

CARDANO ECOSYSTEM MASS ADOPTION - A COMMUNITY COMPILED DISCUSSION PAPER

Reason for this Community effort

In the IOHK website with all the academic papers (<https://iohk.io/en/research/library/>), there are no explicit papers covering the economic and political analysis justifying the Cardano ecosystem. While, it would seem obvious from an investor's point of view, I thought it much more useful and constructive if the community could make a contribution towards development of the Cardano Ecosystem by producing that paper, **not as an academic effort, but as an educational /informational endeavour**. Hopefully, in the process existing investors and potential investors will have a clearer appreciation of the Cardano ecosystem specific perspectives, and potential impacts on the global economy.

Required Basic Etiquette - for building up a solid, but non-academic paper which is easy to read for the Community:

- 1) *When you make your contribution including constructive criticisms, present your reasoning behind your opinion to enable everyone to appreciate your point....so, **avoid thought bubbles and down ramping**.*
 - 2) *Where possible and useful, include Reference sources and acknowledgements/attribution*
 - 3) *When making a contribution that refers to a particular section of this paper, please reference the specific section by the number and/or quoted text so that the context is clear. It will also assist with ensuring your views are not misrepresented when preparing each week the consolidated Community Discussion Paper.*
 - 4) *If you want to add a new section to this discussion paper, state what it is and provide some initial information to provide a framework for others to contribute*
 - 5) *On a weekly or fortnightly basis depending on the feedback, I will be reading and consolidating all the opinions expressed and issuing an updated version, with versioning, so that one does not have to troll webpages. Also, a PDF version will be available for download. Referenced acknowledgements/attribution for contributions will be compiled at the bottom of the document in the References/Acknowledgement section.*
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A general overview on what has already been expressed by Charles Hoskinson, CEO of IOHK through his AMAs, Interviews and ad hoc updates to the Cardano Community

References: <https://www.youtube.com/user/charleshoskinson?app=desktop>;

Charles Hoskinson, as CEO of IOHK the developers of the Cardano Protocol and ecosystem, has repeatedly and laboriously provided the rational for the unique direction for the development of the Cardano ecosystem. These include the following (but is not complete) that I could identify, not in any order of importance or preference:

- 1) A recognition that the current global financial system is broken with a structure that is skewed permanently to benefit an ever decreasing number of super rich, while a sea of humanity is left in increasing poverty or dependent on the "benevolence" of these super rich.
- 2) The increasing concentration of wealth is also accompanied by increasing concentration of political power which is being used against the vast majority of the powerless, impoverished humanity.
- 3) The only hope for humanity to stop this road to increasing inhumanity by a few over a vast majority is to introduce a totally new financial system that has no mechanism by which a few financially privileged and politically powerful can control its operations.
- 4) The fact that two-thirds of the world's population are unbanked, based on the definitions of banking services and infrastructures freely available in the developed world and therefore a viable market.

- 5) There is, therefore, this vast potential of economic development and empowerment if these unbanked are given a new global financial ecosystem which:
 - a) Is easy to use.
 - b) Guarantees payment for Services and Goods.
 - c) Requires minimum level of education to use.
 - d) Provides proof of identity to secure the assets owned.
 - e) Provides proof of purchase and ownership of any asset.
 - f) Provides a secure and immutable audit trail of transactions from farm-gate, to transportation, processing, manufacturing and finally to the consumer.
 - g) Provides free movement of funds globally without restrictions from any institutions, both private and public.

- 6) The availability of this vast market of the unbanked means there is no need for Cardano to compete in the over-saturated, over-banked, over-regulated Developed Economies financial markets

The potential economic and political implications for Cardano Ecosystem mass adoption

Introduction

PART 1 & 2 below are my initial contributions to towards the Community pooling of opinions and information. Feel free to make comments that will expand the ideas, information or even add a new concept not yet addressed.

