

Revolutionizing Biotech Funding: The Promise of Tokenization



Tokenization holds great potential to revolutionize funding and investment in the biotech industry, fostering growth, innovation, and patient access to therapies. Asset tokenization provides increased access to capital by broadening the investor base and democratizing investment opportunities. This article highlights the potential of fractional ownership to attract diverse investors passionate about biotechnology advancements. Additionally, the inherent transparency and security of blockchain technology support trust among investors, mitigating concerns related to fraud and misrepresentation.

Asset tokenization introduces liquidity to traditionally illiquid private equity investments, creating secondary market opportunities for investors to trade their tokens. This liquidity allows early-stage investors to exit their investments and reinvest, nurturing a vibrant ecosystem optimized for therapy research and development around pre-IPO biotech companies. Innovative biotech companies, especially with pre-commercial assets, should consider tokenization to enhance funding opportunities and collaborate with the digital ecosystem.

Introduction

Biotech's potential for continuous innovation in the near future is driven by dynamic, young firms with ground-breaking technologies. However, the development of biopharmaceuticals requires substantial funding over an extended period. The financing landscape has undergone significant changes since the onset of COVID-19 and the SVB bank crash. Nature Biotech recently highlighted a decline in IPOs, urging a more cautious approach to venture capital (VC) investments. Private financing, as reported by Nature Biotech, witnessed a roughly 20% decrease in volume compared to the previous year's series A, B, and C rounds, with a more significant drop of around 30-50% in quantity, except for series A. While VC investments historically remain strong, totalling \$35 billion in 2022, investors are becoming more selective¹. This raises the question of how to enhance investability in promising therapeutic assets within the biotech sector.

Tokenization has the potential to disrupt traditional investment approaches in the biotech sector, offering a "precision financing" solution that appeals to many investors. While pharma companies traditionally focus on building asset pipelines to mitigate investment risks, some venture capital firms have shifted towards an "asset-centric" strategy, backing biotech firms centered around a single compelling therapeutic candidate. This model has gained traction and is commonly adopted by young biotech firms. However, a token-centric biotech venture represents the next evolutionary step. Tokens can be used to represent fractions of an asset and, when combined with a suitable digital marketplace, enable the participation of communities, including clinicians and patients, in the investment and development of therapies targeting significant medical needs. The emerging thesis for institutional investors is that the higher the engagement of customers in the token-centric model, the greater the commercial relevance of the clinically tested asset (see Figure 1).

¹ Precision financing. Senior, Melanie. 2023. April 12, 2023, Nature Biotechnology.



