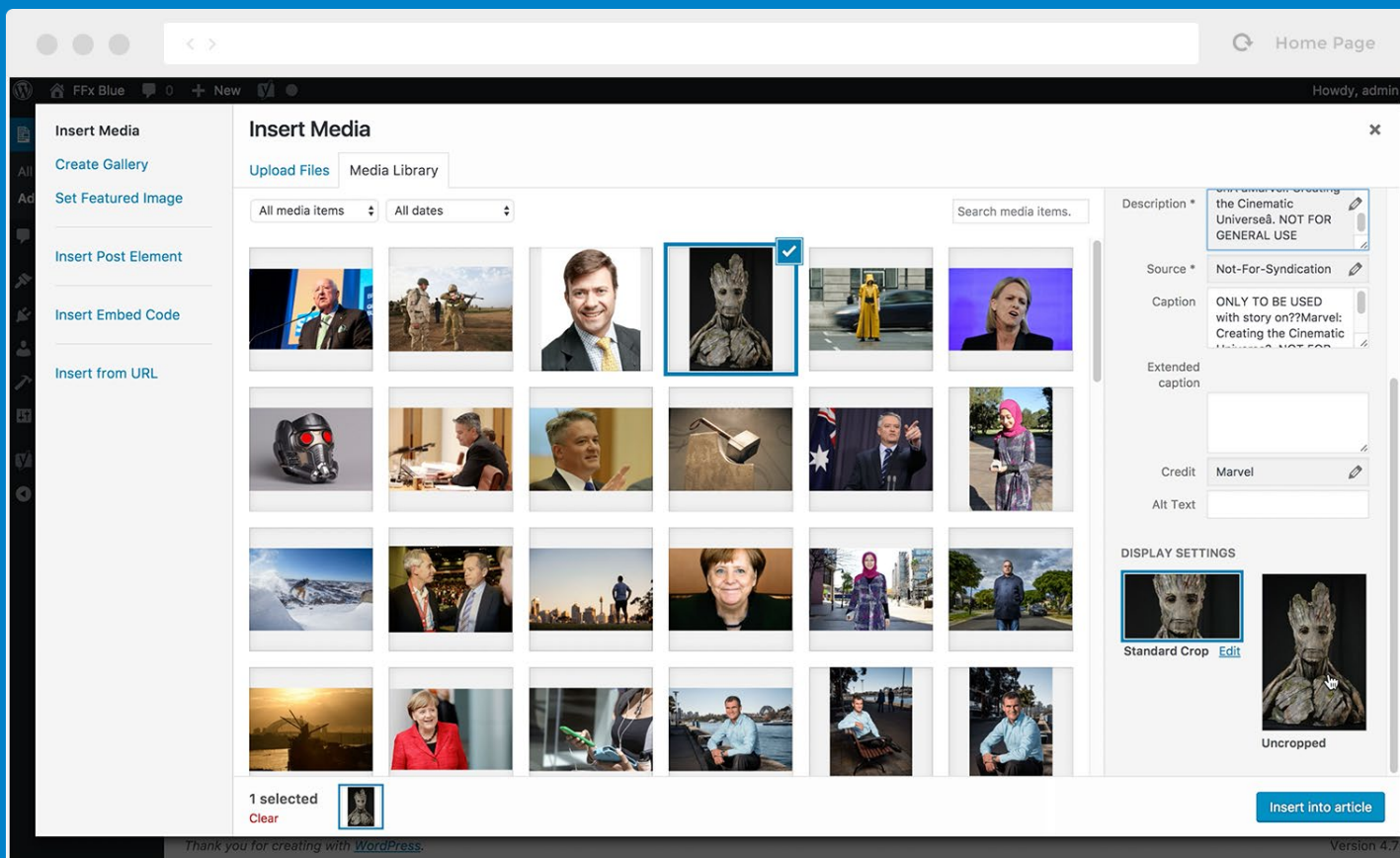
Slack to their CMS in an effort to help reduce email noise, and enable editors to review and approve news stories much more efficiently. The integration has been prepared, and there are plans to build the Slack notifications in the following sprints. Fairfax were already using Slack internally as a communication tool, so using the integration to answer simple questions about the status of an article was a natural move.




