

# The future of funds

How the asset management industry must evolve for the digital future



Working together with



# Outline

- > **1.** Introduction
  
- > **2.** Setting the scene of current day: fund segment snapshots
  - Overall Funds Landscape
  - a) Mutual Funds
  - b) Private Funds
  - c) Hedge Funds
  - d) Exchange Traded Funds (ETF)
  - e) Money Market Funds (MMF)
  
- > **3.** Industry level digital innovation in funds
  
- > **4.** Moving the needle on tokenisation
  
- > **5.** Future focused – increasing velocity on fund innovation progress
  - a) Tokenisation of Assets and Cash
  - b) Integration of ESG
  - c) Market INFRASTRUCTURE as an enabler – Platform based models
  - d) Artificial Intelligence (AI) and Machine Learning (ML)
  
- > **6.** What might a “utopian” state for the future of funds look like?
  
- > **7.** Concluding thoughts

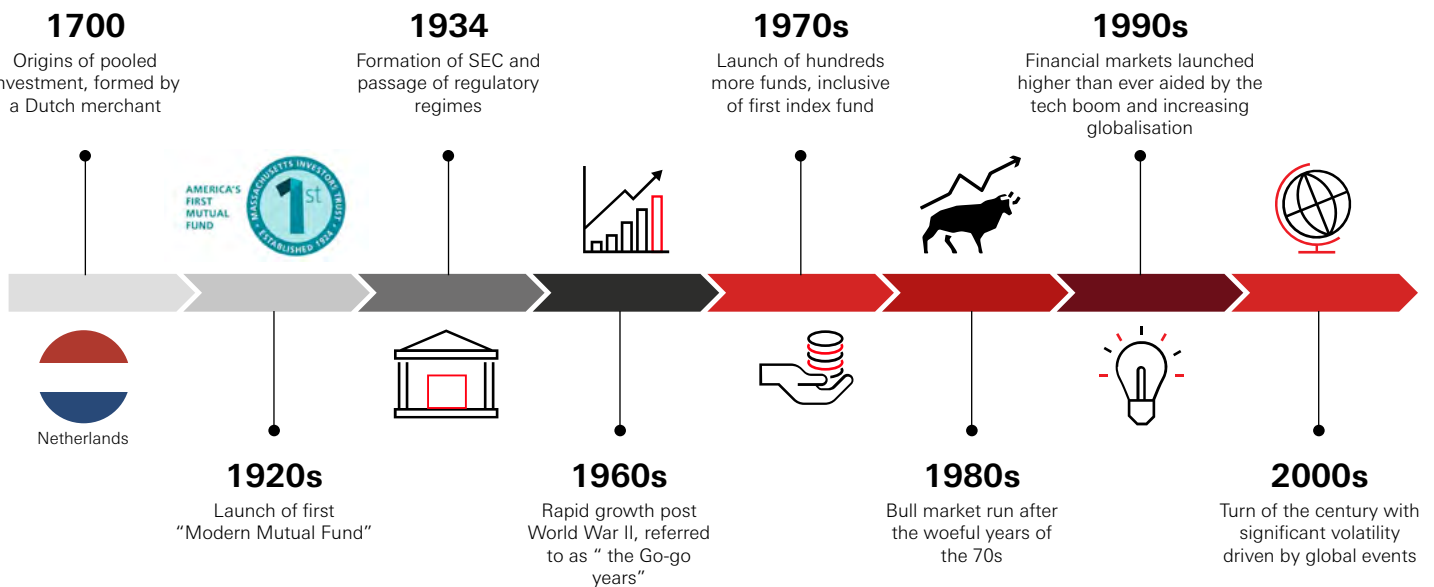




# 1. Introduction

To cast a view on the 'Future of Funds', one must take a moment to appreciate the path taken over the 'History of Funds', a journey which has crafted them into what they are today. Funds and their associated structures

have served as the centre pin of institutional investment products for the past 100 years in their current form, but the origins date back to the 18<sup>th</sup> century.