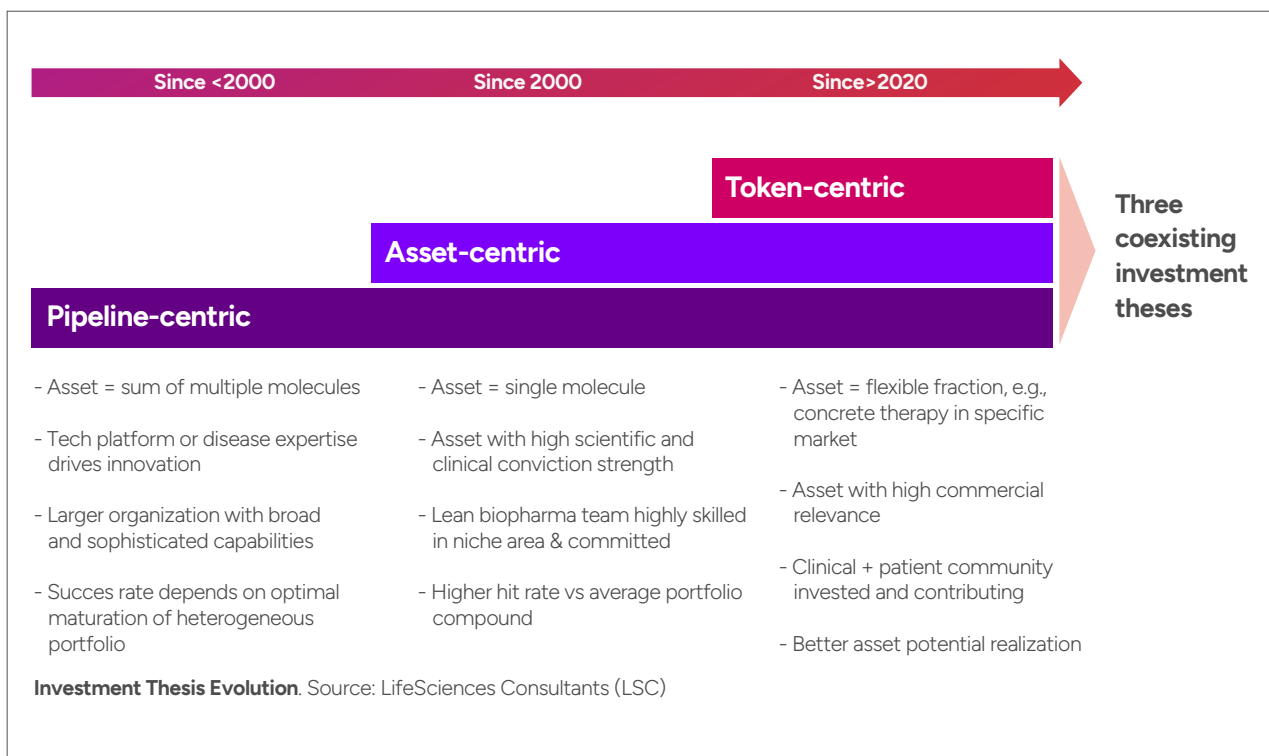


Figure 1

Biotech companies could potentially regain and expand the interest of investors and should consider tokenizing their shares to be set up for future growth. But what is tokenization exactly and how can it concretely help to tackle fund-raising challenges?

What is 'tokenization'?

Tokenization refers to the process of converting real-world assets, such as equity, real estate, or intellectual property, into digital tokens on a blockchain. This innovative concept offers fractional ownership, improved liquidity, and increased transparency for traditionally illiquid assets. In the context of pre-IPO biotech companies, asset tokenization holds tremendous potential, offering several advantages that can drive growth and foster innovation within the industry.

Benefits of Asset Tokenization for Pre-IPO Biotech Companies

Increased Access to Capital: Asset tokenization allows pre-IPO biotech firms to reach a broader investor base. By dividing ownership into smaller, tradable tokens, tokenization opens doors for retail investors, venture capitalists, and institutions that were previously restricted. This expanded

access to capital can accelerate research, fuel clinical trials, and drive innovation in the biotech industry.

Tokenization enables fractional ownership, dividing the equity of a biotech company into smaller units represented by tokens. This model **democratizes investment opportunities**, allowing individuals with different capacities to participate in the growth potential of pre-IPO biotech firms. It fosters inclusivity, breaking down barriers and attracting a diverse range of investors, including those passionate about the advancements and impact of biotechnology.

Blockchain, the foundation of asset tokenization, **provides transparency and security**. Its immutable nature ensures secure storage and easy auditing of transaction records, ownership details, and governance frameworks. This transparency builds trust among investors and stakeholders, addressing concerns regarding fraud and misrepresentation. Biotech companies can leverage blockchain's robustness to establish trust, attracting investors who value transparency and accountability.

Asset tokenization creates **secondary market opportunities** for previously illiquid assets. Investors can trade their tokens on compliant



exchanges, enabling liquidity and the potential to realize value even before an IPO. These secondary markets allow early-stage investors to exit their investments, fostering a cycle of reinvestment and nurturing a vibrant ecosystem around pre-IPO biotech companies. The increased liquidity and exit options attract more investors, contributing to the growth and development of the biotech industry.

How could tokenization help overcome traditional biotech's fundraising challenges?

Biotech firms are facing an uphill battle when it comes to raising capital for therapy development and must devote significant time and effort to engaging with investors. The descriptions of the following five stages of the biotech funding process provide examples of the potential held by tokenization in streamlining those activities (Figure 2).

