Project Close-out Report
Cardano Mendix plugin by the Landano team

Project URL:
https://projectcatalyst.io/funds/11/cardano-open-developers/cardano-mendix-plugin-by-the-landano-team

Project number: 1100061

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Challenge KPIs

KPI 1: Cardano Open: Developers (technical track) category aims to support developers and engineers to contribute to or develop open source technology centered around enabling and improving the Cardano developer experience.

Low-code access to Cardano enables many more developers to access Cardano by bypassing the need to learn Haskell. For those members of the Cardano community already trying to develop applications using Haskell, this should speed up development for any users who choose to apply it to their idea. Generally, this product supports all developers by expanding the number of users who have access to Cardano.

KPI 2: The goal of this category is to create developer-friendly tooling and approaches that streamline an integrated development environment, help to create code more efficiently and provide an ease of use for developers.

The Cardano Mendix Plugin directly expands access to Cardano for developers and engineers, bypassing the need to learn Haskell for a variety of uses and functions as mentioned above. This low-code access provided by our plugin product directly improves the developer experience on Cardano and opens it up to many more users. As of 2024, Mendix has facilitated the creation of over 200,000 applications, serving more than 50 million end users worldwide. Additionally, Mendix boasts an active community of over 300,000 developers. This extensive reach and adoption across various industries and regions is now able to access Cardano for low-code application development. Low-code programming, by definition, provides ease of use for developers very directly.

Project KPIs

KPI 1: Can a functioning Cardano wallet (or wallets) be created using this product?

Yes it can. This function was created in Milestone 2. This was subsequently tested, refined and its utility confirmed in Milestone 3 by multiple testers.

KPI 2: Once created, can these wallets be used to transact ADA (both sending and receiving), in a clean and streamlined way?

Again, yes. This was refined and confirmed in Milestone 3 as well, by multiple testers who submitted valuable feedback. The objective was to make this function as simple and clean as possible in order maximize applicability.

KPI 3: **Do these wallet creation and transaction capabilities allow the Cardano blockchain to be used for a variety of use cases, especially via the expanded access that this will allow? In other words, does the plugin allow more users to do more things more easily on Cardano?**

Yes, by giving Mendix developers the ability to transact ADA and tokens, create tokens and NFTs, handle multi-sig transactions and providing them with an example to interact with smart contracts we have opened up a range of use cases that are now more easily accessible for the Cardano community as well as opened the door for Mendix developers.

KPI 4: Did the community engagement process set the stage for successful future adoption and use of the plugin (and therefore Cardano)?

Yes, awareness of the developing plugin was spread amongst the Mendix community through invitation and engagement in the prototype showcase workshop event as well as the reviewing process. These engaged users have created a nucleus of potential application developers, as well as evangelists for the new utility of Cardano among the Mendix community.

Key achievements

1. **Working Mendix Plugin for the Cardano Blockchain:**
   We developed a functional plugin for Mendix users to create a wide variety of applications for Cardano with the following features:
   - Wallets: creation, connection (for external wallets, via CIP-30), and restoration
   - Transactions: simple transactions involving both ADA and tokens
   - Metadata and multi-sig functionality for security
   - Token Creation: capability to not only transact but create both fungible tokens and non-fungible tokens (NFTs)
   - Smart Contract integration with Aiken
2. **Expanded Awareness of Cardano:**
   The development process necessarily included announcements, invitations, demonstrations, and finally engagement from within the Mendix community, many of whom had not previously been considering the possibilities of blockchain utility generally, or Cardano's unique advantages more specifically.
3. **A Foundation for Wide, Highly Scalable Cardano application and use:**
   Up to this point, Cardano (via its native development language Haskell) has enjoyed a reputation of a high barrier to entry, because of the perception Haskell has for being somewhat arcane or difficult to learn and use. This low-code access to Cardano through our plugin breaks through that barrier, and opens many possibilities to a wide array of potential developers and therefore users for Cardano that had previously dismissed it.

Key learnings

The integration of blockchain with Mendix has clearly shown the value of securely handling wallet credentials. Encrypting wallet mnemonics within the Mendix database—secured by user-defined passphrases—proved an effective and practical approach. Additionally, implementing CIP-30 integration

allowed seamless handling of external browser-based wallets, enhancing flexibility and user choice. This careful balance of security, usability, and interoperability ensures robust wallet management without overly complicating user interactions.

Choosing Aiken for smart contract interactions instead of Plutus significantly streamlined development. Aiken's simplified syntax and developer-friendly tooling aligned naturally with Mendix's low-code philosophy, improving productivity and ease of integration, especially beneficial in environments focused on rapid application delivery.

Leveraging strategic external libraries, particularly the Cardano Client Lib from Bloxbean, greatly accelerated blockchain integration within Mendix. Selecting actively maintained and well-documented libraries highlighted their importance in reducing complexity, improving security, and simplifying complex blockchain workflows.

Next steps

Developer Engagement and Community Involvement

We have laid the groundwork for developer awareness and interest via our workshop, review & feedback iterations, and demonstration sessions. Further success will be gauged by the number of installations of our modules/widgets within the Mendix platform, reflecting direct developer engagement and interest. We plan to directly encourage this through our business development partnership with Mendix, as well as our own expanding network of Mendix users.

Enterprise Adoption

Long-term, we plan to use this partnership with Mendix to expand enterprise applications on Cardano, through the use of our plugin. We aim to track the number of enterprise applications developed, highlighting the real-world impact and integration of Cardano in business solutions. This should dramatically expand the utility of the Cardano blockchain for real-world and enterprise uses.

Final thoughts & comments

We believe that our Cardano Mendix plugin has unlocked significant opportunities for both Mendix developers and the broader Cardano community. By bridging low-code ease-of-use with the power of Cardano blockchain technology, we've lowered barriers, stimulated innovation, and laid the groundwork for wider blockchain adoption in enterprises globally. We're excited to see the impactful applications and creative use cases that will emerge from this integration, and we remain committed to supporting ongoing development, growth, and community engagement around this powerful tool.

External links

Comprehensive project milestone production results: https://www.landano.io/project-catalyst/fund-11/
Project GitHub: https://github.com/landano/cardano-mx-plugin
Cardano Mendix plugin: https://cardanomendixplug-in-sandbox.mxapps.io/
https://www.mendix.com
https://www.landano.io
Close-out Video: https://youtu.be/WWK3RIXOBKI