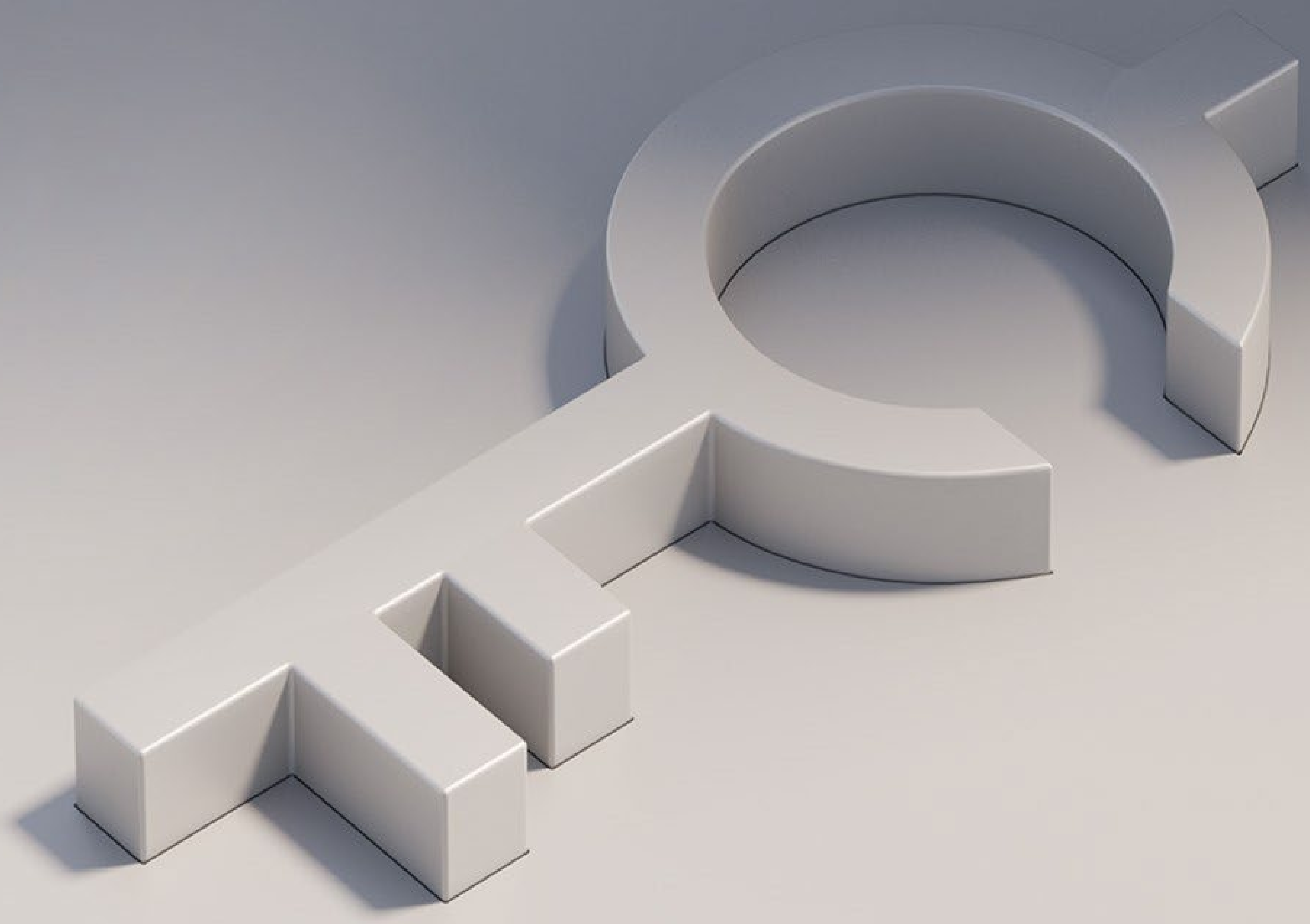
THE COLLAPSE OF FTX
A POST MORTEM REPORT



By William Ery, Christopher Tse, David Scheuermann & Patrick Heusser

November 16th, 2022

FTX, one of the largest crypto exchanges in the world, along with over 130 affiliated companies, have filed for Chapter 11 bankruptcy under the United States Bankruptcy Code. Hundreds of thousands of users have seen their funds blocked, unable to withdraw them from the platform. Trust in centralised exchanges has suffered considerably, and the cryptocurrency market has crashed, yet again.

THE CONTEXT

To better understand what has unfolded over the last few weeks, it is important to paint a picture of FTX and its surrounding environment before all of this happened.

FTX

Founded in 2019, FTX, a centralised cryptocurrency exchange, quickly rose to fame in the digital asset space, reaching the million-user mark by 2021[1] and reaching a valuation of over $30 billion from its last series C funding round[2].