Left: A concept wireframe of the **Slack integration** — a friendly bot that will cut the amount of emails between the Fairfax team and speed up editorial workflows.



# 05 MEDIA LIBRARY



Above:  
**Display settings** —  
Editors can  
choose an  
image and select  
the type of crop  
they prefer to  
display. Each  
crop can also be  
edited manually.

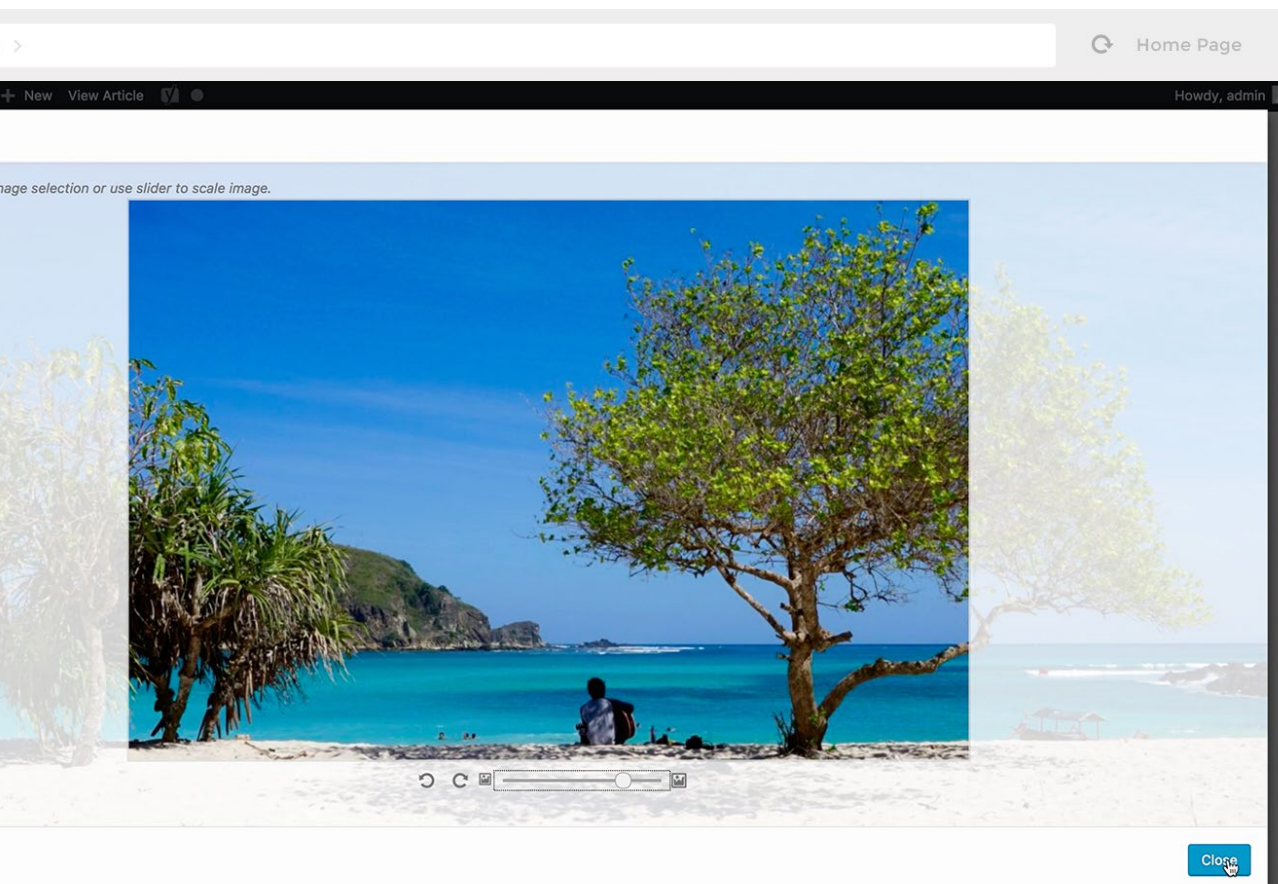


Producing rich, engaging content and changing the way images are uploaded with smart media management.