PART 1

Economic Analysis – Implications and Impacts

1) Assumptions about the Cardano ecosystem

- a) It is here to stay and will become an ever-increasing influence on the global financial and political systems into the future
- b) It is solving and will solve real world problems that cannot be solved using existing economic, political and technological infrastructure.
- c) There exists unsatisfied demand for banking and financial services amount the majority of the global unbanked
- d) The new global financial ecosystem provided by the Cardano ecosystem will be affordable by a majority of these global unbanked.
- e) The Cardano financial ecosystem can be efficiently and competitively productionised on the existing hardware and software technology stack globally.
- f) To meet an expected explosive rise in demand for the Cardano financial ecosystem it will have the inbuilt capability to rapidly and flexibly scale for an indefinite period into the future.

2) Is the world ready for Blockchain and crypto revolution?

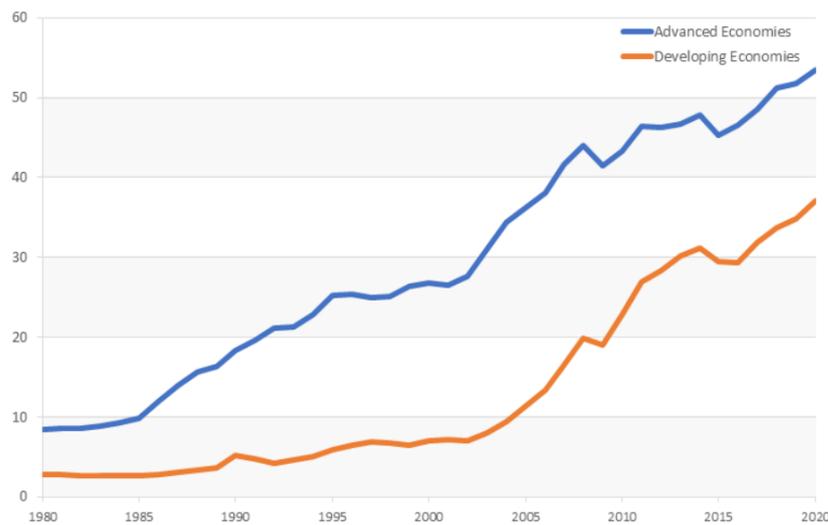
- a) The growth in the number of cryptocurrencies and the total market size since Bitcoin appeared proves the world ready for blockchain and crypto revolution. According to <https://coinmarketcap.com/> as 9th March, 2020: Cryptocurrencies: [5,167](#), Markets: [20,819](#), Market Cap: [\\$233,576,062,472](#), 24h Vol: [\\$148,905,054,158](#)
- b) The growth in the demand and application of Blockchain technologies across all economic sectors shows the world is ready and willing to spend billions investing on real world applications - <https://www.ibm.com/blockchain/industries>, <https://consensys.net/blockchain-use-cases/>, <https://coinswitch.co/news/20-blockchain-applications-across-industries-2019>

3) Potential global market size:

- a) \$90 Trillion for 2019/2020 <https://www.statista.com/statistics/268750/global-gross-domestic-product-gdp/>
Unbanked global market that is being targeted by Cardano:
<https://mgmresearch.com/world-gdp-ranking/> - IMF estimates the world GDP to reach \$86.6 trillion during 2019. IMF estimates that advanced economies total GDP would reach \$51.7 trillion and **developing economies total GDP would reach \$34.9 trillion during 2019.**

World GDP 1980-2020 – Advanced vs Developing Economies

GDP in current prices (trillions of US dollars)



