

Redefining Web Presence

No-Code Tools Meet
Decentralized Hosting

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In this case study, we at Filecoin Foundation explore an **innovative approach to website design workflow**, leveraging the respective Filecoin, InterPlanetary File System (IPFS), and Fleek tech stacks. Central to our approach was the **integration of no-code tools** such as Webflow, Udesly, and Decap CMS. These tools enabled our non-technical teams to design, manage, and update the website with ease, bridging the gap between decentralized technology and user-friendly interfaces.

The end result is a **no-code solution for hosting dynamic content websites in a resilient and decentralized manner on IPFS**.

The primary objective of the overhaul process was to overcome challenges related to limited control, inflexible layouts, and lengthy turnaround times offered by traditional website design and hosting solutions. By giving our non-technical marketing and design staff greater autonomy when making future modifications, we aimed to **streamline operations and ensure our digital presence aligns with our core ethos of decentralization**.

We adopted Filecoin and IPFS to enhance the fil.org website's resilience and reliability, and Fleek – which is built on IPFS – to offer hosting with immutability and decentralization. This integrated tech stack, combined with our no-code tools, allowed us to **assume control**

over our website content, improve website performance, and ensure high reliability.

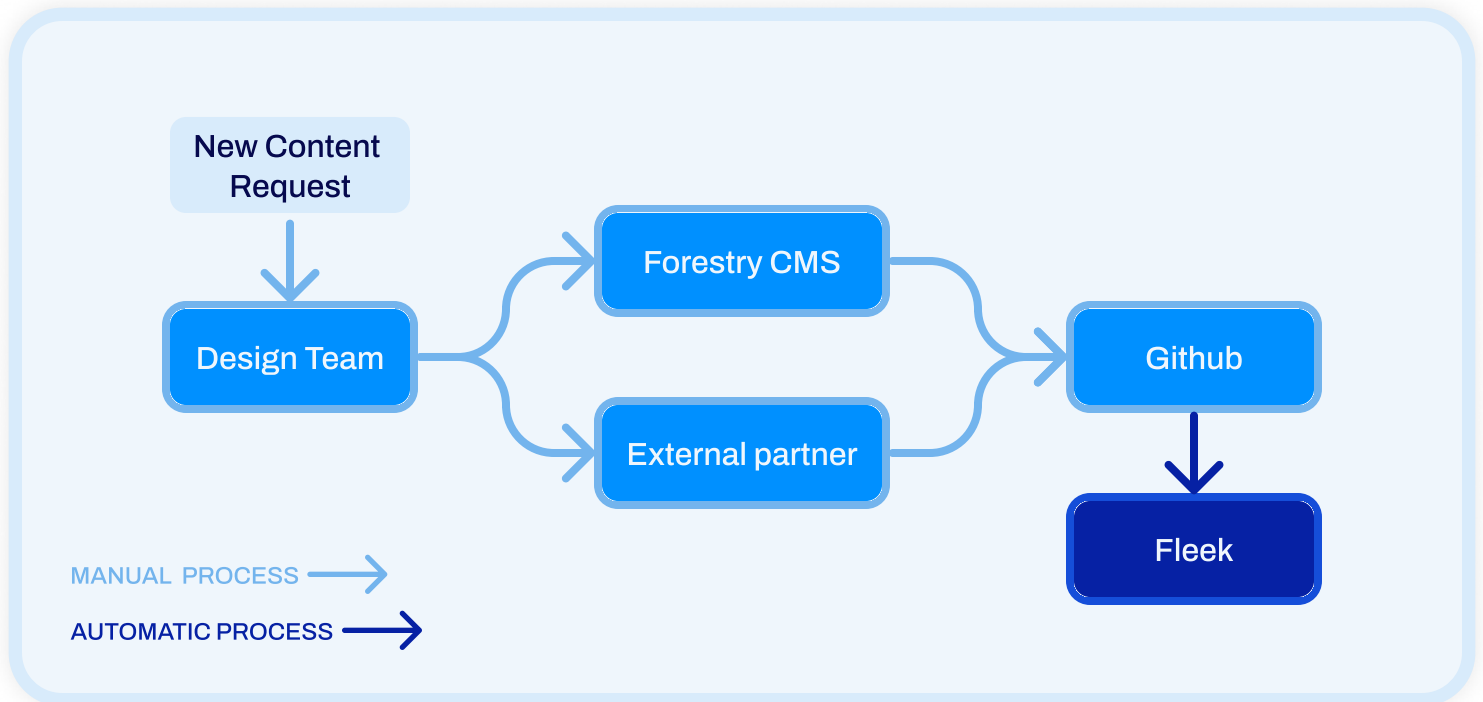
This case study uncovers a **simple and transformative way to use Filecoin, IPFS, and Fleek as an alternative to traditional web hosting solutions**, by offering increased reliability, and data integrity. This solution allows, for the first time ever, for non-coders and non-technical users to host dynamic content websites in a resilient manner on IPFS.

