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Blockchain: Democratizing Access to Innovation

Husain Alfares

University of Cambridge, UK

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Abstract
This academic paper explores how distributed ledger technology can revolutionize the Venture Capital industry and democratize access to innovation. Setting up a blockchain-powered tokenized fund creates a win-win solution where Venture Capital funds have access to untapped capital from individual investors, who are eager to invest in an asset class they were traditionally excluded from.

Keywords
Blockchain, Distributed Ledger Technology, DTL, Venture Capital, VC

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Background

Alternative assets, such as those of Venture Capital, have traditionally been exclusive to institutional investors or high net worth individuals (HNWI). However, when it comes to retail investors, such asset classes are almost impossible to access. This is due to two main reasons: significantly large capital commitment required by VC funds, and a long investment holding period required with no liquidation option or secondary market.

To put things into perspective, the typical VC fund has a lifetime of 10 years and can be extended to 12 or more years depending on market conditions and exit opportunities for portfolio companies. Depending on the investment stage and thesis of the VC firm, the average fund size can be anywhere between $100m-250m (Graham, 2019). As such, only large institutional investors and HNWI have the capital and risk tolerance to commit sizable sums of money for a long period of time. As a result, VCs traditionally sought the easier path of fundraising from a few large investors or as opposed to many retail investors.

Early-stage investments are inherently risky as most start-ups fail but having a diversified VC fund run by experienced businessmen and tech experts can reduce the risk and often reward with higher returns than public stock indexes. Even in times of crisis such as the financial crisis or COVID-19, many institutional investors and HNWI bet on technological innovation funded by Venture Capital to be more resilient and less volatile in the long-run, but individual investors tend to miss out on such opportunities and therefore are doubly impacted by economic downturn. In fact, it can be argued that the exclusivity of access to VC investment is creating further imbalances in wealth distribution and exaggerating the earning gap as only the wealthiest have access to a very lucrative asset class.

In this paper, I will discuss why FinTech innovation is especially needed at this time and how it can help democratize access to investing in innovation. In particular, I will use Hyperion Fund as an example to demonstrate how blockchain technology is being utilized to resolve access issues and what it means for the future of the VC industry.

Shift in investors' narrative to fuel the push for democratized access

Venture Capital is the gateway to finance innovation which is reshaping current realities and creating new technologies to improve and even mould new industries. Made popular by Silicon Valley's tech giants such as Facebook, Google, and Uber, more and more retail investors are drawn to Venture Capital but were restricted by the barriers to entry. Consequently, there is there is a potentially huge amount of untapped capital that could be directed to start-ups through individuals eager to invest in VC. Blockchain-powered tokenized funds provide a great solution to fill this gap and potentially accelerate innovation as more capital will be available for start-ups (Lipusch, 2019).

Indeed, people are realizing that Venture Capital is an instrument of change and want to be invested not merely for financial return, but also for moral and personal fulfilment by investing in start-ups solving issues close to heart. This investor mentally shift has been prevailing with the rise of awareness about Environmental, Social, and Governance issues and a parallel shift in investor demographics fuelled by growing proportion millennial investors that are more conscious about sustainability and global issues. There is also a very significant shift in investor psychographics, putting more weight on ESG factors at the cost of lower return on investment, which results in funding ideas that may not have been funded with traditional investors' maximized return requirements (Riquier & Beals, 2020). Moreover, millennials are likely to trigger network and herd effects as they are likely to be first users and advocates of products or services that they have funded (Lipusch, 2019), essentially providing a free of charge sales and marketing channel for the start-up!

Invictus Hyperion Fund

Invictus Capital is the worlds first fund to leverage blockchain technology in democratizing access to Venture Capital. Launched in 2018, Invictus's Hyperion fund pitches itself as a tokenized Venture Capital fund utilizing blockchain to democratize access to early stage investments. Leveraging its technical expertise in blockchain as the leader in applying the technology in the Venture Capital industry, Hyperion particularly seeks investments in the field of blockchain applications.

How does it work?