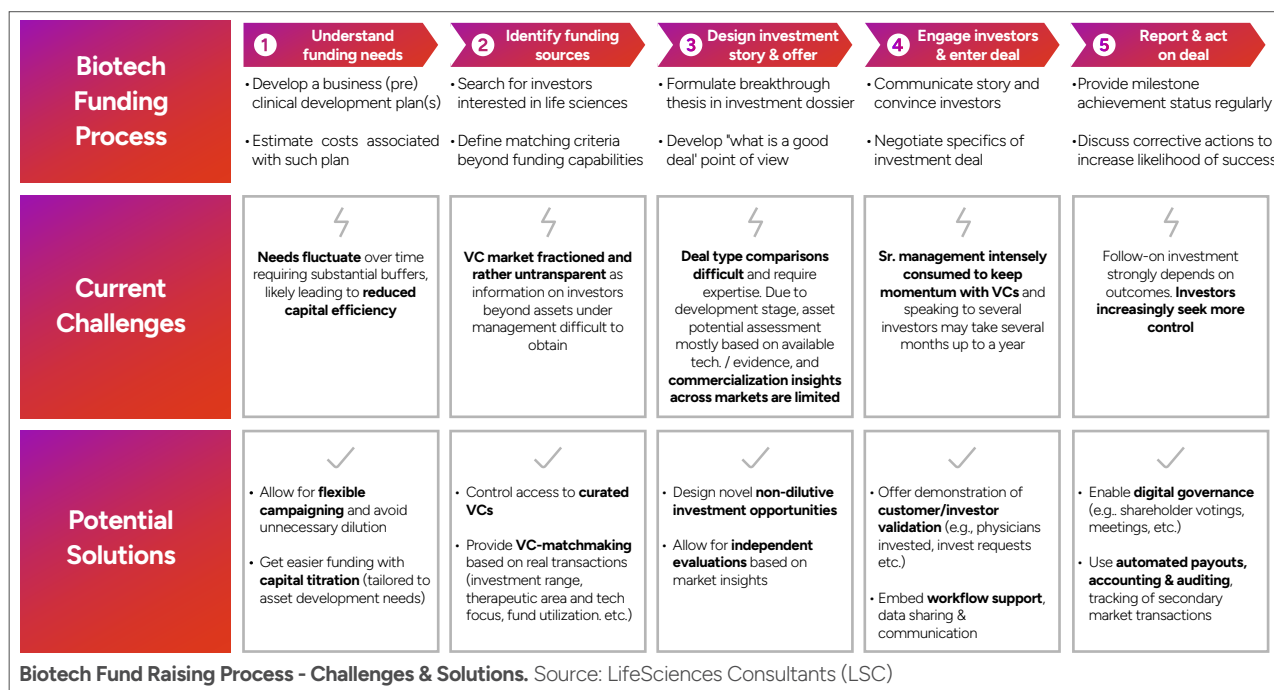


Figure 2

1. Understand funding needs

Biotech companies include the financial estimation for the clinical development of a therapeutic asset as part of their overall business plan. The costs of clinical trials can vary significantly dependent on factors such as trial stage, indication, and study design. According to global CRO Sofpromed, phases 1-3 of clinical trials may require approximately \$70 million². Meeting clinical trial budgets can be challenging due to common delays caused by e.g. difficult patient enrolment, resulting in additional costs and fluctuating funding needs. Consequently, biotech executives often include significant buffers in their projections, which may reduce capital efficiency when obtaining funding. Issuing digital shares on a stock exchange though could offer more precision as fundraising could be handled in a campaign-like manner. It could be linked to series A, B, or C equity rounds, but not necessarily. This way capital can be "titrated" to

top up the existing funding base as needed and unnecessary equity dilution can be avoided.

2. Identify funding sources

Identifying sources for funding can have several pathways, depending on the firm's stage. However, potential investors are commonly identified, and reached, through personal connections. In fact, the VC market is relatively fractioned and rather untransparent, making it challenging for younger biotech firms to access the right investor type, with matching interests and funding strategy. A dedicated platform could facilitate the screening and matchmaking of biotech firms and curated (co-)investors, utilizing profiling criteria based on real transactions via the platform. Both sides could regulate the visibility and access of investment requests and offers (e.g. via a digital bulletin board). This way, parties would, early on, get an idea of how well investment scenarios could resonate with the marketplace.

