IGF Session Report on:

Digital Currency and Blockchain Technology

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Introduction:

Blockchain had been accumulating momentum throughout the past years. Since the beginning in 2009, the growth of Blockchain identifies how this technology is becoming a game changer. The idea of removing the middleman is very simple, yet very complex. Blockchain was developed by Satoshi Nakamoto, an unknown person, group, or entity, to support the concept of the first virtual currency named Bitcoin. This currency which worth about 14k at the time of writing this report and have a market cap of 241 billion USD. In one year, the price of a Bitcoin had grown exponentially from 1k in January 2017 up to 14k in December 2017. The peak price was about 20k on the 17th of December. The total number of virtual currencies is currently around 7000. An indicator how Blockchain is an innovation that is changing the way people interact with financial transactions. According to the Gartner Hype Cycle 2017, Blockchain is still in a high potential phase. Companies are still exploring around not only the limitations and how this technology can lead many industries in the future, but also how it can be a sustainable solution for the long run. Applications of Blockchain goes beyond virtual currencies. Currently, companies are examining the use of Blockchain in different sectors. Smart Contracts, Traceability and Voting systems are few examples. Yet, these promising ideas are still lacking proof of viability.

This topic was first introduced in the IGF in 2015. The session was talking about basic ideas of Blockchain, Bitcoin and what is digital cash. Additionally, the session elaborated on the legal side of digital currencies. The year following, in Guadalajara there was also one DC session about Blockchain Technologies. The discussion was about hard forks, regulations and immutability of Blockchain. The level of discussion shows how the topic is evolved during time and how people are becoming more comfortable talking about technical details.

Blockchain Technology

Understanding how this technologies is working is key to realize how unique it is. Blockchain, in a nutshell, is a peer to peer technology. Meaning a use of a 3rd party entity, a central bank in case of money, is not longer necessary. Transactions have element of timestamp, date and participants of the transaction. All transactions are stored in what is called a ledger. This ledger is distributed all over the world operated by people named nodes. Miners are special people who are using their computers to store these ledgers and verify transactions. In the case of Bitcoin, miners are rewarded by bitcoins. Yet, to get that bitcoin they need to solve very complex math problems which gets more and more difficult over the time. Additionally, ledgers are immutable which means all transactions are registered and there is no way to undo that. Keeping in mind that all information is encrypted.

Blockchain in IGF 2017

This year, Blockchain was given more attention. In total two workshops talked about the technology and cryptocurrencies in particular. Both sessions had a very good number of attendance and a good participation from audience. The following is a summary about the session tilted: **NRIs Collaborative Session: Digital Currency and Blockchain Technology.**

This round table session had 6 speakers. After a brief introduction from Walid Alsaqaf about Blockchain where he talked about how this technology was built on math rather than belief in the idea, Arvin Kemberi made very clear distinction between open and closed Blockchains. A closed Blockchain is a centralized, private Blockchains-database that is owned and managed by organizations, just like a private intranet network. However this type eliminates a core concept of Blockchain which is distribution. On the other hand, an open Blockchain represents a database or "ledger" which anyone can contribute to. The ledger is managed by a whole community ensuring redundancy and transparency. Walid elaborated on this concept by referring to the old days of the internet. People didn't understand how the technology is working, therefore they were very sceptical about how it would change the world. This is also the case with Blockchain.

Talking about Blockchain Governance, Nathalia Patricio reflected the Brazilian stand of Blockchain from a regulatory perspective. She believes that digital currency will not replace regular banking rather than becoming supplementary to the financial services provided by banks. However, the applications of Blockchain such as smart contracts will bring more transparency in governmental actions. This idea was elaborated by Satish Babu who emphasized that Blockchain is a technology that cut off the middleman, even if this middleman is the government. Hanane Boujemi a research on Blockchain was wondering about how Blockchain is compliant with the new GDPR (General Data Protection Regulation) which will become enforceable in May 2018 and when regulation will keep up with technology. Avrin answered that now is always a good time for discussing Blockchain regulations and he proposed to have a Blockchain Governance Forum. Patrick DAI added that there is a governance model between developers. For example in Bitcoin, developers discuss about the "block size" and in Ethereum, the foundation has the power to do the fork, or not. GDP (Decentralized Governance Protocol) is a protocol where people can vote on changes on the Blockchain parameters.

When asked about issues, Satish elaborated that Bitcoin, as a currency, got a bad reputation because it was used in Ransomware attack in May 2017. In fact, the misuse of Bitcoin should not be a reason to block the whole technology. A person committed suicide in a car doesn't mean a government can ban the use of cars, Walid explained. A participant raised the issue of electricity consumption. Currently Bitcoin is using 1% of the energy produced on the plant for mining. If this is to be doubled, Bitcoin will never be sustainable in the long terms. Besides, Bitcoin as a currency is rewarding the early adapters in terms of mining, while the late comers need a bigger investment in machines and infrastructure to be able to compete. Another serious issue with Blockchain is scalability. The more miners are there the more difficult the process becomes. And, the more transactions are there, the longer ledger we have. In total, while credit cards system can handle 1700 transactions per second, a Bitcoin handels only 7. It is still not a perfect solution and more fixes and updates will continue to take place. At the end, it is a disruptive technology, good or bad is relative. Indeed Blockchain has issues, but generalizing that Blockchain is a bad technology is not wise.

Conclusion

Innovation in technology is disruptive. New technologies bring along issues related mainly to regulation. Blockchain, as a part of this disruptive innovation, has created vague boundaries between what is possible and what is not. While some people think of Blockchain as a deception, others still believe that Blockchain is just a beginning of a whole new era of peer to peer relationship. Yet, this leaves me wondering about all the market entities that were created, all the wallet management applications, mining equipment and financial analysis tools. Indeed this is only for the use of Blockchain as a currency, but still, the ecosystem created around this technology is replacing the middleman by new ones. Users are contained by the technology others are providing. Finally, are the people who are investing in Bitcoin do believe in the idea, or they are only waiting for the best possible moment to cashout. This doesn't prove anything, yet it keeps the discussion moving forward.

References & further reading:
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