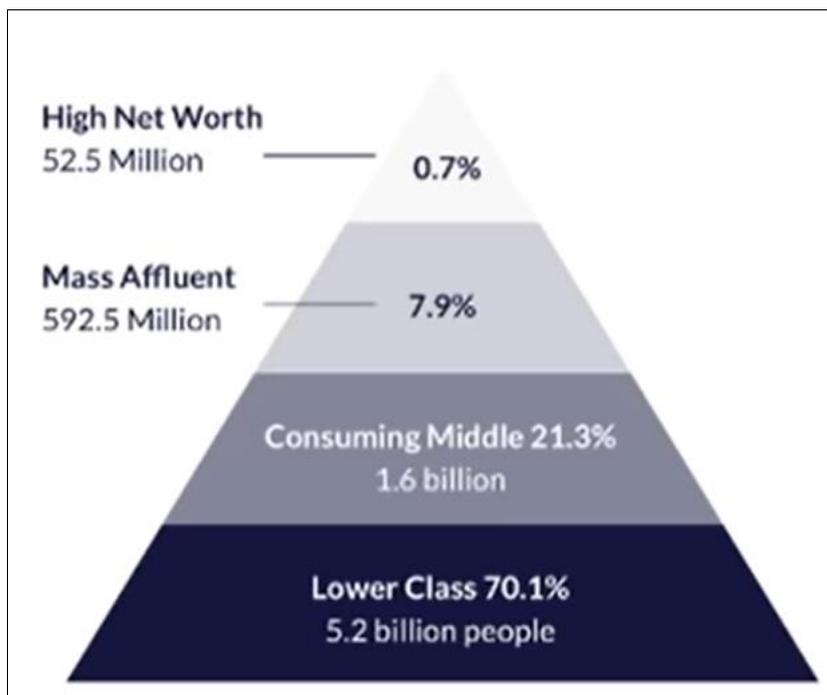
IMF estimates the world GDP to reach \$86.6 trillion during 2019. IMF estimates that advanced economies total GDP would reach \$51.7 trillion and developing economies total GDP would reach \$34.9 trillion during 2019.

The world GDP has nearly doubled during the 15-year period from 2004 to 2019. During the same period, the advanced economies GDP has increased 1.5-times, whereas the developing economies GDP has increased 3.7-times.

Data Source: IMF World Economic Outlook, October 2019

Data Analysis by: MGM Research

b)



<https://www.youtube.com/watch?v=KlJZIER4nss&feature=youtu.be&t=43>

4) Best market segments for adoption/ use cases for Cardano

- Business Registrations and Asset Custody - <https://bitcoinmagazine.com/articles/blockchains-greatest-impact-will-be-developing-countries-says-upenn-lecturer>.
- Financial Services, Remittances, Peer-to-Peer energy trading, Supply Chain, Land Registry, Identity, Fund Tracking - <https://www.devex.com/news/opinion-7-ways-to-use-blockchain-for-international-development-90839>.

5) Main competitor platforms focussed on or could compete in Developing Economies

- a) Ethereum smart contracts.
- b) Tezos for Proof of Stake.

6) Major potential hinderances to mass adoption

- a) Transaction and/or Service fees must be equal to or less than existing mobile services fees and charges.
- b) Data transfer rates must be must equal or better than for existing Mobile Apps.
- c) Services must be responsive to unreliable Internet and Mobile networks.
- d) Data storage on Mobile phones must be competitive with existing majority of mobile storage limits in Developing countries.
- e) Scalability of transaction volumes to avoid crashing the Cardano platform and/or the networks/servers available/accessible in the Developing Countries.

7) What is the significance of the Cardano Community in the development and promotion of mass adoption?

- a) Validators of the useability, and capability of the Cardano technology to meet it stated deployment aims.
- b) Educational contributions through Social Media posts, News media, articles in Community and Professional journals
- c) Development of real use case DApps on the Cardano platform demonstrating its efficacy.
- d) Acting as redirection channels for Investors and Developers to the source of truth and development tools they need to meet their specific requirements.

8) What incentives must be used to promote and achieve mass adoption?

Based on the experiences from the Incentivised Testnet as well as what is practiced in the IT industry, they include the following, but it is not complete:

- a) Staking incentives – ADA Rewards, Cardano Foundation Online Newsletter.
- b) Pool Operator incentives – ADA, Discounted Cardano Conference tickets, Cardano Foundation Online Newsletter.
- c) Ambassador incentives – ADA, Discounted Cardano Conference tickets, Cardano Foundation Online Newsletter.
- d) DApps developer incentives - ADA, Joint-Development and/or funding, Discounted Cardano Conference tickets, Cardano Foundation Online Newsletter.
- e) Conference and Marketing Events organiser incentives – ADA, Cardano Foundation Online Newsletter.

PART 2

Political Analysis - Implications and impacts

A revolutionary idea with global economic impacts will inevitably draw political interest and eventually political interference both positively and/or negatively. Ideas that impact citizens of any country will force the authorities on the countries to exam what are the benefits and risks of this new idea. The Cardano ecosystem when fully implemented, and in particular, when fully commercialised with mass adoption will draw responses that may seek to both promote and also inhibit its growth and development.