## **Faster image handling with the Cloudinary API**

As well as their huge database of articles, Fairfax have an equally large media database which they wanted to keep using. They also wanted to upload images through WordPress directly. This happens through a process where images are uploaded to WordPress via a default media frame and sent to their Media API. From here, the image is completely deleted from WordPress, so there will never be an attachment post in WordPress' database.

We also changed the way images are uploaded to a post, circumnavigating standard WordPress functionality. It starts with the Cloudinary API; so instead of generating thumbnails for each uploaded image, we obtain the URL formats to retrieve them from each image, giving editors the ability to create custom thumbnails for every image they want to use in the post. Because this process is handled through the API, it happens dynamically and the editorial team don't have to save endless thumbnails; making their media workflow much smoother and faster.



Left:  
**Efficient and smart image cropping** with the Cloudinary API.

## Programmatic cropping on images

Our work with the Cloudinary API had an incredibly positive impact in the way journalists approach their publishing workflow. Previously they'd had to edit and crop images using an outdated image manipulation tool. This consumed a lot of time and was a stressful part of their daily tasks. The Cloudinary API is able to automatically detect focal points on images and crop

them down to six different, pre-set sizes. So now, journalists are able to search for images in their Media API, and have perfectly cropped images that are responsive across all devices and screens, in a matter of minutes. Although the focal points are adjusted automatically, journalists do have the option of manually overriding them; but the accuracy of the technology saves such huge amounts of time and effort, they rarely ever do.

# 06 AGILE, REMOTELY





Visiting Fairfax on-site meant we were able to look at the available tech solutions and strategies for implementation together, as well as get a good feel for the values and ethos of the business as a whole.

## User research: on-site events

Despite our experience building content management systems for enterprise media, we wanted to intimately understand all the ways in which Fairfax's CMS would be used internally. We spent one week in their offices undergoing extensive user research; gathering experiences from editors, journalists, social media managers, and business managers, to get a well-rounded view of the best way we

could implement the solutions Fairfax had determined to improve everyday interactions with their publishing system. Fairfax's digital team had a clear long-term plan for the changes they needed to make, and had extensively identified their biggest pain points. The ability to visit them on-site meant we were able to look at the available tech solutions and strategies for implementation, as well as get a good feel for the values and ethos of the business as a whole.

## Scrum framework applied remotely

To be able to deliver the first release in a reasonable time frame with best possible transparency and flexibility, the whole project leaned heavily on a fairly fundamental implementation of the Scrum agile framework. Agile project management and the Scrum framework were originally developed in the context of everyone being in the same place, so it was an interesting challenge to apply this methodology remotely.

We started by establishing the initial team, working with the Product Owner to get the Project Backlog underway and setting up a meeting schedule. The team consisted of a Product Owner, Scrum Master, and Development Team. While Scrum teams are 'egalitarian' and not based on any hierarchy, we found we needed an Architect/Development Lead as a primary arbiter of decisions, and point of contact for the client-side team.

The Product Owner, assigned to a member of the Fairfax team, is an important stakeholder in the project. They understand the needs and required practical and business outcomes and are primarily responsible for creating the Product Backlog. We found that having the Product Owner on the client side worked really well, when their responsibilities on other parts of the project didn't encroach. We also found that it's crucial for the Product Owner to have a deep understanding of the scope of both the use cases and the business cases, to be able to prioritise issues in the Product Backlog adequately.

