

CAPCO

DEMYSTIFYING CRYPTO & DIGITAL ASSET IMPLEMENTATION ADOPTION AND RISKS FOR BANKS



DEFINING SUCCESSFUL APPROACHES WITHIN AN EMERGING INDUSTRY IN CRISIS

The adoption of Distributed Ledger Technology (DLT) and blockchain innovations has attracted close scrutiny across a traditional banking sector audience interested in looking beyond trading Bitcoin or Altcoins for speculative purposes – especially among private and institutional investors.

A key trend is banks' interest in capturing new revenue opportunities via emerging crypto product and services models and a related focus on more ambitious enhancements to their client propositions.

In this paper, we look to demystify what financial institutions need to understand in order to successfully prepare for or improve upon the strategic execution of their crypto and digital asset initiatives. We also consider some of the learnings from the current 'crypto winter' and the FTX collapse. We also assess the cornerstones for developing the product and services capabilities needed for digital and crypto assets supported by an ecosystem approach.

INTRODUCTION

The traditional banking sector has been taking an ever closer interest in the ongoing adoption of Distributed Ledger Technology (DLT) and blockchain innovations above and beyond the mere trading Bitcoin or Altcoins for speculative purposes especially among private and institutional investors. The International Data Corporation (IDC) estimated the size of the blockchain solution market at \$6.6 billion with a projected CAGR of 48% over the 2019-24 period¹. And during the earlier bull run of 2021, Chainalysis reported an increase in crypto global adoption of 880%².

However, 2022 saw the onset of a 'crypto winter' – a large fall and subsequent prolonged depression in prices – triggered by the shock collapse in May of the TerraUSD stablecoin. That winter has since been ongoing on the back of a major Bitcoin sell-off, the implosion of the NFT marketplace, the mid-year liquidation of Singapore-based crypto hedge fund Three Arrows Capital, and ongoing rounds of job losses.

The impact of these developments was only exacerbated by high inflation, spiralling interest rates and the war in Ukraine – and then in November the still unfolding FTX saga surfaced, sending shockwaves across the global digital asset ecosystem and further crushing trust and confidence in the sector.

Prevalent fraud speaks to a lack of governance and controls within the crypto ecosystem, negatively impacting valuations and growth. According to an OECD analysis, the events of 2022

underline the very interconnected and centralized nature of the crypto asset ecosystems – the decentralized ideal has rung hollow, given a surprisingly high degree of financial engineering between DeFi protocol components³.

The crypto industry is clearly experiencing a defining moment similar to Enron, Madoff and Lehman Brothers. Those events ultimately ushered in enhancements to financial stability, banking conduct risk and consumer protection. Looking ahead, we foresee a clear opportunity for regulated banks – in particular those in the top-tier that have been positioning programs over the past few years – to seize the initiative and take ownership and leadership in this space by leveraging their value chains, scale, regulated activities, trusted status and strong governance.

In this paper, we look to demystify what financial institutions need to understand if they are to successfully prepare for or improve the strategic execution of their crypto and digital asset initiatives. We also consider learnings from the 'crypto winter' and the FTX collapse. We also take a cross-functional view on the cornerstones for developing the product and services capabilities required for digital and crypto assets supported by an ecosystem approach.

DLT- CRYPTO & DIGITAL ASSET INTEGRATION CHALLENGES

Traditional banks and wealth & asset management firms face inherent capability challenges when developing crypto and digital asset services or products underpinned by legacy systems, technologies, and complex regulatory dependencies. These challenges include defining relevant business propositions, mobilising the necessary expertise and talent, understanding the application of blockchain technologies, the evolution risk and regulatory requirements, and making the right decisions in respect both of ecosystem partners due diligence and optimal target operating models.

In the sections below we explore four key challenges banks must address when pursuing a successful crypto and digital asset integration – see figure 1.

