GBBC
Global Blockchain Business Council

STRONGER TOGETHER:
REBUILDING AFTER THE MAELSTROM OF MARKETS

GBBC 2022 Annual Report

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BOARD CHAIR UPDATE

DAVID TREAT
SENIOR MANAGING DIRECTOR AND GLOBAL METAVERSE
CONTINUUM BUSINESS GROUP & BLOCKCHAIN LEAD
ACCENTURE

Iconic duos are recognized universally: peanut butter and jelly, copy and paste, Romeo and Juliet, and now, blockchain and extended reality. Two technologies joined this year, creating an inflection point that will usher in an incredible new wave of innovation. Blockchain's killer apps are revolutionizing our systems of record as the 'Internet of Ownership' through the tokenization of identity, money, and objects. Our systems of experience are being redefined, moving us towards the 'Internet of Place,' with advancements in virtual and augmented reality hardware and platforms. Together they are ushering in a new digital world, the 'Metaverse'.

Originally, our digital world was something that we drove to because computers started as the size of buildings. It was then something that we walked to, with the advent of the home PC. I still remember my first home PC, the IBM PC Jr.! Now, our primary access point is carried in our pockets or, more likely, is glued to our hands. I recently watched one of my kids attempt to tie his shoes with one hand while watching a video on his phone with the other! Despite this significant innovation, the digital world has remained a two-dimensional experience seen through a flat pane of glass; served up for a single user who is largely alone in their experience. The recent leaps forward in virtual and augmented reality have catalyzed a new potential. The digital world is becoming deeply collaborative as 'multi-player,' and is no longer just for the gaming community. With two screens (one for each eye) and advancements in 3D displays, we will now begin to experience computers everywhere, overlaid on our physical reality and within virtual worlds.

Given the unlimited potential of digital experiences, why would we cling to flat, 2D, singular experiences for a moment longer than necessary?

Our focus as the GBBC is of course, blockchain. This technology continues to transform the systems of record for our digital world through the tokenization of identity, money, and objects and shared data infrastructure. While we have made significant progress establishing the Internet of Ownership and the functional layers that empower our growing token-based capabilities, we need to bring it all together through wallet infrastructure. Improvements in wallet infrastructure will not only enable better user experiences, but also enable us all to bring our identity, money, and objects across digital spaces.

For mass adoption of blockchain and tokenization to occur, the experience layer must exude simplicity, trust, and joy. Extended reality and the Internet of Place provide a rich palate of tools to accomplish that loveable experience; marrying this experience with the known requirements of enterprise grade blockchain systems will enable a more impactful, large-scale transformation of our digital world.

Reflecting on the past 12 months as the GBBC Board Chair, I have tremendous pride in the immense amount of quality work and collaboration from our community. We have driven incredible growth and progress, from launching GSMI 3.0 to our merger with Global Digital Finance (GDF), creating GBBC Digital Finance. We now have more than 500 institutional members and 200 ambassadors and operate across 100 jurisdictions and disciplines. In addition to the energy, momentum, community engagement, and outcomes, we are very fortunate to gain incredible talent such as Lawrence Wintermeyer and Emma Joyce. Our combined expertise, experience, and energy is creating a more powerful and impactful organization.

As we look ahead to the next year, we will continue to focus on innovating and building responsibly. We at the GBBC understand what it means to build trusted, robust, reliable, regulated systems with recourse and resiliency at the foundation. We believe that by following the principles of partnership, engagement, and advocacy, we can create a brighter future for everyone. As always, we are looking forward to continuing our journey into the future, and thank you all for your continued support! ■

CEO UPDATE

SANDRA RO

2022 – what a year. So much promise and hope. So many challenges.

In anticipation of preparing for this year's CEO update, I decided to take stock of GBBC's nearly six-year history and reread past GBBC annual reports:

- January 2018: 'Global Challenges: Blockchain Solutions' in collaboration with Coin Center and Covington
- January 2019: 'Beyond the Hype: Building Blockchains for the Real World'
- January 2020: 'Chain Reaction: Blockchain Enters the Mainstream'
- January 2021: 'Build Back Better: Digital Updates for Today's Challenges'
- January 2022: 'Coming Together: Forging Collaborations in an Era of Profound Change'

This annual report, '**Stronger Together: Rebuilding after the Maelstrom of Markets**' continues to demonstrate our members' creativity, determination and resilience.

Conclusion? We have come a long way. We have been through ups and downs, and we remain committed to our mission of education, partnership and advocacy as a community of changemakers and leaders. This challenging time is no different. We remain steadfast, reliable and true to our values of integrity, transparency, and collaboration.

What did GBBC learn and do in 2022?
The questions we ask every day: how can we create value and opportunities for the future?
What do we need to bring the private sector and governments together to help build sustainable, equitable societies?

Trust. Integrity. Reliability. Security.

The GBBC initiatives and milestones of 2022 were driven with these questions and with these values in mind.

GSMI 3.0 | AMBASSADORS' PROGRAM | FOOD FOR CRISIS | 76 EVENTS | 3 REPORTS

We scaled our organization with the merger with Global Digital Finance, now called GBBC Digital Finance (GDF):

Special thank you to GDF founders Lawrence Wintermeyer and Simon Taylor for their confidence and trust to bring these organizations together. Further, thank you to the GDF board of 2022: Emma Joyce, Jeff Bandman, Greg Medcraft, Dawn Stump, Dimitrios Psarrakis, and Abdul Haseeb Basit. And thank you to the 2022 GBBC Board of Directors: Dave Treat (Chair), Michele Curtoni, John deVadoss, Yuval Rooz and Staci Warden, who also voted in confidence of the merger and announcement in May 2022. Our merger brought together two world class organizations to build a 500+ strong institutional membership, with 177 ambassadors across 94 jurisdictions and disciplines.

Together we are stronger.

Our membership grew, as did our board
GBBC continues to scale our community to more than 500 institutional members across more than 100 jurisdictions, representing 39% increase in memberships since last year. We expect to continue this momentum to reach 550 members in 2023.

GBBC'S BOARD OF DIRECTORS

DAVID TREAT
SENIOR MANAGING DIRECTOR AND GLOBAL METAVERSE CONTINUUM BUSINESS GROUP & BLOCKCHAIN LEAD, ACCENTURE; BOARD CHAIR, GBBC

YUVAL ROOZ
CO-FOUNDER & CEO, DIGITAL ASSET; BOARD MEMBER, GBBC

STACI WARDEN
CEO, ALGORAND FOUNDATION; BOARD MEMBER, GBBC

DONNA PARISI
GLOBAL HEAD OF FINANCIAL SERVICES AND FINTECH, SHEARMAN & STERLING; BOARD MEMBER, GBBC

JOHN DEVADOSS
PRESIDENT, NGD ENTERPRISE; BOARD MEMBER, GBBC

LAWRENCE WINTERMEYER
BOARD CHAIR, GBBC DIGITAL FINANCE

GBBC'S MEMBERS BY THE NUMBERS

500+
INSTUTIONAL MEMBERS

100+
JURISDICTIONS

Lawrence Wintermeyer, GBBC Digital Finance Board Chair, and **Donna Parisi**, Partner and Global Head of Finance and FinTech at Shearman & Sterling LLP, joined the GBBC Board of Directors.

Focus on global policy engagement:
Not only have I relocated to DC, this year we also announced our global policy team, who will lead the GBBC's engagement on the ongoing policy and regulatory developments across key jurisdictions.

The number one question when GBBC meets with government officials, regulators, and corporate executives around the world is: what are the real use cases in blockchain? This is usually followed by: who is really implementing it? The good news is that there are many examples from which to draw, as provided in this Annual Report, not only in GBBC's initiatives, but as demonstrated by our driven community.

2023: New Decade – Growing, Maturing Industry
We remain focused on creating a democratized opportunity set for many and will be focusing on delivering education and policy sessions in parts of South America, Southeast Asia, India, South Africa, and the Caribbean, as well as working closely with like-minded social networks and borderless groups.

The message that GBBC and its members, supporters and Ambassadors are encouraged to share is:

- Blockchain technology is a useful tool to enable and increase trust in a world where distrust, misinformation, and manipulation create uncertainty, instability, and sometimes, chaos.
- Blockchain technology cannot solve all problems, but it can shed light in areas where opacity or confusion over information reigns. The potential opportunity set is staggering; coupled with other emerging technologies, blockchain has applications in nearly every industry, from media to supply chains, to governments, financial

GLOBAL POLICY TEAM

EMEA:

LAVAN THASARATHAKUMAR
GOVERNMENT AND REGULATORY AFFAIRS DIRECTOR—EMEA, GDF

DIMITRIS PSARRAKIS
BOARD MEMBER, GDF

LAWRENCE WINTERMEYER
CHAIR OF BOARD, GDF

EMMA JOYCE
CEO, GDF

ABDUL HASEEB BASIT
CFO, GDF

APAC:

GREG MEDCRAFT
BOARD MEMBER, GDF

MALCOLM WRIGHT
GOVERNEMENT AND REGULATORY AFFAIRS DIRECTOR—APAC, GDF

AMERICAS:

ANDREA TINIANOW
HEAD OF POLICY - AMERICAS, GBBC

ANDREW SMITH
GOVERNMENT AND REGULATORY AFFAIRS DIRECTOR—AMERICAS, GDF

DAWN STUMP
BOARD MEMBER, GDF

SANDRA RO
CEO, GBBC

SUMMER SINGH
POLICY AND COMMUNICATIONS LEAD, GBBC

DINA ELLIS-ROCHKIND
POLICY ADVISOR—AMERICAS, GDF

services, non-governmental organizations, and non-profits.

- The digitalization of nearly everything to tokenization to data as 'value' will continue to evolve and impact industries and communities.
- Web2 meets Web3 will allow industries, governments to interact with customers, fans, and supporters in ways unimaginable today.

With deep gratitude to our many GBBC Members, Ambassadors, Observing Members, Sponsors, and supporters from around the world, thank you for dreaming of a better society, daring to be different, and collaborating with us to show the world how humanity can use technology for good.

How do we get there? We get there by sharing, speaking, and collaborating with each other. The profound paradigm shift blockchain enables is toward a society with fewer zero-sum scenarios and more collaboration.

Together, in 2023, may we be the standard bearers and may we spearhead the change needed to create more secure, equitable, and functional societies around the globe. #StrongerTogether ■

GBBC'S THOUGHT LEADERSHIP

REPORTS

FROM FINANCIAL SERVICES TO BLOCKCHAIN AND CRYPTO: HOW EXECUTIVES ARE MAKING THE SWITCH

WITH HEIDRICK & STRUGGLES

GBBC collaborated with Heidrick & Struggles to survey industry executives to understand their reason for adopting blockchain. This report showcases those survey results and provides considerations for those contemplating joining a blockchain or crypto company.

THE FUTURE OF URBAN LIVING PART II: THE CITY OF THE HAGUE, NETHERLANDS

WITH THE HAGUE

GBBC's Open-Source Ideas Report, in collaboration with The Hague, delves into innovation initiatives in The Hague and how blockchain technology is being piloted in both the public and private sectors.

VOLUNTARY ECOLOGICAL MARKETS (VEM) OVERVIEW - VOLUME 2

This InterWork Alliance (IWA) report covers the voluntary ecological markets ecosystem as it relates to tokenization, looking at the further collaboration needed to align around common governance standards, specifications, and classification systems.

MEDIA MOMENTS

EXAMINING DIGITAL ASSETS: RISKS, REGULATION, AND INNOVATION

GBBC CEO Sandra Ro speaks at the U.S. Senate Committee on Agriculture, Nutrition, and Forestry

WHERE ARE ALL THE BLOCKCHAIN COURSES?

GBBC Head of Research and Sustainability Diana Barrero Zalles speaks with Hyperledger Latinoamerica

TRANSITIONING FROM TRADFI TO CRYPTO

GBBC Board Member Staci Warden is interviewed on FinTech.TV

HOW THE GBBC HELPS SOCIETY

GBBC CEO Sandra Ro is interviewed by Vince Molinari, FinTech.TV

WHITE HOUSE EXECUTIVE ORDER ON CRYPTO

GBBC CEO Sandra Comments on the White House Executive Order with FinTech.TV

TECH INNOVATION TO END HUNGER

Lawrence Wintermeyer writes in Forbes on the Food for Crisis programme and scaling blockchain solutions with the UN World Food Programme

GLOBAL STANDARDS MAPPING INITIATIVE (GSMI) 3.0

The GSMI returns in its third year with the most comprehensive effort yet to map and analyze the blockchain and digital assets landscape across six key areas:

1. Digital Assets Regulation Map
2. Taxonomy
3. Technical Standards
4. Blockchain & Digital Assets Landscape
5. University Courses & Degree Programs
6. Fact Cards on Key Themes

210 JURISDICTIONS

180+ DEFINITIONS

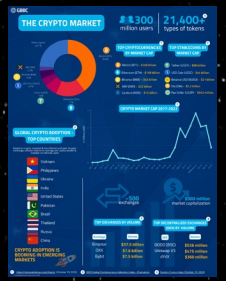
50 STANDARDS BODIES

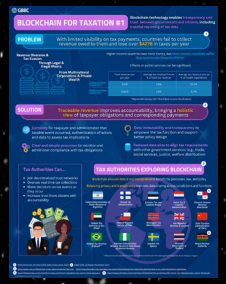
2000+ STAKEHOLDERS

700+ UNIVERSITY COURSES

GSMI 3.0 builds upon GSMI 2.0 - released in 2021 - by mapping, cataloging, and analyzing data to provide a holistic view of the industry's global activity. This year we provided snapshots with interactive data tables and visuals.

Through this initiative, GBBC had the pleasure of partnering with the 2022 IFC-Milken Institute Capital Market Scholars Program, as well as our academic partners, the University of Zurich; the University of Arkansas – Sam M. Walton College of Business; Singapore Management University; Nagoya University of Commerce and Business, and the University of Birmingham.





See more of the fact cards here.

GSMI REPORTS AND RESOURCES ARE CROWD-SOURCED AND OPEN ACCESS, INTENDED TO SERVE AS A BASELINE FOR THOUGHTFUL AND WORKABLE FRAMEWORKS, AS WELL AS COMMON STANDARDS TO ENABLE ADOPTION, INCENTIVIZE FURTHER INNOVATION, AND ADVANCE COLLABORATION.

With a focus on sustainability, GSMI 3.0 also maps regulatory developments and efforts to improve governance, bringing clarity to consumer and investor protections, and addressing energy consumption concerns. A section of the landscape is devoted to projects using blockchain and digital assets to advance sustainability, and a subset of the taxonomy is also devoted to environmental terms.

Finally, GSMI 3.0 includes a detailed report from our partners in China on the latest status of blockchain developments in the country, spanning policy, technical standards and requirements, and domestic applications that have expanded significantly as part of the digital economy.

Looking ahead, we will continue to update the datasets as this space continues to expand to shape many aspects of our civilization. We welcome feedback and additional contributions as we build upon this release. The best solutions to complex global problems are achieved when diverse stakeholders collaborate, bringing their different perspectives and local knowledge to the forefront. Blockchain and digital assets, through democratization and transparency of data, have the potential to address the world's most pressing needs. We hope that the resources contained in GSMI can support collaborative solutions that will benefit all. ■

INTERNATIONAL JOURNAL OF BLOCKCHAIN LAW

GBBC's Legal & Regulatory Group (LRG), made up of leading global law firms, studies and anticipates regulatory challenges and changes facing the ecosystem. This year, GBBC's LRG released Volumes II, III, and IV of the International Journal of Blockchain Law (IJBL), an open access online journal of blockchain law published quarterly, written and edited by lawyers, and designed to help interested business and non-legal communities better understand the world of blockchain and digital assets.