The fund was able to provide retail investors with access to diversified exposure of early stage investments through a one-off issuance of IHF tokens which are linked to the underlying value of the assets. These are ERC20 tokens based on the Ethereum blockchain and allow investors to trade tokens in a transparent and trusted platforms, essentially providing liquidity and freedom to exit the fund at anytime (Invictus Capital, 2018).

By tokenizing the fund, Hyperion fund has effectively resolved the two main obstacles preventing retail investors from partaking in Venture Capital investments, those obstacles being large capital commitments and long holding time. With the IHF token priced at $0.1 at the Initial Coin Offering (ICO) (Eatherscan, 2020), investors are able to purchase small stakes that are linked to Net Asset Value (NAV) of the fund's invested capital. Tokenization of the fund resolved the challenge of large capital commitment allowed investors to exit their positions by trading tokens on an exchange as they are based on the well recognized and trusted Ethereum blockchain (Knight, 2019).

In addition, tokenization allows Hyperion to be an "evergreen" fund, meaning the fund is not limited to a set duration like typical funds based on a 10-year investment horizon. Traditional venture capital funds are limited by set timeframe and may be forced to exit positions early to payback investors, missing out on further growth opportunities. Since Hyperion investors can exit at anytime by selling their tokens on the exchange, the fund managers can focus on scaling portfolio companies and exiting investments at the optimal time with higher return. In addition, having an evergreen fund allows fund managers to focus on delivering value, rather than worrying about fundraising for the next fund (Graham, n.d.).

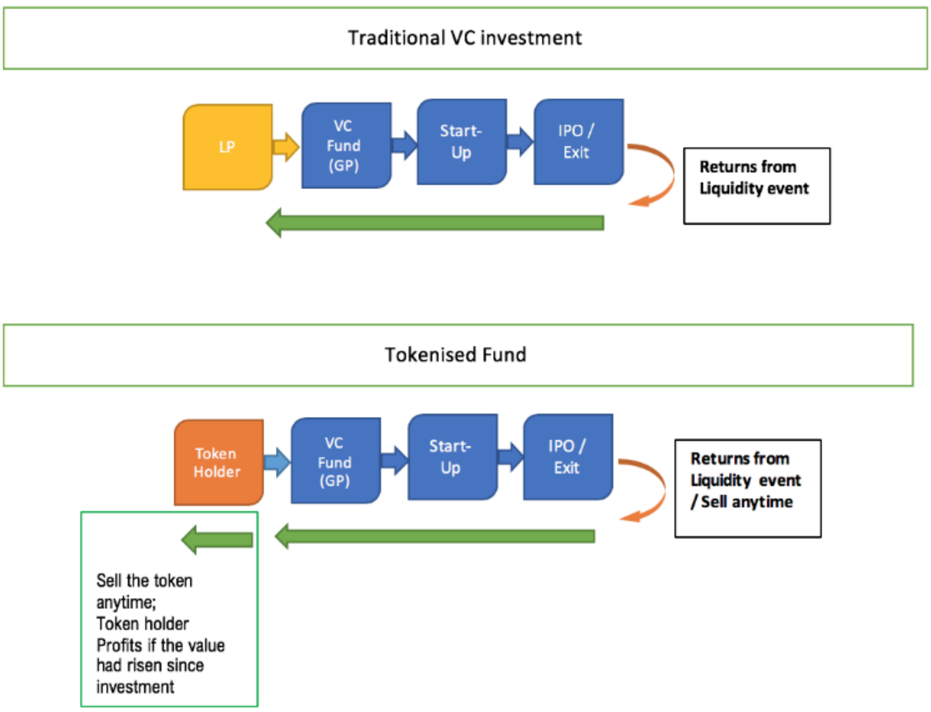

Image source: (Kottakki & Palathinkal, 2018)

How is value distributed to investors?

The implementation of blockchain in Hyperion succeeded in raising money from retail investors and providing a platform to liquidate at anytime. However as this is an evergreen fund, there needs to be a mechanism to reflect the true NAV on the price of tokens on the exchange, ensuring selling investors are compensated fairly for liquidating their investment. To resolve this, Hyperion implemented a "buy-and-burn" methodology where the fund will buy back tokens using a price target that tracks the NAV per token.