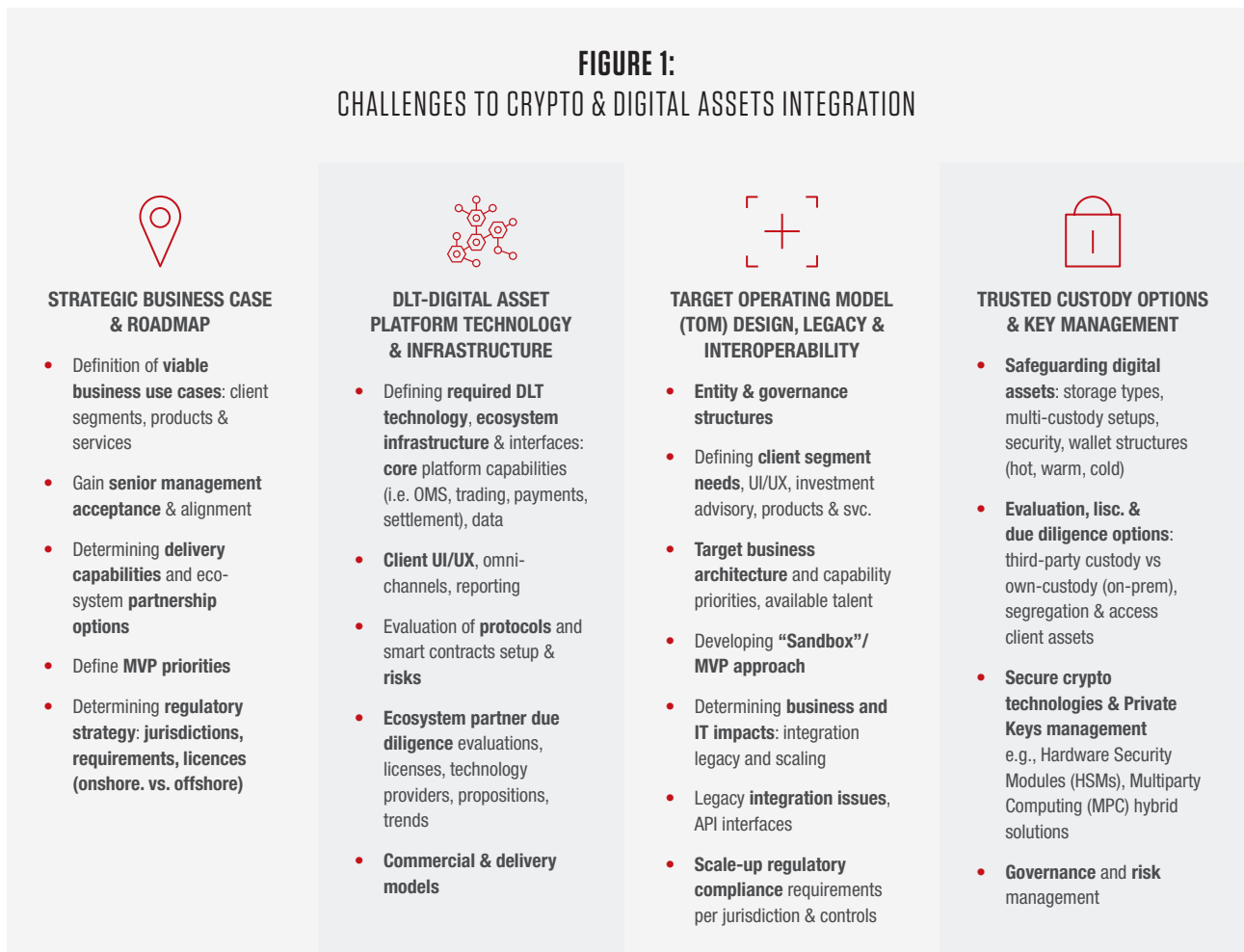
1. STRATEGIC BUSINESS CASE & ROADMAP

Traditional banking institutions have typically treated crypto and digital asset projects as a classic change project and attempted to diligently calculate returns and benefits. The reality is that the digital asset industry is relatively immature, limited historically and constantly changing.

The project implementation needs to be effectively orchestrated within a multi-faceted complexity along with a strategic roadmap where both business and technology have important roles in defining viable use cases.

It is not uncommon for average lead times to range from six to 18 months when launching initial crypto projects. This extended