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**HUMAN  
MADE WERE  
INSTRUMENTAL  
IN DEVELOPING  
OUR EDITORIAL  
EXPERIENCE.**

*Damian Cronan, CTO*

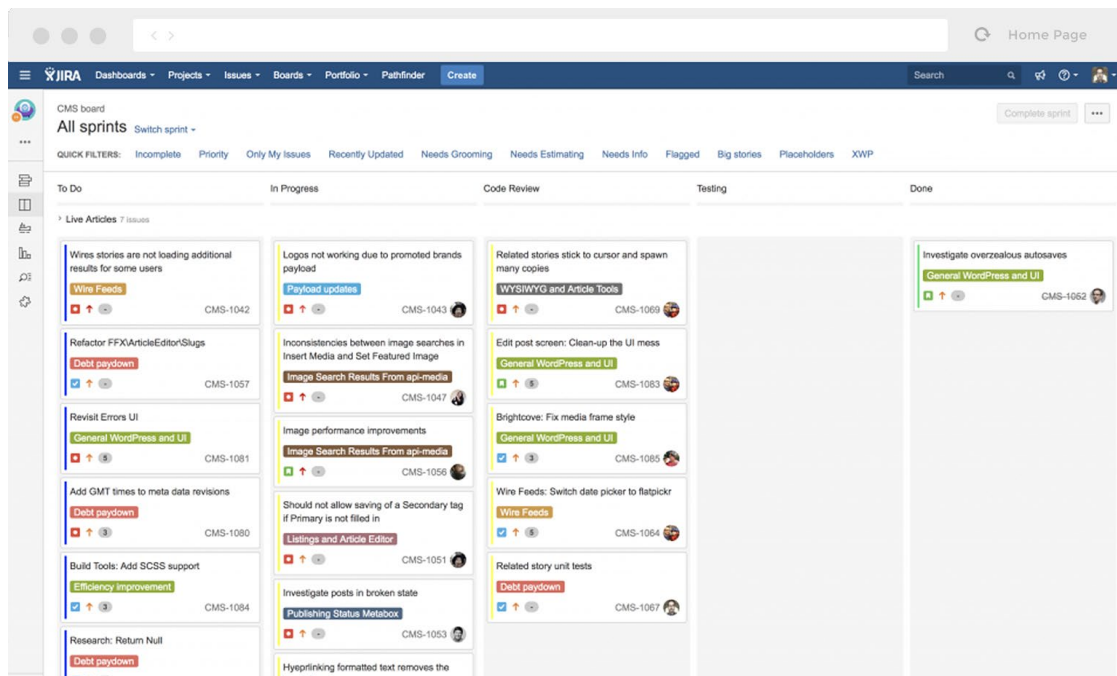
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# Transparency: communication and documentation

We managed communications for the project in several different places, and predominantly in line with Human Made’s usual communication tools. We used [a simple WordPress theme](#) for all written reporting, Slack or Google Hangouts for real time communication, and Zoom for face-to-face meetings.

The size of the project and the numbers of people involved meant we got into the habit of

documenting processes and events on both the project P2, and in Fairfax’s repositories on Atlassian Bitbucket. We aggregated and stored Onboarding documentation in the P2 as well, and direct links to all documents required for onboarding (including initial scope, branching and deployment strategies, and [engineering handbook](#)). We also linked out to screen-recorded videos of features we’d built after each one was complete and, as we progressed through the project, documented approaches to solutions directly in the code; making it clear to other developers in code review why the code is as it is.



Left:  
The team used  
Jira to manage  
the progress  
of the project.

## Enterprise experience and community leadership

Given the extent to which we've customised the WordPress admin experience, and integrated with the tools the in-house team were building, our experience with the [REST API](#) was a crucial part of Fairfax's decision to choose us as a tech partner. Not only were we able to draw from our involvement

with the digital transformations at The Sun and USA Today, but also from our multidisciplinary contributions to the project as a whole. Our developers have co-lead the project and been heavily involved in core contributions, and we've produced an extensive white paper on the [REST API](#); we've also given multiple talks and [presentations around the world](#), as well as organising events in the UK and USA to [educate developers on the WordPress REST API](#).



Left:  
**Joe Hoyle**  
— CTO &  
Partner at  
*Human Made*,  
joint lead  
developer for  
the WordPress  
REST API  
project.



## TALK TO US ABOUT YOUR NEXT PROJECT

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