In practice, this is very similar to share buyback schemes implemented by publicly listed companies to distribute retained earnings to investors wishing to sell their stocks, increasing share prices to the benefit holding investors. A representation of how Hyperion's method works is shown the table below:

	Inception	Q1	Q2	Q3	Q4
Portfolio Valuation	$10,000,000	$12,000,000	$15,000,000	$ 20,000,000	$ 25,000,000
Quarter Performance		$ 2,000,000	$ 3,000,000	$ 5,000,000	$ 5,000,000
Buy-and-Burn @50% Performance		$ 1,000,000	$ 1,500,000	$ 2,500,000	$ 2,500,000
Ending Net Asset Value	$10,000,000	$11,000,000	$13,500,000	$ 17,500,000	$ 22,500,000
Token Supply Pre "Buy-and-Burn"	100,000	100,000	91,667	82,500	72,188
Token Supply Post "Buy-and-Burn"	100,000	91,667	82,500	72,188	64,969
Token Price Pre "Buy-and-Burn"	$ 100.00	$ 120.00	$ 163.64	$ 242.42	$ 346.32
Token Price Post "Buy-and-Burn"	$ 100.00	$ 120.00	$ 163.64	$ 242.42	$ 346.32
ROI - Quarter		20%	36%	48%	43%
ROI - Inception		20%	64%	142%	246%

* An oversimplistic representation of how the fund executes the "buy-and-burn" methodology, ignoring management and performance fees.

The "buy-and-burn" orders are executed when the fund has positive performance, meaning that recent quarter NAV is greater than that of the previous quarter. Note that the overall NAV of the fund will drop, but the token price stays the same as fewer tokens will be in circulation. Using this method, Hyperion is able to leverage the power of smart contracts in providing liquidity at a fair valuation to investors who wish to liquidate their positions, while investors who wish to hold for a longer investment horizon are provided with a less volatile and stable price that tracks the NAV price (Invictus Capital, 2018).

The fund terms stipulate that 50% of quarter performance is used to purchase tokens off the open market at the NAV price calculated at the end of the quarter (Invictus Capital, 2018). This means that the remaining (cash) gains, after deduction of fees, can be reinvested in other opportunities, taking advantage of the power of an evergreen fund.

Tokenized Funds vs. Crowdfunding

Tokenized funds such as Hyperion, are not the only attempt to tap into retail investors' capital in early-stage investment. In fact, several firms are utilizing technology with the same ambition, the most successful alternative being crowdfunding.

Crowdfunding is an alternative that some start-ups pursue as an alternative to seeking funding from venture capitalists. As opposed to receiving funding from one or two VC funds, the start-up will raise money from many individual investors. This became a viable option with the internet boom and rise of crowdfunding platforms that streamline the process for both start-ups and individual investors. Many platforms currently exist to serve this purpose, such as Seedrs, Republic, and SeedInvest to name a few. The business model is very similar for all platforms, with the main differentiator being the ability to source quality businesses to use their platform against the many alternatives.

Compared to Hyperion, crowdfunding succeeds in democratising access to start-up funding, but fails to resolve the liquidity issue by itself. However, many crowdfunding platforms are realizing the importance of liquidity to retail investors and are developing solutions. Seedrs, for example, is launching its own secondary market. Like a stock exchange, Seedrs's investors can buy and sell their shares in start-ups at a fair value determined by a comprehensive internal valuation policy. Republic, on the other hand, is providing tokenization services to give companies the option of having a tradable coin. This may allow anyone to exchange the coin and give a larger secondary market as compared to Seedrs internal secondary market.

Crowdfunding remains riskier than investing in a VC fund such as Hyperion with industry and technical expertise to conduct proper due diligence, as opposed to minimal due diligence offered by crowdfunding platforms. Industry and technical expertise that venture capitalists offer can also support and accelerate the success of the venture, not to mention the possibility of network effect within the VC's portfolio companies. This explains why crowdfunding is sometimes viewed as a last resort move indicating venture capitalists were not willing to invest in the start-up, though this may only be true in developed economies where VC is mature and active.