FIGURE 1:
CHALLENGES TO CRYPTO & DIGITAL ASSETS INTEGRATION

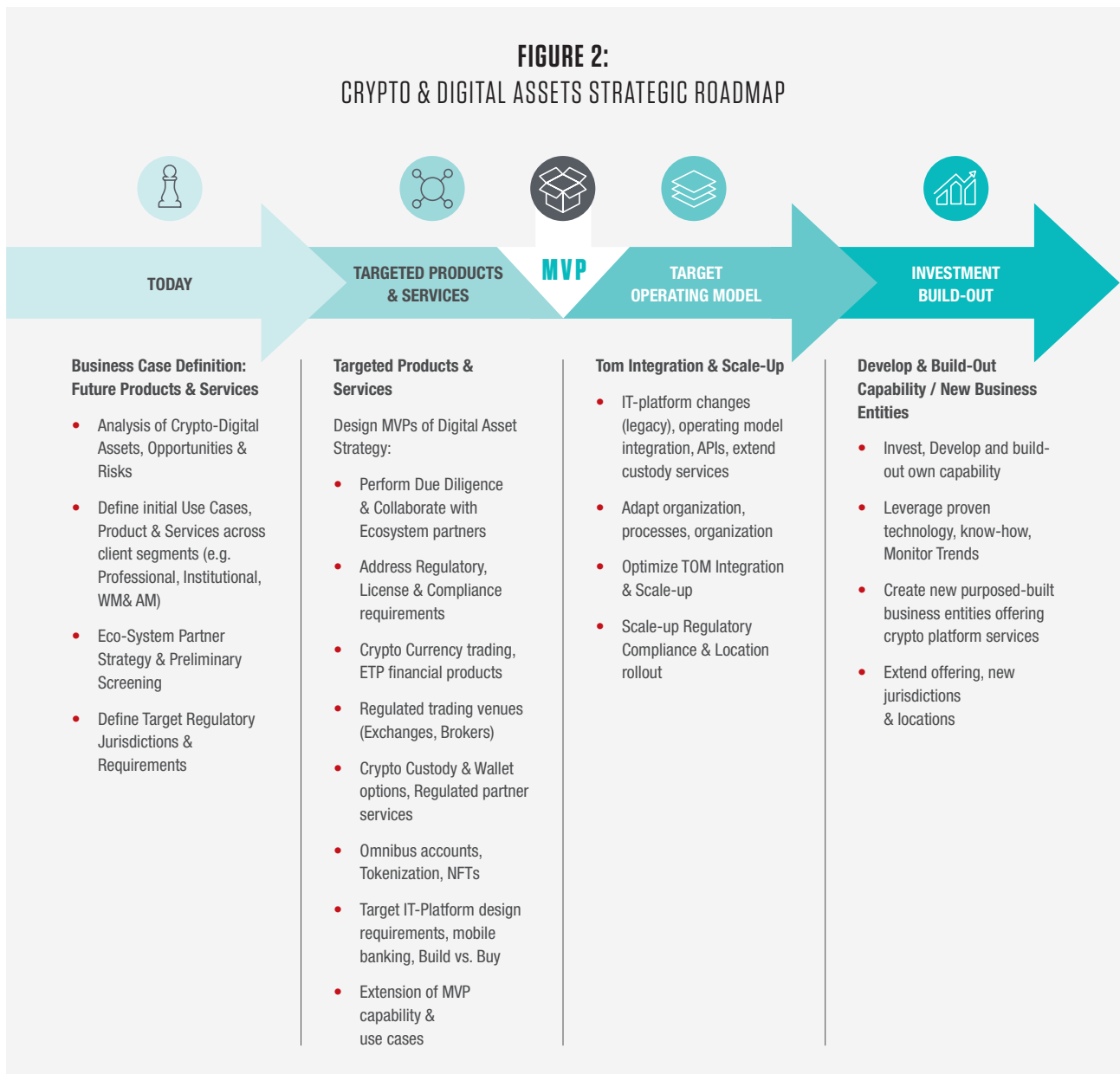


implementation can be further hampered by poorly thought out programs which underestimate the inherent complexity involved from strategic through to operational considerations. There is a need to define tangible MVP releases of simple use case – for example, setting up crypto ETPs or trading Bitcoin and Ether.

Additional care needs to be assigned when setting up the relevant custodian and wallet structures with crypto service providers to safeguard client crypto assets. In the wake of the FTX collapse, this area – along with governance and business activity transparency – must be at the forefront of banks' minds to ensure users' trust is maintained.

The survey from October 2022 done by Cointelegraph on institutional demand, quantify the holding, preferred investment products (e.g. long-only single-asset or index products, derivative products...) and trading behaviours of professional on crypto assets⁴.

According to Cointelegraph, a majority of professional have a preference to hold and transact crypto assets directly via a centralized exchange. In addition, they also prefer regulated investment fund products over derivative products. And active investment strategies are favoured over passive ones due to profitable margins.



The outcome from this research is to be put in prospective as it happened before the FTX Collapse. But the main take aways for the traditional financial institution proposition, are the high interest from professionals to use a trusted intermediary trading venue and custodian, and access different financial product types and strategies.

