Digital assets hit the wealth management mainstream

essential for banking

Introduction

While the extreme volatility and complexity of crypto assets have led many investors to shun this market, there is now a growing recognition amongst wealth management clients that with the right management there are significant growth opportunities and intrinsic value in these digital assets.

This paper explores the underlying realities of this emergent market and considers some of the challenges to overcome when trying to make the investment process simpler and safer for investors. In doing so, it considers several options for improving the situation. But fundamentally, it asks whether now is the right time for banks and wealth managers to insource the whole crypto asset investment process and provide comprehensive management and advisory services for their clients – as they do for other financial assets.

"We see that crypto-assets are here to stay. Despite the recent turbulence, this market continues to grow."

Valdis Dombrovskis
European Commission Vice President
2018[1]

An opportunity underpinned by an emergent technology

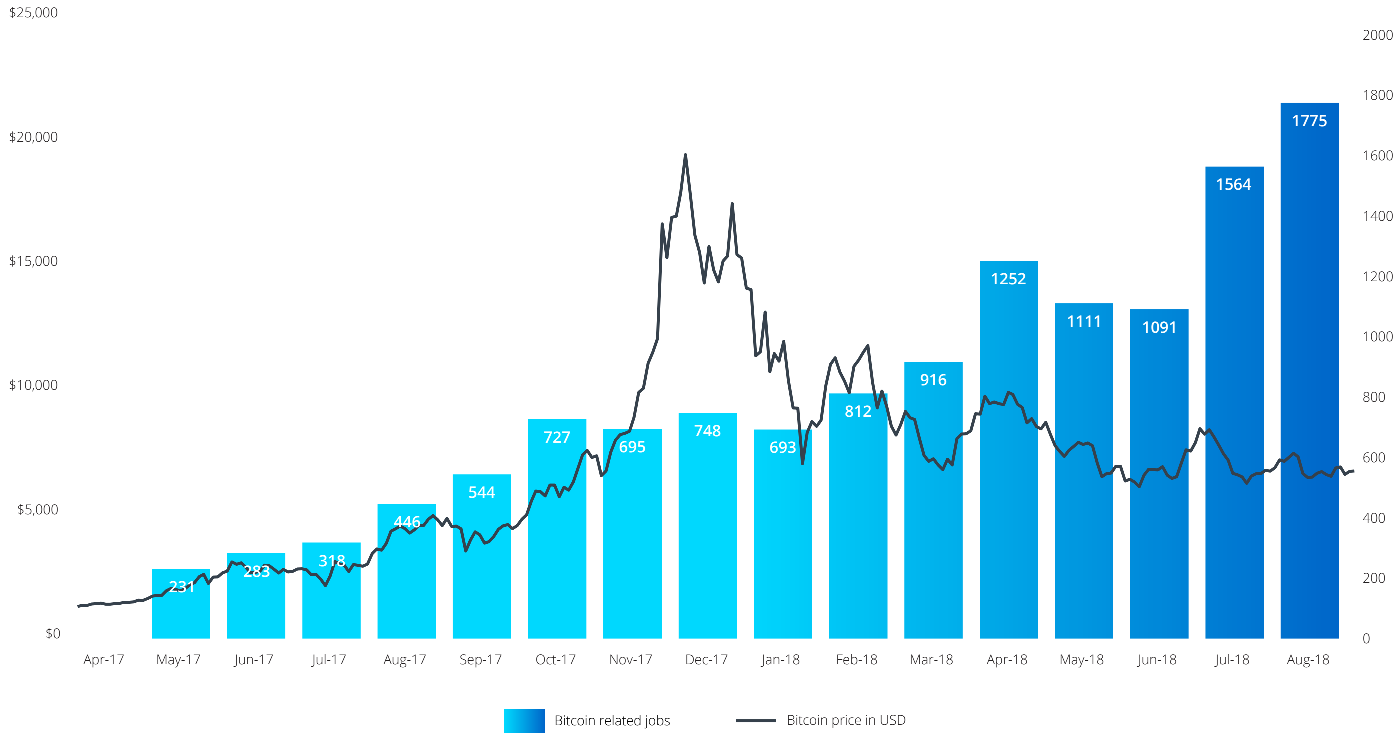


Exhibit 1: Bitcoin job growth outpacing crypto currency prices[2 3]

Context is crucial when assessing the performance of crypto assets. The same blockchain technology that powers crypto currencies enables the concept of tokenization: the process of generating digital tokens representing different types of assets. To date, tokenization has mainly been enabled by Ethereum and used for many Initial Coin Offerings (ICOs) beyond the introduction of Bitcoin itself.

As these crypto assets came online, they created a huge hype in the market. However, while the hype has died down, the underlying technology is still valid and continues to be developed. In fact, there is a great potential for supporting a whole range of different kinds of digital assets with tokens. This potential can be observed by looking at the job growth in this market sector. Despite the severe drop of the Bitcoin price and ICOs, companies continue to open blockchain technology related jobs (exhibit 1).

"The unequivocal answer is digital assets will survive."