Introduction to Filecoin and Filecoin Foundation

The Filecoin network is **building open services for data**. The vision includes not only storage, but also the distribution and transformation of data. The goal is to form a credible alternative to the legacy cloud infrastructure that matches it in scale and suite of data services.

Filecoin Foundation is an independent organization dedicated to the **stewardship and advancement of the Filecoin network**. Its mission is to ensure the protocol's long-term success by fostering its development, promoting its values, and supporting the vibrant community of developers, storage providers, and users. By championing decentralized storage solutions, the Foundation aims to create a more open, resilient, and equitable internet.

Deep Dive into the Challenges



At Filecoin Foundation, our initial website hosting, tooling, and workflow solutions presented **obstacles for our non-technical** design and marketing teams. Moreover, we aspired to optimize the use of technologies and **tools within our ecosystem**, especially concerning website hosting.

In our original configuration, we were reliant on a third-party organization to add, remove, or rearrange sections. This dependency not only increased their billable hours but also led to a **considerable backlog** on our side.

More, our custom-built content management system (CMS) permitted basic textual edits and image replacements, but lacked the flexibility for more intricate design tasks without in-depth coding knowledge.

For instance, when someone from the events or marketing team requested a website design change, they would approach our design team, who would then relay the request to the external agency. The agency would then commit the change on Github, and send it back to the design team to finalize the process.

More, the limitations of our chosen CMS hindered our ability to **adapt swiftly to our evolving objectives** and manage our online presence effectively.

Dynamic content is crucial for modern websites, offering personalized experiences and engaging features. However, we found that **conventional static website hosting solutions fell short in supporting dynamic content effectively**. Integrating such content into our website while using Fleek for hosting posed its own set of unique challenges.

As we searched for alternative solutions, another challenge we ran into with the major no-code website hosting platforms is their reliance on centralized cloud storage providers such as Amazon Web Services (AWS). The Filecoin protocol is designed to revolutionize this space by providing storage and data services in a decentralized fashion. Thus, hosting our website on a service like AWS would **not align with our core principles, so we needed to find a creative alternative**.

The Promise of Decentralization

Before diving into our solution, it's essential to understand the technologies we leveraged. IPFS, or the InterPlanetary File System, is a protocol that allows **files to be stored and shared in a decentralized manner**. Instead of the traditional method of locating files based on where they are (like a URL), IPFS locates them based on what they contain, using a cryptographic hash. This ensures data integrity and reduces the reliance on centralized servers.

Filecoin, which leverages IPFS, is a **decentralized storage network** that creates a marketplace for storage services. It aligns

incentives between storage providers and users, ensuring a robust and reliable network.

Fleek is a platform that **simplifies the process of building and deploying decentralized websites and applications on IPFS**. It provides user-friendly tools and services that enable developers and organizations to implement decentralized website hosting without the technical complexities traditionally associated with IPFS.

Our Journey to a Decentralized Solution

Recognizing the limitations of our initial setup, we embarked on a journey to overhaul our digital presence in a way that utilizes our tech stack and is inline with our core values of decentralization and immutability. Our goal was clear: **to create a dynamic, decentralized website that could be easily managed** by our team without extensive technical knowledge.

Our initial instinct was to build out a site using Webflow, a popular no-code web design tool, as our team had extensive previous experience with the platform. The challenge with this was that Webflow sites are typically hosted on Amazon Web Services, which is a centralized storage and data services platform. **So, we sought out a solution to use Webflow for the design component while hosting on a decentralized alternative**.

We turned to Fleek, a **Web3-native hosting solution** that provides decentralization and immutability by using the IPFS and Filecoin underlying technologies.

Fleek's platform is designed to work **hand-in-hand with Github**. It automates the

deployment process by fetching static code directly from Github repositories and publishing it. This integration ensures that the deployment of websites and applications is both efficient and consistent.

We then needed a way to get the content from Webflow to Github to be fetched by Fleek. To do this, we implemented another no-code tool called Udesly that efficiently transforms Webflow's content into streamlined and compressed static code. By using the Udesly Chrome extension, **we could easily convert our content into clean code and then export that code directly to Github.**

The Dynamic Content Challenge

This tight coupling with Github presented a **new challenge** for us: Fleek primarily supports static websites, but fil.org operates a dynamic blog. Thus, any content update would require either a direct interaction with Github or an intermediary layer to manage the block content.