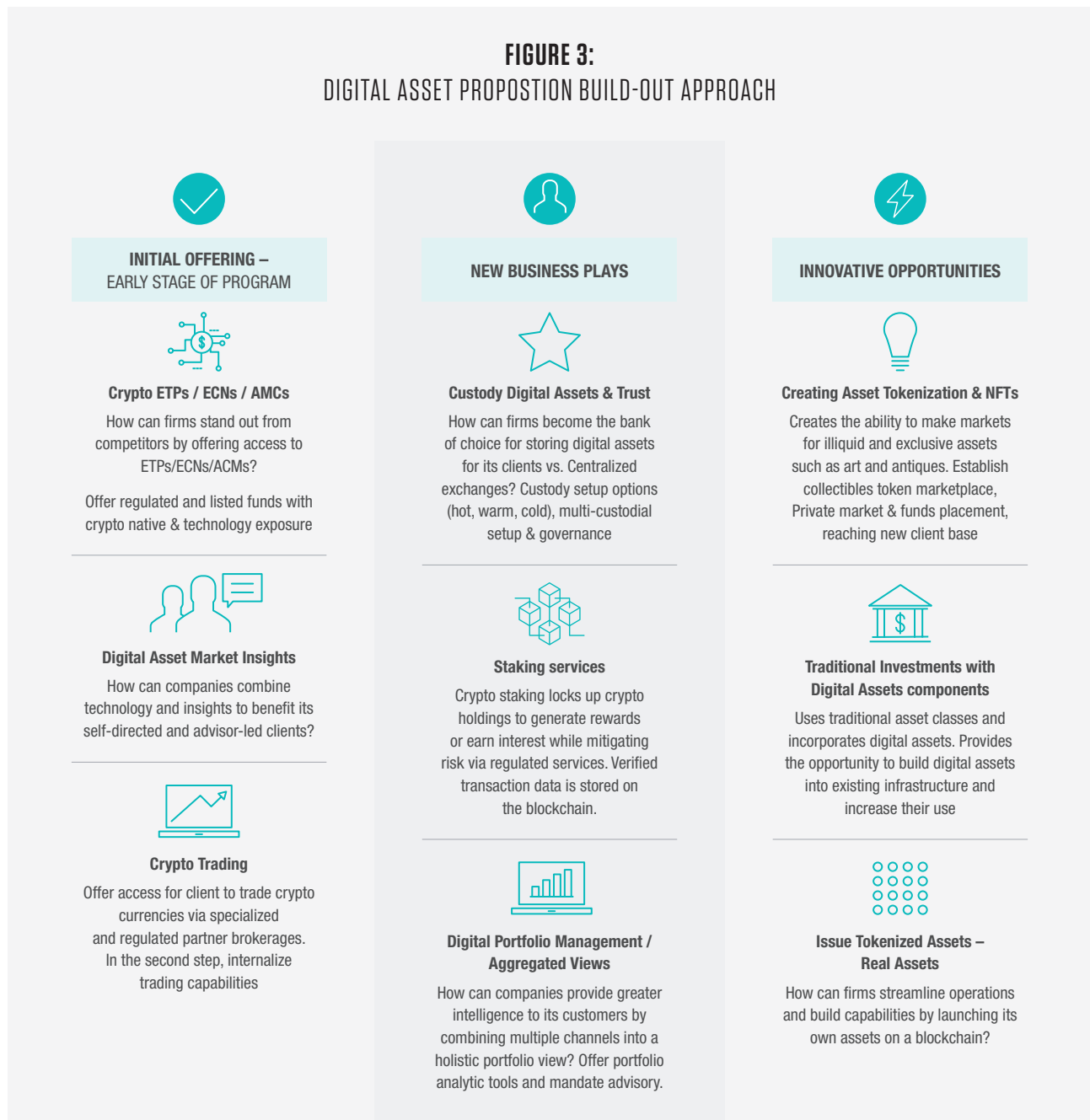
In time, the proposition can be enriched for professional by providing portfolio management and rebalancing tools

specifically developed for crypto products and access to trustworthy crypto market data.

In Figure 3 below, we set out one potential digital asset proposition build-out approach.

In Switzerland and Liechtenstein, we observe that smaller to mid-sized wealth managers and certain regional banks have been active at the early stages of their programs over the last

FIGURE 3:
DIGITAL ASSET PROPOSITION BUILD-OUT APPROACH



two years, with a marked acceleration in late 2021 and early 2022 and a subsequent recalibration in the face of the ongoing crypto winter.

At this stage in their journeys, banks typically offer targeted products and services, within their value chain by proposing limited exposures and entry points, such as regulated listed crypto products: ETPs, Futures, Options. This 'light' approach helps foster both internal and client traction while allowing the institution to build experience and a track record with these new product offerings.

An enhanced level of exposure could be offered via spot crypto brokerage and tokenization services via trusted ecosystem partners. For additional integration, existing e-banking applications could be extended via crypto services providers that offer a compelling user experience for clients. Finally, in reimagining their strategic build out, there are some notable examples where banking service firms have chosen to operate as 'platforms' for other institutional clients, external asset managers and smaller banks (e.g. Switzerland's INCORE Bank).

2. DLT-DIGITAL ASSET PLATFORM TECHNOLOGY & INFRASTRUCTURE

The proliferation in crypto and digital asset platforms has accelerated alongside the explosion of coins and tokens now available (CoinMarketCap listed over 8'000 cryptocurrencies at the time of writing – though this number is disputed in some quarters, and Bitcoin holds a near 45% market share). Investor numbers have similarly spiralled and Centralized Exchange Platforms (CEX) providers dominate the marketplace, handling over 50%⁵ of crypto trading volumes. This activity is highly concentrated within the top 10 exchanges⁶.

These CEX platforms often require users to deposit crypto asset or fiat currency into an account on the platform to be eligible for trading, and they offer their clients the means to convert their crypto asset holdings back into fiat currency (i.e. from BTC to USD). CEXs are accordingly referred to the 'on-ramps' and 'off-ramps' of the ecosystem, offering convenience and (in theory) security⁷. They also provide trading, custody facilities for other digital assets such as stablecoins and NFTs (non-fungible tokens), serve as CeDeFi venues (e.g. Binance – BNB Smart Chain)⁸.

Traditional finance players are mostly absent across what is a vertically integrated value chain, where CEXs provide all services – from client onboarding, product development, brokerage/trade execution, proprietary trading activities and custodial services.