In 2022, Volume II provided an array of articles on topics ranging from decentralized finance (DeFi) in Vietnam to the practical challenges of smart contracts. Volume III covered the complex world of stablecoins, decentralized autonomous organizations (DAO) governance, DeFi regulation, what data privacy means in the metaverse, UniSwap's state of decentralization, and Lummis-Gillibrand's proposed crypto legislation. Volume IV expands on the aftermath of the Ethereum Merge, cryptoasset and consumer protection, and smart contracts.

"The International Journal of Blockchain Law (IJBL) is the outcome of a very productive partnership between seven attorneys, who serve as editors, and the GBBC. I strive to bring together varied critical writers to provide insights into appealing legal topics globally. We also invite regulators to share their views on captivating issues, so all parties can better understand each other."

IJBL Editor-In-Chief, Matthias Artzt, Senior Legal Counsel, Deutsche Bank

EXPLORE IJBL

VOLUME II

VOLUME III

VOLUME IV

IJBL EDITORS

EDITOR-IN-CHIEF
DR. MATTHIAS ARTZT
SENIOR LEGAL COUNSEL
DEUTSCHE BANK

LOCKNIE HSU
PROFESSOR
SINGAPORE MANAGEMENT UNIVERSITY

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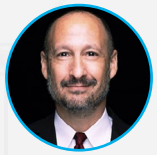
THIAGO LUÍS SOMBRA
PARTNER
MATTOS FILHO

ANDREA TINIANOW
CHIEF LEGAL OFFICER & HEAD OF POLICY - AMERICAS
GBBC

JAKE VAN DER LAAN
CHIEF INFORMATION OFFICER & DIRECTOR
FINANCIAL AND CONSUMER SERVICES COMMISSION, NEW BRUNSWICK, CANADA (FCNB)



GARY D. WEINGARTEN
ASSISTANT VICE PRESIDENT, DATA PROTECTION OFFICER
NOTARIZE, INC

INTERWORK ALLIANCE

The InterWork Alliance (IWA), an initiative of the Global Blockchain Business Council (GBBC), empowers organizations to adopt and use token-powered services in their day-to-day operations, across use cases and networks, bringing inclusivity to globally distributed applications. Founded in 2020, and merged in 2021 with the GBBC, the leading global industry association for the blockchain ecosystem, IWA is a key rallying point for organizations to collaborate on market-driven interwork standards and taxonomy to transform digital interchanges of value.

Following the merger with GBBC, the IWA has continued its efforts to drive tokenization standards forward through the Token Taxonomy Framework (TTF), a common language framework for defining the structure of tokens and how they operate in their ecosystem. The IWA maintains a GitHub repository and a Token Designer Tool to allow for the community to use the code and standards derived from the TTF to explore tokenization in their daily business operations. By providing a common language for both business- and technology-oriented individuals to discuss tokenization, the IWA seeks to promote interoperability by providing agreed upon token definitions and guidance on how those tokens can be used.

IWA LEADERSHIP COUNCIL

MARLEY GRAY
PRINCIPAL TECHNICAL PROGRAM MANAGER, MICROSOFT CLOUD FOR SUSTAINABILITY

MICHAEL KLEIN
MANAGING DIRECTOR, ACCENTURE BLOCKCHAIN TECHNOLOGY

JOHN DEVADOSS
PRESIDENT, NGD ENTERPRISE

ERIC SARANIECKI
CO-FOUNDER & HEAD OF STRATEGIC INITIATIVES, DIGITAL ASSET

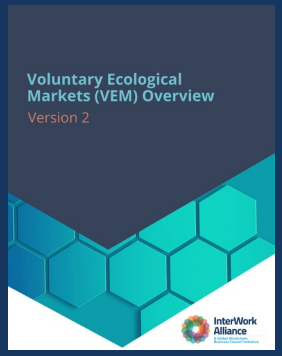
SANDRA RO
CEO, GLOBAL BLOCKCHAIN BUSINESS COUNCIL

LOOKING AHEAD TO 2023, IWA WILL FOCUS ON:

- Continuing to drive tokenization standards forward in key areas related to sustainability
- Exploring new use cases for the Token Taxonomy Framework (TTF)
- Driving adoption of the IWA standards and the TTF
- Promoting implementations that use the TTF in their business
- Grow the TTF Open Source Community through GBBC, GDF, and IWA channels
- Invest in new channel growth and communities to scale TTF standards

2022-2023 IWA MILESTONES AND HIGHLIGHTS

- IWA's Voluntary Carbon Markets (VCM) Taskforce releases version 2 of the Voluntary Ecological Markets (VEM) Overview, defining tokenization standards and workflows for VEM use cases
- IWA creates two new taskforces focused on tokenization for sustainability use cases: Carbon Emissions and Energy
- Making it real: Several implementations built using the IWA's tokenization standards have been developed and are providing feedback on how the standards work in practice



Read the Voluntary Ecological Markets (VEM) Overview - Version 2 report here

POST-TRADE DISTRIBUTED LEDGER GROUP

The GBBC's Post-Trade Distributed Ledger (PTDL) Group, which serves as a rallying point for prominent financial institutions under the aegis of the GBBC, would like to thank the financial institutions, market infrastructure players, fintech companies, and government officials who presented during the PTDL's 2022 meetings to discuss distributed ledger technology applications and regulatory developments in financial services.

Moving into 2023, the PTDL will sit with GBBC Digital Finance (GDF), chaired by CEO, Emma Joyce. GDF is the financial services arm of GBBC, and will continue to drive discussion and collaboration in the community in the monthly PTDL meetings.

2022 PTDL LEADERSHIP COMMITTEE

ANDRE PORTILHO
HEAD OF DIGITAL ASSETS, BTG PACTUAL

KERRY DENERSTEIN
PUBLIC POLICY LEAD, CLS GROUP

HANNAH MEAKIN
PARTNER, NORTON ROSE FULBRIGHT

MATTHEW SHEPHERD
VP STRATEGY, RESEARCH, & DEVELOPMENT, WELLS FARGO

MICHELE CURTONI
HEAD OF STRATEGY, SIX DIGITAL EXCHANGE

SANDRA RO
CEO, GBBC

THANK YOU 2022 PTDL PRESENTERS:

Banco de Central Brasil
Bank of England
Capital Markets Authority of Kenya
Circle
Commodity Futures Trading Commission (CFTC)
Copper.co
The Digital Dollar Project
European Parliament
European Banking Authority
Evertas
Fiat Republic
Hedera
Hellenic Association of Treasurers
Lukka
Nasdaq
Norton Rose Fulbright
NYCA Partners
Organisation for Economic Co-operation and Development (OECD)
Oesterreichische Nationalbank
Provenance Blockchain Foundation
Regulated Liabilities Network
SBI Digital Assets
Virtual Assets Regulatory Authority (VARA)

GBBC'S 2022 EVENTS

Following the challenges of the pandemic in 2021, the GBBC focused on convening community and fomenting dialogue. In 2022, GBBC produced and co-produced:

76

PANELS AND SESSIONS

WITH SPEAKERS FROM

50

JURISDICTIONS

BLOCKCHAIN CENTRAL DAVOS

Thanks to the generous support of our sponsors, the premier in-person gathering of leaders across blockchain, digital asset, technology, and government unpacked the most-pressing developments and challenges facing the ecosystem to unite communities and forge solutions following the pandemic.

BLOCKCHAIN CENTRAL UNGA

Returning for in-person programming alongside the United Nations' 77th Annual General Assembly, and thanks to the generous support of Shearman & Sterling, more than 230 attendees safely gathered in New York City for 15 panels and sessions focused on the role of community and technology in accelerating progress towards the United Nations Sustainable Development Goals. The event's sessions were livestreamed, attracting ~1.9K unique online viewers.

GBBC VIRTUAL CONVENINGS

This year, the GBBC community hosted members-only virtual members forums, university dialogues, and discussions from the Legal & Regulatory group across EMEA, APAC, and the Americas with leaders in the digital assets space, highlighting the thoughtful initiatives and projects within our community this year.

A FEW PLACES YOU MAY HAVE SEEN US

Whether online, in person, or in the press, GBBC's executive leadership participated in numerous global events and media appearances throughout 2022. Here are a few of the places where you might have seen us:

SINGAPORE FINTECH FESTIVAL

The Members' Dinner convened the Monetary Authority of Singapore (MAS), Financial Services Regulatory Authority (FSRA), the Abu Dhabi Global Market (ADGM), the Financial Action Task Force (FATF), and the U.S. Securities and Exchange Commission (SEC), to talk about cross-border collaboration supporting the digital assets ecosystem.

GBBC also co-hosted a lunch with Oliver Wyman joined by Superintendent Adrienne Harris, New York State Department of Financial Services (NYDFS), to discuss how crypto regulation plays a key role in global coordination, especially on pressing global issues like climate change.

NECKERVERSE GBBC 2022

To celebrate its conception during the Blockchain Summit on Sir Richard Branson's Necker Island, GBBC gathered changemakers to discuss empowering initiatives and lead thought discussions on topics facing the digital assets industry.

14
GLOBAL SUMMITS

30
DISTINGUISHED SPEAKERS

860+
GBBC COMMUNITY PARTICIPANTS

15.5
HOURS OF DISCOURSE

GBBC'S AMBASSADORS

SINCE ITS INCEPTION, THE GBBC HAS RELIED ON ITS GLOBAL AMBASSADOR NETWORK TO EXPAND OUR GLOBAL COMMUNITY, PRESENCE, AND IMPACT.

GBBC AMBASSADORS

In 2022, the GBBC ambassador cohort expanded from 130 in 2021 to 180, spanning six continents and 96 jurisdictions. We also expanded the areas of expertise to include Arts, Media, & Entertainment; Buy-Side; Decentralized Finance (DeFi); Education; Environment & Sustainability; Global Standards Mapping Initiative (GSMI); Healthcare; Media; Science & Technology; and Security & Resilience.

For 2023, we are expanding even further to include Financial Services, Metaverse, Policy & Regulation, and Tech Ethics. The new jurisdictions include Greenland, Honduras, Indonesia, Jordan, Libya, Liechtenstein, Oman, Panama, Portugal, Saudi Arabia, Sierra Leone, Thailand, and Zimbabwe.

Blockchain technology's development and progress is rooted in mass, global collaboration. Our 2023 cohort of Ambassadors exemplifies the global community required to develop the next multi-trillion-dollar industry and build more secure, equitable, and functional societies during this watershed moment in history. The GBBC is honored and humbled to work with such a diverse group of luminaries.

Read the full list of ambassadors here gbbcouncil.org/about

230

AMBASSADORS

108

JURISDICTIONS AND DISCIPLINES

FOOD FOR CRISIS: A WEB3 INITIATIVE

At the 2022 UN General Assembly, we announced a plan for Food for Crisis, a joint initiative between the UN's World Food Programme (WFP) and GBBC Giving. This initiative aims to address the global hunger crisis by raising awareness, fundraising for the WFP, and spurring innovation leading to increased efficiency and transparency of humanitarian aid.

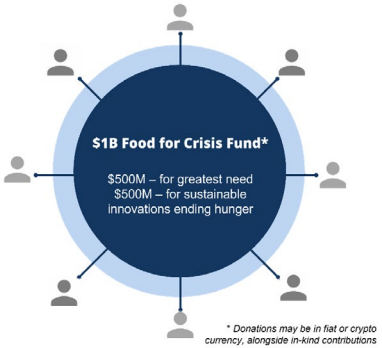
Food for Crisis came about due to the recent significant increase in acute hunger globally: various challenges, including the war in Ukraine, climate change, the COVID-19 pandemic, and inflation, have led to 345 million people marching towards starvation (more than double the 135 million people in 2019).

The WFP, which reached 128 million people with food and life-saving assistance in 2021, is dedicated to achieving Zero Hunger – the UN's global goal to end hunger by 2030. The WFP's Innovation Accelerator helps work towards Zero Hunger by sourcing, supporting, and scaling high-impact innovations that allow the WFP to leverage advances in digital innovation. GBBC Giving, with its focus of "blockchain for good," saw a unique opportunity to leverage its capabilities to partner with the WFP Innovation Accelerator. The two organizations, supported by management consultancy Oliver Wyman, joined together this year to form the Food for Crisis initiative.

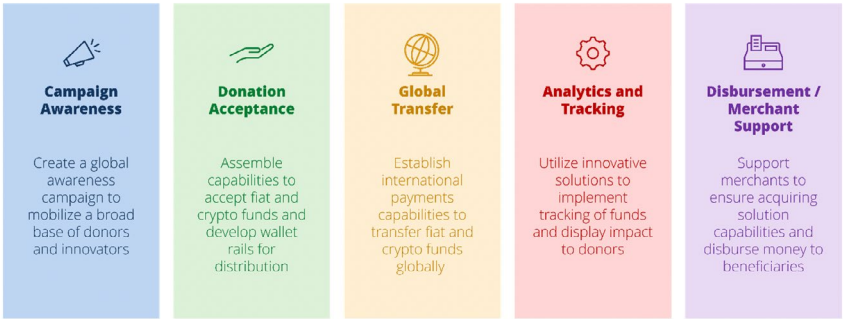
With the power of data in WFP's Hunger Map, and blockchain to track donations and food supplies, the intended result can be a powerful tool that provides donors with visibility on their impact. The level of transparency for a global deployment of this scale is an unprecedented development that can hopefully incentivize many more to come. Food for Crisis will target one of the main challenges the WFP faces in raising funds: the lack of easy-to-consume information as to how donations are used, leading to low trust from potential donors. The initiative will aim to address this challenge via the development of a solution that leverages Web2 and Web3 tools, including crypto and blockchain-based solutions, to improve donation visibility and achieve trust and transparency.

Food for Crisis aims to raise funds for the WFP, targeting a pilot fund of $100 million in donations (in fiat, crypto, or donations in-kind) by the end of 2024, with a moonshot target of $1 billion if the pilot succeeds. Half of these funds will be allocated to delivering immediate aid to regions most in crisis, and half will be used to develop the solutions to increase trust and visibility. The work will help save lives, as well as invest in innovations for a sustainable future. We are calling all supporters interested in collaborating to be part of this life changing initiative, and we are grateful for those who have already committed to join us! ■

345 million people are marching towards starvation



Five "pillars" of work



GDF

GBBC DIGITAL FINANCE

2022 | Year in Review

WHILE CRYPTO HAS FALTERED, THE TOKENIZATION OF THE REAL ECONOMY HAS BEGUN IN EARNEST

Chair's Foreword

Lawrence Wintermeyer
Chair of Board
GDF

2022 proved to be one of the most challenging years for global markets with high inflation, record energy prices, and the worst performance of the US stock market since the 2008 financial crisis. Crypto fared no better and followed markets down with a string of crises across the year from the Luna stablecoin implosion to the ignominious bankruptcy of FTX, the resulting contagion, and failure of several crypto firms.

GDF is disappointed by the FTX bankruptcy and its impact on customers, counterparties, and market integrity. In market downturns the "flight to quality" and shakeout of organizations that are over-leveraged or do not have the working capital to sustain themselves becomes evident. The FTX bankruptcy may very well lead to profound consequences for the impending regulation of crypto in major markets.