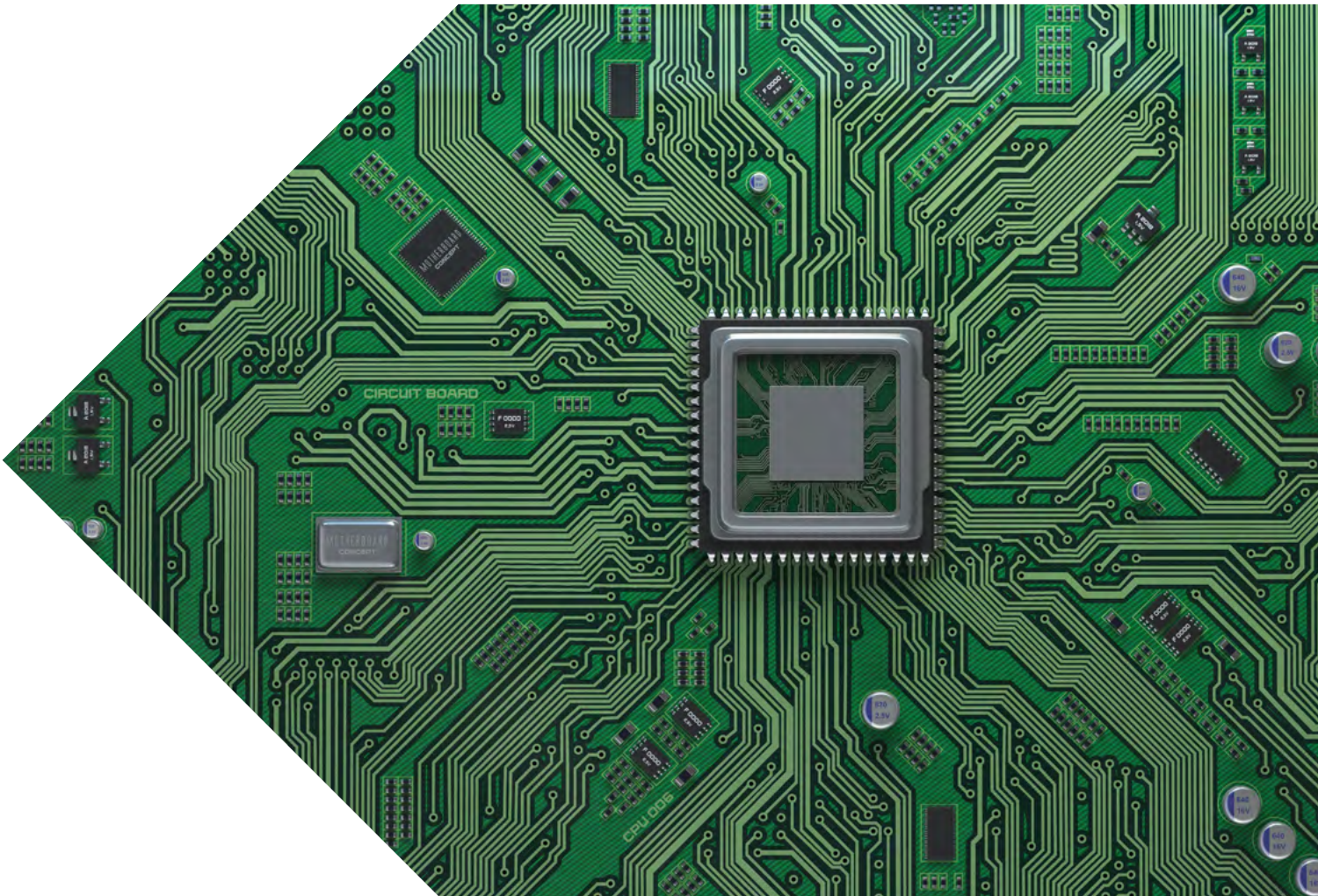


Moving to the 21<sup>st</sup> century, we've observed solid recovery from the Global Financial Crisis in global markets, not to mention the unprecedented disruption and long-term damage from the COVID era. Consequently, the industry has experienced prolonged fee compression out of compounding factors which include ever increasing competition in funds management between top-end players, market share from leaner, tech driven incumbents and increased investor expectations in relation to the cost of investment fund products. Asset allocation and management advice have each led industry players to reassess how funds can stay competitive and where to focus resources and energy.

On top of this, the fintech and digital asset landscape has been booming for much of the last decade where significant leaps in technical and digital capabilities have been accomplished in deep areas such as data, cloud computing, and deployment of blockchain based infrastructure. These leaps have served as enablers for all types of firms in the funds value chain, creating an opportunity to perform business operations on a more cost effective, expedient and often smarter basis through harnessing the computing power and reach of such solutions. The digital space, however, has seen tumultuous times in the last couple of years.

With the fintech community seeing valuations and funding dropping off significantly, the pressure on funds and firms has increased to demonstrate growth and value to investors on a near-term basis to maintain their existence in a crowded market. Some of these firms have seen the need to reduce scale and rationalise business models, often at a cost of headcount.

2023 is a year that has seen an array of variables impact the trends and volatility playing out in the financial markets. A challenging fiscal year combined with rising inflation and interest rates has driven all forms of investors to rationalise investment strategies and asset allocations. Paired with this, we've seen a continuation of mega-trends such as that of ESG, tokenisation (**See Northern Trust & HSBC paper: Beyond Tokenisation**) and a resurgence in the form of artificial intelligence (AI) - more to come on these themes. Amongst this bear market and market outlook, innovators have remained steadfast in pursuit of progress and the journey to prove the concepts and value from an array of use-case exploration. Central to this exploration and progress is the investment funds domain, on account of its global reach, product composition and sheer potential of revolutionising the ecosystem using the technologies now being curated.





## 2. Setting the scene of current day: fund segment snapshots

Before we explore the future of funds further, let's take stock of where we are today across the fund categories and what's trending.

### Overall Funds Landscape

The broader investment fund landscape has seen an acceleration in the evolution of products and capability over the last few years, where the catalyst has been multi-fold and well aligned to the mega-trends noted above. Expanded and enhanced offerings in conjunction with market dynamics have propelled combined assets of mutual fund and exchange traded fund (ETF) providers to a total of US\$38 trillion as of the end of 2022<sup>1</sup>. Traditional 60/40 allocation strategies are now a rarity among the world's asset owners. In the hunt for sustainable, risk-adjusted performance and inflation hedges, diversification is the order of the day. Increasing exposure to alternative and private assets has been a notable trend, not without its own set of issues when it comes to data and valuations.

Digital and technological advances have helped drive fund-level innovation. The emergence of investment platforms has had a major impact on the way in which distributors, professional advisers, allocators and investors access funds.

This, in turn, has helped to facilitate innovation and competition in the market – however, it's a market that is dominated by a select number of household names, the top 10 of which command some US\$18 trillion<sup>2</sup> (or 47.3%) of that collective asset base.

### a) Mutual Funds

'HSBC is participating in 'Fundnode', an industry-wide funds utility being developed in Singapore by Marketnode, built using distributed ledger technology. Fundnode aims to bring together fund ecosystem participants onto a single platform to streamline fund process and reduce manual steps required.'

The mutual fund sector has seen steady growth over the past years at a rate of 5% since 2016<sup>3</sup> according to current estimates. It is forecast to grow by USD\$71.62 trillion by 2027, accelerating at a Compound Annual Growth Rate (CAGR) of 9.76%<sup>4</sup> during the forecast period. All funds have

seen sustained drops in total expense ratios (TERs)—the total cost of running or managing a fund. Passive funds have felt the worst of this impact in the last year but active funds will see faster falls in the years ahead. A recent PwC survey suggests this trend will compound further over the course of 2024<sup>5</sup>. These moves have been further intensified by the increased competition driven by the top tier firms and their relentless investment in technology and people as they ramp up delivery of digital ready products, solutions and processes, enabling leaner, more cost-efficient operations at scale.