Jeff Sprecher
New York Stock Exchange (NYSE) chairman
2018[4]

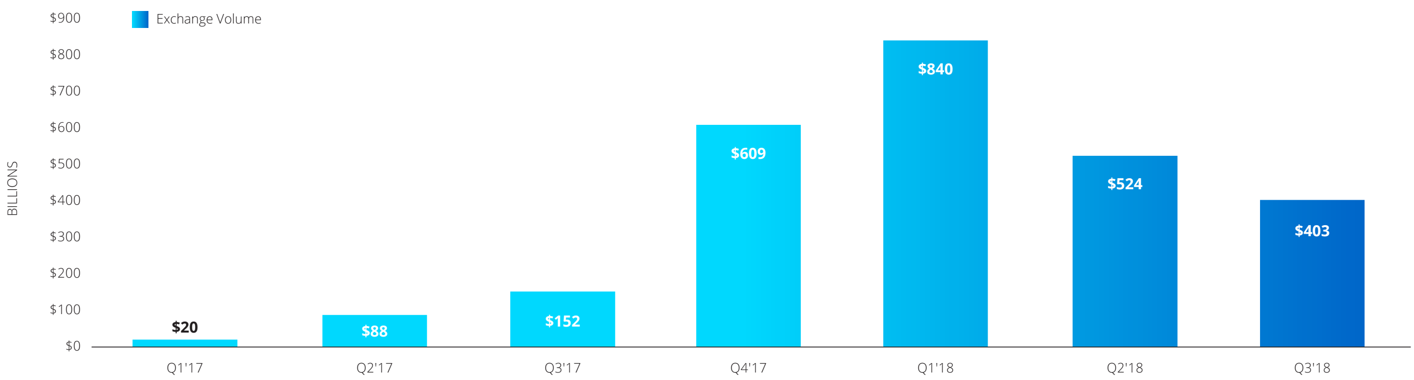


Exhibit 2: Bitcoin exchange volume (quarterly)[5]

This potential also exists for Bitcoin itself. The price drop has not affected the overall increase in the volumes traded. Despite traded volumes not reaching the levels achieved during the rally of late 2017, they have increased significantly versus those in early 2017 (exhibit 2). Interest in crypto currencies remains high.

This view is underlined by the industry sentiment. A recent study by Greenwich Associates indicates that most, 70% of those surveyed, believe that following an initial clear-out many crypto-assets will thrive, or that once regulated, growth will ensue (exhibit 3).

Exhibit 3: Institutional expectations for crypto market[6]

"Crypto currencies are here to stay."

Christopher Giancarlo
Chairman, U.S. Commodity Futures Trading Commission
2018[7]

Why invest in crypto?

There are fundamental reasons why crypto asset investments could prove worthwhile for serious investors, notwithstanding the hype and technical fervour of the last few years. They could provide an anti-inflationary store of value, growth potential and a diversification effect.