The GDF member-led Advisory Council is now looking at ways to improve GDF Codes to better equip crypto exchanges with higher conduct standards for consumer and counterparty protection. Unfortunately, codes, standards, policies, and regulations will not deter individuals' intent on circumventing controls and committing fraud.

We remain vigilant and are working together with the Advisory Council to ensure GDF has the support in place to respond to member and community needs and priorities in 2023. We are also committed to moving the GDF Code further to a fully open-source public standard in 2023 so that any firm, association, or agency interested in promoting and adopting it can do so.

We all have an obligation to reclaim the high-ground and help to restore the lost trust of our customers and stakeholders across the global crypto market through demonstrating exemplary conduct.

The GDF Global Financial Institution Cryptoasset working group has just completed drafting the Global Standard for Crytpoassets, a well-timed set of principles that are intended to promote a robust, fair, liquid, open, and appropriately transparent market. The standard is now in open public consultation until February 2023 in advance of regulatory purview and public release. Institutions committing to this standard will help to ensure that a diverse set of market participants, supported by resilient infrastructure, are able to transact in crypto confidently and effectively at competitive prices that reflect available market information and in a manner that conforms to acceptable standards of behavior.

A big theme in 2022 was "The Asset Managers are Coming." Several of the largest buy-side institutions are now engaged in the tokenization of billions of dollars of financial assets and are seeking to extend the tokenization of real assets beyond securities to real estate and commodities. 2022 saw a significant increase in projects around the tokenization of traditional asset classes. The GDF Private Markets Digitization Steering group made up of over 80 institutions worked to open up global digital distribution using the FinP2P open-source protocol.

The GDF DeFi working group report, Moving The Dialogue On Standards And Regulation Forward, published this year, is a call to action for industry and agencies to engage on and

commit to the development of regulatory nodes on protocols. In the short-term, the DeFi industry must focus on adopting the many standards already in use in the wholesale markets for anti-money laundering (AML)/know-your-customer (KYC), margin lending, third party data usage, and algorithmic finance.

Looking at the medium- to long-term, the community explores co-regulatory models and the opportunities to design regulator nodes in a decentralized autonomous organization (DAO), something which Abu Dhabi Global Markets (ADGM) also highlight in their contribution to this report.

The GDF Stablecoin Code refresh was released in the early autumn and served to further underpin the important role that asset backed and fully reserved stablecoins play in decentralized finance. Despite the crypto market turmoil of 2022, stablecoins set a record in total settlement volume this year, beating out most major credit card providers and demonstrating the importance of stablecoins in the development of Web3 and the future global payments system.

The economic and consumer benefits of digital payments have heightened the urgency of the central bank digital currency (CBDC) agenda with most central banks now engaged in CBDC projects. 2022 saw several Bank of International Settlements (BIS) Innovation Hub projects deliver. The U.S. Administration delivered a framework for a digital dollar, the European Central Bank (ECB) announced its commitment to investigating a digital Euro, and the UK has signaled the development of a digital pound.

While crypto has faltered in 2022, the tokenization of the real economy has begun in earnest.

Following the Ukraine Crisis earlier in 2022, GDF's Emergency Sanctions Summit in March saw hundreds of delegates in attendance and was followed up by a working group dedicated to Sanctions. This resulted in a Sanctions Primer report, which examines the operational components to sanctions compliance in the industry, as well as policy considerations for further mitigating sanctions evasion risks, and is supported by a Sanctions Hub on the GDF website.

The community response to sanctions was exceptional and demonstrated that the global crypto industry can come together to meet challenges of policymakers and law enforcement in line with a traditional global framework and objectives.

The fulfillment of members' and regulators' GDF 2022 priorities was evident in the continued prolific activities of member-led working groups with DeFi and the Stablecoins Code refresh. Significant work was also done in the AML working group on the Virtual Assets Due Diligence Questionnaire, developed with the Wolfsberg Questionnaire in mind. A new Digital Custody Working Group was kicked off jointly with the International Securities Services Association (ISSA). With over 20 firms contributing, the group is expected to deliver a report in early 2023.

Following regulatory roundtables, GDF submitted nine major regulatory consultations in different agencies and regions and chaired a member-only Markets in Crypto Assets (MiCA) Working Group to influence the Level 1 draft. With the bill now passed through the European Parliament, and MiCA expected to come into effect in 2024, the working group will continue to convene members to engage with the European Union (EU) on the Level 2 measures to be implemented as part of the legislation.

GDF conducted advocacy outreach missions in

Brussels, Washington, London, and Singapore.

The key message was the strength of the GDF membership in its dedication to collaborative policymaker and regulatory outreach, and the community's dedication to standards. In the U.S., the President's Executive Order kicked off the government-wide review of the digital asset ecosystem and GDF continued its engagement with U.S. agencies.

The GDF Regulators' Only Forum has extended its outreach to over 60 agencies and 170 delegates invitees. Our quarterly meetings saw presentations from GDF member working groups on sanctions and institutional standards; policymaker and regulatory presentations on MiCA Level 1; and jurisdictional best practices for exchange licensing.

GDF became an International Organization of Securities Commission (IOSCO) Affiliate Member in September, the first crypto and digital assets members association to do so, and we will focus on the IOSCO Crypto-Asset Roadmap working groups: Crypto and Digital Assets (CDA), and Decentralized Finance (DeFi) with a view of getting industry working even more closely with regulators.

Contributions to the this year's report from the Financial Stability Board (FSB) and the Organization for Economic Co-operation and Development (OECD) call for immediate action on global regulatory harmony as crucial to the development of safe and sustainable markets in digital finance. The Financial Action Task Force (FATF) reports on the work still to be done on the global implementation of the Travel Rule.

The Dubai Financial Services Authority (DFSA) and Virtual Assets Regulatory Authority (VARA) demonstrate the importance of ongoing industry engagement on behalf of regulators. Commissioner Mersinger at the Commodity Futures Trading Commission (CFTC) calls for greater clarity and collaboration between agencies, stating, "fix the problem, not the blame."

This year we have strengthened the GDF board, adding Dawn Stump, former Commissioner at the CFTC, who will support the team further with the development of the GDF Regulator Forum and our regulatory outreach, and Dimitrios Psarrakis, a highly experienced European Commission advisor and a member of the MiCA drafting team. This, along with GDF board member and GBBC CEO Sandra Ro's move to Washington, extends our capability to support policymakers and regulators through education and knowledge of blockchain and the crypto and digital assets ecosystem.

GDF's merger with the GBBC in May strengthens our organizations and creates the largest global blockchain and digital assets members association in the world. GDF will lead on the financial services sector enabling GBBC to build out in the logistics, energy, and healthcare sectors globally. GDF has taken on the running of the GBBC Post Trade Distributed Ledger (PTDL) group, a monthly forum for financial institutions, policymakers, and regulators.

The newly merged organization extends our global footprint and range of benefits on offer to members in an unparalleled and preeminent community for the open and collaborative development of the global blockchain and digital assets ecosystems. 2023 will likely be one of the most difficult markets many of us will face for a generation, and collaboration is one of the key commercial enablers to forge a path to future successes.

It is through open collaboration that the GDF community has achieved such an outstanding program of work in 2022, through one of the worst markets, and volatile global economies in recent times. We have our dedicated members and community supporters to thank for this: it is you that make GDF the preeminent global membership community it is.

Our purpose, which is fulfilled by delivering the GDF mission, has never been greater: to promote and underpin the greater adoption of market standards for the use of crypto and digital assets through the development of best practices and governance standards in a shared engagement forum with industry, policymakers, and regulators." ■

Exec Report: GDF 2022 in Review

Emma Joyce
Chief Executive Officer
GDF

Despite a shaky 2022 for some in the digital assets industry, adoption of digital assets continued apace on a global level, and there were many positive events that moved the industry forward.

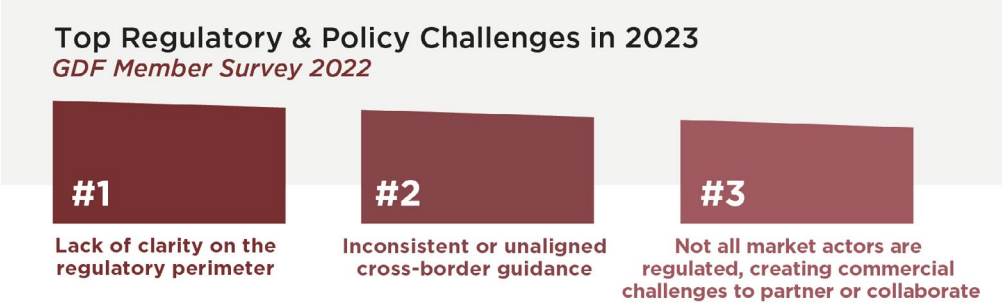
At GBBC Digital Finance, we continued to work with industry and regulators and support our members.

GDF merged with the Global Blockchain Business Council (GBBC) in May 2022, and the merger saw the two organizations join their respective resources, assets, and membership, becoming the world's largest industry association for the blockchain technology and digital assets ecosystem. GDF leads on all financial services-related activities, and this meant business as usual for GDF, but with more members, resources, and opportunities.

The GDF Advisory Council (the GDF governing body that oversees the development of the Codes of Conduct, Member Code Registration program, regulatory consultations, and policy recommendations), and all our working groups have remained in place, and we continued to engage with policymakers and regulators, respond to regulator consultations, refresh codes, and produce reports. During 2022 we welcomed DTCC, Crypto.com, Gate.io, OKCoin, PayPal, Visa, and Chainalysis to the Advisory Council.

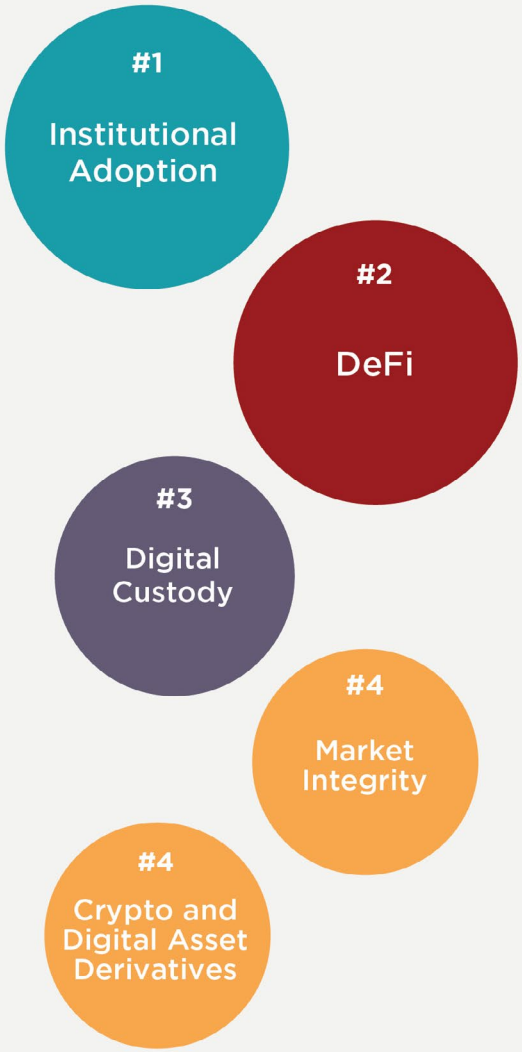
We started 2022 focused on our members' priorities, which were decentralized finance (DeFi), digital custody, and anti-money laundering (AML)/know-your-customer (KYC), and we built our 2022 program accordingly via our working groups, reports, and events. This included publishing the DeFi and sanctions reports; launching the Digital Custody working group with the International Securities Services Association; continuing our work with the Global Financial Institutions Crypto Assets (GFIC) group; and delevoping the Virtual Assets Due Diligence Questionnaire.

In our survey at the beginning of 2022, our members told us that the US, European Union (EU), and UK were the priority jurisdictions



Priority Areas for GDF Members in 2023

GDF Member Survey 2022



Emma Joyce speaking at the Neckerverse Event, 2022

CryptoCompare's Digital Asset Summit 2022

they had a focus on. As we saw throughout the year, with the President's Executive Order, the European Union's Markets in Crypto Assets Regulation, and the UK vying to become a global cryptoasset hub, all three regions are showing leadership in the race for digital asset regulation.

GDF's community continued to respond through regulatory engagement and consultation responses. Andrew Smith and Lawrence Wintermeyer have been leading engagement with regulatory bodies in the US. Meanwhile, we launched the Markets in Crypto Assets (MiCA) Working Group, and have been developing the All Party Parliamentary Group (APPG) on Digital Finance which will launch this year.

Asia-Pacific continues to be a region of importance for GDF members, and we have held various member events in Singapore during 2022, including a GBBC/GDF dinner which representatives from the Monetary Authority of Singapore (MAS), the Financial Action Task Force (FATF), and the Securities and Exchange Commission (SEC) attended as speakers.

We continued to engage members, regulators, and policymakers in a number of regulatory consultation roundtables, member roundtables, summits, responding with agility and readiness to industry developments. This included our Emergency Summit on Sanctions in response to the war in Ukraine and global focus on

ensuring crypto platforms were not misused for sanctions evasion.

The GDF Board, Executive, and members have had a very busy year speaking at events around the world including annual fixtures in London, New York, San Francisco, Paris, Barcelona, Singapore, Texas, Salzburg, and Dubai as well as speaking at events at GBBC's annual fixtures at Davos and UNGA, and the Necker Island Blockchain Summit.

We also continued to produce events. In partnership with DLA Piper, the Tony Blair Institute for Global Change, and Chainalysis, we held an event focused on "Women in Blockchain and Digital Assets", exploring how women can start a career in these industries, and we are looking to continue this series in 2023.

We held our annual Global Summit on Crypto and Digital Assets with Hogan Lovells in November which explored unlocking crypto and digital assets, on a global scale. A large conference was held in London with events also taking place across Asia, Paris, Frankfurt, Milan, Dublin, Brussels, and Washington, D.C.

GDF was a partner at the California, Singapore, and London Digital Assets Week series, and hosted a large dinner after the London event with Lord Holmes of Richmond as guest speaker.

It was a very busy but rewarding 2022, and GDF heads into 2023 with more members, more partners, and more areas to collaborate than ever before.

As ever, my thanks goes to the GDF Board, the GDF team and the GDF members, without whom none of the above would be possible. I also need to thank my new colleagues – the GBBC Executive Team, board, and the GBBC members. Together, both teams have shown what collaboration and teamwork means and can achieve.

As one association, we are larger and stronger, and ready to continue to lead and advocate the adoption of best practices for digital assets at a time when the industry truly needs it. ■

Anastasia Kinsky and Lawrence Wintermeyer host the Digital Asset Report with FintechTV

Emma Joyce hosts a panel at Ripple Swell 2022

GDF ADVOCACY AND OUTREACH

Regulatory Helter Skelter – A Lookback

U.S. Regulation and Policy in 2022

Andrew Smith
Government and Regulatory Affairs Director - Americas
GDF

Dina Ellis Rochkind
US Policy Advisor
GDF

To say that 2022 was a tumultuous year for U.S. crypto regulation is an understatement. With a barrage of legislative proposals across Congress and the states, an Executive Order whole of government regulatory review, novel regulatory actions, and catastrophic blows up in the space, we conclude the year at a regulatory inflection point. Now on the other side of a political mid-term election cycle that left Congress divided, the mantra for digital asset regulation in 2023 should be *do not let the perfect be the enemy of the good.*

Throughout the year, we have tracked the status of dozens of legislative proposals, including two significant overarching ones, the Responsible Financial Innovation Act and the Digital Commodities Consumer Protection Act, but none were successful. Observers seemed cautiously optimistic that stablecoin legislation would move forward during the year. However, consensus faultered and then failed, and at the time of writing, none of the year's proposals had advanced into law. With an eye toward the 2023 legislative agenda, hopefully the lessons learned and best components of past proposals will be incorporated into ones for the new Congress.