The fact remains that investor demands are evolving as are the investment products available – the net effect being that legacy operating models, commercial models and portfolio composition may no longer be fit for purpose. Catalysts in digitisation and tokenisation are taking the evolution of the product mix and options available to a new level. For example, one notable move is in the direction of ETFs and direct indexing.

#### b) Private Funds

It's no secret that private markets and alternative investments have been on the rise and held up as target sectors for further growth, where their ascent continued from US\$9.7 trillion in assets under management (AUM) in 2012, to US\$22.6 trillion AUM by the end of last year<sup>6</sup>. There is also a significant amount of capital estimated sitting around, yet to be invested, known as “dry powder”— of around US\$3.2 trillion. Private Equity funds in particular have been one of the early focuses for tokenisation which should be no surprise to anyone as they have a market of US\$13 trillion<sup>7</sup> in AUM globally.

“Northern Trust pioneered a Private Equity (PE) blockchain solution in 2017 which leveraged the technology to demonstrate a new level of flexibility and versatility in managing fund data. By applying blockchain to the entire operational workflow of a fund, every transaction and occurrence – from capital calls to audits to exchanges between GPs and LPs – was automatically captured and encrypted into a single “source of truth” book of record, which could then be audited

by a more closely connected ecosystem of auditors and regulators directly on the blockchain. This effort was an early indication of the potential for the technology and a sign of what lies ahead in use of shared ledgers as well as next generation real-time auditing abilities.”

The private fund segment represents an opportunity that cannot be ignored, with a potent combination of compelling risk adjusted returns (historical returns of 14% globally over the past 25 years<sup>8</sup>) and genuine diversification – (which has become more difficult to accomplish in public markets alone).

The sector remains a prime target for digital disruption given it's an investment landscape with long lock-up periods, limited exit opportunities, and lack of liquidity, transparency, and accessibility as a market compared with more traditional asset classes.

#### c) Hedge Funds

Hedge funds (HF) have returned moderate performance in recent years with yields down compared with historical norms, which can in part be attributed to the near-zero interest rate environment. That said, market neutral HFs have also performed solidly with downside protection and capital preservation, and in some cases positive returns, against the more severe market downturns in recent years. These funds have historically proven to show a strong correlation with increased performance returns during rising, high interest and inflation rate environments<sup>9</sup>.

The broader capital markets experienced significant increased volatility during 2022 and 2023 due to economic and political uncertainty. The conditions made it easier for managers to outperform passive benchmarks as larger price movements helped skilled HF managers add value through security selection. The higher interest rate environment of 2023 has also had a dramatic impact on the relative demand for some HF strategies as investors focus on expected returns above the risk-free rate for each strategy driven by beta (the markets the strategy targets) and alpha (through manager skill and selection)<sup>10</sup>. Overall, 2023 has shown strong flows going to the bigger, branded and most established HF managers. A recent output from the CAIA suggests that 5% of HF organisations with the strongest brands will attract 80-90% of net flows within the industry<sup>11</sup>.



Against this backdrop, innovation remains top of the agenda for HFs that are committed in their pursuit of digital asset solutions and exposure despite the turbulent times. Whilst the overall percentage of HFs investing in crypto-assets fell from 37% in 2022 to 29% in 2023<sup>12</sup>, there is a robustness in confidence driving HF capital to be deployed in the broader digital asset fintech ecosystem. The value proposition and long-term sustainability of crypto-assets is being recognised, with many seeking out more lateral investment opportunities in down crypto markets. Findings from the combined HF report from PwC and the Alternative Investment Managers Association (AIMA) found that the average allocation to crypto-assets managed by traditional HFs surveyed from mid-2022-2023 increased from 4% to 7%<sup>13</sup>. Tokenised assets are also a hot topic for this sector with huge untapped potential, bringing new liquidity and opportunity in newly tokenised asset markets like property and arts.

Differentiation in digital capability for this community is critical to success in both trading and servicing arenas in the search for alpha and diversification. Navigating these new digital waters comes with support and model considerations different to what the industry is accustomed to, including aspects such as investment mandate changes, Anti-Money Laundering, tax, custody and more.

#### d) Exchange Traded Funds (ETF)

The ETF space, considered a more niche option for investors in the early years, has seen a monumental ascent since its inception in the 1990s. It has become an efficient and effective way to gain stock market exposure over traditional stock picking. The driving forces and momentum in the ETF market is undeniable and considered to be a new pathway to how next generation fund products will operate in the future. We believe that there are certainly indications of how this future state could look based on the characteristics of the ETF product set.

ETFs are gaining share of all funds volume across the US and Europe, with an annual growth of 16% over the last 5 years<sup>14</sup>. This outperformance continues to fuel new fund launches and the conversion of mutual funds and separately managed accounts (SMA) into ETFs. In the US alone, it was estimated that up to 70% of new fund launches were ETFs. This was aided by the US regulatory environment which provides tax advantages for ETFs over mutual funds. The resilience of the growth in ETFs in recent history is particularly meaningful when net inflows achieved by ETFs are compared with the outflows from mutual funds - this totalled US\$1.4 trillion in 2022 alone.

Many of the new entrants are large asset management groups that had previously stayed away from the ETF market, which has further propelled the growth of the domain.

A recent survey from PwC of ETF managers globally reported that 70% of respondents expect that global ETF AuM will grow to US\$15 trillion or more by 30 June 2027<sup>15</sup>. This represents a healthy 12% annualised growth for the market from where it is today. The promise of additional ETF growth is bolstered by the number of new and emerging regional markets that have not been incorporated as of today, with product sets yet to be fully established.