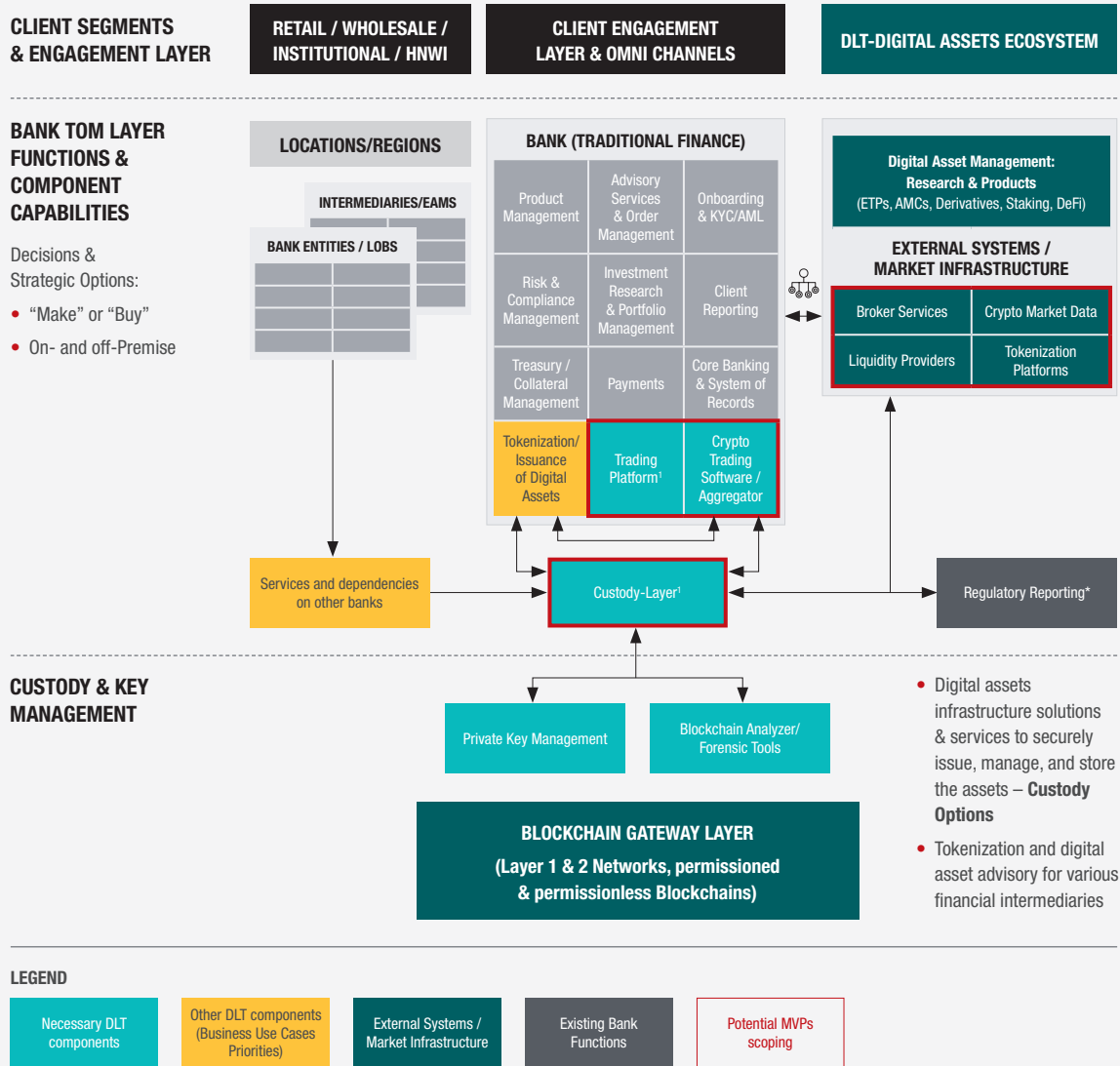
Many CEXs operate without regulatory oversight from national or international supervisory bodies. Moreover, the majority are established in jurisdictions that impose minimal regulatory constraints and have a relatively opaque governance and business entity structure. Conversely certain players (e.g. Crypto Bank) have sought to differentiate themselves from the outset by embracing regulation and/or obtaining a banking or security dealers' licence to foster trust a sense of and transparency.

The bankruptcies and defaults across the sector in 2022 (3AC, Terra-Luna, Celsius, BlockFi), culminating in the FTX collapse, have clearly triggered intense scrutiny of crypto business and the products and services which are provided, and has added renewed impetus to regulatory initiatives and alignment across geographies. At the same time, this presents an opportunity for those players with regulated and licensed business to step away from the pack and to shine.

Other players are the white label platform solutions providers, they are specialized technology product firms. They usually work with system integrator partners to help customize and integrate their products. Their solutions are based on different features and typically offer a shorter time to market, save on in-house software development, testing and costs, allowing the platform operator to focus their attention instead on user experience (UX) and interface (UI) differentiation for their end clients. Ideally the platform solution would follow a phased, minimal viable product (MVP) modular approach to scaling up: this allows experience, customization, client traction and an emerging business to develop while at the same time limiting capital investments and delivery risks.