We watched as a government-wide review process unfolded under executive authority to assess the digital asset ecosystem. More than 20 departments consulted on their roles in the space, and the White House outlined its First-Ever Comprehensive Framework for Responsible Development of Digital Assets. Importantly, the Administration's policy roadmap set out recommendations focused on protections for consumers, investors, businesses, financial stability, national security, and the environment. As observers of bureaucracy will note, this work product serves as cover for regulatory action and legislative initiatives proposed under the duration of the Biden White House.

From the Securities and Exchange Commission's (SEC) actions involving lending products, insider trading, accounting treatment, new and old registration violations as well as illicit promotion; one-fifth of the Commodity Futures Trading Commission (CFTC) enforcement docket including Ooki DAO; Treasury's sanctions enforcement including Tornado Cash and Bittrex; to the innumerous hearings, studies, statements and reports from the Federal Reserve, Office of the Comptroller of the Currency (OCC), Federal Deposit Insurance Corporation (FDIC), Consumer Financial Protection Bureau (CFPB), and others, the deluge of crypto-related regulatory action over the past year is dizzying.

As if the year had not already produced enough to exhaust the strongest participant, the industry received a November surprise with FTX's cataclysmic implosion. Although the latest and most surprising disaster, it cannot be viewed in isolation. Earlier in the year, as the values of major cryptocurrencies plummeted, Three Arrows Capital, Celsius, and Voyager Digital Holdings filed insolvency cases within weeks of each other. As the dust begins to settle, conversations of contagion and association with the incredible failures of Lehman, MF Global, and Madoff are common, as are discussions in Washington of how such an instance could have been prevented. A market failure affecting

The GDF Reg Team make their way to Washington

society such as this string of insolvencies frequently serves as the impetuous for new, and occasionally over-reactionary, legislative and regulatory action.

Opposing views on the space are likely to intensify in light of the FTX's implosion. However, these views should instead coalesce around the priority of establishing strong processes and regulations to ensure the protection of customer assets. As we careen at fever-pitch into 2023, we hope to see regulators and legislators take a sober look at what is possible and move forward balanced proposals, accounting for the novel realities and distinctive nature of the decentralized finance space, as well as the unfortunately well-known realities of disgraceful behavior. While no perfect solution exists, the timing and circumstances are ripe for action in Washington.

As always, the GBBC Digital Finance team will continue to follow the legislative and regulatory developments and engage with the relevant stakeholders to represent the views of industry and our membership. ■

From Framework to Implementation

Crypto Regulation in Europe

Lavan Thasarathakumar
Government and Regulatory Affairs Director – EMEA
GDF

2022 was a seminal year for cryptoasset regulation and Europe was at the epicenter, with the European Union's (EU) Markets in Crypto Asset Regulation (MiCA). After years of monitoring, consulting, and negotiating, on 30 June 2022 MiCA reached political agreement, delivering arguably the most comprehensive cryptoasset regime in the world.

The regime will apply to all cryptoassets which do not fall under existing financial services legislation and apply a strict set of rules for how Crypto Asset Service Providers (CASP) should operate, providing a single rule book that the industry will need to follow when operating across the EU.

However, there is still a long way to go. Whilst MiCA has been agreed, much of the detail as to how it will be applied has been left to Level 2 of the text. It will be up to the European Supervisory Authorities (ESA) to establish the detail on how this will be implemented. This will undoubtedly be a huge job. When we consider the length of time taken to deliver the Regulatory Technical Standards for Payment Services Directive 2 (PSD2) and the controversies that this unearthed, it is reasonable to suspect that MiCA could follow a similar path and suggestions are that the Level 2 part of the text will be in excess of 1000 pages.

2023 will see the start of this work and there will be a race to conclude discussions in time for when MiCA comes into force. GDF's MiCA Working Group has reconvened to assess what needs to be achieved at Level 2 and make recommendations to the relevant ESAs. Its aim is to ensure that the industry position is made clear and there is a strong regime that delivers the intended protections whilst workable for industry.

Many jurisdictions will have a close eye on where MiCA will end up. This is what comes with first mover advantage: the EU has set the direction in which they are going to address cryptoasset regulation and others will likely follow. However, there is also something to be said for second mover advantage. With EU legislation being a compromise between 27 EU Member States and therefore 27 different markets, there are always going to be concessions within the legislation so that it is able to accommodate everyone. As such, other jurisdictions can look at this and build upon it in their own regime, gaining a competitive advantage.

The UK can certainly do this and 2022 saw steps in this direction. In his address at the Innovate Finance Global Summit, John Glenn, then Economic Secretary to the Treasury, announced that he wanted the UK to be a Global Hub for cryptoasset businesses, creating a regulatory framework that is dynamic enough to adapt to the fast moving nature of the industry.

Following that, the UK announced its position on stablecoins, extending the regulatory perimeter of the E-Money Directive to bring certain cryptoassets into its remit and committed to establishing a framework for all other cryptoassets in 2023, which we anticipate imminently.

However, for the UK, the most significant step forward was the Law Commission Report on digital assets. The outcome of the report suggested creating a new category of property – 'Data Objects'. The law of England and Wales stretches far beyond its borders with it being

the governing law in a number of international transactions. As such the gravity of this proposal should not be taken lightly, paving the way for a greater clarity of property rights pertaining to digital assets. Whilst a timeline has not been published for it, the Government has also asked the Law Commission to publish a similar report on the legal status of decentralized autonomous organizations (DAO), another vital report which will be key to unlocking DeFi.

Looking forward to 2023, eyes will be set on the Financial Services and Markets Bill (the Bill) in the UK. Towards the end of 2022, the definition of cryptoasset was introduced into the Bill and whilst it was welcome, creating the legislative vehicle to bring cryptoassets into the remit of financial services regulation, eyebrows were raised as to the broad remit it covers, in essence bringing all cryptoassets within scope. Discussions suggest that this will allow all cryptoassets to be covered and then certain cryptoassets excluded in pieces of legislation, where it is not deemed appropriate. Industry needs to remain vigilant that there are not unintended consequences with this approach.

The regulatory outlook for 2023 promises to be even busier than 2022. Whilst 2022 made significant strides in cryptoasset regulation, we are now moving to the implementation stage addressing how we actually apply this regime in practice. What is clear is that it is imperative that industry coalesce to ensure that we provide a consistent narrative and solutions as to how the EU, the UK and jurisdictions across the world approach implementing cryptoasset regulation. Progress is being made, but we are only half way there. ■

A Year of Learning, Reshaping, and Increased Regulatory Clarity

APAC Policy and Regulation in 2022

Greg Medcraft
Board Member
GDF

On a positive note

2022 has seen many important developments in the global digital finance area, especially when one considers the regulatory progress made on central bank digital currencies (CBDCs), stablecoins, and decentralized finance (DeFi), and the work of intergovernmental and supranational bodies working on the policy and regulation for this space.

CBDCs

The Bank of International Settlements' (BIS) survey found that 86% of central banks are actively researching the potential for CBDCs. 60% were experimenting with the technology for CBDCs, and 14% were deploying pilot projects. The BIS Innovation Hub has contributed several proofs of concepts and prototypes, including Project mBridge, Project Helvetia, and Project Sela.

Regional CBDC-related initiatives have continued to develop too. In the APAC region, this includes projects testing or piloting both retail and wholesale CBDCs in Hong Kong and India; the rollout of a retail CBDC pilot in China; and the launch of a pilot for a retail CBDC in Australia. Singapore is actively looking at wholesale CBDCs for cross-border payments.

Stablecoins

Many countries have announced or are considering rules for single currency-pegged stablecoins (SCS), generally looking to bring them into prudential-style regulation. On a global level, the BIS Committee on Payments and Markets (CPMI) and International Organization of Securities Commissions (IOSCO) have jointly issued guidance on the application of the CPMI-IOSCO Principles for Financial Market Infrastructure (PFMI) to systemically important stablecoins. This is expected to help guide regulators' thinking regarding both systemic and non-systemic stablecoins, in particular with a view to applying the principle of "same risk, same regulation".

In the APAC region, Japan passed a law on SCSs that essentially restricted the right to issue them to licensed banks, registered money transfer agents, or trust companies. Singapore has issued guidance on SCSs which will apply to non bank issuers above $5 million in value. This will mean that issuers will have to hold a major payment institution license. Both banks and non-bank issuers to SCS will be subject to regulatory requirements, including reserves and asset backing, timely redemption at par, customer disclosure, and solvency. In Australia, the central bank and the Australian Council of Financial Regulators is currently considering the regulatory arrangements for payment stablecoins.

DeFi

IOSCO has set up a work stream led by the US Securities and Exchange Commission (SEC) with the aim of publishing policy recommendations to support innovation by the end of 2023. This will focus on market integrity, investor protection issues, and financial stability. The approach of the work stream will be to understand emerging DeFi trends and risks and develop guidance on managing those risks within existing regulatory frameworks. It may also consider potential areas for regulation.

Japan has led policy research on decentralized autonomous organizations (DAO) and DeFi more generally. Australia has announced a review of innovative organization structures, which may include DAOs. The Monetary Authority of

Singapore (MAS) has launched Project Guardian to test the feasibility of applications in asset tokenization and DeFi. The first of their industry pilots explored the institutional trading of tokenized bonds and deposits through smart contracts to autonomously perform trading and atomic settlement.

Global Harmonization

Alongside the DeFi workstream, IOSCO has launched the Crypto and Digital Assets (CDA) group, led by the UK Financial Conduct Authority (FCA). The group will aim to publish a report and policy recommendations by the end of 2023, looking to support innovation and focused on concerns related to fair, orderly trading; transparent markets; market manipulation; investor protection; safekeeping; and custody.

These initiatives led by IOSCO are important given the need for globally consistent and co-ordinated regulatory action. A crucial starting point will be consideration of potential taxonomies of cryptoasset markets and their risks.

Regulation on a global scale will be shaped by crucial regional developments, including the European Union's Market in Crypto Assets regulation (MiCA); the application of existing law under the SEC and US Commodity Futures Trading Commission (CFTC) and key developments in APAC. Hong Kong, for example, is implementing a harmonized regulatory environment for digital assets including service providers. Japan already has a well established legal framework for cryptoasset issuers and service providers. South Korea is considering legislation that would establish a comprehensive framework for regulating cryptoassets. The Australian Securities and Investments Commission (ASIC) recently allowed exchange-traded fund (ETF) backed by certain cryptoassets, and the government has commenced a token mapping exercise as a first step to determine regulations for the crypto industry.

On the negative side

It has certainly been a challenging year for global fintech industry, with rising inflation and interest rates challenging valuations, increased geo-political tension increasing uncertainty, and stress in the digital asset sector from events such as FTX and Terra/Luna.

These factors have had two consequences for the digital asset sector in terms of trust and confidence:

1. Accelerated the need for regulation for centralized exchanges and digital asset issuers that is consistent within jurisdictions and between them.
2. In the absence of regulatory clarity, the need for international industry standards that are robust, adhered to by participants, and can be trusted by regulators and policymakers has become crucial. On Industry standards, GBBC Digital Finance has continued to strengthen its existing standards and looked to develop new ones.

It is also critical that financial service regulators liaise closely with other relevant standard setting bodies, including those relating to anti-money laundering, privacy, and competition to avoid intended consequences.

Engagement with Regulators and Policymakers

GDF has continued to engage globally, regionally, and locally with regulators, policymakers, and other finance industry groups. As well as the excellent work done in the US, we have been working with industry groups such as the Securities Industry and Financial Markets Association (SIFMA), the Institute of International of Finance (IIF) and Structured Finance Institute (SFI). Additionally, we were delighted to be

accepted this year as an affiliate member of the IOSCO which will further strengthen our engagement.

2023: The Way Forward

2023 will be a year of learning, re-shaping, and better regulatory clarity.

- The two IOSCO task-forces on CDA and DeFi will seek to actively engage with relevant stakeholders and experts during the policy development phase to help inform their recommendations and expect to deliver a public report on proposed policy recommendations by the end of 2023.

- India will lead the G20 where regulating crypto and digital assets is expected to be a key issue. Again, engagement with key stakeholders will be important.

- More CBDC initiatives will continue to move from pilot to possible mainstream issuance

- With regulated stablecoin frameworks now in place, we will no doubt see more issuance

- DeFi will continue to attract attention, especially considering the challenge it poses to the platform economy, particularly in terms of data privacy and other benefits of disintermediation

- Alongside regulatory clarity, institutional participation in digital finance will continue as a natural part of growth for the digital asset ecosystem ■

Governance in Digital Assets Will be Critical to the Industry Regaining Credibility in 2023

Simon Taylor
Board Member
GDF

In the wake of the FTX crisis, digital governance in digital assets has come to the forefront. This excerpt from the new CEO of FTX Group, John Ray III, neatly illustrates why the issue is now so critical.

> **"FTX Group's collapse appears to stem from the absolute concentration of control in the hands of a tiny group of grossly inexperienced and unsophisticated individuals who failed to implement virtually any of the systems or controls necessary for a company that is entrusted with other people's money."**

This issue is compounded by the data coming to light over the last 12 months showing high volumes of wash trading on non-fungible tokens (NFT) marketplaces, insider trading, and a high concentration of control over governance in both centralized and decentralized cryptoasset projects and protocols.

For decades the world of regulated financial services (traditional finance, or TradFi) has implemented controls, processes, and regulations to manage risks like market manipulation. This includes the separation of concerns, whereby one company or entity has limits on the activity they perform. For example, in the wake of the financial crisis, it became clear that a proprietary trading firm should not trade against the interest of their customers or risk customer assets.

Because it is a truly global industry with no clear legal jurisdiction or nexus, many protocols or exchanges do not neatly fit existing regulations. Lessons can certainly be learned from the best practices established by financial institutions in recent decades.

However, we must be careful not to overlook the significant advantages of the new technologies in blockchain, decentralized finance (DeFi), and digital assets. The ability to automate governance through smart contracts to create transparency and clear audit trails of decision-making with significantly more efficient, global financial markets is possible.

This is already evidenced by the work of many central banks in partnership with actors from across the TradFi and DeFi spectrum, from Project Guardian showing stablecoins could be a workable solution for regulated financial institutions, to Project Marina investigating how automated market makers (AMM), a DeFi innovation, could be leveraged at scale for instant cross-border liquidity.

As we move into 2023, we need to address three main topics as an industry in open and transparent partnership with global regulators and governments:

1. **CeFi governance challenges**
2. **DeFi governance challenges**
3. **Opportunities presented by technology**

CeFi governance challenges

Centralized exchanges, wallets, and operators (classified as cryptoasset service providers, or CASP) typically operate either "onshore" in a major jurisdiction or offshore from a smaller jurisdiction. While many have chosen to be regulated by a tier 1 global financial center or their local regulators, such as the US, Singapore, Germany, or the UK, this is not a uniform standard.

This global, 24/7 infrastructure is often regulated differently by jurisdictions but creates challenges for all. This lack of clarity makes space for risks to emerge.