On the digital side, the ETF segment has seen the initial stages of a new wave of blockchain and digital asset based ETF products. Most of these ETFs are crafted to gain exposure to the larger digital asset ecosystem including blockchain companies and direct and indirect exposure to technology and fintech firms that are innovating in the broader environment. These are predominantly going after major cryptocurrencies including Bitcoin (BTC) and Ethereum (ETH) themselves, or their performance via more novel compositions and benchmarks using derivatives instruments such as futures. The overall composition, however, tends to be a multi-asset allocation with a mix of fixed income, equities and money market funds. Other blockchain solutions include a parallel, public blockchain based fund share with records maintained by the transfer agent service provider.

### **Not all ETF products are equal: the active vs passive management debate**

As a sub-plot to the ETF story, there has been a shifting preference for passive over active products. Passive funds now comprise 38% of global assets. This number is up from 19%<sup>16</sup> just 10 years ago. Passive funds have extremely low expense ratios that limit the fees providers can earn. Existing brands also have large economies of scale that would be difficult for new entrants to replicate. For these reasons, fewer firms compete in passive management, and this is ultimately leading to yet more consolidation in the industry.

### e) Money Market Funds (MMF)

Money market funds (MMFs) have always played a significant role in financial markets. They provide liquidity, short-term yield, and diversification. They typically invest in high-quality, short-term securities, such as Treasury bills, repurchase agreements (Repos), or commercial papers - their value is designed to be stable under regular market conditions. Their relative safety in times of uncertainty related to equity and taxable fixed-income markets have been proven with global investors gravitating to lower risk waters amidst an array of macro-economic rate factors, where in early October 2023 the Global MMF market was worth USD\$5.71 trillion<sup>17</sup>. Interestingly, this market is dominated by a number of household-name financial services. The top 10 managers in this space collectively account for 81%<sup>18</sup> of all money market assets.

On the digital side, MMFs have been the subject of great interest from the asset management community as a candidate for fund tokenisation initiatives as a result of the above mentioned drivers for yield generation in the treasury management space, as well as potential use of MMFs as collateral and margin funding sources (not previously possible). The aim of this is to unlock new eligible collateral, preventing the need for asset managers to redeem cash from funds. The use of the tokenised fund unit representation can enable dramatically reduced settlement time and risk in meeting collateral obligations, all of which benefits capital efficiency in balance sheet usage.

We have seen growing momentum as the use case for MMF tokenisation solidifies, with many institutional players facilitating conversion of these funds into tokenised forms.





# 3. Industry level digital innovation in funds

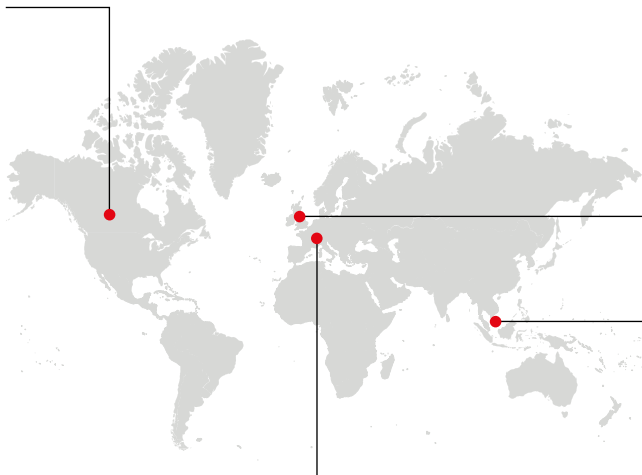
The funds industry is no stranger to digital innovation and transformation, with a variety of core capabilities and data driven progress achieved over recent years which was further propelled by the COVID pandemic. Some aspects of this experience have fast-tracked progress in digital-first capabilities and interactions in ways not thought possible at scale in past years. Previous to this, legacy digitalisation projects have dragged on with paper and fax-based interactions remaining in place in some pockets of the value chain and much longer than they should have been. The eradication of these elements provides the foundational layer for digital-forward innovation to build on in the coming years.

Each region globally has its jurisdictional regulatory nuances and geographical challenges, but all share a common view

on innovation and common goal in exploration of leveraging digital capabilities in the future of funds architecture and financial product landscape.

There are a range of digital innovation opportunities suited for different fund types – for example master-feeder funds can benefit from streamlined and automated processes, which improves transparency and communication between the master fund and its feeders. Alternative funds most notably can benefit from the fractional ownership enabled by tokenisation, with fractionalisation of the fund’s investment as a result. From core digitisation across the tech stack, to the emergence of early digital token fund unit representation, the signs are clear that a watershed moment in progress is a matter of when and not if, as bigger institutional firm focus centres on the next wave of adoption and product.

In the US, Q1 2021, the Securities and Exchange Commission (SEC) issued a notice<sup>22</sup> creating some exemptions and non-enforcement terms via a framework for broker-dealers exploration of digital assets – however this was somewhat narrow and didn’t scale for adoption.



In the UK, the Investment Association (IA) has been active in exploring early-stage constructs for the future state of its funds industry while also advocating for the government and the FCA to create a framework for tokenized funds with support and interest from a number of high-profile asset managers.

The UK is also preparing to launch a Digital Securities Sandbox (DSS) to further propel efforts with tokenisation and will include funds in its scope – this is expected to be available in late Q1 2024<sup>19</sup>.

Recent Asia-Pacific based regional developments have come through in Hong Kong & Singapore. The most recent phase of Singapore MAS’s Project Guardian initiative announced in late June 2023<sup>23</sup> will cover funds. This comes to life through a multi-phase drive to innovate in the digital asset network and tokenisation space, cultivating progress across more financial asset classes.

Project Guardian is a collaborative initiative of MAS comprising 11 financial institutions which will lead industry pilots across asset and wealth management; fixed income; and foreign exchange.

In Hong Kong, the Securities and Futures Commission (SFC) release guidelines for Virtual Asset Trading Platforms (VATP)<sup>24</sup> which took effect at the beginning of June 2023 to safeguard investors.