The DLT/blockchain technology provides support for various banking applications in both traditional finance and digital asset industry. Regulated banks need to determine the most appropriate blockchain features such as scale and speed whether the chain will be 'permissionless' (i.e. not requiring authorization) or 'permissioned'. The use of permissionless

FIGURE 4:
ILLUSTRATIVE BANKING OPERATING MODEL WITH ITS CORE-BANKING
COMPONENTS INTER-RELATIONSHIPS



* Regulators may be given direct access to necessary data

¹ Development on top of a standard solution/software – e.g. Custody options (hot & cold storage) & Approval Terminals Framework

blockchains present a problem for financial market regulators focused on identifying counterparties, risks and target vulnerabilities.

3. TARGET OPERATING MODEL DESIGN, LEGACY & INTEROPERABILITY

Traditional banking operating models face technical process and functional shortcomings when integrating crypto and digital

asset solutions. Internal platform capabilities typically have interoperability issues with blockchain technology as well as with other crypto and digital assets platform service providers, such as specialized crypto brokers, trading venues, custodians, and when accessing DeFi platform services.

The core of the interoperability challenge is that traditional banking technologies are not adapted to run digital asset data,

and so integration layers are needed. There are fundamental transaction data model formats and precision differences. Also that data can be held on/off-chains and on public/private blockchains. A specialized technical integration approach will be required, and this can be sometimes addressed via sophisticated API solutions or services.

The predominant model has been for banks to access white label solutions or initially adopt Software as a Service (SaaS) models offered by crypto ecosystem firms prior to then transitioning to on-premises solutions once the level of maturity and the business ramp up.

There are new risks presented by crypto and digital asset products that must be managed by stakeholders. Due to their regulated status, traditional banks have needed longer lead times to fully scope and understand the spectrum of regulations pertaining to different digital asset activities. Furthermore, the due diligence for the client onboarding of crypto assets is challenging, and traditional compliance processes and tools are insufficient to assess and control related risks. Forensic analysis to determine ownership of cryptos is another key capability that must be implemented to trace and prevent risky transactions, including money laundering, sanctions busting, and terrorism financing.

The licensing and regulatory framework for crypto is currently either emerging or brand new, and there are numerous detailed requirements that will require close analysis. One example is Switzerland's Distributed Ledger Technology (DLT) Act, introduced in August 2021, which looks at once to put guardrails around decentralized DLT and to foster innovation in the blockchain and crypto space.

The DLT Act provides legal clarity and certainty in respect of governance, financial law, Anti-Money Laundering (AML) provisions, risk management, DLT applications and trading platforms in the blockchain sector. It also explicitly addresses the segregation of crypto assets in the event of bankruptcy. The Swiss regulatory framework considers crypto to be an asset class, therefore banks can keep crypto assets off balance sheets⁹.

These provisions are collectively seen to have given Switzerland a relative advantage as competition for crypto business heats up between jurisdictions globally. Similar regimes of note include those introduced by the Monetary Authority of Singapore¹⁰. The US authorities, meanwhile, are in the early stages of coordinating various banking and regional regulators to develop crypto-oriented rules – a process only likely to accelerate post-FTX.

Closer to home, the EU Markets in Crypto Assets (MiCA) regulation has received formal approval and is expected to take effect in late 2024¹¹. MiCA focuses on categories of crypto-assets which currently fall beyond the scope of existing regulations such as MiFID and introduces a harmonized legal framework for crypto-asset services providers and security measures for protocols, as well as establishing consumer protection rules.

4. TRUSTED CUSTODY OPTIONS & KEY MANAGEMENT

Custody of digital assets is unique due to the private 'keys' that control access a client or owner's holdings. The ecosystem for the custody of digital assets incorporates a range of players, including crypto-native firms and fintechs providing technology infrastructure-focused solutions for institutions that wish to provide and/or manage their own custody services. Some top-tier traditional banks and custodians are bringing to the table their traditional banking knowhow, 'trusted' governance and their experience as custodians at scale (notably Bank of New York Mellon, State Street and Fidelity), their technology solutions are sometimes based on ecosystem partnership.

Much as with traditional assets, digital asset custody is necessary to ensure that the assets can be traded, exchanged and stored between exchanges in a secure and trusted manner. The evaluation and integration of custody services options from ecosystem providers is a key consideration, as is the definition and implementation of robust governance frameworks.

Market commentary from JP Morgan following the FTX collapse noted that emerging regulatory initiatives are likely to put a particular focus on safe custody and protection of customers'

“
State Street Digital’s mission continues to focus on putting the right tools in place so we can provide clients with solutions to support their traditional, as well as digital assets needs. Today’s exciting announcement will only enhance our ambition to deliver to our clients an amazing digital experience. We look forward to collaborating with the team at Copper as State Street Digital continues to grow.
”

Nadine Chakar, head of State Street Digital¹²

digital assets, a segregation of broker/trading/lending/clearing/custody activities, and greater transparency around the reporting of reserves, assets and liabilities¹³.

Evaluation of custody wallet options is also required to determine elements such as ‘hot’ and ‘cold’ wallet structures, self-custody, hardware security modules, and clearly defined and robust governance and compliance frameworks. Using custody propositions by ecosystem partnering is likely to offer the quickest and simplest way to manage digital assets capability.

