# Project Close-out Report for:

**Full-feature open-source NFT Web Forge**

## Name of Project and Project URL on IdeaScale/Fund

- **Name:** Full-feature open-source NFT Web Forge
- **URL**: Project on IdeaScale
- **Project Number ID:** 1300105
- **Name of Project Manager:** Roman Majovsky
- **Date Project Started:** Jan 20, 2025
- **Date Project Completed:** June 12, 2025

---

## List of Challenge KPIs and How the Project Addressed Them

**Challenge KPIs Addressed:**

1. **Decentralization:** Enabled fully decentralized hosting via IPFS and blockchain-based NFT minting.
2. **Open Source Development:** Released all code and smart contracts under the MIT license on GitHub.
3. **User Empowerment:** Delivered a tool that simplifies the NFT creation process for non-technical users.
4. **Reusability for Developers:** Modular architecture with mock support and documentation for easy integration or extension.

---

## List of Project KPIs and How the Project Addressed Them

**Key Project KPIs Addressed:**

1. **Functional Tool:** Deployed a working web-based NFT minting application at https://nft-forge.wingriders.com
2. **Custom Metadata Support:** Allowed creators to define collection-specific fields and validate metadata integrity.
3. **IPFS Integration:** Uploaded and pinned NFT images using real or mock IPFS endpoints.
4. **Community Impact**: Shared updates via Twitter and Discord, with posts reaching over 100 interactions. The tool is publicly accessible and fully usable by the community.
5. **Documentation:** Provided architecture, frontend, and testing documentation in GitHub.

## Key Achievements

- Built a full-featured open-source NFT minting dApp using Next.js and TypeScript.
- Integrated with Eternl, Lace, NuFi, and Typhon wallets via CIP-30.
- Streamlined bulk image upload, and metadata input into a single UI.
- Added metadata validation, duplicate detection, and error handling at every stage.
- Published complete documentation with test coverage and environment configs.

## Key Learnings

- Simplified deployment by combining frontend, backend, and IPFS handling in one unified Next.js application.
- Clear documentation and structure support easier onboarding for new contributors.
- No need for centralized services when browser-based tools and decentralized storage are properly integrated.

## Performance and Adoption Metrics

**Performance Metrics**
Internal testing, supported by survey feedback, shows that the average user completes the minting workflow (from wallet connection to successful submission) in approximately 3–5 minutes. This includes steps such as image upload, metadata input, and transaction signing. For a browser-based dApp integrating IPFS and blockchain interaction, this performance aligns with expectations.

**Success Rate & Errors**
Functional testing and in-app validation show a high success rate for all intended actions. Errors are mostly related to user-side input, such as:

- Missing collateral setup
- Invalid or duplicate metadata
- Uploading unsupported file types

These are non-blocking and are well-handled through real-time in-app feedback and error messaging.

**Volume & Throughput**
Due to the decentralized and open-source nature of the tool, we do not track usage on-chain. However, a public user survey collected 26 responses — with 6 users reporting real-world use and 15 planning to use the tool. In addition, internal testing included dozens of successful test runs using both mock and live IPFS endpoints.

**Latency & Responsiveness**
Performance testing under typical conditions shows:

- <2 seconds average load time for UI components (wallet, collection form, metadata form)
- 3–10 seconds for image uploads and IPFS hash return, depending on file size and network speed
- Responsive metadata validation and real-time error handling

Mock IPFS endpoints were also used during development and testing to ensure responsiveness.

**Engagement & Adoption**
Project updates and documentation were shared through Twitter, Discord, Telegram, and YouTube. As recorded during Milestone 4, these posts resulted in approximately 10,000 combined impressions and interactions. A public survey was later shared to gather direct feedback from users. Finally, the NFT Web Forge was also integrated into the WingRiders Launchpad interface, where it is now actively used in internal workflows for NFT collection setup.

---

## Next Steps for the Product or Service Developed

- Extend wallet support.
- Extend support for other metadata standards.
- Enable tighter integration with marketplaces.
- Continue community engagement and encourage adoption by other Cardano NFT platforms.

---

## Final Thoughts / Comments

NFT Web Forge is built to lower the barrier for NFT creators on Cardano. As an open-source project, it’s not just a tool, but a foundation others can build on.

We thank the Catalyst community for their support, and we look forward to continued growth and contributions.

---

## Links to Other Relevant Project Sources or Documents

- GitHub Repository: https://github.com/WingRiders/nft-forge
- Architecture: https://github.com/WingRiders/nft-forge/blob/main/docs/architecture.md
- Frontend Design: https://github.com/WingRiders/nft-forge/blob/main/docs/frontend-design.md
- Test Coverage: https://github.com/WingRiders/nft-forge/blob/main/docs/tests.md
- NFT Forge App: https://nft-forge.wingriders.com
- Community Engagement and Feedback: https://docs.google.com/spreadsheets/d/1YgoVWrafManZ1OPj3t_YFoix7v9baxOlw0NARS6CXZU/edit?gid=103454808#gid=103454808
- Marketing Report Document: https://docs.google.com/spreadsheets/d/1QTrs1wm2HUfyumQcjSeGMjRDPgCLMoIk2LfsbCEuDGY/edit?gid=0#gid=0
- NFT Web Forge – Demo Walkthroug: https://www.youtube.com/watch?v=Y6u7LoMiyXw

---

## Link to Close-out Video

- https://www.youtube.com/watch?v=oJGddJe5R5s