FTX is not a single entity, but a network of shell companies across the globe. Incorporated in Antigua and Barbuda, FTX mainly operated out of the Bahamas. Its American affiliate, FTX US, had overlapping management teams but separate capital structures, allowing US residents to trade, as they were not allowed to do so on the primary platform operating out of the Bahamas.

As stated on their website, FTX was founded to be a cryptocurrency exchange "built by traders, for traders". They were known in the wider cryptocurrency market for offering complex digital products with high liquidity, such as derivatives and options. The exchange platform itself was heralded as a well-developed product.

During the 2020-2021 crypto bull run, FTX, led by Sam Bankman-Fried, was often perceived as one of the most profitable, trusted, and influential marketplaces in the space. A combination of several factors, such as the economic downturn during the "crypto winter", negative revelations about FTX itself and its practises in the industry would, however, soon lead to its downfall.

Sam Bankman-Fried

Founder of both companies involved in this fiasco, Sam Bankman-Fried (SBF) is a key actor involved in this cascade of events. The 2014 MIT graduate spent his first professional years as a trader for Jane Street Capital. He then went on to launch Alameda Research in 2017, before founding FTX in 2019.

He quickly became perceived as the darling of the crypto community, notably backing layer-1 blockchain project such as Solana. By 2022, Forbes estimated his personal net worth to be $17 billion, making him one the richest people in crypto, and placing him on the 30 Under 30 list.

In 2022, SBF openly advocated for more regulation in the crypto native space, most notably lobbying with American politicians to implement regulatory measures towards DeFi before this year's midterms. Through Twitter, he publicly stated that he was aiming to "support constructive candidates across the aisle to prevent pandemics and bring a bipartisan climate to DC". Several parts of the crypto industry openly voiced concerns regarding SBF's actions, and in the weeks leading up to his downfall, his "darling of crypto" image was already starting to fade.

Alameda Research

Alameda Research is a quantitative cryptocurrency trading firm, founded by SBF in 2017. In addition to their trading operations headquartered in Hong Kong, the firm is heavily invested in nearly 200 crypto companies[3].

After SBF officially left the company to focus on being FTX's CEO, he passed the torch to fellow traders Caroline Ellison and Sam Trabucco, the latter stepping down from his position of co-CEO in August 2022.

Despite being established as two separate entities, FTX and Alameda Research allegedly operated very closely over the years. Investigations would soon reveal that funds were

[1] Businessofapps.com - link
[2] Crunchbase.com - link
[3] Capital.com - link

moving from one entity to the other without FTX customers' knowledge or authorisation. The close ties between FTX and Alameda would also ultimately catapult both companies into bankruptcy.

The Luna crash

The collapse of the SBF-led FTX ecosystem was not the only event that brought the digital asset space to its knees in 2022. Earlier this year, in May, Terra's $45 billion Luna ecosystem also crumbled. Many hedge funds and crypto companies, such as Three Arrows Capital, Arca Funds, Celsius, and Voyager Digital were severely impacted. The industry experienced a spate of bankruptcies.

Alameda seemed unaffected by this collapse at the time. In contrast to the rest of the market, FTX was investing aggressively in crypto firms such as BlockFi and Voyager, and even attempted to acquire the bankrupt company Celsius. However, it would later come to light that FTX was, allegedly, sending capital, including user funds, to its sister company to help soften any adverse impact from the recent crash. It has been speculated that up to $10 billion of FTX assets were siphoned into Alameda, which left FTX severely undercapitalised and vulnerable to negative market conditions[4].

THE TIMELINE OF EVENTS

A great deal has happened since November 2nd. This section aims to accurately tell the story of what unfolded in the crypto space in relation to FTX in the last two weeks. It is based solely on what was known publicly at the time of writing.

02.11 | Alameda Research's balance sheet leaks

On November 2nd, CoinDesk, a news website, which covers the entire digital asset space, released an article providing insights on a leaked balance sheet of Alameda Research.

As of June 30th, the company's assets amounted to $14.6 billion, with nearly 40% of which comprised $FTT, FTX's invented exchange token[5]. This sparked concerns across the crypto community that Alameda had even closer ties to FTX than expected. This leaked balance sheet would end up instigating the events leading to the bankruptcy of both companies.

06.11 | Binance sells its $FTT holdings

The news of Alameda's surprisingly weak financials spurred panic across the crypto market. Changpeng Zhao (CZ), CEO of Binance, the largest crypto exchange in the world and a direct competitor of FTX, announced via social media that Binance would sell all its $FTT tokens.

In 2019, Binance had made a strategic investment in FTX, while taking a long-term position in $FTT, the exchange's invented token, to "help enable the sustainable growth of the FTX ecosystem" (per a company communication from December 20th, 2019[6]).