In Europe, the European Commission stepped up in its digital and tokenisation journey at the beginning of this year, launching its Blockchain Regulatory Sandbox<sup>20</sup> followed by European Securities and Markets Authority (ESMA) with the introduction of its DLT Pilot Regime<sup>21</sup>. This initiative made provisions and exemptions for financial market infrastructures (FMIs) to use blockchain technologies for the issuance and trading of tokenised stocks, bonds and funds, including money market funds.

Its also worthy of note that the EU can now move forward with a greater degree of certainty with the Markets in Crypto Assets (MiCA) regime now in force as of June 2023.

Disclaimer: The regulatory developments mentioned above is up to date as of Nov 2023.  
19, 20, 21, 22, 23, 24

# 4. Moving the needle on tokenisation

## So, what can be done to move the needle and deliver on the future of funds promise?

### Option 1: Tokenisation of fund unit only, underlying remains in dematerialised form

One option for fund managers looking to realise some benefits of blockchain technology while minimising complexity and allowing for ease of adoption is tokenising the units of a fund. In this model, the underlying assets remain in the traditional dematerialised format and the token essentially acts as a wrapper for the fund. This can include having a tokenised share class alongside traditional share classes or having all units of a fund represented as tokens.

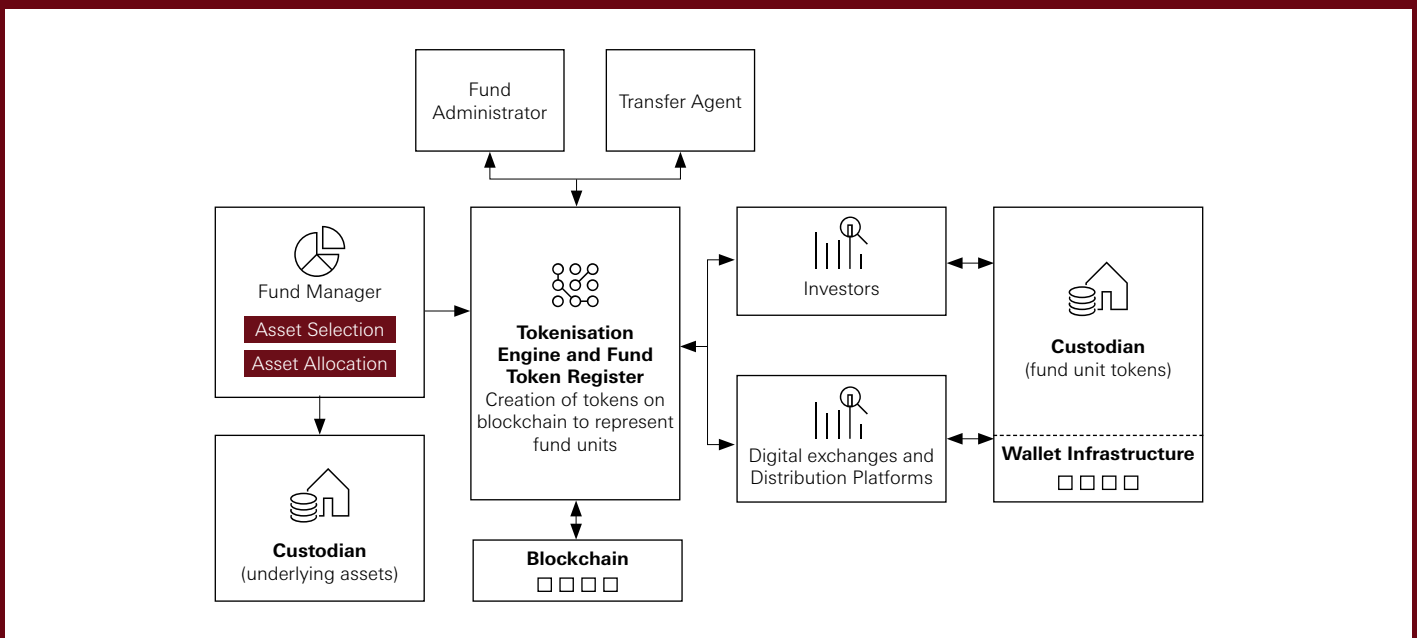
Regulatory clarity and support for tokenised funds has been growing in recent years. In Europe, tokenised units in Alternative Investment Funds (AIF) and Undertakings for the Collective Investment in Transferable Securities (UCITS) funds are regarded as financial instruments rather than crypto assets under the forthcoming EU Markets in Crypto-Assets Regulation (MiCA) Regulation. In June 2023, following the release of virtual assets regulations in Hong Kong, the head of the Hong Kong Securities and Future Commission’s (SFC) fintech unit, told a conference that the SFC was happy to discuss tokenisation of public funds<sup>25</sup> with the asset management industry.

One of the main benefits of fund unit tokenisation is in terms of distribution and accessibility. Once tokenised on a public blockchain, the fund’s units can be listed on digital assets exchanges and distributed via digital distribution platforms or even sold directly to investors. To purchase traditional funds, investors usually need to place an order with a distributor which is typically a bank. They then need to wait 1- 2 days

to receive confirmation that their order has been placed and the fund units have been received. The waiting time could be longer for alternative funds. Similarly, for redemptions there is a gap of a few days between the placing of the order and the receipt of redemption proceeds. This time lag is due to the manual processing performed by the distributors, fund administrators and transfer agents involved. For a tokenised fund, investors can purchase units directly on exchange or digital distribution platforms. They can fund a cash account linked to the platform, place an order and immediately receive the tokenised fund units into their accounts. This increases the efficiency and transparency of the investor journey. Accessibility to investment in funds via these digital platforms would create opportunities for a wider investor base that may not be reached solely through traditional distributors, opening new markets for this conventional asset class.

