

Blockchain Functionalities and Future Possibilities



January 11, 2018

The Zurich Chapter recently hosted 85 INSEAD alumni and guests at a conference featuring Ming Chan, Executive Director of the Ethereum Foundation, the driving non-profit organization contributing to the development of Ethereum, a leading blockchain platform. The fully-booked event was moderated and organized by Martin Spirig, MBA'06J.

There are many types of blockchains under development based on faith in the concept's high-potential to deliver secure, transparent, permanent records of transactional data. [There are more than 100 types of blockchains, according to a recent article in Silicon Republic, quoting Amor Sexton, senior innovation manager at Citi.] Ming Chan manages the organization developing one of the leaders in the market.

The claims about blockchain in general are almost hyperbolic. Proponents say that it's different from any other enabling technology we've ever seen before; nobody really grasps the state of the art because it's moving so quickly; and that it has disruptive power, despite its relatively short record of accomplishment. Ming Chan went some way to confirm some of the claims and dispel some others, while keeping the focus on Ethereum.

She substantiated the level of interest in Ethereum, gave an overview of its features and tools, described where development is going and what the greatest challenges are now.

Read on for the summary of the proceedings, structured into ten "takeaways" that include the key points in the speaker's presentation and questions from the audience.

Speaker: Ming Chan, Executive Director, Ethereum Foundation



Since 2015, Ming Chan has managed growth and continual improvement of the Ethereum Foundation in her role as ED. She has a background in enterprise IT and management consulting and has founded and grown businesses working with top educators, scientists, and inventors to bring inspiring research and tech innovation to life.

Ten Takeaways

1. Ethereum Foundation in the blockchain context

The Ethereum Foundation is a Swiss non-profit Stiftung (“Foundation”) registered and based in Zug. It is responsible for supporting development of the fundamental layer of the public blockchain and platform after which it is named.

Ethereum is now the leading platform for blockchain application development, according to Ming Chan. The foundation is driving development of core protocols, research, standards, and tools, enabling other layers (applications level development, privacy or other features that include creation of private chains based on Ethereum). It also sponsors or provides specialized grants for academic and other research and development relevant or related to the Ethereum platform. The Ethereum Foundation supports open source software development of the public Ethereum blockchain. The creator of Ethereum and founder of the Foundation is Vitalik Buterin, who is also the President of the Foundation’s board and Ethereum’s Chief Scientist. He is considered a cryptocurrency “icon” and the face of Ethereum.

2. Ethereum influence on investors

Projects and companies exploiting novel business models are using Initial Coin Offerings (ICOs) to finance development. Eighty percent of ICOs today are using Ethereum, according to Martin Spirig. Illustrating its popularity is the spike in the share price of Kodak [best known as the old-style camera and film manufacturer, based in upstate New York] when it announced it was offering the Ethereum-based KodakCoin [for photograph copyright management]. Its share price tripled in one day.



3. Ethereum's reach and growth

With just 60 employees or contractors whose work is funded by the Foundation and an estimated 50,000 coders working on its platform world-wide, the Ethereum Foundation is like other open source software project communities; the number of Foundation-supported developers working on the technology is tiny compared to the number of Ethereum community developers worldwide.

Chan, who organized and oversaw the last three “Devcons” (the annual developers conference produced by Ethereum Foundation), said that more than 2,000 people attended Ethereum’s annual developers conference, Devcon3, in Cancun in November 2017. The growth in attendance has been remarkable. Devcon0 in Berlin was an internal event that consisted of about 50 people. Devcon1 in London was oversold at around 400 people, and Devcon2 in Shanghai was beyond maximum expected capacity at 800 participants.

Since 2015, commercial interest in the platform has increased alongside the growth in developer interest. All sizes of companies, from startups to multinational institutions are

interested in the platform. Ming Chan mentioned the existence of organizations such as banking consortiums, insurance association and enterprise groups (like EEA, “Ethereum Enterprise Alliance”) as indicative of Ethereum’s relevance to the business world at large. EEA, for instance, has 200 members [including well-known brands, such as BP, Cisco, Credit Suisse, KDDI, Microsoft, Intel, MasterCard, Santander, Scotiabank, Wipro.]

4. Ethereum's role in preventing abuse and criminal activity

Disseminating information about blockchain and cryptocurrencies in the context of Ethereum, including answering questions from regulators, policy-makers as requested, and often working together with academics and researchers, are other valuable activities that contribute to the Foundation's mission of supporting Ethereum platform and base layer R&D, according to Chan. Cryptocurrencies are not going to go away, and neither are regulators, so the entire blockchain ecosystem has a responsibility to cooperate and work together with regulators to help them be as well informed as possible in order to perform their jobs in such a way that help promote rather than impede tech innovation and progress in the crypto sector.