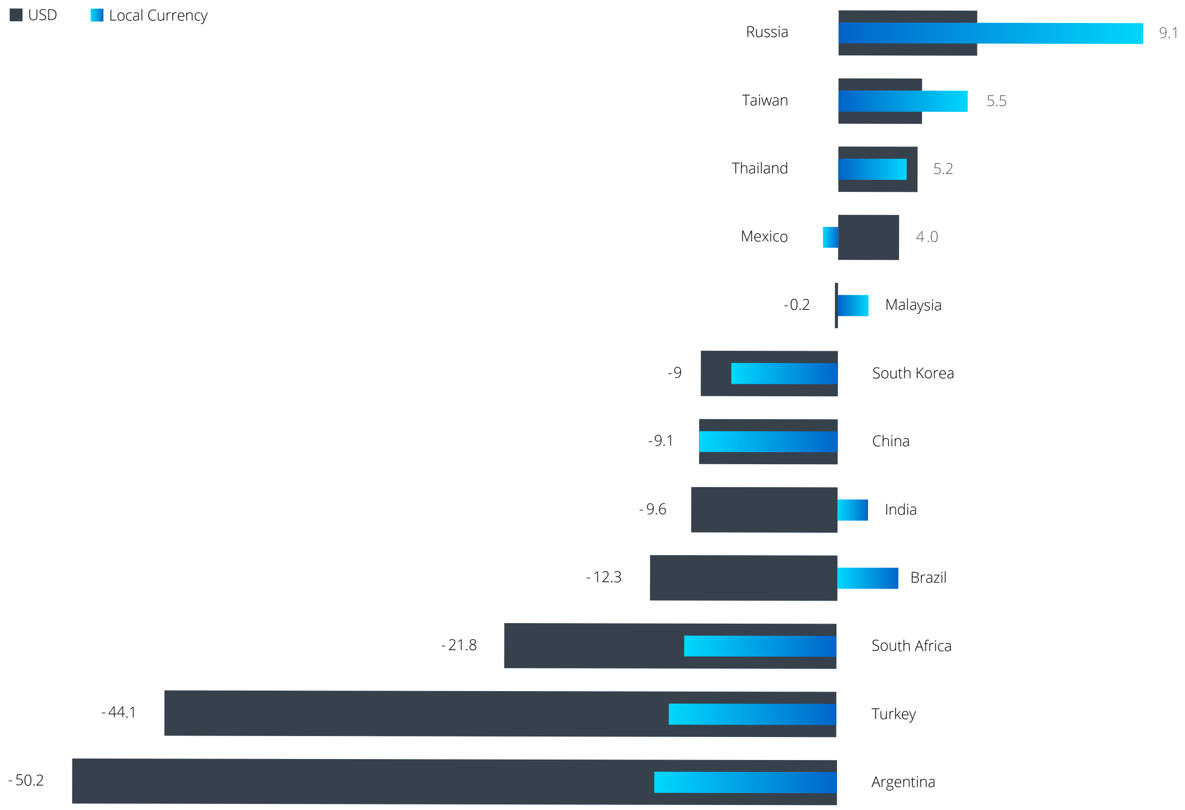


Exhibit 4: Emerging country returns as of September 2018 (figures show USD returns)[8]

As a store of value

A key feature of money is its use as a store of value. However, in this respect, currencies do not behave in the same manner. Inflation is the scourge of many emerging country currencies, and in some countries the depreciation of the local currency has been dramatic. Exhibit 4 shows how much erosion some populations have been facing in recent times. It is of no surprise that the populations of these emerging countries seek an alternative to store the value of their savings. Indeed, in the case of Argentina, while the Argentine Peso fell by over 50% in 2018, compared to USD, the volume of Bitcoins purchased with Argentine Pesos more than doubled in the same period[9].

A similar situation may be happening in countries where the FX market is controlled by the state. Bitcoin and the other crypto assets are offering an alternative way to those aiming at paying invoices in a foreign currency or make payments when travelling abroad. Consequently, some are trying to curtail crypto assets so that their currency regulation remains effective.

Another popular case is cross-border payments. In the Philippines, for example, an exchange like Coins.ph has more than 5 million users, which represent 5% of the population. A remittance in Bitcoin can be performed for less than a 1% transaction fee, against up to 10% using traditional channels. In the Philippines, the remittance flow is quite significant: it is around USD 30 bn, representing 10% of the country's GDP. Another element to consider, which drives the demand for Bitcoin, is that in the Philippines three quarters of the population is unbanked.

In short, uncertainty in the worldwide currency markets is fuelling Bitcoin development, as people are looking for alternatives to store the value of their savings.

Exhibit 5: Crises comparison between the internet and crypto asset bubbles[11]

Speculation on growth

Crypto assets are also traded speculatively. Because of the price drop after the 2017 rally, many investors quickly considered crypto assets as dead. But as we have seen earlier, trading volumes on crypto assets remain high, and so interest is still strong.

History of course provides examples of other assets that have recovered from similar crisis situations. For example, the Nasdaq index soared then plunged, like Bitcoin, when the internet bubble exploded in year 2000 (exhibit 5). It slowly recovered, then dropped again during the financial crisis and then continued to climb, reaching 160% of its year 2000 peak by 2018. For investors who have a longer-term perspective and are, perhaps, investing across a portfolio of digital assets, such thinking is likely to be driving their behaviour.

Indeed, many analysts will view the crypto-bubble explosion as a sign of growing maturity rather than a sign of impending death[10]. Avaloq itself is now seeing many of its wealth management and private banking customers wanting to support these new assets.