The first scenario would have required Filecoin Foundation team members, even those from non-technical backgrounds like marketing or events, to learn to **navigate the complexities of Github** for even minor changes, such as initiating and signing off on updates, ensuring accuracy, and then initiating the publish action.

As learning these details would not have been a valuable use of time for most of our team members, we identified a **viable intermediary layer in Decap CMS**, a no-code yet open source content management tool. While Decap CMS was built initially for users building static websites to host on Netlify, because it is open source we were able to run our own version to support dynamic content.

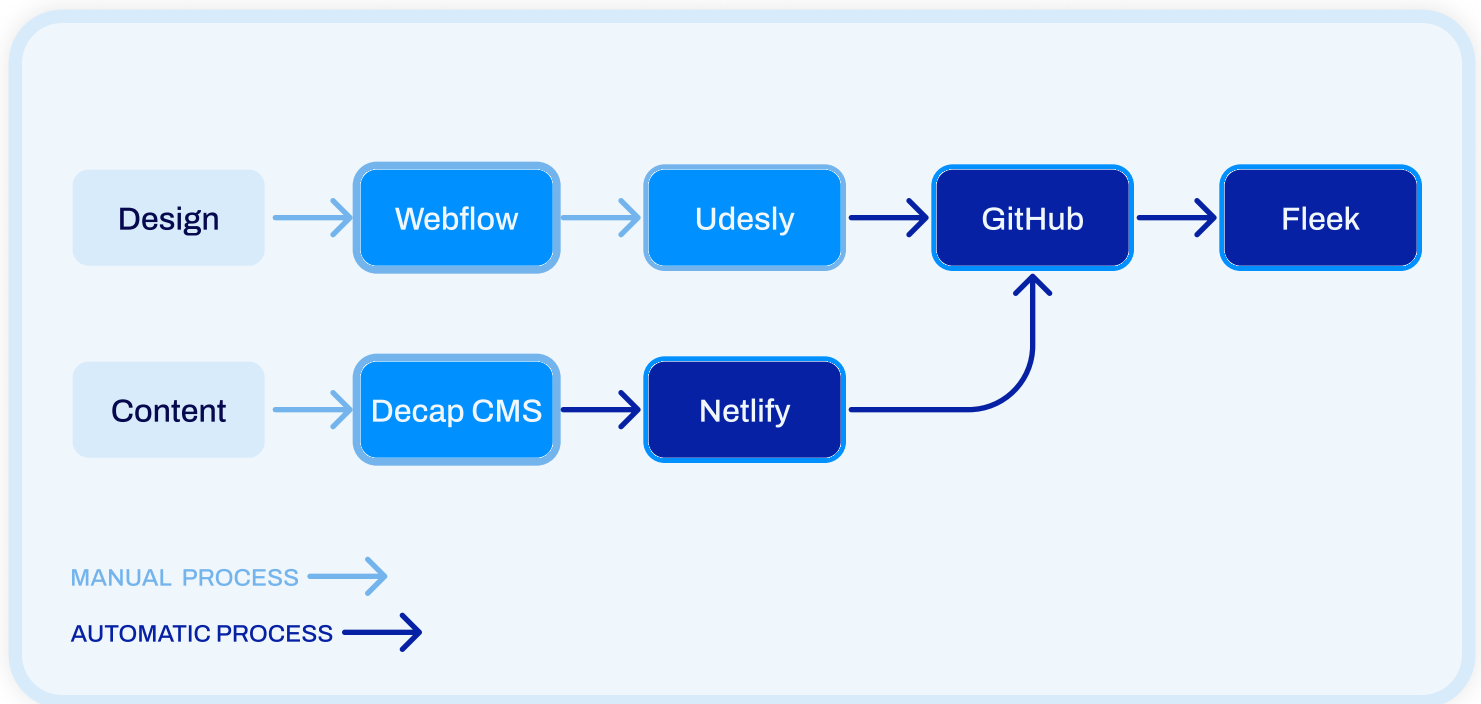
As a Git-based CMS, Decap CMS **simplifies the content management process** by providing a user-friendly interface while offering the benefits of Git.

Git is a **distributed version control system** (VCS) that tracks changes in source code during software development. As such, Decap uses the Git VCS as its primary means of content storage, tracking, and collaboration. Every change is tracked, allowing for history reviews and reversion to previous versions. Content is stored in a Git repository, rather than a database, ensuring easy cloning, forking, or migration.

Through this process, we discovered that Decap could **seamlessly handle** Github interactions for us, eliminating the need for manual data transfers to Github and ensuring compatibility with Fleek.