06-08.11 | FTX faces the equivalent of a bank run

On the news, combined with some barbed tweets from CZ, panic spread across investors, both retail and institutional alike, who rushed to withdraw their funds from the FTX platform. As clients withdrew their assets, it dried up the exchange's reserves. Roughly $5 billion in withdrawals were requested, which was nearly fifty times the average daily net in/out flows[7].

08.11 | Binance considers rescuing FTX

The price of $FTT collapses, bringing down the entire crypto market along with it. FTX faces a severe liquidity crunch, pushing SBF to call CZ asking for help. Both exchanges publicly announce that they will sign a non-binding letter of intent, in which Binance agrees to acquire FTX, pending a due diligence procedure[8].

After only a day, Binance announces that it will not follow through with the acquisition, citing "reports regarding mishandled customer funds and alleged US agency investigations" as reasons for the decision.

[4] Wsj.com - link
[5] Coindesk.com - link
[6] Binance - link
[7] CionDesk.com = link
[8] FTX- link, Binance – link

08.11 | FTX pauses withdrawals

Investors are no longer able to withdraw their funds from the FTX exchange. It is revealed that users' supposedly securely custodied funds (amounting up to $10 billion) are no longer with FTX[9]. Rumours circulate that FTX had been using customers' funds to fund venture investments, marketing campaigns, and Alameda Research's trading strategies.

10.11 | The Securities Commission of the Bahamas freezes FTX's digital assets

In a media release, the Securities Commission of the Bahamas announces that it is freezing the digital assets of FTX and related parties. They also suspend FTX's registration and appoint a provisional liquidator. The commission states that this is a "prudent course of action" to "preserve assets and stabilize the company".

10.11 | FTX announces withdrawal of Bahamian funds only

FTX announces on Twitter, via its @FTX_Official account, that they are allowing withdrawals of Bahamian funds in compliance with regulators, while actively investigating ways to enable withdrawals worldwide[10].

Two days later, the statement from FTX is contradicted by the Securities Commission of the Bahamas, stating that they never authorised such a decision[11].

11.11 | FTX files for Chapter 11 bankruptcy

FTX announces voluntary Chapter 11 bankruptcy proceedings in the US, in addition to approximately 130 affiliated companies (see Annex 1), such as FTX US and Alameda Research.

SBF resigns, and John J. Ray III, who oversaw the Enron bankruptcy in the early 2000s, is appointed as new CEO. Ray III states that "the immediate relief of Chapter 11 is appropriate to provide the FTX Group the opportunity to assess its situation and develop a process to maximize recoveries for stakeholders"[12].

12.11| FTX suffers major hack

FTX's Telegram channel administration announces that "FTX has been hacked. All funds seem to be gone. FTX apps are malware. Delete them. Don't go on FTX site as it might download Trojans".

$600 to $800 million in cryptocurrencies are taken out of the exchange's wallets in unauthorised transactions, while a malicious update tries to compromise users' funds via the app. The havoc across the crypto community continues, and the trust towards FTX seems to be completely gone.

THE AFTERMATH

The following section includes an analysis of the actions of all players involved in the collapse of one of the largest cryptocurrency ecosystems in the world. Again, this is solely based on the information available at the time of writing. The aim is to try to better understand what went wrong and what this means for the digital asset space as whole.

[9] FT - link
[10] Twitter.com - link
[11] Twitter.com - link
[12] Twitter.com - link

What FTX allegedly did wrong

Moving user funds behind closed doors

According to Reuters and other credible sources, FTX was allegedly lending out billions of dollars' worth of customer funds to its sister trading company Alameda Research whenever it needed extra collateral for their long positions[13]. This means that users' funds were moved freely and willingly by FTX. Where exactly these funds ended up might never be known, but it can be assumed that user funds were in fact moved around behind closed doors, without knowledge or authorisation from their rightful owners.

According to the New York Times, Alameda's CEO said that during the Luna crash, lenders moved to recall the loans made to the company. However, as the funds that Alameda had spent were no longer easily available, they allegedly used FTX customer funds to make those payments[14].

Lies about financial health

On multiple occasions, spokespeople from FTX and Alameda declared that they were financially strong. In a Twitter thread from November 7th, during the FTX "bank run", SBF stated that the company had "enough to cover all client holdings", declaring in addition that "they do not invest client assets"[15].

After Alameda's balance sheet leaked[16], showing weak financials, Caroline Ellison, the company's CEO, defended that they had over $10 billion of assets that were not reflected. After CZ announced that Binance would be selling their $FTT holdings, she also tweeted that if the Binance CEO is looking to minimise the market impact, "Alameda will happily buy it all from (him) today at $22"[17].

In addition, in a tweet that has since been deleted, SBF declared that "FTX is fine. Assets are fine." In the hours and days that followed, the community realised that this was indeed another lie.