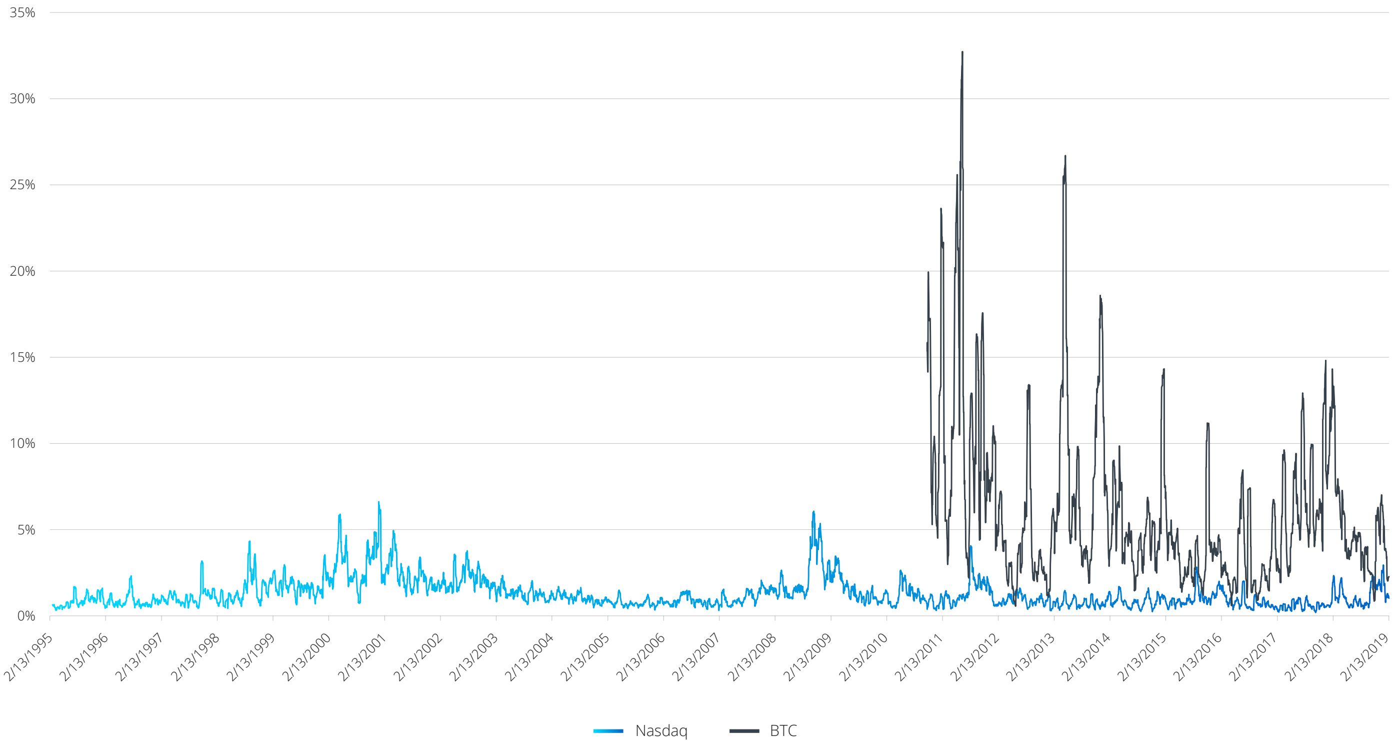


Exhibit 6: Nasdaq vs Bitcoin volatility - standard deviation over 10 days[12]

The diversification effect

Another element to consider when building a portfolio is the correlation between assets within a given portfolio. Maximizing diversification involves distributing risk across multiple underlying, hopefully non-correlated, market factors. Interestingly, Bitcoin detractors often point out their concern that Bitcoin is not backed by any tangible asset. However, this very feature brings a striking advantage. Bitcoin is mostly uncorrelated to any other financial asset. This makes crypto assets a great diversification tool.

Moreover, as the volatility of crypto products is currently very high, it can be used as a boost to portfolio performance - with the right hedging policies. Exhibit 6 compares the volatility of the Nasdaq with Bitcoin volatility. Interestingly, the exhibit not only highlights the difference in volatilities, but also that the volatility is decreasing in line with increasing trade volumes and investor interest.

In a nutshell, all these factors may be driving investors to increasingly consider investing in crypto assets as a relatively low-cost method of diversifying against risk and boosting performance.

Crypto currency or crypto asset: Just a question of terminology?

In this paper, the terms crypto asset, and sometimes digital asset are used, but rarely crypto currency, mainly because the asset term feels more appropriate for the world of investments being discussed in this paper. It can be argued that crypto assets are a super-set of crypto currencies. And, crypto currencies, such as Bitcoin, can be considered more suitable for payments than other crypto assets, such as security tokens, which behave more like regular securities.

Nevertheless, banks must be very clear about the terms and classifications that they use. The usage of the digital token will define its treatment under regulatory, legal and accounting practices. For example, the Swiss FINMA defines three main categories of tokens; payment, utility or asset, as well as a hybrid category[13].

Meanwhile, the BCP classification defines tokens as utility, counterparty or ownership tokens[14]. Each classification will imply different legal or regulatory treatment. Indeed, one important issue is that banks need to consider the potentially high capital requirement associated when booking crypto assets classified as securities. Many banks will want to limit holding these assets on their own balance sheet for this reason. Instead, they will want to segregate the customer's crypto accounts, so that they can be treated off-balance sheet.

What are the challenges of investing in crypto assets?

Given the discussion of crypto asset benefits above, it would be natural to question why the uptake is not higher. The answer to this lies in the numerous technical complexities and deep concerns that both investors and financial institutions still need to overcome.

An investor's perspective

Let's imagine that an individual, thanks to all the information gathered above, decides to invest in crypto currencies. Where should they start from?

- Who are the trusted actors out there? Trusting one of the new crypto exchanges could be fine for a small amount, but would it be the same for a large one?
- What about the liquidity these exchanges provide?
- Does the investor feel comfortable with the custodian arrangements?

Meanwhile, the press reports daily about exchanges being attacked, keys being lost and their associated funds going missing. It is very difficult for the investor alone to assess the best partners. In addition, the technology is intrinsically complex: it uses cryptography, which is not easy to grasp. Answering basic technical questions is not trivial, yet it is essential to ensure investments in crypto assets are not put at risk. Questions such as:

- Are the processes in place reliable enough?
- Are my funds protected against cyber-attacks?
- Do they have the necessary security measures in place to protect the keys from being compromised?

These questions are not the only ones. Looking at the market the individual investor could wonder how to manage these new assets once they have acquired them:

- Where should they consolidate their positions?
- How should they do their tax reporting?
- How can they understand their risk exposure?
- Where can they see pricing and performance information?
- Which wallet application should they use?