Centralized exchanges may often ensure they separate their custody from proprietary trading operations and voluntarily report on doing so. There are no clear standards about the form this should take, with many using the requirements placed on regulated financial institutions and adapting those to the unique needs of the digital asset industry.

As long as the status quo of regulation and policy exists, consumers are at risk from FTX-scale harms as and when cryptoasset prices begin to rise again. To date, there is no clear way to prevent the risk from re-occurring other than the best efforts of good actors in the industry.

"Offshore" exchanges can innovate at pace and create new financial products that could benefit consumers or the broader financial system, but this "feature" can quickly become a "bug" in the event of a run-on the exchange scenario.

No single jurisdiction can prevent offshore exchanges from existing or operating acting independently, and often attempts to do so simply create another even harder-to-manage alternative. "Same risk, same regulation," while an impressive soundbite, misses the nuance. Often, the risks are similar *but not the same*.

Any solution to the potential consumer and systemic risks presented by the sector should learn from:

1. The principles that made financial services regulation successful in the past century
2. The best practices adopted by industry today
3. The new opportunities presented by the technology

DeFi governance challenges

DeFi protocols and projects operate a myriad of services intended to be available to anyone at any time who has access to the internet. A consumer or financial institution can interact with these services using a "wallet" that connects to the protocol's decentralized application (DApp).

With the intent to replicate protocols like HTTP or WWW, many DeFi projects operate their governance transparently. The code that runs the project is available in the public domain, and any changes to the code can be discussed in a public forum and "voted on" by holders of governance token holders.

In practice, these projects may adopt multiple legal entities that perform different functions to ensure the DApp continues to operate and can respond to market changes and demand. A common legal structure includes at least:

1. A community or decentralized autonomous organization (DAO) that operates in the public domain which proposes protocol changes and votes on those changes
2. A non-profit or foundation which represents the protocol in a jurisdiction
3. A for-profit corporation that writes the software.

The non-profit or foundation takes instructions from the DAO. In turn, the corporation is paid to execute any changes required by the foundation on behalf of the DAO voters. The corporation can be "fired" at any time by the community represented as a DAO.

This area of financial services is still emerging, and its use cases continue to grow. However, the risks presented by poor transparency are largely avoided, with many users of DeFi almost completely unaffected by the FTX crisis's fallout.

DeFi's largest risks are:

1. **Scams and hacks.** Because users often self-manage custody and the value can be transferred automatically and approved only by software, attackers can exploit any bugs.
2. **Centralization of governance.** The practical reality of most DeFi protocols is that a handful of wallets hold most governance tokens and these votes may not represent the will of the wider user community.

Opportunities presented by the technology

Crypto and digital assets continue to evolve at an unprecedented rate. While the recent market correction has limited the potential for consumer harm or systemic risk, history has shown that prices may rise again at some point in the future.

Even if today's cryptoassets fade, the technology is already being adopted by the private sector and governments to create more efficient and transparent markets. This leads to several questions:

1. How might we use the technology to innovate risk management as we're innovating on new financial products?
2. How can we automate compliance?
3. How can this be done in partnership with governments and agencies?

The technology has six fundamental features:

- **24/7.** The software runs without cut-off times and is available around the clock regardless of jurisdiction, including evenings and weekends.
- **Global.** Unless otherwise blocked, protocols and software are available to anyone with an internet connection by default.
- **Transparent.** All transactions that happen on the network are a public record. (Note this does not prevent transactions from happening "off-network" on paper)
- **Permissionless.** Anyone with compatible wallets can interact with any protocol or project deployed on a public network.
- **Programmable.** The networks can have complex logic and transactions created to automate workflows between multiple legal entities or parties.
- **Composable.** Often one project can "consume" the features of another. Where one bank cannot easily use another's software, one DeFi project can interact with another without any pre-existing relationship required.

Perhaps these present an opportunity for industry, states, and supernational agencies to collaborate in an open space to solve specific challenges and problems like wash trading, scams, hacks, and separation of client funds. ■

GDF PRIORITIES AND WORKING GROUPS

GDF Priorities and Initiatives in 2022

2022 started as all GDF years do: with the results of the GDF Members' Survey. Each year, we ask our community — representatives from the global crypto and digital asset ecosystem — to direct our focus for the year ahead.

We ask our members to determine the jurisdictions that are most important to them, the key topics they see as priorities for the industry, and their top regulatory challenges.

The 2022 programme was set accordingly, with the work led through the working groups as well as the GDF Regulatory Team, engaging with regulators, policymakers, and industry bodies across the US, European Union, UK, and Asia-Pacific regions.

As well as being led by the Members' Survey at the top of the year, GDF remains agile in the face of industry development, and periodically seeks the advice of the membership on direction via industry roundtable discussions and the monthly Advisory Council meetings. As such, initiatives are developed to address topics that were not highlighted in the survey, such as the Sanctions and ESG working groups.

Whether through reports, standards development, codes of conduct, or vital regulatory consultation responses, we are led by a driven community whose aim is to strengthen the crypto and digital assets sector through best practices and appropriate regulation. We thank the Advisory Council, Working Group Co-Chairs, and wider membership for their continued input to GDF's work. ■

DeFi
Working Group

Read Report

Decentralized finance (DeFi) has been a top priority for both industry and regulators for the past two years according to GDF industry and GDF Regulator Only Forum surveys. Risk mitigation in this space is a complex area, whether considering top-down regulatory frameworks, or industry-led standards. Although regulatory attention has certainly increased with the market downturn seen this year, there are still few comprehensive regulatory solutions.

The DeFi working group released The DeFi Report: Moving the Dialogue on Standards and Regulation Forward in June. The report gives an overview of the key constituents of the DeFi ecosystem, and summarizes the top concerns outlined by regulators and policymakers so far. It proposes a two-track approach to addressing the risks in DeFi activities:

Track One – Short-Term Industry Transition: Industry Standards
In the absence of regulation specific to DeFi, the industry must coordinate to establish governance and investor protection standards, as well as industry-led monitoring, to demonstrate that it can operate to high standards of trust and predictability. This can be more rapidly expedited through analysis of standards for wholesale markets and adopting existing standards and principles to connect the dots to emerging policy and regulatory frameworks.

Track 2 – Medium to Long-Term: A Co-Regulatory Model
Industry and agencies must collaborate in a co-regulatory model to carry out the process of risk identification across the ecosystem in a shared engagement platform. This will accelerate the development of proportional and balanced regulation that is harmonized at a global level. In doing so, regulators have the opportunity to explore the design and operation of regulator nodes in a decentralized autonomous organization (DAO).

Steven Becker
CEO
UDHC

John Salmon
Technology Partner
Hogan Lovells

Justin Wright
Co-Founder, COO & CFO
YieldApp

The report is a call to action for both industry and regulators to better collaborate on the next steps for moving forward responsible innovation in the DeFi space. In 2023, GDF will look to further develop Tracks 1 and 2, with a special focus on RegDAO – a forum in which industry can safely identify the gaps in policy and opportunities to better manage risks, and provide visibility to global regulators of the challenges and opportunities in DeFi. ■

Custody
Working Group

In partnership with Supported by

Among the many discussions surrounding the development of the crypto and digital asset space, the custody of these assets is central to the sustainable growth of the industry.

Whether the regulatory focus on self-hosted wallets, or institutions moving to provide custody services for digital assets, custody was cited as a top priority for both regulators and the GDF membership this year. On the industry side, 2022 saw BNY Mellon lead traditional banks in offering cryptocurrency custody, and the FTX scandal sparked debate over centralized crypto exchanges and custody.

Regulators continued to be split in their approaches across Europe and the U.S.: the Securities Exchange Commission (SEC) is requiring that client assets be kept on balance sheets as liabilities. The Basel Committee for Banking Supervision, however, stated that custodial services do not give rise to credit, market, and liquidity requirements. We expect the discussion to continue to evolve over the next year.

GDF has partnered with the International Securities Services Association (ISSA) to launch a working group with a focus on delivering a report that lays out the key components and players in the digital asset custody space, the challenges and opportunities, the key differences from traditional finance, and the principles for best practice in digital asset custody.

The group is co-chaired by Swen Werner, State Street, and Seamus Donoghue, Metaco, and is supported by Deloitte as the consulting partners. In October, the working group convened for a two day workshop in London to kick off the conversation, determine the scope of the group, and map the content of the report. The working group will continue to meet virtually throughout Q1 2023, and expects to release the report in March. ■

Swen Werner
Managing Director, Digital Product Development and Innovation
State Street

Seamus Donoghue
Chief Growth Officer
Metaco

KYC / AML
Working Group

Shyft XReg.Consulting

2022 was a year of significant upheaval and events that, by the end of the year, had left the sector looking very different from how it started. Within this, a reshaping occurred with banks and institutions beginning to take greater interest as more regulators moved to implement or update their regimes, tightening governance around areas of perceived risk.

The anti-money laundering (AML) working group had two key focus areas throughout the year: the first was to assist regulators in shaping their regulatory frameworks by responding to consultations and holding bilateral conversations. The second focus was the near-completion of the GDF Virtual Assets Due Diligence Questionnaire. The importance of this questionnaire cannot be understated.

Financial institutions have been looking for a best practice, standardized way to assess AML risk for virtual asset service providers (VASP) that they might wish to onboard for banking services. In the traditional finance (TradFi) sector, the Wolfsberg Questionnaire for Correspondent Banking has long been the benchmark, and so with the agreement of Wolfsberg, a similar questionnaire was developed for VASPs.

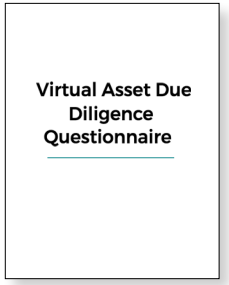
As we move into 2023 and this important project comes to a close, it will allow more banks to consider onboarding VASPs for banking services; something that will not only expand and strengthen the virtual asset sector, but also allow TradFi to adopt blockchain and crypto into more of their own services.

The questionnaire will also serve to support the industry adoption of the Financial Action Task Force's (FATF) so-called Travel Rule, by fulfilling a key aspect of Travel Rule requirements whereby every VASP should conduct a due diligence assessment (for AML purposes) with counterparty VASPs.

We expect 2023 to be a year of maturity for the sector and to support this, the work of the AML group will continue. We welcome new members to join us to lead this important outreach and support to both TradFi and regulators around the world. ■

Malcolm Wright
Head of Strategy
Shyft

Nicky Gomez
Partner
XReg Consulting



MiCA
Working Group - Phase 2

Following the publication of the European Commission's proposed Markets in Crypto Assets Regulation (MiCA), GBBC Digital Finance (GDF) put together a working group to conduct an in-depth analysis of what the proposal contained and suggest amendments to this proposal as part of the legislative process in Europe on behalf of the digital finance and crypto community. The intention was for this group to follow the developments and be primed to respond to comments and amendments to the text as they come out of the institutions.

With the regulation now passed by the co-legislatures, and MiCA expected to come into force from 2024, the working group is now reconvening to engage with the European Institutions and supervisory authorities on the level 2 measures. The group will identify the delegated acts which are most important to GDF members and establish what the group's ideal outcomes will be so that this can be represented to the stakeholders in this process.

Given that there is not a formal industry consultation process, the group will be leveraging its relationship with the European Banking Authority, the European Securities and Markets Authority and the European Central Bank who are the European Supervisory Authorities assigned to the delegated acts as well as the European Commission, European Parliament, and regulators from key national competent authorities to ensure that the impact of these measures are understood.

The group is co-chaired by John Salmon, Hogan Lovells, Dimitrios Psarrakis, XReg Consulting, and Lavan Thasarathakumar, GDF. ■

John Salmon
Technology Partner
Hogan Lovells

Lavan Thasarathakumar
Government and Regulatory Affairs Director - EMEA
GDF

Dimitrios Psarrakis
Head of EU Affairs
XReg Consulting

Stablecoins
Working Group

The GDF community noted last year the need to review and update the Stablecoin Code of Conduct since its original publication in 2019, due to proliferation of stablecoin structures and uses as a form of payment, wealth storage, and transactional asset, particularly in the DeFi context. During 2022, we then saw the well-documented collapse of Terra and its so-called 'stablecoin' TerraUSD, alongside sister-coin Luna. This event led the Working Group to re-consider not just the appropriate best practices around structure, issuance, offerings, and maintenance of stablecoins, but also the GDF Stablecoins Taxonomy itself.

The group has also had to accommodate for stablecoin-specific regulatory and legislative developments, including the significant portion of the final European Union (EU) Markets in Crypto-Assets (MiCA) regulation covering the management of the perceived risks in this area. The proposal imposes more stringent requirements on stablecoins given the belief that they are more likely than other cryptoassets to grow quickly in scale and possibly result in higher levels of risk to investors, counterparties and, significantly, to the stability of the overall financial system. Defining e-money tokens and asset-referenced tokens, the legislation provides various requirements as to disclosures, structural practices (such as 1:1 backing in cash and highly liquid assets) and registration. It therefore codifies some of the principles contained in the original Stablecoin Code of Conduct, whilst expanding on others.

With this backdrop, the GDF Stablecoin Working Group has been able to update the Code with the support of core industry body members, satisfying our specific objectives in ensuring that a relevant and up-to-date best practice Code is adopted by the community in a meaningful and timely way.

The Working Group proposed the final text of the refreshed Stablecoin Taxonomy and Key Considerations document, alongside the updated Code of Conduct for Stablecoin Issuers. The revisions to the Code and Taxonomy aim to:

- Outline the core differences between centralized and decentralized stablecoin

Andrew Adcock
Operations Manager
Digital RFQ Limited

Bryony Widdup
Partner
Hogan Lovells

Claire Wells
Associate General Counsel and Policy Lead
Coinbase

Leo Real
Chief Compliance Officer
Tether

issuers and implementations of the Code, including how algorithmic stablecoin issuers should view the Code as best practice if operating via a decentralized autonomous organization (DAO)

- Strengthen language pertaining to settlements and that they are to be made promptly in line with the expectations of clients
- Expand language around redemptions and honoring them in a reasonable timeframe
- Add a definition for treasury management and liquidity coverage for stablecoin issuers
- Emphasize compliance with pre-existing laws in the jurisdiction of operation such as the GDPR
- Add a conflict resolution section and a route of recourse for clients
- Expressly recognize the inherent risks with coins whose value is proposed to be stabilized by algorithmic means.

Looking ahead to 2023, we will release the updated Code and seek to gain wider adoption by the stablecoin community as a voluntary, 'beyond compliance' standard for stablecoin offerings. We are also keeping a close eye on developments in regulatory frameworks around the world, including the growing differentiation between issuers falling into 'regulated' and 'to be regulated' categories, and unregulated issuers, in different operating jurisdictions. We anticipate that the Code will require further updates in the future in line with the further evolution of this market. ■


GDF

Global Digital Finance

Code of Conduct
Part VI

Principles for
Stablecoin Issuers

This document must be read in conjunction with the Code of Conduct Overarching Principles and the Key Considerations for Stablecoin and Stablecoin Issuers document.

Read the Stablecoins code refresh

Global Financial Institutions Cryptoassets

Working Group

The notable changes in institutional sentiment in the last 18 months towards the crypto and digital assets have driven market participants' need to promote fair and transparent crypto markets, operating in line with key principles recognized as good practice by regulators.

Bringing together diverse members of the cryptoasset ecosystem, the Global Financial Institutions Cryptoassets (GFIC) Working Group convened to address this need and work towards a common financial conduct and operating standards framework for the institutional trade of cryptoassets.