² Ledesma, Patricio. 2020. How much does a clinical trial cost? Sofpromed, 2nd. January 2020. <https://www.sofpromed.com/how-much-does-a-clinical-trial-cost>

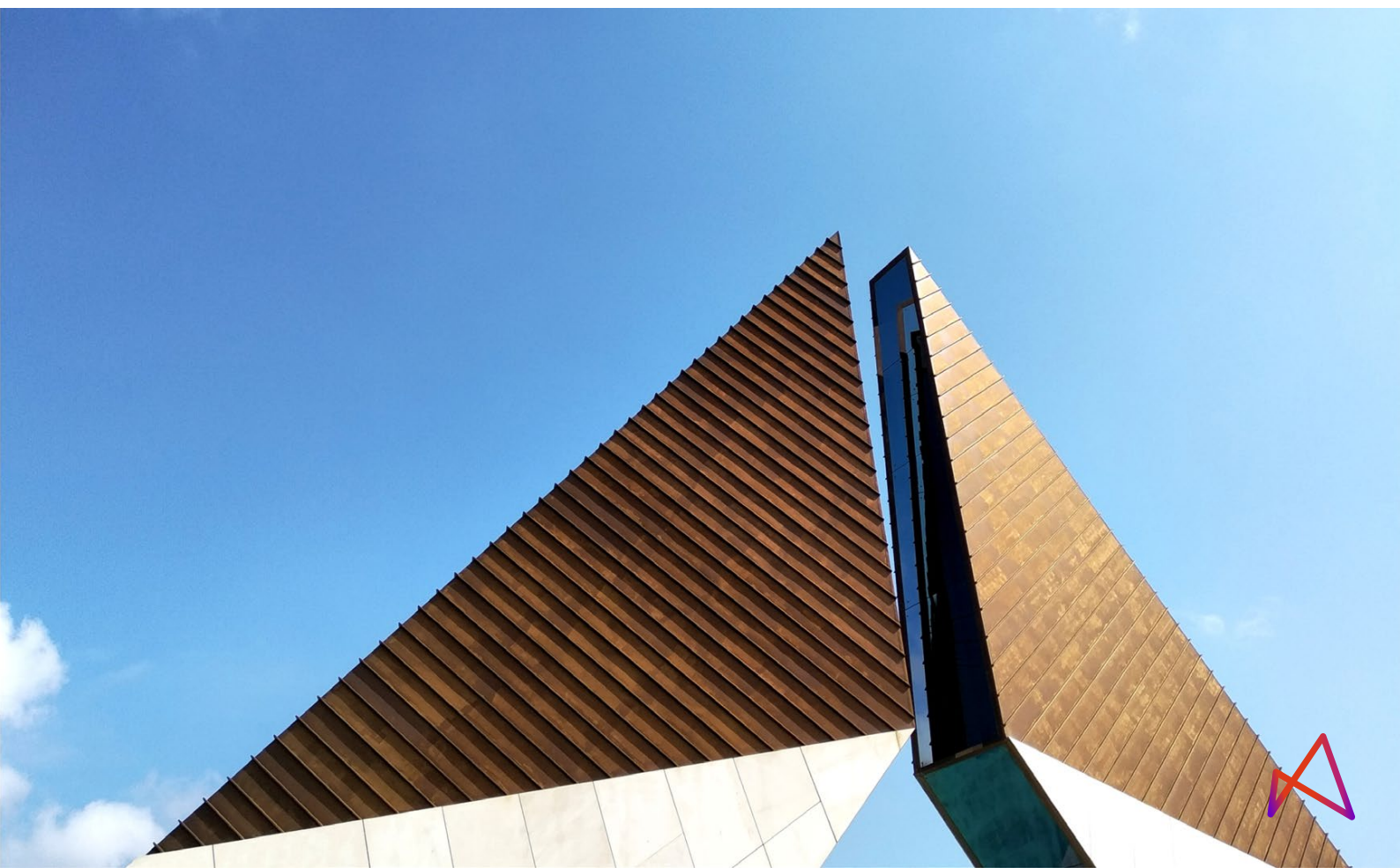


3. Design investment story & offer

To successfully raise funds, biotech leaders must formulate a clear and compelling rationale for why the therapeutic asset under consideration has breakthrough potential. The story then grounds itself on the available clinical and scientific evidence. Commercial insights on the other hand are typically limited, as concrete target product profiles get formulated from late trial phase 2 and market research has not been systematically initiated. Here an active engagement of personal investors seems promising. Physicians and patients can now become active investors willing to share expertise and knowledge for therapy advancement, due to the very low transaction costs and trading volume thresholds associated with a digital tokenization platform (all of this transparently and according to local legal frameworks). Considerations can then go beyond historical probabilities of clinical or regulatory success and leverage up-to-date commercial insights. This way, the therapy development trajectory, the estimation of the asset's potential and the investment offer can be further validated, which might be substantial for biotech firms and institutional investors alike. And finally, novel investment opportunities can be created that are fully non-dilutive, e.g. by designing paybacks per invested token from a therapy's prospective net sales.