According to Reuters, a secret "backdoor allowed SBF to execute commands that could alter the company's financial records without alerting other people, including external auditors"[18]. And the Financial Times shared the balance sheet of FTX dated November 10th, showing $9 billion in liabilities while holding $900 million in assets[19].

Based on this set of facts, it stands to reason that FTX and Alameda have misrepresented the current state of their financial health, likely in an attempt to avoid a crash that would further endanger both companies. Ultimately, after several allegations proved to be true, the community did not believe SBF anymore and this led to a massive exodus from the exchange.

Insufficient governance and a highly complex structure

During an *All-In* podcast with notable guests such as Brian Armstrong, CEO of Coinbase, another guest Chamath Palihapitiya, famous investor and entrepreneur, recalled being approached by SBF during one of their investment rounds[20]. In a two-page deck, which consisted of recommendations made to FTX, Chamath claims that his team suggested that the company first form a board of directors. The apparent lack of structured governance within the organisation is another element that could have precipitated its downfall.

In addition to the absence of a sufficient governance framework at FTX, the entire SBF-led ecosystem consisted of a highly complex legal and corporate structure (see Annex 2). The chosen corporate structure likely obfuscated FTX's legal and financial relationships with its affiliated companies, preventing an objective, critical analysis by auditors and other third parties.

Self-preservation during the Luna crash

At the time of the Luna crash, Alameda seemed surprisingly unaffected, while other crypto hedge funds such as Three Arrows Capital (3AC) went bankrupt. According to unverified information, FTX may have covered some of Alameda's financial losses in the aftermath of the Luna crash,

[13] Reuters - link
[14] NY Times – link
[15] Fortune.com - link
[16] CoinDesk.com - link
[17] Twitter - link
[18] Reuters.com - link
[19] Ft.com - link
[20] Youtube - link

in an attempt to ensure the firm's continued operation.

The collapse of Luna and 3AC also significantly affected other major market participants, including crypto lender BlockFi. Following these events, FTX publicly announced support and financial aid to many affected companies, notably reaching a deal to acquire BlockFi for up to $240 million in July 2022. However, an unverified source allegedly declared that a former BlockFi employee stated that "the only reason FTX bailed (them) out was to get (their) funds onto FTX's platform to use in their shell game"[21].

Finally, as already stated, according to the New York Times, Alameda admitted to using FTX customer funds to repay its lenders that had moved to recall their loans in the aftermath of the Luna crash[22].

Untrustworthy "auditing" practices

Reading through FTX's Security Policy, nothing seemed to be amiss at first glance. Two US accounting firms audited FTX and passed a US GAAP audit in 2021 prior to its collapse. The firms Prager Metis CPAs, LLC and Armanino LLP are at the same time also stated to be business partners and FTX advisers[23]. One might speculate a clear conflict of interest given this situation, and this casts doubt in the objectivity of their respective assessments. The Public Company Accounting Oversight Board, the regulator of the US audit profession, since reviewed four sample audits by Prager Metis CPAs, LLC and all samples contained deficiencies[24].

What does this mean for the crypto asset industry?

This report has aimed to accurately present the timeline of events that led to the collapse of the entire FTX ecosystem. Evidence available so far suggests that insufficient checks and balances were in place in the companies controlled by SBF, resulting in the companies' eventual downfall and erosion of customer funds. This failure, by a major centralised exchange used by millions, has precipitated a broader crypto market crash. Bitcoin hit new cycle lows of around $16,000. This debacle also hurt FTX's competitors such as Binance, which witnessed 1.35 billion dollars' worth of withdrawals from its platform in the days following the collapse[25]. Within seven days, the total climbed to $6.2 billion of withdrawals from all major exchanges of BTC and ETH tokens alone[26].

What does this entail for the digital asset industry as a whole? Many share the opinion that the FTX fiasco has set back the growth and resilience of the crypto ecosystem by several months, if not years. With trust decreasing, yet again, it will become more and more complex for retail investors, and institutions to enter the space. As a consequence of this incident, it is likely that regulators across the globe will increase regulatory scrutiny on intermediaries, such as centralized crypto exchanges.

At the same time, it is worth highlighting that the innovations enabled by blockchain technology remain unchanged, as do the fundamental values of crypto, and the building of quality protocols and projects within the ecosystem will likely continue. Many of these issues that came to the surface are rooted in traditional behavioural and conduct deficiencies that have historically plagued traditional financial markets. These issues cannot be addressed by the advancements of blockchain technology and are not indicative of a failure in the technology.