Since its launch in February 2022, the group has issued a public commitment statement, intended to formalize industry sponsorship with signatories of key market participants committed to the development and conducting their business in line with the standardized code of practice for financial institutions operating in cryptoassets.

The group has finalized a whitepaper on Global Cryptoassets Standards. Supported by EY, the Global Cryptoasset Standards consists of a set of global principles that are intended to promote a robust, fair, liquid, open, and appropriately transparent market in which a diverse set of market participants, supported by resilient infrastructure, are able to confidently and effectively transact at competitive prices that reflect available market information and in a manner that conforms to acceptable standards of behavior. The paper is now open for public consultation here. Feedback is welcome until the 10th February.

Throughout the standards drafting process, the group has consistently sought regulatory engagement. The co-chairs produced GDF's first Regulatory Knowledge Series and led a discussion that aimed to capture how the group can best engage regulators to shape the future of institutional crypto adoption.

The group has been co-chaired by René Michau, Standard Chartered, and Anthony Woolley, Ownera. ■

Rene Michau
Global Head of Digital Assets
Standard Chartered

Anthony Woolley
Head of Business Development
Ownera

Sanctions
Working Group

ELLIPTIC TRM

Russia's invasion of Ukraine in March 2022 forced a new spotlight on the importance of global, coordinated, targeted economic sanctions. With this, the industry saw increased attention on the crypto and digital asset platforms' ability to remain compliant with sanctions law, with many fearing that these platforms would undermine government efforts to inflict damage through targeted sanctions.

GDF convened the industry and regulators in an Emergency Summit on the crypto industry's response to the Ukraine crisis on 2 March 2022. It was highlighted by both industry and law enforcement that the risk of sanctions evasion through crypto platforms is marginal and firms are generally compliant with sanctions requirements. That said, continued vigilance is of paramount importance.

> ***"It is worth noting that the scale that the Russian state would need to successfully circumvent all US and partners' sanctions would render cryptocurrency as an ineffective tool. However, crypto can be exploited when proper controls are not in the system, and the US remains vigilant against this threat and the use of crypto as a means for evading sanctions."***
> – Carole House Director of Cybersecurity and Secure Digital Innovation at the US National Security Council.

To address the concerns of law enforcement and policymakers, the Sanctions Working Group convened members to deliver a report on the operational components of sanctions compliance in crypto and digital asset platforms, and suggest recommendations to policymakers on ensuring that the guidance on sanctions compliance is robust and effective.

"There has never been a more important moment in the crypto and compliance industries to make sure that we have the controls in place to mitigate the risk of complicit actors," said working group co-chair, Ari Redbord.

Since the report was released in June 2022, the Office of Foreign Assets Control (OFAC) of the U.S. Department of the Treasury blacklisted crypto tumbler Tornado Cash after nearly $7 billion was laundered through Tornado Cash protocol, some of it connected to criminal actors such as the Lazarus group out of North Korea, or other state-sponsored hacking groups. Acknowledging the severity of these risks, the discussion on Tornado Cash is significant for the entire industry as it is the first time that the US government has imposed sanctions on a piece of software rather than an intermediary or person.

David Carlisle
Vice President of Policy and Regulatory Affairs
Elliptic

Ari Redbord
Head of Legal and Government Affairs
TRM Labs

In light of these events, GDF held a roundtable discussion in September which highlighted some of the complexities with remaining compliant with sanctions, including scenarios in which a user is implicated due to a 'dusting' attack. Participants concluded that further engagement with agencies on these complexities is paramount, as well as discussion on the practical, industry-led solutions to these challenges. The group will meet again in 2023 to further this work. ■

Private Markets Digitization

Steering Group

In 2020, the GDF Private Markets Digitization Steering group (PMDS), co-chaired by Ownera and Hogan Lovells, brought together over 70 leading institutions, including banks, asset managers, exchanges, fintech, and international law firms to digitize private markets. That year, the group published a proposal for a digital security network specification, which would be open to all regulated institutions; multi-vendor; ledger agnostic, and have open interfaces, known as FinP2P.

Through 2021, extensions to the API specifications were published to support secondary trading and collateralization of assets. This unlocked the ability to pledge digital securities as collateral for lending and borrowing, opening up the world of DeFi to regulated institutions at a global scale.

Throughout 2022, multiple working group members have been working on projects that are real-life examples of the FinP2P open source protocol being used in production. These projects encompass the issuance of multiple types of assets including pre-IPO companies, money market funds, institutional real-estate companies, private equity funds as well as unique applications of carbon offsets.

In November, the group convened in the first in-person special GDF Private Markets session, as part of the London Digital Assets Week. The session focused on asset managers in the digital asset space and brought to stage a number of the largest asset managers and tokenization trail blazers in the industry, to talk about their digital asset programs, the assets, the models, the technology, and the importance of interconnecting to the rest of the group member's programs via FinP2P.

The group is setting up a FinP2P Node agreement with GDF, setting out the rights, obligations, and registration of members to the network, with more to follow in 2023. ■

Anthony Woolley
Head of Business Development
Ownera

Lavan Thasarathakumar
Government and Regulatory Affairs Director - EMEA
GDF

The PMDS group presents at London Digital Assets Week

ESG
Working Group

Read Report

Although not set as a top priority for the GDF community in the 2021 Members' Survey, the climate impact of crypto and digital assets increasingly became a focus for regulators and policymakers at the beginning of 2022.

The ESG Working Group set out to develop a report and best practice framework to help the industry meet Net-Zero targets and adopt science-based pathways. Whether because of oncoming regulation, or because firms are already required to meet the standards of regulated counterparties, it is important to map and understand what scope 1, 2, and 3 reporting looks like for the complex value chain of the digital assets sector.

Through promotion of accurate, transparent methodologies, and improved data collection, the guidance is aimed to support clearer, more accurate, and greater comparability of reported emissions impact and forward-looking targets for various digital assets. By promoting an industry-wide approach that recognizes methodological and data realities for different parts of the digital asset value chain, this guidance aims to support development of metrics for current emissions as well as to support short-, medium, and long-term targets for digital assets that are aligned with global Net Zero emissions by 2050 and the target to limit global temperature rise to 1.5° C.

Led by our co-chairs, Bryony Widdup, Hogan Lovells, and Blake Goud, RFI Foundation, the working group convened members to discuss the challenges with understanding the climate impact of cryptoassets activities. In September, the group hosted two workshops on methodologies for the allocation of carbon in crypto. Participants, including academics, miners, platform providers, and exchanges, discussed the available methodologies, and the challenges with being able to compare data that is based on very different activities.

Bryony Widdup
Partner
Hogan Lovells

Blake Goud
CEO
RFI Foundation

The work of the ESG Working Group will continue next year alongside the GBBC sustainability initiatives. This will form part of a holistic approach to the role of crypto and digital assets in climate, social, and governance concerns – whether strengthening digital asset's sustainability credentials, or the use of tokenization and distributed ledger technology to strengthen legacy processes across climate finance, financial inclusion, supply chain management, and beyond. ■

REGULATORS AND POLICYMAKERS

Developing an International Regulatory Framework for Cryptoassets

Rupert Thorne
Deputy Secretary General
FSB

Cryptoasset markets continue to be fast-evolving. The turmoil in these markets in the past year, including a sharp fall in aggregate market value and a number of prominent failures in the sector, have highlighted a number of structural vulnerabilities in these markets. It has also given extra impetus to the ongoing work of the Financial Stability Board (FSB) and the international standard-setting bodies to address the potential financial stability risks posed by cryptoassets, including so-called stablecoins, and to establish a global framework of regulation and supervision, including in non-FSB member jurisdictions.

The FSB is coordinating the international work on regulation and supervision of cryptoasset activities, and in October 2022 we issued for public consultation a comprehensive set of proposals consisting of: (i) proposed recommendations to promote the consistency and comprehensiveness of regulatory, supervisory and oversight approaches to cryptoasset activities and markets; and (ii) proposed revisions to the FSB's high-level recommendations of October 2020 for regulation and supervision of "global stablecoin" arrangements.

The recommendations are grounded in the principle of "same activity, same risk, same regulation": where cryptoassets and intermediaries perform an equivalent economic function to one performed by instruments and intermediaries of the traditional financial sector, they should be subject to equivalent regulation. In parallel, the framework also proposes that regulation should take account of novel features and specific risks of cryptoassets and harness potential benefits of the technology behind them.

Among the structural vulnerabilities to be addressed, the market turmoil exposed inappropriate and unsustainable business models that depend on expectations of ever-increasing cryptoasset prices or rely on new investors to serve the returns they promise to existing investors; liquidity and maturity mismatches that expose platforms and protocols to run risk; highly leveraged positions, which led to margin calls or automatic liquidations; and a high degree of interconnectedness within the cryptoasset sector. These vulnerabilities were amplified by the lack of transparency and disclosure in the cryptoasset sector, flawed governance, inadequate investor protection, and weaknesses in risk management.

The failure of FTX and its fallout on other market players also highlight a number of issues with crypto trading platforms combining multiple activities that are normally subject to regulatory firewalls in traditional finance. They include: vulnerabilities arising out of vertical integration; lack of transparency on corporate structure, key function holders, and financial positions; inappropriate use of clients' funds; reliance on self-issued, unbacked tokens; and interconnectedness with affiliated entities.

The FSB closely monitors the risks to financial stability form cryptoassets, as highlighted in its February 2022 assessment. While the limited spillovers to date outside the cryptoasset ecosystem reflect the still low interconnectedness with the traditional financial

system, the situation could change rapidly as cryptoasset markets recover. The rapid evolution and international nature of these markets also raise the potential for fragmentation or arbitrage. Although the extent and nature of cryptoasset use varies somewhat across jurisdictions, financial stability risks could rapidly escalate, underscoring the need for both timely and pre-emptive evaluation of possible policy responses as well as regulatory action where existing requirements apply.

The FSB's recommendations are high-level and retain flexibility so that they can be incorporated into a wide variety of regulatory frameworks in individual jurisdictions. The recommendations cover a number of themes similar to those in regulatory frameworks for traditional finance, including strong governance, effective risk management, adequate disclosure and timely data reporting. However, within these themes, the recommendations also target specific features that lead to weaknesses in cryptoasset activities and markets. One typical issue is that many activities fall short of effective governance and control mechanisms that are commonly expected of financial institutions. Some are operating without any established governance structure, some others may even involve misaligned incentives because some entities may exercise control over the operations but not take proportionate governance responsibilities.

To address this, the recommendations propose that crypto service providers should have in place a robust governance structure. Likewise, in response to significant data gaps in the cryptoasset ecosystem, the recommendations cover the need for requirements on data collection, storage, and reporting.

High regulatory standards should apply in particular to cryptoassets – such as stablecoins – that could be widely used as a means of payments or store of value, as they could pose significant risks to financial stability. The proposed revisions to the high-level recommendations for the regulation, supervision, and oversight of "global stablecoin" arrangements strengthen the requirements for users' redemption rights and for a robust stabilization mechanism. As the report notes, many existing stablecoins would not meet the FSB recommendations.

The public consultation on the recommendations ended in December 2022, and the FSB will finalize the recommendations by July 2023.

Cryptoassets are inherently global, so the FSB will continue to coordinate work among national financial authorities and international standard-setting bodies on the comprehensive and consistent regulation, supervision, and oversight of cryptoasset activities and markets. In addition, in 2023 the FSB is analyzing developments and potential risks to financial stability stemming from decentralized finance (DeFi) and will consider in 2023 whether additional policy work is warranted based on the findings from this work. ■

Virtual Assets: Global Trends and Compliance

Violaine Clerc
Executive Secretary
FATF

The Financial Action Task Force (FATF) sets global anti-money laundering and counter-terrorist financing standards. Our goal is to stop criminals from being able to launder the proceeds of their crimes, and further fuel their activities: to prevent drug dealers, arms traffickers and people smugglers from making a profit at the expense of others. Doing so, our work ultimately contributes to stronger economies and safer societies.

Criminals will use whatever means available to move and hide illicit funds, including virtual assets. The first major criminal investigations involving virtual assets were almost a decade ago. Since then the risks associated with virtual assets, or crypto, have grown, attracting criminals with their potential for anonymity, speed and international reach.

Scams and money laundering cases involving virtual assets are on the rise. Recently we have seen an increase in the use of virtual assets for terrorist financing. Groups like the Islamic State of Iraq and the Levant (ISIL) and al Qaeda, as well as extreme right wing groups, are using them to raise and move funds. At the same time, there is the growing use of virtual assets by North Korea to finance its weapons for mass destruction programme. There are cases involving attacks on crypto exchanges and the stolen assets later being used to finance the procurement of weapons components.

The FATF has taken action to respond to these risks, including monitoring emerging risks, sharing experience, and incentivising compliance. This includes working with countries to help them implement FATF's Recommendations to cover the virtual asset sector, which continues to see huge growth and development. This has helped incentivize companies to invest in technologies to improve regulation.

However, many countries still lack an effective regulatory framework or any framework at all. More than three years since the FATF standards were extended to virtual assets, implementation is still lagging and there is uneven application of the standards globally. Only 50% of countries that reported on the implementation of these standards in June 2022, have introduced laws to regulate virtual assets service providers. Of the 83 countries that have been formally assessed against the revised standards, three quarters are partially compliant or non-compliant. Not one is fully compliant.

This is clearly not good enough. The lack of implementation makes the virtual assets sector more vulnerable to money laundering and terrorist financing, and holds the industry back.

A key component of the FATF standards in this area is Recommendation 16, known as the Travel Rule. This requires virtual asset service providers (VASP) to collect and transmit certain information about the senders and recipients of virtual assets. The rule has been a challenge to implement as companies have not had the infrastructure or technology to comply. This led to a catch-22. Countries delayed implementing the Travel Rule while they waited for industry to develop technological solutions. At the same time, the lack of consistent global implementation left the industry facing a patchwork of different national approaches, which removed incentives to invest and develop or find global technological solutions.

As a result, the implementation of the Travel Rule is particularly poor. As of June 2022, only a fraction of countries reported having passed legislation to implement the Travel Rule, and even fewer are enforcing these requirements. The lack of consistent regulation around the world means Travel Rule solutions remain scarce, and those that do exist are being used inconsistently. Even where solutions have been developed, many have serious deficiencies. For example, some technologies do not include the necessary information relating to the beneficiary, or rely on transaction identifications rather than unique customer addresses. In addition, in many cases, a solution used in one jurisdiction is not technologically compatible with the solution used in another jurisdiction, which further complicates transfers.

These issues create costs for businesses, disincentivize compliance, and encourage firms to move to countries with the weakest regulation. All of these issues need to be urgently addressed and the FATF is working with countries and partners to ensure the sector continues to improve its regulatory compliance.

As virtual assets are inherently international and borderless, non-compliance in one country has serious global implications. Uneven implementation across the world creates opportunities and safe havens for criminals, terrorists, and nuclear proliferation networks.

If countries fully and effectively implement the FATF's standards, it will become increasingly difficult for virtual asset service providers to operate from unregulated jurisdictions. This, in turn, will reduce the risks of virtual assets being used for money laundering or terrorist financing, and will make the global virtual asset market safer. The FATF will continue to support countries to comply with our standards and consider how to make sure all significant centres for virtual asset activity are properly regulated. ■

Global Approaches are Crucial for Fair, Efficient, and Coherent Policies

Carmine di Noia
Director for Financial and Enterprise Affairs
OECD

The turmoil in cryptoasset markets during 2022 has served to underline the need for a regulatory debate about these markets, as well as for international discussions about approaches to deliver a fair, efficient, and coherent policy environment across countries.