There are so many questions and uncertainties, that many individual investors are likely to be put off. Of course, there is always the possibility of investing in crypto investment fund. Many of the questions above would be answered by such an investment, but not all of them. Additional fees will be charged, which will dampen the impact of the underlying asset performance. The investor will once again be subject to a credit risk, counteracting one of the key benefits of the blockchain technology. Notwithstanding the lack of availability of such funds.

Individual Investors need a simple integrated solution by a provider they already trust.

A bank's or wealth manager's perspective

From a bank's or a wealth manager's perspective the situation is not much better. All the questions individual investors face, are also faced by such organisations. Furthermore, there are some more questions for banks and wealth managers:

- Where is the market liquidity?
- How should they ensure best execution?
- What about compliance?
- What will be the impact of crypto activities on the balance sheet?
- What about anti-money laundering?
- How to custodize the assets?
- How to implement and integrate this as part of their existing investment process?

This is complex. The crypto market and its technology is still immature, and this makes it particularly difficult for wealth managers or banks to explore and build alone. Wealth managers and banks need to source integrated solutions so that they can focus on providing services to their clients, rather than having to build such an infrastructure from scratch.

Grasping the opportunity

There is always the possibility to sit back and monitor this new business area to see how it develops over time, before investing resources. However, this strategy exposes banks and wealth managers to the risk of missing out on lucrative opportunities as it takes off. As seen earlier, crypto products have interesting features for investors and not offering them, especially to the new generations, could soon become a negative differentiator. Ultimately, the reach of blockchain technologies goes beyond crypto – and the adoption of new technologies is occurring at a fast pace. Once these technologies become mainstream, catching up with the market will be a difficult task.

Outsourcing to specialist crypto-service providers

One approach for banks and wealth managers, which could allow them to maintain the client relationship, is to outsource parts of the crypto value chain to specialised providers. A simple solution is to offer crypto based funds. As mentioned earlier, these funds do not provide all the benefits of their underlying crypto assets. However, sourcing such a product from an asset manager or a hedge fund and offering it to customers is an easy way to enter in the crypto market, while avoiding much of the burden.

Another alternative is to provide access to direct crypto investing through third-party custodians and trading venues. Crypto-custodians provide services for 'cold' wallets, which hold the assets securely off-line. Combined with brokers trading on multiple crypto exchanges, clients can also benefit from improved market liquidity across these OTC crypto-markets.

The risk for a bank or wealth manager to be disintermediated is high if private keys are not under their control.

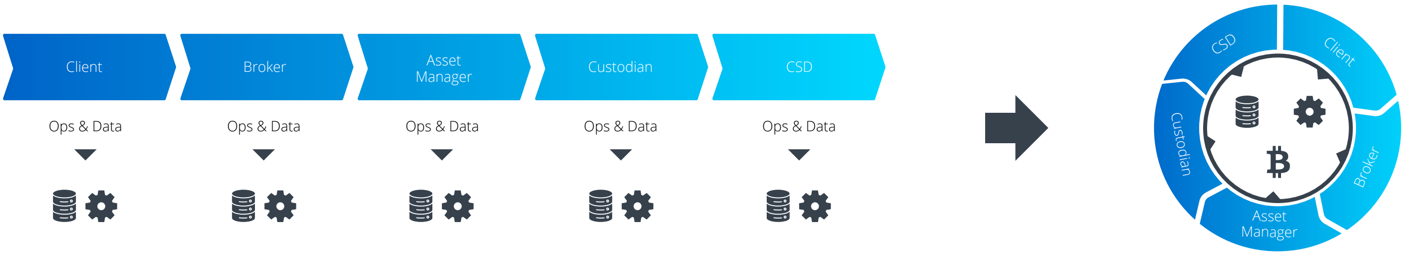


Exhibit 7: Custody now and in 2025[15]

Insource and become the crypto-custodian

Blockchain is effectively 'reshuffling the industry cards' and some traditional players will no longer remain in their positions. In particular, settlements should become much easier, as blockchain acts as an asset repository used by every actor along the value chain. The custody and Central Security Depository (CSD) activities are therefore likely to be heavily disrupted.

Whoever owns the crypto-keys can transact and the relationship between the client and the custodian effectively becomes direct, no longer involving multiple parties managing separate versions of the data. As exhibit 7 shows, in the blockchain based scenario one version of the truth is shared between all parties.

The opportunity now exists to integrate the whole crypto asset process and become the custodian of digital assets for clients. The result is that clients will have a 'one stop shop' for the crypto asset management, as well as for their traditional assets. Banks and wealth managers will overcome an investor pain, by providing the trusted key management function and critically, maintain control over their clients' assets and cash flows.

Offering crypto-key management services is therefore becoming an imperative for many banks and wealth managers. The risk for a bank or wealth manager of being disintermediated is high if customer keys are not under their control.

A holistic investment proposition

Simply providing access to the crypto market may not be a strong enough proposition in itself. While it can be said that many pure-play crypto firms are not trusted to the same extent as incumbent banks or wealth management brands, they invariably have more experience and technical expertise in this market.