Fund unit tokenisation retains parts of the traditional fund ecosystem as the existing fund’s structure remains in place. A custodian would hold the underlying assets, but holders of the fund unit tokens would also need to appoint a custodian with wallet infrastructure capabilities to safekeep the private keys to the tokens. A tokenisation engine needs to be in place to create or remove fund token units based on subscription and redemption orders for the fund. The use of DLT can allow for multiple participants including the fund managers, administrators and transfer agents to access real-time information on changes in the fund’s holdings via this platform.

Fund unit tokenisation can also streamline operational processes especially in the administration of the fund. The placement of fund orders is commonly a highly manual process involving emails and in some cases faxes between investors, distributors and transfer agents. Tokenisation of fund units



can potentially serve as a catalyst for digitisation, requiring distributors and administrators to send and receive data from the tokenisation platform using digital channels. However, there is an upper limit to the benefits that can be achieved in this case as the underlying assets are not tokenised and not all participants would be directly connected to the blockchain.

An interesting potential implication of this model arises for money market funds. Tokenisation of money market funds has been increasing in popularity recently. Money market funds typically invest almost all their assets into liquid government securities and cash. Hence tokenised units of these funds can potentially be used as a representation of cash in digital asset transactions, or even a high-quality liquid collateral. As opposed to using stablecoins which are cryptocurrencies pegged to a fiat currency, using a tokenised form of a money market fund that complies with existing regulations may be a secure and compliant option to facilitate the cash leg of transactions in digital assets.

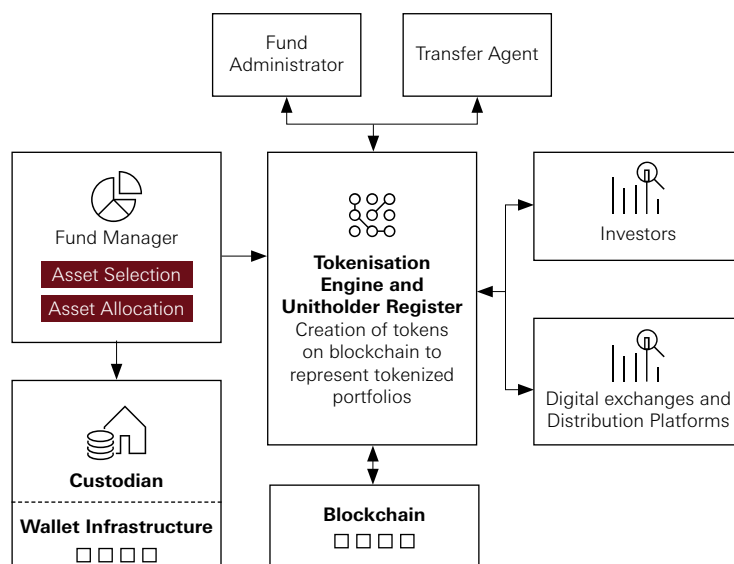
**Option 2: Tokenisation of underlying assets of fund**

Another option for fund managers is to tokenise not only the fund unit but the underlying assets of the fund. Under this model, the underlying assets would either be natively issued on a blockchain or issued in the traditional dematerialised form and subsequently tokenised. Tokenising the underlying assets would allow fund managers to capture the full benefits of DLT, especially if all participants involved in the fund lifecycle are connected to a shared ledger.

The participant roles involved in the end-to-end fund lifecycle would be similar to that of traditional funds (administration, transfer agency, etc.). The difference would be the way these services are performed. As the underlying assets are represented as tokens, smart contracts can be used to automate many of these processes by essentially capturing the rights and obligations of assets in lines of code. Similar to Option 1, a custodian would need to provide wallet

infrastructure to safekeep the tokenised assets. For traditional funds, a transfer agent would need to receive orders from distributors, update the shareholder register that they maintain separately and then update the fund manager on changes in holdings and cash flow. For a tokenised fund, distributors or exchanges would be directly connected to the shared ledger, so all orders flow through to the network and result in an automatic update to the fund unitholder register that is immediately visible to all participants. The transfer agent in this case would either be the operator of the shared register or a participant with the main obligation of oversight and exception handling. Many fund administration functions such as fund valuation can be performed automatically via smart contracts.

Besides changing the nature of the roles across the asset lifecycle, tokenisation would provide increased flexibility in terms of structuring funds as well. As explained in our paper on the [future of asset servicing](#), due to the efficiencies and cost-savings generated by tokenisation, smaller portfolio sizes would become commercially viable for asset managers. Asset managers can easily layer different asset tokens to enable the creation of thematic investment options catering to niche themes. Fund managers could even allow investors to structure their own portfolios by choosing from a range of underlying asset tokens. Imagine an investor journey where investors can select which assets to combine into a portfolio by simply selecting options on a mobile application, in line with the thematic opportunities that appeal to them. For example, if they believe in the potential of AI, they could create a custom portfolio of companies building AI solutions. In addition to the streamlining and efficiency benefits mentioned above where investors can receive fund units immediately upon subscription, the additional advantages of tokenising not only the fund unit but also the underlying assets are increased flexibility and customisability in creating portfolios. This increased customisability can better appeal to smaller investor segments interested in purpose-driven investments.





A promising use case would be in structuring green investments including green funds. Funds can be structured including layered carbon credits or even have carbon credits used as payment for redemption proceeds. While these structures are complex and costly to set up for traditional funds, tokenisation would improve the efficiency and viability of this model. We are already starting to see the emergence of tokenised securities with embedded green features. For example, Project Genesis 2.0, led by the Bank of International Settlements and the Hong Kong Monetary Authority (HKMA) explored the benefits of integrating the green bond and carbon markets, through use of DLT and smart contracts. The project involved creating a new green bond structure appended with mitigation outcome interests (MOIs), which are future contracts with a commitment to deliver, at maturity, verified carbon credits. The MOIs were tokenised, and smart contracts were used to digitally track data linked to the green bond's lifecycle. In February 2023, HSBC worked with the HKMA on their HK\$800m 365-day Reg S inaugural tokenised green bond issuance for the Government of the Hong Kong Special Administrative Region of the People's Republic of China<sup>26</sup>. Securities like these could potentially be included as part of tokenised green funds, providing additional investment opportunities for the increasing investor base which is interested in ESG focused options.