Following these events, retail investors will naturally demand more protection for their assets on exchanges, which will put pressure on regulators to "do something". Similarly, institutions will want regulated marketplaces and regulated custodians that can offer a low-risk execution and settlement of their digital asset trades. Regulated financial institutions, mainly banks, wanting to enter the digital asset space, will likely recalibrate their risk assessment of the crypto market. As a potential consequence, they may decide not to onboard with unregulated crypto exchanges or even to refrain from

[21] Twitter.com - link
[22] Ft.com - link
[23] Forbes.com - link
[24] Inspection report PDF - link
[25] CoinDesk.com - link
[26] Bloomberg.com - link

onboarding with exchanges altogether regardless of their regulatory status.

In the short term, the FTX debacle has severely hurt the digital asset industry. Trust in the market and its participants has impaired significantly, and communication between those attempting to enable further crypto adoption and regulators, traditional financial institutions and governments will likely become more challenging. But in the medium and long term, if the good players keep improving the ecosystem, and more of them take the regulated, trusted route, then the digital asset industry is poised to grow once more, although perhaps slower than expected. Trust, not just in the characteristics of blockchain technology itself, but also in its users will likely become a growing requirement as the industry continues to grow again in the future.

How can trust be regained?

Proof of Reserves

Major crypto exchanges are currently dealing with significant customer uncertainty and are attempting to find ways to reassure their user base. Binance's CZ spearheaded the Proof of Reserves trend when confidence was at its lowest in order to confirm the extent of assets held by the exchange.

Kraken and Gate.io, other large cryptocurrency exchanges, have already provided Proof of Reserves for the past two years, allowing customers to confirm that the respective exchange has assets, without sharing the customer account details.

However, the concept of Proof of Reserves necessitates trust in an objective third party, like an audit firm, and in addition it only provides a snapshot at a particular point in time, typically once or twice a year, and can in general not provide an accurate picture of the real-time health of a centralised exchange. For example, there have already been large outcries against some exchanges when the they shared their so-called Proof of Reserves, as keen-eyed viewers noticed considerable outflows and inflows of assets which appeared not be reflected in these snapshots.

From a conceptual standpoint, the value of a Proof of Reserves mainly exists in times of crisis – if a major event negatively affects an exchange, customers will typically want to check the exchanges' reserves with immediate effect and not have to rely on data provided half a year ago or wait for a few weeks for the exchange to generate a more recent snapshot. Moreover, depending on the flavour of Proof of Reserves, it would be possible to collaborate with other exchanges to inflate wallet balances for the snapshot before returning the assets.

Many exchanges have now promised to release some form of Proof of Reserves in the coming weeks. In the meantime, several exchanges have released the addresses of their cold and hot wallets to show the total assets they own.

All these efforts are just a temporary band-aid. You cannot rely on blockchain for all the answers, as financial tools, such as lending and borrowing, hedging and options trading are aggressively utilised off-chain, which means that on-chain data provides an incomplete picture based on an insufficient data set. This can be illustrated by viewing publicly available data on wallet addresses. The publicly available information regarding the balance of a wallet does not *per se* provide an indication of whether or not the wallet holder, (for example an exchange), is in effect also the beneficial owner of the funds. For instance, funds associated with a wallet balance could easily be borrowed from another exchange or other third party to artificially inflate Proof of Reserves. As of today, there is no established, publicly accessible, way to transparently verify an exchange's liabilities.

Role of auditors

If auditing practices are to be effective, there needs to be globally recognised standards that are openly critiqued and adapted over time to ensure best practice. In order to effectively audit the digital asset space, accountants will need additional knowledge and experience regarding the flow of digital assets through databases, how they are stored, and balances tracked. Without such expertise, auditors will end up blindly agreeing with whatever the exchanges tells them, fuelling even more distrust in the sector.

Does Decentralised Finance have the answer?

While DeFi promises to provide an alternative – the "trustless" exchange of assets still presents significant challenges, particularly when it comes to institutional adoption.

Notwithstanding the expertise needed to audit smart contract code, many traditional players will from a risk management and AML-perspective neither be willing nor be able to participate in a system where they are unable to verify or evaluate their counterparties.

The emergence of permissioned DeFi, which requires all participants to undergo a whitelisting process that involves KYC, allows institutional investors to participate on-chain. This could provide a potential solution, while diluting the concept of a purely "trustless" environment.

Going forward, it seems likely at this point two ecosystems with differentiating characteristics will exist in parallel : the "trustless" DeFi available predominately to the savvy individual investor, and applications built and maintained by Centralised Finance adding value by making verified "clean" assets in custody with reputable providers accessible.

How to avoid such things in the future?

Regulation

If the FTX story has reminded the crypto industry of one thing, it is that, now more than ever, regulation is required to prevent failures of individual providers and intermediaries. Taking the slower, but safer route towards customer-protection regulation will likely be preferred by most institutional players. This might in consequence force unregulated service providers to accept licensing and oversight if they intend to be part of the crypto financial industry in the long run. Regulation is necessary to avoid the alleged malicious and criminal activity that has been witnessed at a large scale and at several instances.