The USP for incumbent banks and wealth managers is to provide a seamless integration of crypto assets within the full investment process for their clients. The crypto assets should be made available like any other asset within the client's investment portfolio. The option to invest and trade in crypto should be provided within the same web and mobile apps as their other traded asset. The reporting of positions, performance and risk should also be comprehensive, and analysed within the context of the client's complete investment portfolio.

This concept can be extended to crypto assets sitting off-custody, which have not been incorporated into the bank's or wealth manager's position, so that the client has a holistic view comprising all crypto assets. This unifying concept can be pushed even further by also integrating asset positions from other banks or wealth managers.

Tokenization

As stated previously, many banks and wealth managers are considering bringing investment services for crypto assets in-house, to provide access for mainstream investors. Meanwhile, there is a symmetrical trend in the crypto-market place. Many crypto companies are eager to tokenize a wide range of additional assets and, in particular, existing traditional assets. Tokenization is likely to be the next big thing.

Banks and wealth managers could make use of the tokenization concept for themselves, as well as for their clients. For example, a token can be issued to represent the liability side of a non-regulated fund. Instead of a cumbersome paper-based process to materialize the liability on behalf of the client, a bank could issue shares of the fund as tokens. This would not only reduce the administrative burden, but it would enable banks to sell smaller share denominations in such funds, making the products more suitable for a wider range of clients.

In addition, the flexibility of the 'smart contract' embedded in a token can be used to create innovative products that have a predetermined profile. For example, a product could be created that has a defined risk reduction over a specified time, if its gains have reached a certain threshold. A bank could have these tokens listed on a crypto exchange or could even create a trading capability to provide a secondary market in its own products. This would enable clients to participate in such products, while limiting their commitment and exposure to them.

The ideas are limitless. Banks could also issue tokens on behalf of their clients to finance projects, in the same way companies do with traditional loans or bonds. Ultimately, banks and wealth managers would miss out if they were to leave this tokenization market to pure-play crypto companies. Such an outcome would be surprising, given the clear advantage of already being connected to the 'fiat' world.

Avaloq's approach

Avaloq focuses on two major issues that have been highlighted above: unifying all the positions under one umbrella and ensuring state of the art security within an industrial process.

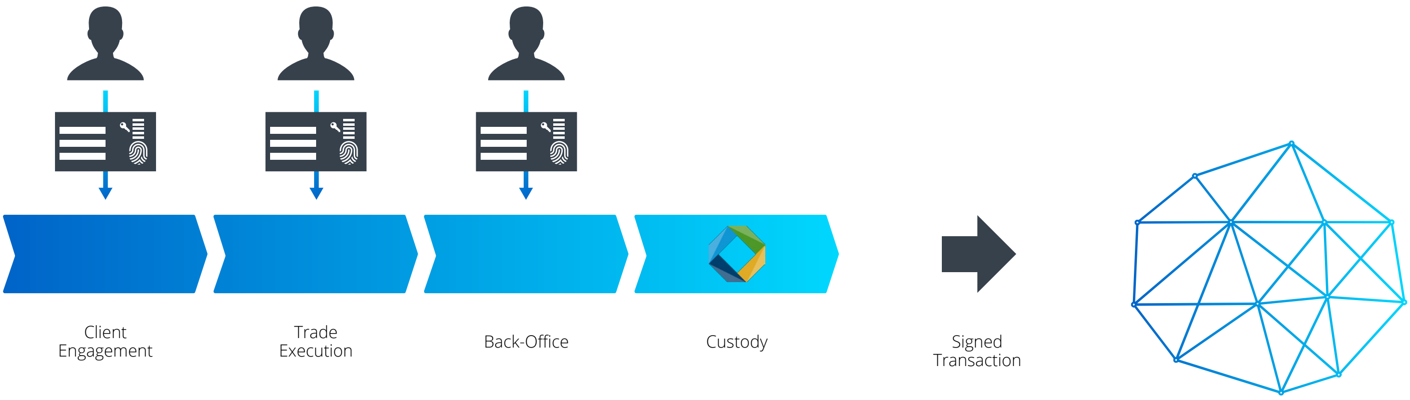


Exhibit 8: Avaloq and METACO integration

Unification

The aim is to leverage the existing setup banks or wealth managers have to provide crypto investment opportunities for their clients. Instead of creating a separate offering specific for crypto assets, Avaloq's approach is to integrate the specific components needed to manage crypto assets in its end-to-end platform. The whole banking platform has become crypto aware and all existing processes have been adjusted so that banks or wealth managers can benefit from the new asset class.

With this new module, clients can trade crypto assets from their current web and mobile applications. Crypto-coins can easily be transferred to payees and the position and P/L reporting comprehensively covers both traditional and crypto assets. There is no need to use a separate tool. The clients do not need to understand the detail of the technology or worry about private key storage. The fundamental trust problem of crypto markets is effectively solved. Clients just needs to leverage the trust they already have in their bank or wealth manager.

Avaloq supports the most popular coins and will also support the ERC-20 tokens, which are based on the Ethereum platform. Supporting these tokens will, in the first place, enable clients to invest in existing tokens, but it will also form the base of a new tokenization platform.