The increased flexibility and ease of structuring new portfolios brings up the question of the value of the traditional funds structure in a world of tokenised assets. Funds were created to pool assets, diversify with minimum capital and achieve economies of scale to reduce costs. However, if the costs of investing in individual securities falls drastically in future due to tokenisation, a key question would be whether the funds structure as we know it today remains relevant. This question would be one for the industry and regulators to consider during the transition phase moving from traditional to tokenised assets.

In addition, as a platform and service operator in this fund ecosystem it will be key to ensure that any tokenisation platform is operating under an appropriate regulatory framework. The use of distributed ledgers and smart contracts also requires a strong governance and controls framework to be in place at the platform level. Roles and permissions can be set up as part of the smart contracts to ensure appropriate access to data. Smart contract audits can validate code quality and security, ensuring that the rules and logic governing the operation of funds tokenisation networks are fit for purpose.

There is no doubt that if funds and their respective managers don't evolve to harness and realise the potential benefits of emerging technologies and tools now available, they will remain under fire from competing products and players. One thing not up for debate is that transformation is necessary, and change is a constant – estimates reported by BCG<sup>27</sup> suggest if asset managers were to maintain status quo, their annual profit growth will be approximately half the industry average of recent years (5% versus 10%). To get back to historical levels of profitable growth, asset managers will need to cut costs by 20% overall and shift their revenue mix to generate at least 30% of their revenue from higher-margin products.



## 5. Future focused – increasing velocity on fund innovation progress

What might the future of funds look like?

We looked at the features and highlighted four key contributing factors we believe can influence the shape of that future and increase the velocity of that progress.

### a) Tokenisation of Assets and Cash

In section **4** above, we considered how funds can be transformed through tokenisation of either the fund unit or the underlying assets. We started to explore the use of smart contracts to automate processes throughout the fund lifecycle and change the way existing roles such as of the custodian and fund administrator are performed. We expect the domain to further embrace the potential of what tokenisation can bring across the funds value chain, mobilising assets and creating new markets and liquidity along the way.

‘HSBC’s Orion platform enables financial institutions and corporate to issue digital bonds based on distributed ledger technology, with asset and settlement tokens sitting natively on the platform’s ledger. Tokenisation enables faster processing and improved operational performance for fixed income issuances, and the platform can be extended across markets and products in future.’

The availability of digital cash will also be a consideration in how far tokenisation can transform the funds lifecycle. While many jurisdictions have started to launch pilots or experiments with central bank digital currencies (CBDC), their use has not reached the level of mainstream adoption. Lack of CBDC or other form of digital money would mean

fiat cash has to be pre-funded for the purchase of units, thereby limiting the scale of automation that can be achieved. Besides CBDCs, other forms of digital money such as Commercial Bank Digital Money, tokenised deposits or tokenised money market funds can be considered. Some progress is being made here and we are now starting to see the green shoots of institutional level adoption starting to emerge. This will be a critical component to the next phase of progress.

### b) Integration of ESG

This is no new topic, nor is there any dispute in the funds industry as to the growing importance of sustainability. There is a long road ahead on delivering effective integration of ESG factors into our investment fund products – something which has fast become a must-have driven by a balance of regulatory measures, disclosures and investor pressures to be accountable for ESG impact. All roads, however, start and end with data – “the new oil” some say, which is a little ironic in this context. A key consideration of integrating ESG into fund vehicles is about offering investors a comprehensive and customisable approach to sustainable investing. Current roles in the fund lifecycle may evolve as a result. For example, for fund administrators and transfer agents, their roles encompass providing data capture and information delivery. As keepers of the investor’s data, there is potentially an ability for them to combine investor and fund-level ESG data to create personalised ESG ratings, insights based on an individual retail or institutional portfolio.

Northern Trust’s Matrix platform enables the integration of data by a combination of DLT technology and operating model innovation which is instrumental in delivering real-time, up-to-date data and meeting the connectivity needs of the modern-day institutional investor. “Data has also become critical to asset managers’ ESG and sustainability requirements. The introduction of various disclosure regimes and reporting requirements has elevated the transfer agent (TA) role”<sup>28</sup>, says Kate Webber, head of product strategy, Northern Trust.

Fund vehicles can become dynamic hubs of sustainability, actively incorporating ESG metrics into every facet of their operations, focusing on measurement of the real-world impact of investments. This may involve tracking metrics related to emissions reductions or clean energy adoption, providing a clearer picture of the fund’s contributions to sustainability. An example is Europe’s first decarbonised spot, Bitcoin ETF by Jacobi, which implemented a verifiable built-in Renewable Energy Certificate (REC) solution to offset the electrical consumption attributable to Bitcoin in the ETF<sup>29</sup>. Embedded carbon data within fund vehicles will not only offer insight into the carbon footprint of the investments but also the progress made in reducing it. The granularity and transparency of this data allows funds to incorporate detailed carbon tracking and reporting mechanisms to adapt and meet latest standards of ESG disclosure requirements, reassuring investors that their investments are in alignment with both investment value goals and the highest ESG integrity.

We believe that there will be a host of new use cases and methods by which carbon products can be integrated into both traditional and digital products and markets alike. These will harness aspects of DLT and tokenisation which can help to bring greater transparency, trust and accountability to the ecosystem. Northern Trust recently announced the launch of its fully digital Institutional Voluntary Carbon Credit platform<sup>30</sup>, creating an ecosystem that allows purchasers to transact tokenised carbon credits directly with project developers and retire these against their carbon footprint.