From a market resilience standpoint, both unregulated and regulated crypto exchanges will increasingly have to focus on systematic collaboration with regulated custodians that operate within proper and vetted frameworks in order to better manage counterparty and overall credit risk going forward. Regulated players will ultimately become the gatekeepers to the digital asset industry as they will be charged with providing the trust required for further retail and institutional adoption of the asset class.

Moreover, the importance of appropriate business auditing practices will be heightened. Passing audits from reputable audit firms will increasingly be required for many crypto service providers in practice, including further certifications (such as SOC 2 controls with their respective ISO equivalents in place). Regulatory compliance and licensing in the respective target markets will equally become an important foundation to provide reassurance to both regulators and investors.

At the same time, the solution lies not necessarily in introducing additional regulation, but rather in the systematic application and enforcement of already existing regulatory frameworks and principles while making sensible tweaks to capture the characteristics of blockchain technology and its applications. Initial steps towards this direction can already be observed and seem promising. Noteworthy examples include the Markets in Crypto Assets Regulation in the European Union as well as the Swiss DLT Law that both focus on taking a holistic approach and largely apply established standards to digital asset services providers and infrastructures. The role of national competent authorities will be equally important as they will eventually be tasked with applying the tweaked regulatory frameworks to their locally existing blockchain industry in a transparent and risk-based manner. Lastly, reducing opportunities for regulatory arbitrage at an international level (e.g., by combatting offshore practices) will combat the continued emergence of unregulated offshore ecosystems.

Secure Custody

To prevent market participants from moving user assets without their permission or knowledge, the overall market structure of crypto custody and settlement will require substantial changes. In the long term, prudentially regulated service providers will be the main gatekeepers for crypto custody and settlement services, having verifiable and transparent accounting practices in place that are systematically scrutinised by established audit firms and national competent authorities. In essence, the standards of traditional custody services will become a hard requirement also in the regulated digital assets space.

Novel concepts, such as Proof of Reserves, seem promising in theory but will need to be open to independent verification, including information on beneficial ownership of real assets on the blockchain (as opposed to information available only on private databases that can be manipulated by individual parties at will).

Regulated players need to offer a balance between ease-of-use and safety. Assets need to be kept safe through custody solutions that have comprehensive control frameworks in place, so that malicious internal or external actors are not allowed to move, steal, or hack into customer wallets and funds. This needs to be combined with tried and tested technology solutions such as a Hardware Security Modules (HSM) with security and redundancy features. Private keys should never be exposed to custodian employees or third parties. Particular attention should also be paid to disaster recovery and overall business continuity frameworks to combat the creation of back-door to accessing assets.

KEY TAKEAWAYS

- The entire FTX failure was in essence caused by unchecked counterparty credit risk, the lack of strong corporate governance principles and a resultant loss of trust. It is not the result of intrinsic deficiencies of blockchain technology or its use cases.

- The intrinsic values of digital assets and blockchain technology continue to be an important cornerstone for the long-term growth of the industry.

- The collapse of FTX has proven, once again, that carefully chosen regulated partners are essential gatekeepers of the entire ecosystem.

- An even global regulatory playing field is a key factor in ensuring that such incidents can be effectively prevented in the future. Existing financial standards of the financial industry need to be consistently applied at a global level and room for regulatory arbitrage needs to be minimized at all costs.

- Digital assets are the financial instruments of tomorrow and should therefore be managed by regulated financial intermediaries that have the required expertise and ethics required to safekeep customer assets.

About the Crypto Finance Group

The Crypto Finance Group - comprising two FINMA-regulated financial institutions and part of Deutsche Börse Group - offers professional digital asset solutions. This includes one of the first FINMA-approved securities firms with 24/7 brokerage services, custody, infrastructure, and tokenisation solutions for financial institutions, as well as the first FINMA-approved manager of collective assets for crypto assets, with an active, rules-based and index-based alternative investment fund offering, including the first Swiss crypto fund. The Crypto Finance Group is headquartered in Switzerland and has a regional presence in Singapore and Germany. Since its founding in 2017, the company has received numerous awards, including Crypto Valley Top 50 Blockchain Company and winner of the Swiss FinTech Award 2019.