Qualified crypto custodians typically offer an initial solution that directly connects to omnibus and/or segregated wallet accounts where the assets are safeguarded. The client’s asset will not be reflected in the custodian balance sheet but fully segregated and held off-balance sheet. However, CEX providers often offer their custodial services within their own ecosystem control, that typically arise a risk of comingling client assets with their on-balance sheet setup.

In short, it can be concluded that not all digital asset custody offerings are equal.

DEVELOPING A SUCCESSFUL IMPLEMENTATION APPROACH

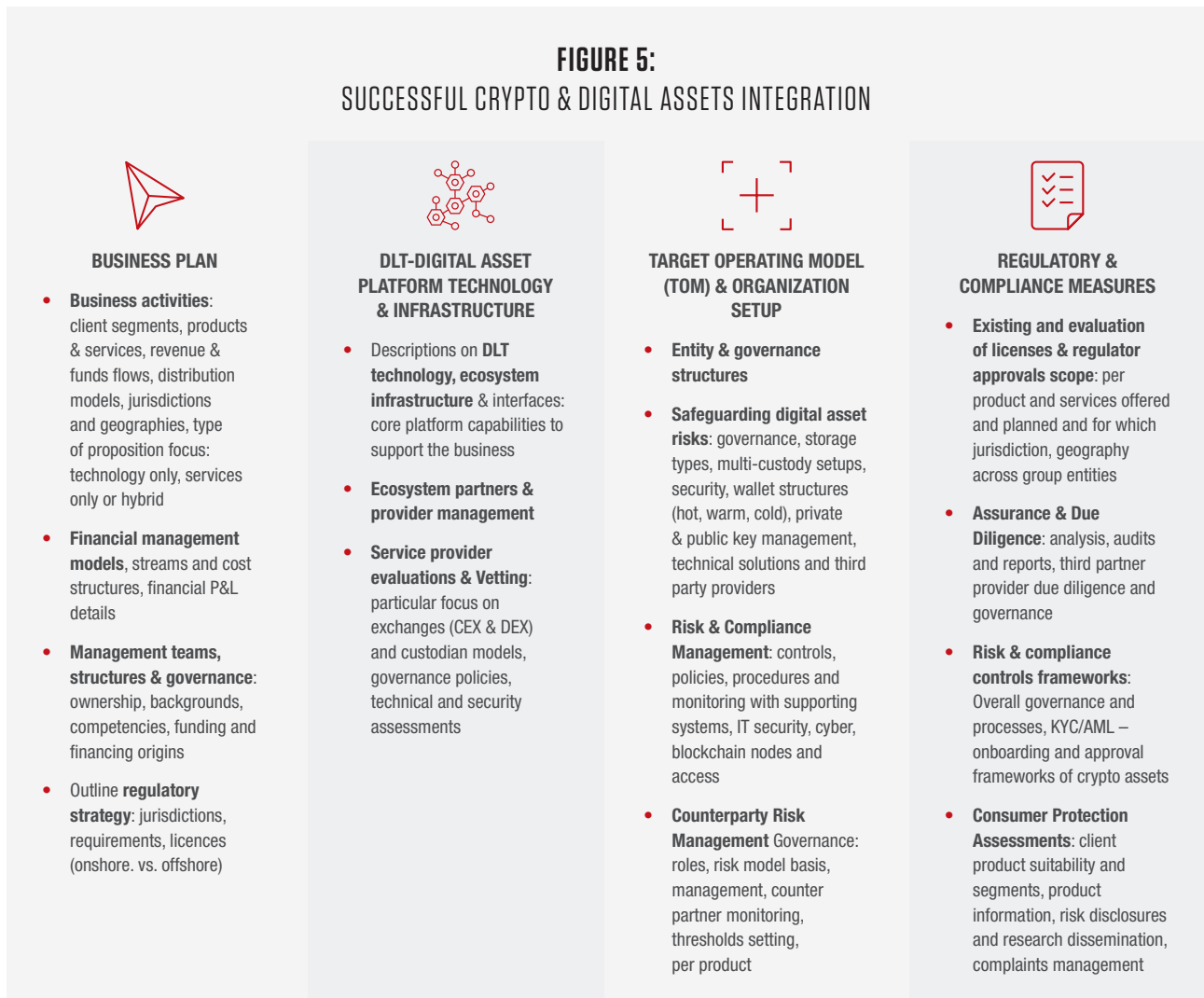
Traditional financial institutions' crypto and digital asset ambitions will only take flight once the initial implementation challenges are overcome, and greater internal business acceptance is achieved.

Establishing a deep understanding of the risks inherent in crypto and digital asset products is a key initial 'success factor' when preparing a business case. This is a market which is rapidly growing and continually innovating, and which regularly transitions from boom to bust. Accordingly, any opportunity needs to be put into clear context through the correct due diligence and safeguards implemented.

This will allow investments and resources to be effectively targeted while at the same time avoiding time wasted on ill-defined business use cases which will only require adaptation within an increasingly harsh regulatory environment.