In summary, crowdfunding platforms offer viable alternatives to raising retail investors' capital, however, there are shortcomings when compared to tokenized VC funds. Crowdfunding does not come close to the level of professional investment selection and diversification that a professionally managed fund can offer. It may be a better suited option for more experienced retail investors who are willing to actively vet and select investments themselves with the little information provided on the crowdfunding platform. However, good crowdfunding investment opportunities may be scattered across multiple platforms, coupled with the fact that VC funds have first-pick in start-up investment opportunities, even the most skilful retail investor is at a disadvantage in terms of access to quality start-ups.

Conclusion

Compared to traditional Venture Capital funds, tokenized VC funds offer an easy and viable option to democratize access to venture capital investment. The market trends in term of demographics and psychographics of investors not only make this option as a nice "added-benefit", but offer real advantages for both fund managers and portfolio companies who benefit from the network and herd effects triggered by having a large number of investors.

Compared to other methods such as crowdfunding, tokenized funds clearly has the advantage. Hyperion, as a specialized tokenized venture capital funds will have better access to high quality investment opportunities, and will be able to construct a well-diversified portfolio within its blockchain expertise, not to mention better due diligence and support after investment with technology and industry experts. Combined with lower capital commitment and the ability to sell tokens at a fair price at anytime, this may be the new standard in venture capital investment for retail investors. Indeed, Hyperion has proven that blockchain technology can be the catalyst in democratizing access to Venture Capital. I expect more funds will capitalize on shifts in retail investors' narrative and appetite for funding innovation, launching tokenized VC funds that target popular issues such as sustainability, climate change, and healthcare.

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References

Eatherscan, 2020. *Token: Invictus Hyperion.* [Online]
Available at: https://etherscan.io/token/0xaf1250fa68d7decd34fd75de8742bc03b29bd58e#tokenInfo
[Accessed 14 June 2020].

Graham, A., 2019. *State of the Venture Capital Industry in 2019.* [Online]
Available at: https://www.toptal.com/finance/venture-capital-consultants/state-of-venture-capital-industry-2019
[Accessed 9 June 2020].

Graham, A., n.d. *Exploring Evergreen Funds with a VC Investor Who Raised One.* [Online]
Available at: https://www.toptal.com/finance/venture-capital-consultants/evergreen-funds
[Accessed 13 June 2020].

Invictus Capital, 2018. *Hyperion Litepaper.* [Online]
Available at: https://cdn.invictuscapital.com/whitepapers/hyperion.pdf
[Accessed 11 June 2020].

Invictus, n.d. *Hyperion Fund.* [Online]
Available at: https://invictuscapital.com/hyperionFund#aboutHyperion
[Accessed 9 June 2020].

Knight, A., 2019. *Hyperion Fund: Democratizing Venture Capital.* [Online]
Available at: https://medium.crypto20.com/hyperion-fund-democratizing-venture-capital-2741f09eec12
[Accessed 8 June 2020].

Kottakki, S. & Palathinkal, J., 2018. *Why & How to tokenize a Venture Capital Fund?.* [Online]
Available at: https://hackernoon.com/https-medium-com-firstcrypto-cryptovc-13ec13ff886
[Accessed 15 June 2020].

Lipusch, N., 2019. *Democratizing Venture Capital — A Few Thoughts on How the Blockchain and Tokenized Funds May Change the Venture Capital Market.* [Online]
Available at: https://medium.com/vencortex/democratizing-venture-capital-a-few-thoughts-on-how-the-blockchain-and-tokenized-funds-may-d7695c3c2cd
[Accessed 11 June 2020].

Riquier, A. & Beals, R. K., 2020. *As boomers hand over the keys to the stock market, sustainability-minded younger investors let their consciences lead.* [Online]
Available at: https://www.marketwatch.com/story/as-boomers-hand-over-the-keys-to-the-stock-market-sustainability-minded-younger-investors-let-their-consciences-lead-2020-05-21
[Accessed 13 June 2020].