As investors, particularly with a long-term perspective, the political impacts on the Cardano financial ecosystem should not be underestimated if its vision gains significant traction to the extent that Governments sense a loss of economic controls. Below are some of the questions that come to mind, that Investors must consider.

1) What is the current global political climate for Blockchains & Crypto ecosystems?

- a) Political power is threaten (Loss of power to control all aspects of individuals life, weakening Taxation capabilities, introducing Commercial practices that cannot be censored or monitored) – the Political institutions response solution is introduction of Regulations (<https://cointelegraph.com/news/us-congressman-introduces-crypto-currency-act-of-2020>) to protect the status quo until the Institutions have developed sufficient depth of understanding of the technology such that they are assured that its long-term direction will not lead to the current political systems overthrow - <https://www.publish0x.com/g4g-crypto-training/the-political-economic-and-social-impacts-of-blockchain-xowyyi>

2) What specific political impacts will Cardano ecosystem have?

- a) Deployment of Cardano in the political voting process as well as Identity certification during voting will significantly weaken those interested in continuing to manipulate the voting eligibility vetting process

and voting system to gain or maintain political advantage.

- b) It will reduce the need for vote recounts, eliminate questionable voting results, and increase public assurance that each vote counts and cannot be altered thus, strengthening democratic institutions.

3) What are the political risks at present for Cardano ecosystem?

- a) Blanket bans, by Financial Institutions in some countries, of solutions built on the Cardano ecosystem similar to bans on Cryptocurrencies and Crypto Exchanges. The global political reality of Governments and their Institutions capacity to collude and collectively impose punitive restrictions, not only on any new ideas but also on those who promote those ideas is well established.
- b) The legitimacy of those Regulatory imposts could actually be initiated and strongly lobbied for by influential Investors, Businesses, and Organisations that can clearly see they would be decimated by the implementation of this new ecosystem ("The Empire Strikes Back"). The actions of Central Banks as well as Banking and Finance Institutions whose roles would be replaced by Blockchain and Cryptocurrencies created without the need for Banking Licences and money transfer licences led to the politicising of the Blockchain and Cryptocurrencies developments. The result contributed to the sudden slow down in the crypto space and the departure of many Start-ups.
- c) There could be onerous legal requirements imposed by Regulators in an attempt to force the Cardano ecosystem to work within existing understanding of Financial markets and infrastructure similar to the onerous New York BitLicense application (<https://en.wikipedia.org/wiki/BitLicense>) and as well as the threats to Facebook's cryptocurrency, Libra.

4) What are the political risks in the future for the Cardano ecosystem?

- a) Even if the Cardano ecosystem is initially allowed to flourish, however, a rapid growth in demand and use of the Cardano ecosystem could create a climate of anxiety among Government officials who may see it as a rapidly growing threat to their political and economic control. This could lead to either restrictions or increased supervisory demands over the internal workings of the Cardano ecosystem.
- b) If Cardano was to become as dominant in the blockchain ecosystems as Facebook, Apple and Google are in their ecosystems, the Government attitudes could change to be positive, if it strengthens and expands existing business environments and/or creates a whole new industry like the Internet did for global online businesses.

5) Does or should the Cardano Community even care about the political risks and imposts?

- a) Some might casually say "Meh!, we'll deal with them as, when or if they happen. Not much to see here at the moment".
- b) Long-term Investors have probably been grappling with these vexed issues as they see how Governments and Regulators have separately and jointly smashed viable Crypto Startups over the past 18months with the stroke of a pen or a Twitter feed.

To soldier on, through the current Crypto Winter and Political assault requires the belief that in the end, the will and demand of the majority will win. But will that require some compromises as has occurred in the development of the Internet, which is has controls through the globally centralised registration and regulation of Internet Address?

- c) It is one thing to have Quantum resistance for Blockchain ecosystems, but it is quiet another to have effective Political influence resistance or independence in the globalised world with institutionalised vested interests and legally enforceable frameworks.

REFERENCES

1. <https://forum.cardano.org/t/must-see-unqualified-opinions-podcast-from-messari-building-cardano-with-iohk-ceo-charles-hoskinson/31263>
2. <https://www.youtube.com/watch?v=KIJZIER4nss&feature=youtu.be&t=43>