There are many types of regulators (such as securities, banking, insurance, tax, etc.), all of whom are interested in the technology so that they can have the understanding to better protect their respective constituents. Many jurisdictions are also scrutinizing cryptocurrencies, in particular. Their motivation is to protect their constituents or address taxation issues. The first regulators to show interest were the securities and exchange authorities.

5. Encryption and transparency

There is uncertainty, fear and doubt on the part of many politicians. They understand that while blockchain addresses, unique transaction identifiers and certain details, are transparent to anyone who has a specific crypto address to look up, the identity of the parties involved is not easily apparent. Transactions on the blockchain are considered pseudonymous and not anonymous, according to Chan, since information provided voluntarily or discovered otherwise, could reveal the owner of an address or participant in a transaction.

The cryptographic signatures do not contain personal identifying details, but they do contain an address identifier. If the digital address of a user is publicly known or discovered, then their transactions are essentially also public. There are people who track large transactions and the known addresses high-profile cryptocurrency figures, according to Chan. They publish their findings on Reddit and Twitter.

6. Black-market transactions and undeclared income

Cryptocurrencies were used to carry out anonymous transactions for certain blackmarket activities using the TOR browser. Chan inserts a distance between Ethereum and such activities using technologies that focuses on anonymity as a feature. She points out that it will be increasingly difficult to hide many cryptocurrency transactions and that the shift is welcome. For example, cryptocurrency "coins" or are often stored in virtual wallets, managed by centralized for-profit service providers. They in turn enable cryptocurrency to be converted into fiat via payment gateways and payment processors. Since the money always must eventually be deposited into a bank account to be realized and used as fiat, regulatory, and tax laws and policies apply.

Banks must comply with KYC and AML codes, requiring multiple levels of personal identification. Audits and enforcement in this area are expected to increase, according to Chan.

7. Energy consumption

The energy used to perform hashing or mining functions is greater than that of some countries. Solution to this problem has been underway and may be starting to be realized as early as 2018. The first few releases of Ethereum's core software were based on a proof of work model, which requires powerful graphics processors and high level of electricity consumption. The next historically planned major Ethereum release is called Serenity and will be based on proof of stake, which eliminates the bulk of the cost of equipment and electricity, since it provides a model based on "virtual" proof/work.

While the virtual mining model is not energy-intensive, how it will work, and which solutions will be adopted is neither clear nor easily understood, according to Chan. Some degree of debate and controversy is to be expected in the community.

The year 2018 will be an important one for testing and implementing the new model(s). The Ethereum Foundation is investing in R&D and its level of commitment is "high". This technology milestone is required for scalability. Chan referenced a relevant article <https://blog.ethereum.org/2018/01/02/ethereum-scalability-research-development-subsidy-programs/> on the Ethereum blog.

8. Exorbitant currency exchange fees

A recent Ether transaction generated a CHF 5 fee for a contract worth CHF 50.00, pointed out a guest. People are overpaying for transactions, agreed Chan. Pricing of block processing is set by the miners typically, and can be negotiated. However, the cost of converting cryptocurrencies to fiat is controlled by the wallet services providers. This group currently has that "power" in the ecosystem. Their fees are far higher for exchanging cryptocurrency to fiat than for exchanging fiat pairs.

9. Who to trust when it comes to cryptocurrencies?

Trust is an issue, especially for the many newcomers to cryptocurrencies. Fiat is backed by central banks, but crypto-coins and tokens can be backed by anyone. Chan suggests that if the interest in the token is not purely speculative, then the smart investor will use common sense and do the same kind of due diligence when researching fundamentals of any investment target. Look at the size of the developer community and amount of progress and value of the R&D activity, the people, companies involved, and the size, level, and scope of adoption by businesses and users world wide, for example.

10. Greatest risk is talent shortage

Lack of talent is the greatest risk to further progress. The amount of qualified and experienced programmers and developers is very low, while the demand for their skills is far greater than the current supply, according to Chan. The Ethereum Foundation

encourages the blockchain community and the urges greater ecosystem to do what they can to contribute to developing the talent pipeline. Poaching of talent is quite common due to the limited supply of specialized developers needed, but that is a short-sighted and temporary solution to acquiring the talent companies need in the near, mid and long term.