Traditional banks will need to leverage their existing market positioning and offer relevant crypto and digital asset products coupled with sound risk management and services tailored to evolving client needs – all while staying focused on their strategic roadmap. As mentioned in this paper, the institutional segment and regulated banks, wealth and asset management firms are increasingly exploring digital asset opportunities

FIGURE 5:
SUCCESSFUL CRYPTO & DIGITAL ASSETS INTEGRATION



and, in some cases, launching the initial phases of crypto propositions. Given the events and lessons of 2022, this raises questions about the business case risks relating to operational implementation and to working within an ecosystem across their value chains and operating models.

Propositions can accordingly be expected to be subjected to heightened due diligence, the robustness of implementation approaches tested. Governance, transparency and partnership will be the new mantra to (re)gain trust. Financial institutions are being challenged by highly innovative and some opaque businesses across the digital asset firms which have been applying traditional strategic roadmaps and implementation approaches that were better suited for legacy technology platforms and organizations.

Post-FTX, we foresee financial regulatory bodies requiring that those firms engaging in crypto and digital asset business activities secure specific pre-approvals and licenses, implement measures covering consumer protection/conduct risk, and introduce market manipulation safeguards.

Figure 5 above captures what are considered key criteria when establishing or vetting a digital asset services business partner.

Performing a structured cross-functional readiness assessment enables a bank to better understand how prepared the organization is to manage crypto and digital assets. Assessment

areas include banking value chains and corporate entities, regulatory frameworks / licences, governance, product development, risk & compliance management, operations, data and security, trade execution, and custody services. The purpose should be to identify an initial cross-section of key areas and topics on a high-level basis which highlight capability gaps to address for a successful implementation.

The ever-growing B2B fintech ecosystem is the main gateway to facilitate the banking industry's ambitions to seize potential crypto and digital asset opportunities. On the one hand, ecosystem players are well positioned to support banks in this transformation and the implementation of solutions, and to carve out a share of the market to strengthen their own propositions. On the other hand, they look set to become increasingly constrained as regulatory restrictions increase for non-regulated providers. Without a doubt, a more robust due diligence approach has been implemented to evaluate potential partnerships.

For their part, banks need to understand their own operational blueprints, the impacts and solution imperatives across their value chains, and which operating models will ensure a successful strategic execution.

REFERENCES

1. IDC FutureScape Webcast: Worldwide Blockchain, Crypto, NFT, and Web3 2023 Predictions
2. [Global Crypto Adoption Up 880% in 2021 – Chainalysis](#)
3. OECD (2022), Lessons from the Crypto Winter: DeFi versus CeFi, OECD Business and Finance Policy Papers
4. CoinTelegraph – Global Institutional Demand Outlook Crypto Currencies – 2022-Oct
5. Chainalysis: The 2022 Geography of Cryptocurrency Report
6. <https://www.reuters.com/markets/currencies/top-crypto-exchanges-by-volume-2022-11-09/>
7. US Department of the Treasury: Crypto-Assets: Implications for Consumers, Investors, And Businesses – Sept 2022
8. [What is CeDeFi, and why does it matter? \(cointelegraph.com\)](#)
9. <https://cointelegraph.com/cryptocurrency-regulation-for-beginners/an-overview-of-the-swiss-distributed-ledger-technology-dlt-act>
10. MAS, Proposed Regulatory Measures for Digital Payment Token Services – Oct 2022
11. EPRS, Markets in crypto-assets (MiCA) – 2022
12. [State Street to develop digital custody in collaboration wit \(copper.co\)](#)
13. [What does crypto look like after FTX? | Financial Times](#)

AUTHOR

Ismaël Otmani

Digital Assets, Capco Switzerland

CONTACT

Audrey Miguel

Partner, Capco Switzerland

M: +41 79 101 32 32

E: audrey.miguel@capco.com

ABOUT CAPCO

Capco, a Wipro company, is a global technology and management consultancy focused in the financial services industry. Capco operates at the intersection of business and technology by combining innovative thinking with unrivalled industry knowledge to fast-track digital initiatives for banking and payments, capital markets, wealth and asset management, insurance, and the energy sector. Capco's cutting-edge ingenuity is brought to life through its award-winning Be Yourself At Work culture and diverse talent.

To learn more, visit www.capco.com or follow us on Facebook, YouTube, LinkedIn and Instagram.

WORLDWIDE OFFICES

APAC

Bangalore
Bangkok
Dubai
Gurgaon
Hong Kong
Kuala Lumpur
Mumbai
Pune
Singapore

EUROPE

Berlin
Bratislava
Brussels
Dusseldorf
Edinburgh
Frankfurt
Geneva
London
Munich
Paris
Vienna
Warsaw
Zurich

NORTH AMERICA

Charlotte
Chicago
Dallas
Hartford
Houston
New York
Orlando
Toronto
Washington, DC

SOUTH AMERICA

São Paulo

WWW.CAPCO.COM



© 2023 Capco – The Capital Markets Company Sàrl | Elías-Canetti-Strasse 2, 8050 Zurich | All rights reserved.

CAPCO
a wipro company