Cardano ($ADA) Overview

Overview:

Cardano ($ADA) was founded in 2015 by Charles Hoskinson (former Ethereum co-founder) under IOHK as an effort to change the way cryptocurrencies are developed, with a particular focus on building a cryptocurrency that addressed the scalability and interoperability of $ETH. Cardano is a proof-of-stake blockchain platform: the first to be founded on peer-reviewed research and developed through evidence-based methods. The overall focus beyond a particular set of innovations is to provide a more balanced and sustainable ecosystem that better accounts for the needs of its users as well as other systems seeking integration (identity, monetary system, voting, dapps, etc).

Developer Team:

Founded by Charles Hoskinson and Jeremy Wood, IOHK is the technology and engineering company contracted to design, build, and maintain the Cardano platform. IOHK employees ~300 employees per its LinkedIn page. Hoskinson studied cryptography and mathematics in university. Additionally, some of his notable previous ventures include founding of blockchain/cryptocurrency startup Invictus Innovations and the Cryptocurrency Research Group in 2013. He was also one of six co-founders of Ethereum in 2014, although he left the group soon after. He differed from Ethereum's mutability approach, instead believing that Ethereum should abide by its principles of immutability and transparency as noted in its white paper.

Use Cases (link)**:**

- **Education:** Atala PRISM is an ID & credentials solution built on the Cardano blockchain that secures academic certifications within an immutable and tamper-proof ecosystem, empowering students to own and share their achievements, and institutions to instantly verify those credentials.
  - Ex: IOHK announced the largest blockchain deal ever with Ethiopia's Government in April 2021 to implement a national, blockchain-based student and teacher ID and attainment recording system. This deal integrated 5 million students and 750,000 teachers onto the Cardano blockchain.
- **Retail:** Atala SCAN is tamper-proof system to establish product provenance and auditability to ensure every product sold is certified as original.
- **Agriculture:** Atala TRACE and EMURGO's proprietary traceability solution for transparency in the supply chain enable farmers, hauliers, and retailers to certify and trace products from farm to table.
  - Ex: BeefChain partnered with IOHK. IOHK will help BeefChain in the technological aspects of their blockchain tracing endeavor, by supporting them in using Cardano and the IOHK Atala Trace solution. The solution enables the USDA "Process Verified Program" stamp of approval, allowing ranchers to sell meat for an extra $0.05-0.50 per pound, which can amount to $30,000 with every herd.
- **Government:** Atala PRISM is Cardano's digital identity service, enabling users to have full control of their credentials, which they can share and instantly verify.
  - Ex: Atala PRISM allows the government of Georgia to issue national identity cards digitally and securely, as well as allowing universities to issue educational credentials.
- **Health Care:** Atala SCAN can authenticate and verify the origin and supply chain of pharmaceutical products, guaranteeing the safety and well-being of patients worldwide.

Investment Thesis / Opportunity:

- **Most peer-reviewed blockchain:** Published 114 peer-reviewed papers to date, building a corpus of best-in-class research for cryptography (open-source). Team has taken a first-principles approach, rigorously testing/building what they believe is the best consensus algorithm, voting mechanism, etc. This development approach is slower than other alt-coins, however builds a strong foundation that avoids future hard forks and risk. As an investment, we prefer to underwrite a slower-to-market blockchain that is built with scalability and longevity in mind versus one that gains massive adoption in the short-term but is built on fractured code.
- **Exposure to emerging markets (particularly Africa):** Announced largest blockchain deal with Ethiopian government, marking the first of many long-negotiated arrangements. These deals are extremely sticky, lead to massive adoptions, and entrench the blockchain into the daily lives of millions of people (education, then healthcare, then voting/government). Naturally, $ADA will be the currency of choice. 70% of Ethiopia's population is under the age of 30yrs, and will be internet enabled by 2030 (Starlink is a big driver). The Ethiopian GDP was growing at 15% CAGR in the years leading up to COVID - the country is fast growing, has a young and growing population that will be internet enabled, and has a government that is future looking (Minister is a cryptographer). What is misunderstood by investors is 1) the level of adoption/stickiness Cardano will see as it engages in massive governmental deals, 2) the level of growth of African nations, and 3) the resulting demand it will create for ADA from Fortune 500 companies wanting to transact with the young/growing African population, and doing so in ADA.
- **In-built mechanisms for network upgrades:** Catalyst brings on-chain governance to the Cardano blockchain by allowing the community to self-determine priorities for growth. A certain amount of transaction fees are allocated to a fund, which crowd sources upgrade ideas, votes on them, and allocates the capital to a developer team to build said upgrade. Catalyst 1) achieves an internal upgrade and evolution mechanism which is democratic and scalable and 2) encourages a rich developer ecosystem. Currently on Fund 6 ($4Mn).
- **Cardano built in Haskell programming language:** Through Haskell, Cardano's Plutus and Marlowe smart contracts can be carefully implemented in a precise, formally verified code that offers a high level of assurance from the beginning. Avoids vulnerabilities, code failures, and smart contract exploits/hacks seen on other blockchains and smart contract languages. Although

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Catalysts (status updates)**:**

- **September 12th, 2021:** Alonzo Purple network upgrade, enables smart contracts on Cardano. Specifically, a fully public testnet will be available to on-board thousands of participants to the network. This particular stage is split into two distinct phases, "light purple" (simple contracts) and "dark purple" (complex contracts)
- **August, 2021:** Alonzo Red/Black, final big fixes and updates to smart contract capabilities
- Large deal announcements

Risks:

- Delay of Alonzo Purple network upgrade on September 12th
- Network issues surrounding Alonzo updates
- Smart contract issues, lack of developer adoptions post network upgrade

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