### c) Market INFRASTRUCTURE as an enabler – Platform based models

Platform business models are a way of creating value by facilitating interactions between two or more groups of users, usually through a digital platform. These are proving to be both disruptive and transformative across industries, as such models hold enormous potential for the funds industry. The relevance of a platform model becomes especially clear in both the administration and distribution of funds. We have already seen the rise of platform models, particularly in the distribution space. A report by BNP Paribas noted that platforms were the fastest growing distribution channel, as asset managers maximise increasing connectivity and reach to a wider investor base<sup>31</sup>, thus generating the “network effect”.

DLT enabled shared networks are one possibility for how the platform model can evolve. In section 4 we highlighted how roles across the funds value chain could be transformed from performing a specific function and to operating or participating on a shared network. A key consideration for



this model is facilitating access and participation on the platform. Connectivity via common existing channels such as SWIFT may be needed initially to ensure widespread adoption. To achieve network effects, platforms need to have sufficient investors and distributors as participants with interoperable channels. This creates an opportunity for existing custodians and funds servicers to collaborate to operate such networks, connecting their existing network of clients and partners onto new platforms and channels.

#### **d) Artificial Intelligence (AI) and Machine Learning (ML)**

AI has experienced a surge in growth over the past few years. This remarkable transformation can be attributed to advancement in technology, data availability, data quality and big data; the new wave comes in the form of Generative AI (Gen AI). Across industries it has become a transformative force, including its role in the fund creation and management value chain. To process and extract valuable insight and access the full potential of AI, a key requirement is the ability to integrate various data sources into a unified version, ensuring data accuracy and proper governance.

AI-driven algorithms have the ability to analyse massive datasets. Using machine learning (ML) toolsets over that data to structure and learn can benefit functions such

as streamlining portfolio construction by optimising asset allocation based on various parameters. ML enables personalisation and creation of portfolios that align closely with the investor's preference as well as provides more dynamic scenario analysis and more actionable insights on a near to real-time basis.

AI presents a natural fit for thematic growth and income strategies, seamlessly blending innovative technology with compelling, real-world applications. Imagine a tech-savvy investor who's also deeply concerned about environmental sustainability. They seek investments in renewable energy, and AI can offer a savvy solution. AI algorithms can analyse vast streams of data from solar panels or wind turbines, providing allocations to provide not only insights which pique his interest, but the performance and alpha returns.

Additionally, in the realm of client services, AI-driven chatbots and virtual assistants are enhancing customer support, addressing inquiries, and providing timely information to clients through personalised reports and experience, ultimately improving overall satisfaction. As AI continues to advance, its role within funds will likely become even more pronounced, reshaping how funds are established, operated, and optimised to meet investors' evolving needs and expectations.



## 6. What might a “utopian” state for the future of funds look like?

Whilst we must all be pragmatic about what can be achieved, we must be able to envision what the idealistic state ecosystem and value chain might look like to guide respective pursuits for progress. We must also acknowledge that not all views of the utopian state will look the same as roles and value creation aren't weighted equally in the world where financial institutions operate. Roles and services will inevitably shape-shift as firms transform capabilities and seek to optimise value creation for their respective clients and partners – how that value is defined in that future state is an equally compelling proposition.

What sits at the core of the mission for all sides of the fund's community is the prospect of an ecosystem which can provide frictionless, flexible and interoperable access, movement and safekeeping of investment instruments

(assets or funds). The enablers for this new advanced state will be a combination of a number of the above identified contributing factors. We see these living in tandem with an array of component features transforming the fund value chain with automated functions driven by smart contract programmability, real-time data transparency, valuations and atomic settlement creating greater agility and efficiency in both the managing and servicing of funds.

### **What features would exist in your vision of a utopian state Future of Funds ecosystem?**





## 7. Concluding thoughts

There is undoubtedly momentum building across the funds tokenisation landscape. The maturing of what we consider to be the supporting pillars of market infrastructure, interoperability and standards covered in this report will be instrumental to the reaching of “minimum mass” in institutional adoption. This will enable the ecosystem to graduate from a largely exploratory innovation stage to one where commercial models are viable and participation can accrue the benefits it has the potential to deliver.

Investor preferences and expectations continue to evolve as fast, if not faster, than the technological advances before us. The hunt for alpha and beta returns in an ever more complex macro environment mean that many things are not certain

or constant. This further reinforces the need to embrace the innovation and state of perpetual change that we are now immersed in, with a toolkit that is deeper and wider to bring generational change to the broader funds landscape.

Whilst there are steps being taken toward that ‘Future of Funds’ space, there is no escaping the practical realities and headwinds to making progress while navigating the capital investment required, regulatory uncertainty, cross-border barriers, backward compatibility and maintaining current operating models in co-existence. Once again, this is not a space that will see success in isolation. Collaboration will remain key.



# Glossary Terms for the Digital Fund domain

## Blockchain:

Distributed ledgers serving as the settlement layer for transactions. Currently, most decentralised financial (DeFi) services operate on the Ethereum network due to its capabilities and developer adoption. DeFi activity is growing on and across other blockchains as well.

## Decentralized Applications (Dapps):

Software applications built out of smart contracts, often integrated with user-facing interfaces using traditional web technology.

## Digital Assets:

Tokens representing value that can be traded or transferred within a blockchain network. Bitcoin and other cryptocurrencies were the first blockchain-based digital assets. Others have a range of intended functions beyond payments.

## Oracles:

Data feeds that allow information from sources off the blockchain such as the current price of a stock or a fiat currency, to be integrated into DeFi services.

## Smart Contracts:

Blockchain-based software code that carries out, controls, and documents relevant events and actions according to predefined terms and rules.

## Stablecoins:

Digital assets whose values are pegged to a fiat currency, a basket of fiat currencies or other stable-value assets.

## Wallets:

Software interfaces for users to manage assets stored on a blockchain. With a non-custodial wallet, the user has exclusive control of funds through their private keys. With custodial wallets, private keys are managed by a service provider.

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