4. Engage investors & enter deals

Roadshows, often lasting between 6 and 12 months, and driven by senior members of the biotech firm, are the traditional way of connecting with investors. During this phase, C-level executives are heavily solicited to communicate the science behind the products, the regulatory environment, and the competitive landscape, to name a few aspects. This process consumes a large part of the senior management's capacity to keep up the momentum and the interest of potential investors. Given that smaller biotech firms' senior teams consist of a few members only, such capacity might then be missing for further advancing therapy development. To shorten the number of engagements and accelerate the time to agreement, the platform could include full workflow support with a safe data room and communication tools as well as biotech pitch training and learning resources. Besides the operational part, the quality of engagements can be increased, too. Traded tokens could enable the tracking in real-time of completely new indicators that biotech firms can use to demonstrate customer and investor validation. For example, the amount of above-mentioned medical investors committed to contributing capital and advice to the success of start-ups active in their therapeutic area. VCs could then de-risk their investments by targeting companies that achieve a threshold medical investor interest.



5. Report & act on deals

As the deal is closed and investment terms have been agreed upon, biotech management teams must provide regular reporting to demanding investors and show progress to secure follow-on funding. And investors increasingly want to exert operational control as well. Common governance models let investors have a seat on the Board of Directors where decisions are made regarding the companies' / the asset's strategy, budget flows, and management of key personnel. The use of tokens would allow for more flexible governance. In fact, regulated security tokens offer a very high degree of freedom in how to associate assets, rights, and duties with them. Provisions typical of shareholders' agreements, such as subscription rights in the event of a further capital increase, shareholders' meeting participation and voting can be included without notarial certification and entry into the commercial register, which reduces timely and financial efforts for all parties³. Many rights can be designed as optional, and the biotech firm's management could remain fairly in control. But also, hybrid governance models with big pharma could be done as in previous Atlas deals⁴. Conditional pay-outs could be structured to meet milestones achievements, licensing, or royalty agreements. A secondary market would enable a smooth development of return on investment across the clinical trial stages since equity evaluation happens with more frequent transactions. Finally, accounting & auditing can be largely automated.

Summary

Future issuance, custody, and trading of blockchain-based tokens via a digitized and regulated marketplace has the potential to offer a completely new route to funding on top of existing ways. It will increase the investability of biotech companies which ultimately means more therapies will come to markets and patients that need them. It will be attractive to biotech firms and investors alike through:

1. broadening the spectrum of possible investment schemes and strategies,
2. an increase in operational fund-raising effectiveness and efficiency,
3. better return on capital raised,
4. more options for portfolio de-risking and
5. fluidity of equity within the existing banking system.

About LifeSciences Consultants (LSC)

LifeSciences Consultants (LSC) is a global vertically integrated life sciences strategy consulting firm with decennial experience in advancing breakthrough therapies to patients. LSC has offices in San Francisco, New Jersey, Mexico City, Milan, and Berlin.

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³ Schlote, Andrea und Wirtz, Johannes. 2023. Krypto Venture Capital: Chancen einer Startup-Finanzierung durch Token. [Online] Bird & Bird, 12. April 2023. <https://www.twobirds.com/de/insights/2023/germany/krypto-venture-capital-chancen-einer-startup-finanzierung-durch-token>

⁴Booth, Bruce. 2012. New Biotech Corporate Structures: Possible Alternatives For Discovery Platforms and Product Financings. Life Sci VC. [Online] 18. September 2012.



Contact us

Boris Schlaak

Partner

bschlaak@consultingls.com

Fabio Basile

Associate

fbasile@consultingls.com

Michael Katz

Product Lead Equity

michael.katz@sdx.com

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