Additional third-party solutions will be added to bolster the offering for a wider range of institutions. Ultimately, Avaloq Crypto Assets is a fully integrated solution from the pre-trade information, through to key management, trading and order management. Moreover, the service can be provided as a turn-key service hosted in our highly secure service centres.

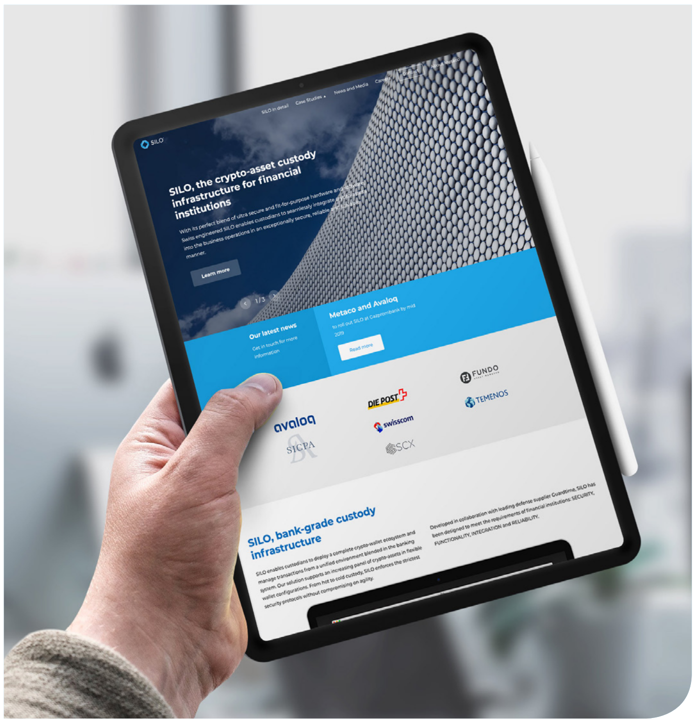
Security

Security is essential. Banks and wealth managers cannot compromise on this aspect and cannot afford to lose control of their private keys or their clients' private keys. At the same time, banks need a solution that ensures assets are easily accessible. Banks cannot afford to manually sign each transaction. This is where the ability to securely support an industrial and automated process is essential.

Without an enterprise grade solution for storing private keys, signing transactions, managing wallets and authorizations, a crypto business cannot be scaled up.

Such a solution, designed specifically to meet the banks' and wealth managers' needs for high security, availability and scalability, is provided by METACO. Avaloq has invested in METACO and has embedded METACO's technology directly into its solution. As shown in the exhibit 8, crypto payments can be made seamlessly and with the same high-security level as for other payment types. METACO stores the private keys of the different client wallets and manages the signature of the client's crypto transactions.