While the Organization for Economic Cooperation and Development (OECD) has long highlighted the potential benefits of blockchain innovation in finance, it has also been clear on the inherent risks in crypto-asset and related decentralized finance markets. These risks were perhaps less obvious to participants during the market's bull run, but with elevated losses in the current downturn and a series of high-profile collapses among major actors, long-standing concerns among market authorities have now crystallized.

Several of these collapses are under ongoing investigation, and it's important not to pre-empt official findings. However, the concerns the OECD has previously flagged in these markets are exactly what financial regulation was created to address. They range from weak governance to poor product design, a lack of disclosure around conflicts of interest, lack of separation between duties, and the potential for outright maleficence.

The costs of these failures have been borne largely by retail consumers, on whom 2022's collapses disproportionately fell, and by the responsible operators in these markets who suffer from collateral damage in the form of weakened trust and negative reputational spillovers. They threaten public confidence in financial authorities' ability to offer appropriate protections to investors and ensure good financial conduct. They risk derailing the development of innovations and technologies which could one day prove beneficial to our financial system.

There is rising political and regulatory pressure to apply the same rules and levels of oversight to cryptoasset service providers as their counterparts in traditional finance. A number of major markets took steps in this direction in 2022, and as policymakers around the world weigh responses and consider efforts to craft regulatory frameworks, reflecting the global nature of these markets will be critical to developing effective and enforceable rules of the road.

More than a decade after the first cryptoassets were developed, many players in these markets may still be offering regulated products in a non-compliant way, or operating outside the regulatory perimeter. Decentralized technologies have posed questions around who and how (and if) to regulate in the face of disintermediation and automation, and how to classify a range of novel digital assets. These questions are not fundamentally unanswerable, particularly given the importance of centralized actors, and the increasing use of technology-neutral approaches to financial regulation in many jurisdictions. But the borderless dynamics in these markets, where participants could be based in almost any country, bring additional layers of complexity to any solution.

This complexity is compounded by the wide range of international issues presented by cryptoasset markets, in some cases more so than traditional finance. They include the potential for currency substitution in some economies,

circumvention of legitimate capital controls, illicit uses and tax evasion, as well as interactions with cross border data rules and privacy regimes. The potential impacts on and from central bank digital currencies, as these move from research to operational stages, are also important emerging factors. These are cross-cutting issues that require a concerted and deliberate cross-border effort to fully address.

Complex and multifaceted challenges to global financial governance are not new, and the international community has demonstrated its capacity meet them time and again. From the establishment of the Bretton Woods system in 1944, to the body of OECD instruments supporting fair and efficient capital flows, to the ongoing work of the Financial Stability Board (FSB) since 2009, we have adapted our international financial architecture as global financial markets have evolved. The digitalization of money brought on by cryptoassets is yet another evolution.

Today, international standard setting bodies are already developing or implementing rules and recommendations, including the FSB on systemic risks, the Financial Action Task Force (FATF) on money laundering and terrorist financing, and the OECD on tax transparency. These efforts are of huge value, but they may also be limited to standard setters' existing remits and the prevailing patterns of international co-operation. There are bound to be gaps, and the wide range of issues in cryptoasset markets demand a more connected and coherent international approach.

The OECD has been a leading source of analysis and policy guidance on cryptoassets since these markets' early days. This year we added the first international policy standard for blockchain to our expansive body of legal instruments, many of which form the basis for international rules and best practices across some key areas impacted by cryptoasset innovation. Complemented with instruments housed across our fellow standard setting institutions, the international community has a solid foundation on which to develop and deliver a comprehensive global approach to cryptoasset governance, and the OECD stands ready to help advance the global debate. ■

Fix the Problem, Not the Blame

Commissioner Summer Mersinger
CFTC

There is an old saying I try to live by when something goes wrong: "Fix the problem, not the blame." Regarding the collapse of FTX, if initial reports prove to be true, there undoubtedly are wrongdoers who must be held accountable under US and international law. Multiple investigations are underway for that purpose.

Yet, affixing blame without meaningful corrective action will not make spot crypto markets safer, protect consumers, or help restore trust in the marketplace. Fixing these problems must begin with policymakers providing clarity and regulatory certainty about the application of existing laws to the new world of digital assets.

Clarity through cooperation

The Commodity Futures Trading Commission (CFTC), where I serve as a Commissioner, regulates commodity derivatives products such as futures contracts and swaps, and exercises limited enforcement authority over spot markets related to these derivatives. Our colleagues at the Securities and Exchange Commission (SEC) have jurisdiction over securities.

The most frequent question I get asked regarding spot crypto products is whether they are commodities subject to CFTC jurisdiction or securities subject to SEC jurisdiction, or both. This question feeds into the popular – but unhelpful – narrative of competition between the agencies over crypto jurisdiction.

But this is not a game. People have lost significant sums of money; faith in markets has been shaken; and confidence in our regulatory system is in question.

It is time for the CFTC and the SEC to work together on a thoughtful framework – with a meaningful opportunity for public input – offering certainty to the market about how we will determine on which side of the jurisdictional line a product falls. The two agencies must attack this problem together, creating a cooperative approach moving forward.

The CFTC and SEC have done this before through joint rulemakings defining their approach to distinguishing their respective jurisdiction over swaps (CFTC) vs. security-based swaps (SEC), and over futures on broad-based (CFTC) vs. narrow-based (SEC) security indexes. We can similarly work together, through constructive dialog, to develop a framework both agencies – and the public – can embrace regarding spot crypto jurisdiction moving forward.

We also must engage our state and international regulatory partners in this important effort. Viewing the problem (and its potential solutions) holistically will enhance our collective ability to achieve our shared goals of safe, efficient, innovative, and resilient spot crypto markets.

Clarity from within

Of course, we also should look within our own respective agencies and clarify the application of existing laws to the new technology, organizational webs, asset classes, and market participants associated with spot crypto trading.

For starters, we at the CFTC should be candid with the public about the existing legal limitations in our authority that only allow after-the-fact enforcement actions and prevent

us from providing more fulsome protection to those trading in spot crypto markets. Consumers will be far better served by clarity about the scope of our oversight authority before they trade than by enforcement actions after the money is gone.

Another area at the CFTC that is ripe for review involves our conflict of interest rules for the derivatives trading platforms and clearinghouses that we regulate. Typically, these entities are not affiliated with spot markets. But in the crypto space, we are seeing complex organizational webs where CFTC-regulated derivatives markets are affiliated with unregulated spot markets and even proprietary trading arms, raising worrisome questions around what constitutes (and how best to address) a conflict of interest in this context.

It is incumbent on the CFTC to evaluate our conflicts rules to see if they can be clarified – and, if necessary, revised – for these newer corporate relationships in the crypto space so we can prevent self-dealing and improper commingling of customer assets, and assure that the actions of our registrants are taken in the best interests of the regulated derivatives markets.

Find solutions

Legislation is needed to fill the jurisdictional gaps in the spot crypto markets, but citing the lack of legislative action as the reason for the recent market failures does nothing to fix the problem. Innovations in digital blockchain technology hold vast potential for our financial system. But to foster such innovation, we must all work together to protect consumers, enhance risk management, and restore faith in spot crypto markets.

It is time to come together and start fixing the problem. ■

Powering Regulatory Technology Through Artificial Intelligence

Wai Lum Kwok
Senior Executive Director
ADGM

Using artificial intelligence (AI) to map and classify the regulations and rules associated with financial regulation is a significant development that could have far-reaching implications for the world of decentralized finance (DeFi). By creating a knowledge graph of such information, it is possible to convert regulatory requirements and context into code or smart contracts. This could enable the development of innovative financial products and services that are built on blockchain technology, and drive the growth and adoption of DeFi.

At the Financial Services Regulatory Authority (FSRA) of Abu Dhabi Global Market (ADGM) – the international financial centre of UAE's capital, we undertook a project in 2021 to digitalize and map our regulations and rules into a knowledge graph using AI, with the aim to help external stakeholders such as financial institutions, compliance advisory firms and regulatory technology (regtech) solution providers better navigate our regulatory requirements.

In the world of finance, there are often many different regulations that apply to different types of transactions and financial products. Through the knowledge graph, we hope to reduce the complexity associated with financial regulation, and make it easier to:

(i) understand and apply regulations to different situations; and
(ii) track and monitor compliance with such regulations.

This could help the industry move towards automating regulatory compliance, which is often difficult due to its highly cognitive and contextual nature.

Therefore, the use of AI to map financial regulation and unlock the potential of automated compliance could potentially one day drive the growth and adoption of DeFi. This could in turn pave the way for the development of more integrated and efficient financial services built on blockchain technology and smart contracts.

Open regulation

However, before regulations can be programmed into smart contracts, there are several steps that need to be taken. One of the key challenges is ensuring that the knowledge graph accurately and completely represents all of the relevant regulations, rules, and guidance available at any given time.

To this end, the FSRA recently launched the Open Regulation (OpenReg) initiative to share our knowledge graph, AI model, data and research for peer review in the ADGM GitHub repository. This is the first time a financial regulator has tried to provide regulatory context in the form of machine-readable regulations and AI models. By working with the industry and developer community, and providing access to the underlying data that we used to create our own AI model, we are looking toward building smarter AI and regtech solutions that make financial regulation simpler, clearer, and more effective.

The process of converting the information contained in the knowledge graph of financial regulations into smart contracts is another complex and challenging task. However, with the use of the right governance approach or vehicle, it would be possible to create a reliable and efficient system that can benefit the DeFi ecosystem.

Pushing the boundary: Regulatory DAOs

A regulatory focused DAO, or decentralized autonomous organization, is one such vehicle that could be used to manage and enforce regulatory requirements. By using a DAO, it may be possible to create a decentralized and transparent system for engaging with firms that are subject to regulation, such as:

- Creating a transparent and accessible venue for regulatory information. A DAO could be used to create a decentralized venue where firms can access and share information about regulatory requirements, such as reporting requirements, compliance standards, etc.

- Using a DAO to create smart contracts that enforce regulatory requirements or identify potential regulatory violations for appropriate remedial actions. For example, a smart contract could be used to automatically trigger a report or other compliance action when certain conditions are met.

In this regard, OpenReg has the potential to be a valuable resource to improve the transparency, efficiency and effectiveness of regulatory compliance. By using OpenReg, it is possible to make the rules and regulations that are enforced by the DAO more easily accessible and understandable to all parties involved.

We look forward to working with the industry, regtech companies and data science community to review our regulatory knowledge graph and use the OpenReg AI training ground in building the next generation of regtech solutions. ■

A Journey Towards Regulation of the Crypto Token Market

Peter Smith
Managing Director, Strategy, Policy & Risk
DFSA

Regulators globally are still divided on the need for regulation of digital asset business and, if regulation is needed, the appropriate form. Even where jurisdictions have chosen to regulate this developing industry, different approaches have been adopted, with a spectrum that ranges from, at one end, regulating digital asset business solely in relation to financial crime issues, such as money laundering and terrorism financing, to, at the other end, developing entirely new financial services regulatory approaches and terminologies. Somewhere between these points sit those jurisdictions who have chosen to apply existing regulatory structures to this sector, often more or less unchanged.

As the use of distributed ledger technology (DLT) and blockchain develops further, with more use cases being identified and assessed, different regulators are also focusing on specific issues, whether that be wholesale market use cases around bond issuance or clearing and settlement, or, for central banks, approaches to the creation and use of central bank digital currencies (CBDC).

The Dubai Financial Services Authority (DFSA), as the regulator in the Dubai International Financial Centre (DIFC), has been navigating its own path through the developments, opportunities and challenges of the digital asset industry to find where we should sit on the spectrum described above.

Our starting point was – and remains – that we are committed to developing robust, proportionate, and balanced regulation to support innovation and experimentation in financial services, while paying appropriate attention to the needs of customers and the proper and efficient operation of markets.

Our first step in this journey was the publication in March 2021 of a consultation on security tokens. We had some really helpful and informative engagement with industry stakeholders, including a roundtable with GDF members, and introduced new rules, now under the heading Investment Tokens, in October 2021. We started with this part of the digital asset world for a couple of reasons. Firstly, investment tokens are conceptually and economically similar to instruments we have regulated for many years – conventional equities, bonds, and so on. Secondly, a number of firms were interested in moving into this area, so we thought it appropriate to encourage that industry demand.

We then moved on to look at some of the newer instruments that have emerged in the digital asset area. In reality, we had already been looking at, and considering a regulatory regime for, this area for several years. We considered introducing rules on initial coin offerings (ICO) in 2017/2018, when we first had people approaching us wanting to do ICOs in or from the DIFC, but we are glad we didn't act at that time. The market has moved on so much that the rules we might have put in place would have become redundant. We prefer to propose new regulation when we can do so in a thoughtful, comprehensive and transparent manner.

In March 2022 we published a comprehensive consultation paper on regulation of what we chose to call Crypto Tokens. This set out detailed requirements for firms wanting to provide financial services in relation to crypto tokens,

including proposals on safe custody of client assets, technology governance, anti-money laundering (AML) and counter financing of terrorism (CFT), and other consumer protection obligations.

After a lengthy consultation period, and an in-depth analysis of the responses, the regime for crypto tokens came into force on 1 November 2022. In October, we issued an extensive Feedback Statement to explain what we had done with responses to the consultation. We set out our thinking in areas where changes were made, or where we chose not to make changes that were suggested, as well as highlighting areas where we will do more work. Regulating in the digital assets area is not a one-off exercise – industry developments make it essential that we keep our regime under review and update it as needed. The key features of our crypto token regime are described below.

Token taxonomy

It is important to be clear about which tokens fall within our financial services regime, which we will look at solely from a financial crime angle, and which are either prohibited or sit outside our regime. We have set this out in our rules and also included an illustrative "Token Decision Tree" to help market participants classify the type of token they would like to operate with.

Recognition of crypto tokens

We have decided that not all crypto tokens can be used by firms to do business in or from the DIFC without some checks. We think this is consistent with the approach adopted by most other regulators, who have some form of sign-off process or list of approved tokens, although the degree of transparency of this process varies. In line with our aim of being transparent, we have set out specific criteria that need to be met for the DFSA to recognise a token. With the same aim in mind, a list of Recognized Crypto Tokens is available on the DFSA website.

Non-fungible tokens (NFT)

For now, NFTs do not fall within the scope of our financial services regulation. However, NFTs that are within the definition in our rules will fall within our financial crime regime and need to comply with our AML/CFT rules. Issuers of NFTs, and persons providing services in relation to NFTs (or utility tokens), such as auction houses and issuance platforms, will have to register with the DFSA as a Designated Non-Financial Business or Profession (DNFBP) and comply with the anti-money laundering regime.

Prohibited tokens

Certain tokens are prohibited due to concerns about the transparency and efficacy of their operations. These include algorithmic tokens and privacy tokens.Companies must be based in the DIFC. We expect all companies that want to be licensed by the DFSA and provide crypto token services to have a substantial presence in the DIFC and have their day-to-day management and oversight of their business carried out in the DIFC.

Financial services activities

A range of financial services activities can be carried out with crypto tokens. This includes the provision of custody, managing assets, trading and arranging and advising, for example.

Be prepared

Companies wanting to provide a crypto token business should be well prepared. In addition to completing the appropriate application forms, we expect companies to prepare well thought-out regulatory business plans, business continuity plans, and financial crime risk assessments (or amendments to these documents if they are already authorised by the DFSA), for example.