For more information, please visit: cryptofinance.ch

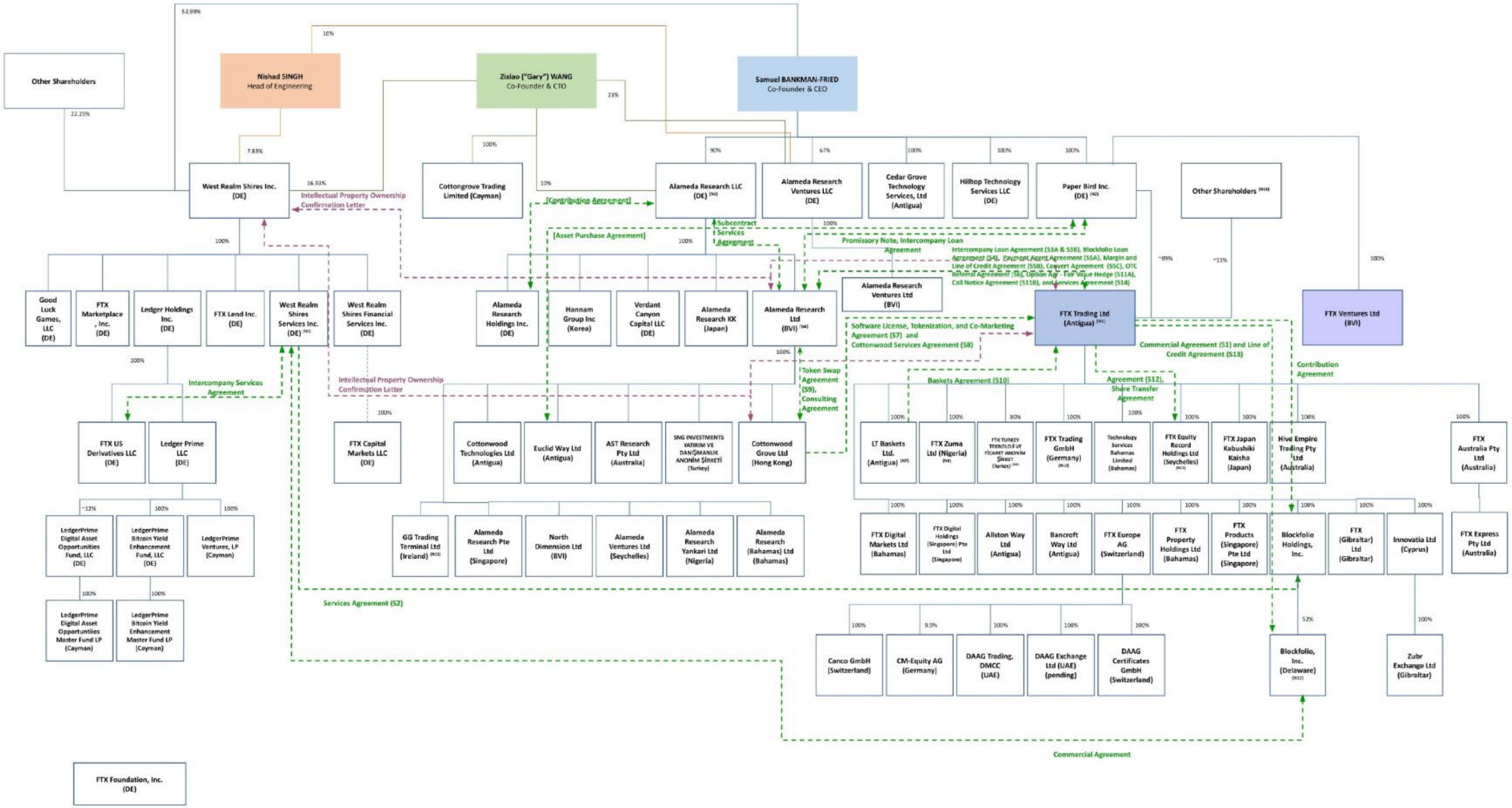
Disclaimer

APPENDICES

<u>Annex 1:</u> List of 134 FTX-bankrupt companies

Alameda Aus Pty Ltd/ 2. Alameda Global Services Ltd./ 3. Alameda Research (Bahamas) Ltd/ 4. Alameda Research Holdings Inc./ 5. Alameda Research KK/ 6. Alameda Research LLC/ 7. Alameda Research Ltd/ 8. Alameda Research Pte Ltd/ 9. Alameda Research Yankari Ltd/ 10. Alameda TR Ltd/ 11. Alameda TR Systems S. de R. L./ 12. Allston Way Ltd/ 13. Altalix Ltd/ 14. Analisya Pte Ltd/ 15. Atlantis Technology Ltd. / 16. B for Transfer Egypt / 17. B Payment Services Nigeria / 18. B Transfer Services Ltd / 19. B Transfer Services Ltd. UAE / 20. B Transfer Services Uganda / 21. Bancroft Way Ltd / 22. BitPesa Kenya Ltd. / 23. BitPesa RDC DARL / 24. BitPesa Senegal Ltd. / 25. BitPesa South Africa / 26. BitPesa Tanzania Ltd. / 27. BitPesa Uganda Ltd. / 28. Bitvo, Inc. / 29. Blockfolio Holdings, Inc. /30. Blockfolio, Inc./ 31. Blue Ridge Ltd / 32. BT Payment Services Ghana / 33. BT Payment Services South Africa / 34. BT Payments Uganda / 35. BT Pesa Nigeria Ltd. / 36. BTC Africa S.A. / 37. BTLS Limited Tanzania / 38. Cardinal Ventures Ltd / 39. Cedar Bay Ltd / 40. Cedar Grove Technology Services, Ltd / 41. Clifton Bay Investments LLC / 42. Clifton Bay Investments Ltd / 43. CM-Equity AG / 44. Corner Stone Staffing / 45. Cottonwood Grove Ltd / 46. Cottonwood Technologies Ltd. / 47. Crypto Bahamas LLC /48. DAAG Trading, DMCC / 49. Deck Technologies Holdings LLC / 50. Deck Technologies Inc. / 51. Deep Creek Ltd / 52. Digital Custody Inc. / 53. Euclid Way Ltd / 54. Exchange 4Free Seychellen / 55. Exchange 4Free Australia Br. / 56. Exchange 4Free Ltd. / 57. Exchange 4Free South Africa Br. / 58. Exchange 4Free Swiss Branch / 59. Finfax Company / 60. FTX (Gibraltar) Ltd / 61. FTX Canada Inc / 62. FTX Certificates GmbH / 63. FTX Crypto Services Ltd. / 64. FTX Digital Assets LLC / 65. FTX Digital Holdings (Singapore) Pte Ltd / 66. FTX EMEA Ltd. / 67. FTX Equity Record Holdings Ltd / 68. FTX Europe AG / 69. FTX Exchange FZE / 70. FTX Hong Kong Ltd / 71. FTX Japan Holdings K.K. / 72. FTX Japan K.K. / 73. FTX