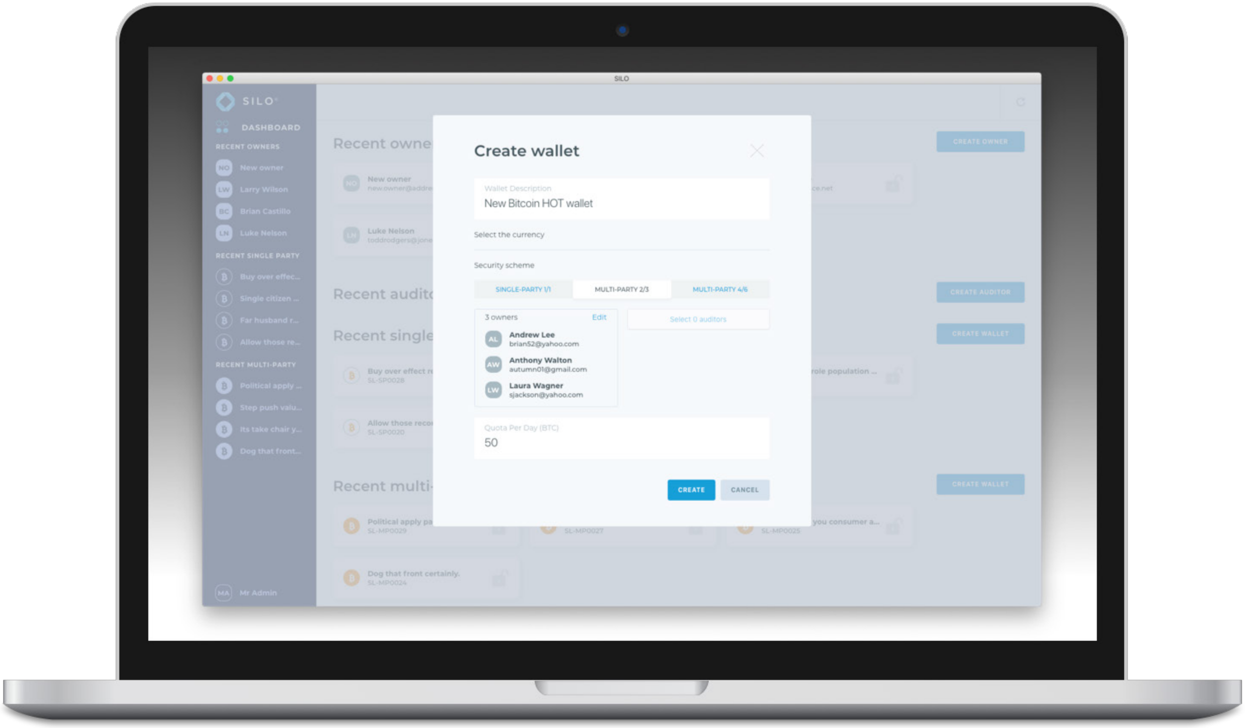
METACO



Guaranteeing a high level of security and being able to mitigate risk is critical to the function of a digital custodian. However, as in all security applications, this is not in itself sufficient. A custodian cannot implement extreme security strategies at the cost of the availability of funds. Banks and wealth managers must be able to identify adequate trade-offs or hybrid solutions that allow fast access to the assets being managed, within a context-adapted level of security. This is known as the liquidity versus security dilemma.

Rather than pointing the custodian to a fragmented ecosystem of solutions, METACO provides a unified environment to the bank. METACO's SILO is a comprehensive crypto asset management solution, allowing flexible parametrizations of wallets, ranging from highly liquid ones to extremely secure ones. This powerful framework allows custodians to cover the following use cases:

- **Hot wallet:** always connected and automated, a hot wallet provides the highest level of liquidity. It can be used to process payments on an e-banking platform, or withdrawal requests on a crypto-exchange.
- **Warm wallet:** always connected and manually-operated, a warm wallet is regulated by hardware-enforced policies removing central points of failure and limiting potential losses. It provides an ideal balance between liquidity and security and can be used for longer term reserves.
- **Cold wallet:** manually-operated with disconnected keys and strict enforcement of the four-eyes principle, a cold wallet provides the highest level of security at the cost of liquidity. It is used for long term custody and generally secures the largest portion of the total assets under management.



However, today's custodians face significant challenges beyond wallet management. They need a platform that is resilient, highly available and scalable, which allows the enforcement of compliance processes – and can be fully integrated into their core infrastructure. Recognising this need, METACO – in collaboration with defence provider, Guardtime – introduced SILO, a digital asset management solution specifically designed for banks.

Engineered in Switzerland, SILO is a full-featured, hot-to-cold digital asset management solution. Its combination of software and hardware provides a unified environment for banks in need of a comprehensive self-custody infrastructure that is highly secure, flexible and scalable. From flexible wallet security configurations and extensive order management services, to the real-time monitoring of transactions and distributed ledgers, SILO provides frictionless access to crypto assets with a high-performance service that integrates the best practices of this new field and facilitates interaction with existing platforms and third-party services.

SILO blends into Avaloq's core banking system to provide a full range of digital asset services to Avaloq clients through complete integration. The METACO services are integrated inside the regular Avaloq processes so that crypto payments can be made in a similar way to any other payment. This solution is available as a service or can be optionally deployed at clients' premises. It has been designed to leverage the high availability and reliability provided by the METACO's SILO solution thanks to its multi-node infrastructure, which runs in multiple data centres concurrently and allows hot system upgrades without service interruption.

It’s time to bring crypto to the mainstream

The crypto market is maturing rapidly and creating an opportunity that banks and wealth managers should grasp quickly. Banks and wealth managers may find it difficult to navigate this new market, which has brought together new technologies with new players. However, the USP that incumbents could achieve is highly compelling. By entering this market they can combine the strength of their traditional investment offering, with the benefits of the crypto asset world. By doing so, they will have to compete head-to-head with many pure-play crypto firms but will ultimately bring greater value to their clients.

Avaloq, as a reference provider for banks and wealth managers, is driving this market transformation. It is integrating crypto assets into its core platforms as a native asset class and leveraging the state-of-the-art security solution from METACO.

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About Avaloq: Essential for Banking

Avaloq is driving the digital transformation and automation of the financial services industry.

Based on our fully integrated banking software, we create powerful digital experiences provided through a standardized Business Process as a Service (BPaaS) or Software as a Service (SaaS) model to banks and wealth managers. Our solutions give financial institutions the freedom to focus on channel and product innovation, client service, client trust and growth, while Avaloq ensures a seamless operation behind the scenes.

158 banks and wealth managers – with more than CHF 4,000bn in assets managed worldwide – trust Avaloq, our products and our experience. Our clients are the leading banks of today and tomorrow.

Avaloq is the only independent provider for the financial services industry to both develop and operate its own software, which makes us a world leader in efficient banking solutions. To further spur innovation, we work with clients, other fintechs, universities and hundreds of third-party developers in a uniquely collaborative way we call the Avaloq Ecosystem.

Headquartered in Switzerland, Avaloq has more than 2,000 employees; three R&D centres in Zurich, Edinburgh and Manila; and three service centres in Switzerland, Singapore and Germany. We also have a presence in the world's most demanding financial and innovation centres, including Berlin, Hong Kong, London, Luxembourg, Madrid, Paris, Singapore and Sydney.

More information is available at www.avaloq.com