Ultimately, Decap's ability to **manage Github processes in the background was a game-changer**. It meant that non-technical team members would be able to create, edit, and publish content without the need to learn complex Git commands or workflows, thus satisfying our objective of delivering a solution that is interoperable and usable by various internal teams.

The Result



The transformation was profound. **We were able to deliver a Web3-native website without sacrificing Web2 performance.** Update delays, which previously spanned days or weeks, can now be executed in mere hours. Our internal non-technical teams can now make real-time changes, ensuring our community always has access to the latest information. The autonomy granted by this new setup has also led to cost savings by reducing our reliance on external agencies.

But beyond the tangible benefits, **our transition to a decentralized hosting solution was symbolic.** As an organization championing the decentralized web, our digital presence is now fully aligned with our stated mission and ethos. We were no longer just proponents of the technology; **we were active users**, showcasing its potential to the world.

The Future of Decentralized Web Hosting

Our journey is just **one example** of the transformative potential of decentralized technologies. We believe that as the digital landscape continues to evolve, centralized solutions, with their single points of failure and vulnerability to censorship, will increasingly give way to decentralized alternatives. **IPFS, Filecoin, and platforms like Fleek are leading this charge**, offering solutions that are not only more resilient but also more in line with the ethos of the modern web.

For organizations looking to make this same transition, **our experience offers a blueprint**. With the right tools and a clear vision, it's possible to create a dynamic, decentralized web presence that offers unparalleled flexibility and control.

The solution we've crafted has broader implications for the decentralized web hosting industry. As more organizations **embrace the benefits of decentralized systems**, our case study serves as a pathway. The ability to host dynamic content websites on IPFS without requiring extensive technical knowledge democratizes the process, making it accessible to a wider range of organizations.

We also believe that the **importance of data integrity and security** is becoming ever more paramount. Decentralized hosting solutions like the one we've implemented offer a robust alternative to traditional systems, ensuring data remains secure, accessible, and in the hands of those who own it.

Conclusion

Filecoin Foundation's transition to decentralized website hosting **offers a blueprint** for organizations seeking to harness the power of Filecoin, IPFS, and Fleek. By integrating these technologies with no-code tools such as Webflow, Udesly, and Decap CMS, we've not only surmounted our initial challenges but also established a model for seamless and autonomous digital presence management.

Our experience underscores the **tangible benefits** of hosting on Fleek and IPFS, highlighting enhanced reliability, performance, and data integrity. For organizations contemplating a shift from traditional centralized platforms, our journey illuminates the path to **achieving a resilient and decentralized web presence** without the need for extensive technical expertise.

As the digital realm continues its evolution, we believe that our approach **serves as a beacon**, demonstrating that with the right tools and vision, any organization can leverage the advantages of IPFS using no-code solutions.

Glossary: Web3 Tools



Filecoin

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IPFS

IPFS stands for InterPlanetary FileSystem. It is a protocol for storing and sharing hypermedia in a peer-to-peer and distributed manner. Instead of referring to files by where they are stored (like a URL), IPFS refers to them by what they contain, using a cryptographic hash. This means that when you request a file, you're asking the network for a file with a specific hash, ensuring you get the exact file you're looking for.



Fleek

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Glossary: No-Code Tools



Webflow

Webflow is a web design and development platform that allows users to create and deploy responsive websites using a visual interface, eliminating the need for manual coding. It bridges the gap between design and development by providing tools to design web interactions and animations visually. The platform is suitable for a range of users, from professionals to those with limited coding experience, and is versatile enough to handle projects from basic landing pages to more complex web structures. One of Webflow's distinguishing features is its ability to produce clean, production-ready code from visual designs.



Udesly

Udesly is a tool designed to bridge the gap between Webflow and other platforms by facilitating the export of dynamic content from Webflow into static code. It operates as a Chrome extension, allowing users to easily convert Webflow projects into a format suitable for integration with various hosting solutions. By streamlining the export process, Udesly ensures that dynamic content from Webflow can be seamlessly integrated into platforms that primarily support static content, enhancing the versatility of Webflow designs without compromising on functionality.



Netlify CMS (now Decap CMS)

Decap CMS is an open-source content management system (CMS) tailored for static site generators. It allows users to add, modify, and delete content directly from a web interface without needing to understand the underlying code or Git workflows. By integrating with Git repositories, Decap CMS ensures that all content changes are version-controlled, providing a clear history of edits. This CMS is designed to be platform-agnostic, meaning it can work with various static site generators and hosting platforms, offering a user-friendly interface for non-technical users while maintaining the benefits of Git-based content management.

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Learn more about the Filecoin Ecosystem



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