Japan Services KK / 74. FTX Lend Inc. / 75. FTX Marketplace, Inc. / 76. FTX Products (Singapore) Pte Ltd/ 77. FTX Property Holdings Ltd / 78. FTX Services Solutions Ltd. / 79. FTX Structured Products AG / 80. FTX Switzerland GmbH / 81. FTX Trading GmbH / 82. FTX Trading Ltd / 83. FTX TURKEY TEKNOLOJİ VE TİCARET ANONİM ŞİRKET / 84. FTX US Derivatives LLC / 85. FTX US Services, Inc. / 86. FTX US Trading, Inc / 87. FTX Vault Trust Company / 88. FTX Ventures Ltd / 89. FTX Ventures Partnership / 90. FTX Zuma Ltd / 91. GG Trading Terminal Ltd / 92. Global Compass Dynamics Ltd. / 93. Good Luck Games, LLC / 94. Goodman Investments Ltd. / 95. Hannam Group Inc / 96. Hawaii Digital Assets Inc. / 97. Hilltop Technology Services LLC / 98. Hive Empire Trading Pty Ltd / 99. Innovatia Ltd / 100. Island Bay Ventures Inc / 101. K-DNA Financial Services Ltd / 102. Killarney Lake Investments Ltd / 103. Ledger Holdings Inc. / 104. LedgerPrime Bitcoin Yield Enhancement Fund, LLC / 105. LedgerPrime Bitcoin Yield Enhancement Master Fund LP / 106. LedgerPrime Digital Asset Opportunities Fund, LLC / 107. LedgerPrime Digital Asset Opportunities Master Fund LP 7 108. Ledger Prime LLC 7 109. LedgerPrime Ventures, LP / 110. Liquid Financial USA Inc. / 111. LiquidEX LLC / 112. Liquid Securities Singapore Pte Ltd / 113. LT Baskets Ltd. / 114. Maclaurin Investments Ltd. / 115. Mangrove Cay Ltd / 116. North Dimension Inc / 117. North Dimension Ltd / 118. North Wireless Dimension Inc / 119. Paper Bird Inc / 120. Pioneer Street Inc. / 121. Quoine India Pte Ltd / 122. Quoine Pte Ltd / 123. Quoine Vietnam Co. Ltd / 124. SNG INVESTMENTS YATIRIM VE DANIŞMANLIK ANONİM ŞİRKETİ / 125. Strategy Ark Collective Ltd. / 126. Technology Services Bahamas Limited / 127. Tigetwit Ltd / 128. TransferZero / 129. Verdant Canyon Capital LLC / 130. West Innovative Barista Ltd. / 131. West Realm Shires Financial Services Inc. / 132. West Realm Shires Services Inc. / 133. Western Concord Enterprises Ltd. / 134. Zubr Exchange Ltd

Annex 2: FTX's highly complex legal and corporate structure [27]



27 Financial Times – link

Annex 3: The timeline of events that led to the collapse of the entire FTX ecosystem