We would also expect to see evidence of how companies will comply with the new requirements in the crypto token regime, for example, technology governance, consumer disclosures and risk warnings.

Future areas of policy focus

To enable us to continue developing our regulation in the crypto area, we will think further about AML/CFT issues, including the Travel Rule; staking; and decentralized finance.

Again, we will focus on striking an appropriate balance between innovation and market development on one hand, and consumer protection and risk management on the other.

Our journey so far has involved discussions with many stakeholders, including other regulators, firms, industry bodies, consultants, lawyers, and many more. The main thing we are certain of, after all this work, is that the journey is not finished. Technological developments will continue. We will aim, as always, to provide regulation that is risk-based and avoids unnecessary burden. ■

Setting the Regulatory Baseline to Secure Global Interoperability Across Virtual Assets

Deepa Raja Carbon
Vice Chairperson
Virtual Assets Regulatory Authority

Virtual assets have been with us for well over a decade, and today we have an increasing number of financial services authorities, legislative and regulatory bodies, market assurance institutions, and tier-1 market-makers across advanced and developing economies acknowledging that they are here to stay.

The dynamic and fast-evolving world of virtual assets is unique in that it is not a vertical sector, but rather a transversal growth accelerator. Its transformative potential in enabling the future global economy is evidenced in that it:

(a) touches practically every industry cluster across international markets;

(b) safely democratizes control by enforcing individual accountability, and collective responsibility; and

(c) interacts with every tier of society making mass economic empowerment a tangible reality.

The year 2022 has highlighted the extreme volatility, surprising unpredictability, and instantaneous escalation further exacerbated by the constancy of change within the sector, raising the alarm on the lack of de-risking mechanisms, and de-escalation levers to effectively stem the tide. Given the material influence this virtual asset sector is likely to wield on the future of finance, the limited awareness of its inherent risks, and very real magnitude and pace of contagion – there are calls for decisive and cohesive action across governments.

Dubai's Virtual Assets Regulatory Authority (VARA) was established in Q1 of 2022 as the world's first and only specialized regulator, and independent authority dedicated to governing the virtual asset industry within its regime. With the mandate to devise a progressive operating framework, VARA has embarked on the bold mission of creating the global regulatory baseline that offers secure cross-border interoperability, and sets the gold standard for responsible virtual asset participation.

How are we going about achieving this?
Even as VARA expects to structure legislative guardrails to secure the niche regulatory framework that it will design for virtual assets, we will harness insights and expertise from traditional finance, and use relevant tested principles as the baseplate to build on.

1. When governing a 24x7 borderless sector where risks are not ringfenced to any single jurisdiction, establishing an 'acceptable baseline' of market assurance, economic governance, and consumer protection standards with an agreed risk-floor between the collaborating governments is crucial. VARA has activated dialogues not just with regulatory peers, but also industry fora and global association groups like GBBC-GDF to leverage insights, contribute learnings, and build shared subject matter expertise.

2. Cornerstone principles of the traditional economy (such as financial market assurance and security including anti-money laundering (AML)/counter financing of terrorism (CFT), information security, and data privacy etc.) would be adopted, and applied without compromise to ensure that Financial Action Task Force (FATF) compliance pre-requisites are not breached across legacy traditional finance (TradFi) or new-age centralized

finance (CeFi) and decentralized finance (DeFi) ecosystems.

3. Beyond the non-negotiable base, regulating the virtual assets industry that is in such a state of nascency and dynamic evolution demands an innovative approach that remains agile and progressive. VARA's Minimum Viable Programme (MVP) epitomizes this philosophy - allowing firms to operate at full-scale, and test their project scalability by offering their products and services to institutional finance, funds, and qualified retail investors under strict conditions.

VARA believes in the need for this programme to balance risk mitigation for market protection with prudent innovation for class-agnostic economic freedom.

1. We hope to encourage other regulators to leverage our MVP as a learning symposium to observe market behaviours, evaluate the threshold for acceptable risk tolerance, and be able to contribute to the joint creation of new global interoperability standards for responsible participation with VARA. This being said, regulators are required to steer the way, rather than continually needing to play catch up even as the industry continues to innovate with new products and technologies.

2. VARA's priority commitment is the protection of consumer and investor interests, followed by consequential financial market stability, cross-pollination of opportunities, and socio-economic sustainability of domestic and international markets.

3. These goalposts drive our activity-based approach to regulation – that steers clear from the product and technology driven frameworks that most likely stifle the pace of innovation by effectively barring any specific thing that's not explicitly been 'approved' to be.

4. As such, VARA governs the underlying activity and regulates the sector based on fair conduct, uncompromised ethics, and equitable market principles. New and legacy firms that seek to service this sector will be bound by rules depending on the type of service they offer.

These regulations are a framework of fundamentals that will continue to apply even as products and technologies continue to evolve. Such flexibility is crucial for those hoping to harness the full potential of virtual assets, without compromising protection of the economically vulnerable and financially vested segments of society.

In regulating a unique industry for which we have developed a unique framework, the basic premise is that virtual assets go beyond being one part of a traditional economy – they are in essence the trigger that can accelerate the scaling of an entirely new economic order that opens access to the under/ unbanked, and allows most sectors of a traditional economy an additional channel to tap into a previously unaddressed segment.

We believe that to regulate companies effectively you need to operate in the environment they are familiar with. In May, VARA became the first regulatory authority to enter the metaverse, establishing our own headquarters in the virtual world of "The Sandbox."

This move ensures that we will always be accessible to those we are regulating, while also encouraging collaborative engagement between more stakeholders. Our entry into the metaverse is also driven by the recognition that the physical world does not offer the same

seamless interoperability standards as the digital world – and it is a call on us as global regulators to put our thinking hats on to create a practical 'portability' framework for a borderless industry, where enforceability and safety are at the core of our joint mission.

With a 90% expatriate population, the UAE naturally has a global perspective. VARA's mission is to ensure that global financial hubs can adopt our framework and as such Dubai can serve as the sandbox for the world – the environment where other jurisdictions can see new regulations adopted, adjusted, and tested. This fosters deeper global 'ownership' of a shared mission, accepted regulatory framework promises to be transformative for the virtual assets space. The market volatility we have seen this year is a consequence of minimal guardrails and safeguards.

Today, as we stand at the crux of a prolonged global recession with deep inflationary pressures, safe channels to put economic control back in the hands of the public would be a desirable end-state for most nations. Sound regulation would attract greater numbers of retail consumers and institutional investors, spanning both the Generation Z profile and the senior pensioner segment, broadening the spectrum of economically active society. Scale by default makes the sector more resilient and reduces volatility. VARA trusts in the potential of the virtual asset sector with the safety net of a comprehensive regulatory framework to serve as one enabling lever to accomplish this goal post. ■

VOICE OF THE COMMUNITY

The Importance of Continuous Education on Best Market Practices

Kim Winding Larsen
President
ACI FMA

Rui Correia
Executive Director of Education
ACI FMA

As the leading global trade association that represents the interests of professionals working in wholesale financial markets, ACI Financial Markets Association (ACI FMA) has a long history, tradition, knowledge, and competence in the promotion and development of codes of conduct and good practices that assist the enhancement of fair, honest, and appropriately transparent financial markets where all participants can trade with confidence and with integrity.

At ACI FMA, we believe that the financial markets community needs a drastic change of culture so that we can avoid the repetition of unfortunate past events that damaged the reputation of our industry and the efficiency of these markets. For us, it is important that such change is supported by codes of conduct and good market practices, built by the industry with an aim to serve the industry.

Given that our three core values are ethical conduct, education, and membership, it is perfectly natural that, as a non-profit organization, ACI FMA's projects are strongly geared to the development of educational tools that allow all market participants to train and certify themselves on a continuous basis, to recognized industry guidelines of good market practices.

In our view, the GBBC Digital Finance Code of Conduct falls into that category, as its ten parts are widely recognized as standards and voluntary principles of good personal and professional behaviour for all market participants in digital finance.

Therefore, ACI FMA and GBBC Digital Finance have partnered to integrate the full content of the GBBC Digital Finance Code of Conduct into the ELAC Portal, for E-Learning, Attestation and Certification on industry codes. This is a tool built and designed by ACI FMA to help entities and individuals understand and attest to their guidelines on an ongoing basis, so that they can show sustained and constant proof of adherence to good market practices. The ten parts of the Code were uploaded into ELAC in December 2022, and they are now available for all interested ELAC users.

To support that release, ACI FMA and GBBC Digital Finance have spent most of 2022 producing current, relevant, and regular content that aims to test the knowledge of the ELAC users, both to the theoretical part of the GBBC Digital Finance Code of Conduct (terminology, glossary, definitions, etc) and also to the practical implementation of their guidelines through "real life" scenarios built with fictional entities and characters demonstrating a diverse number of roles for market participants in all sectors of the digital finance industry.

We believe that the addition of the GBBC Digital Finance Code of Conduct will be an important complement to the current content already included in the ELAC Portal, such as the FX Global Code, the Global Precious Metals Code, and the UK Money Markets Code, amongst others.

The importance of continuous education has increased in recent years, and we believe that it reinforces the learning, comprehension, and implementation of good market practices, as they are paramount to the improvement of ethical behaviour and market integrity of all individual market participants. The integration of the GBBC Digital Finance Code of Conduct into the ELAC Portal allows those participants to have one single tool that can help in the achievement of those

Crypto Will Eat Financial Services

Richard Crook
COO
BCB Group

The convergence of crypto with financial services

Now that I'm at BCB Group, a leading provider of business accounts and trading services for the digital asset economy, I find myself with one foot in financial services and the other in crypto – between the so-called 'TradFi' and 'DeFi'. Today, these two might seem like strange bedfellows but over time, I believe they will inevitably and irreversibly converge.

The Securities and Exchange Commission's (SEC) view has been clear and consistent that traditional finance (TradFi) and decentralized finance (DeFi) will not be regulated by different rule books. We saw at the outbreak of the war in Ukraine the enforcement of anti-money laundering (AML) and counter financing of terrorism (CFT) obligations equally on TradFi and DeFi firms. We wait to see what changes are caused by Ripple vs SEC legal case and draft regulation currently in front of the US lawmakers.

I am fond of quoting the last line from Animal Farm by George Orwell. *"The creatures outside looked from pig to man, and from man to pig, and from pig to man again; but already it was impossible to say which was which."* I am not overly concerned about who you see as the pigs in this fable but that you might understand that in the future it will be impossible to say which is which between TradFi and DeFi.

The spectacular collapse of FTX has surely accelerated the adoption of financial regulation over the crypto domain. FTX could be seen as crypto's Napster and its demise may herald the emergence of crypto's Spotify. A transformative upstart providing financial services that survives the crypto winter and embraces both crypto and regulation.

Crypto is a format not an asset class

The Financial Times recently added the price of Bitcoin and Ethereum to their front page as a new asset class. That this bastion of TradFi has recognized crypto as a peer asset class alongside equities, fixed income, and commodities should be received with celebration. I believe this misses the key innovation of crypto that it is more than another asset class. Crypto is a new format for dematerializing financial assets as tokens.

Bitcoin as a private currency was the first digital asset to hold value under market conditions and over the past decade has proven the underlying distributed ledger or blockchain technology. This has led to many other financial assets being dematerialized as crypto tokens. We have seen fiat currencies dematerialized as USDT and USDC tokens by crypto firms Tether and Circle respectively. Other DeFi firms were not far behind with tokenized debt (AAVE), equity (Tokeny) and commodities (Paxos). We have also seen TradFi institutions joining in, Santander and WisdomTree issuing tokenized bonds and funds respectively. Even the central banks are experimenting with central bank digital currencies (CBDC) to tokenize their balance sheets (SNB). At the last peak in Q4 of 2021, there was $3 trillion in tokens.

Tokenization has allowed for atomic settlement between different financial assets, leading us to unleash a new breed of digital exchange (Archax), decentralized exchanges (Uniswap) and other decentralized financial services operated as smart contracts across multiple asset classes. These new services are able to

offer issuance, listing, post-trade settlement and asset servicing for a fraction of the normal cost with greater transparency. The three decade-long journey to dematerialize the public securities market into centralized databases nears completion but the majority of the $7 trillion private securities market remains opaque, inefficient, and illiquid. The promise of transparency, efficiency, and the most important of them all, liquidity is the prize at the end of the tokenization rainbow.

I see what you see

The buy side has not remained unscathed by this convergence. Retail investors have long understood that they are financially excluded from investing in anything but public securities. They are aware that the growth potential is in private securities. These astute investors are disintermediating the TradFi asset managers to hold dematerialized financial assets as tokens either directly themselves or through new crypto asset managers (Crypto.com). This has led us back to the age-old challenge of protecting client funds and investors by ensuring crypto firms who are providing services or products are authorized by their respective regulator. The difficult balance between investor safety and access will continue.

As this disruptive innovation sweeps through financial services providing more transparency, efficiency, and liquidity, it is not clear how the balance will be struck between investor access and safety, financial stability, and innovation. What is clear to me is that as software has eaten the world, crypto is eating financial services. ■

Money Crypto Versus Tech Crypto:

How the two faces of the ecosystem impact the regulatory discussion

Bill Hughes
Senior Counsel & Director of Global Regulatory Matters
ConsenSys

As legislators and regulators around the world are crafting the rules that will apply to digital assets, it is crucial that policymakers understand that there are really two crypto ecosystems at play. They present different regulatory policy issues. Conflating the two risks stifling growth and innovation, but those jurisdictions that properly understand the difference and regulate intelligently have an opportunity to lead in this digital revolution.

Two sides to the crypto ecosystem

One side of crypto is predominantly about investment. Call it "money crypto." In essence, it is about buying, holding, lending, and trading tokens as investable assets. Money crypto wants big institutions and retirement funds to invest and a spot exchange-traded product that every retail investor buys. When money crypto says "it's still early," this means that most people haven't bought yet. This side rightfully has the attention of regulators after the collapse of Three Arrows Capital, Celsius, Voyager, and most notoriously FTX.

The other side is about building peer-to-peer computer networks where participants transact by using globally accessible software. Call it "tech crypto." Tech crypto wants these new computer ecosystems to actually work and provide utility for their users. When tech crypto says "it's still early," it means that a lot of the key tech that will define the long term has yet to be built out. Generally, this side is poorly understood by policymakers and regulators, but they need to learn fast.

Centralized finance (CeFi) is the beating heart of money crypto. Intermediaries define the investment landscape and are the driving force. In tech crypto, by contrast, the defining feature is software serving as a transactional counterparty or intermediary. It is much more decentralized finance (DeFi) than CeFi.

Money crypto and tech crypto present different risks that public policy might address. In money crypto, the risks look more or less as they do in traditional finance (TradFi). Tech crypto risk encompasses some of these categories but includes entirely different ones, too: hazardous self-custody, vulnerable smart contracts, good and bad actors having equal access and public, pseudonymous and irreversible transactions. DeFi opens up a whole different problem set with which public policy is unfamiliar.

FTX exposes risks in money crypto

Recognizing these differences in risk and potential policy solutions is particularly important in the wake of the FTX collapse. Regulators are feeling tremendous pressure to respond in a way that protects consumers. They should pay close attention to how and why FTX failed, because the circumstances that led to the FTX collapse are not unique to crypto. They are the well recognized symptoms of centralization and intermediated finance, which manifest even in the heavily regulated space of TradFi, as MF Global, Bernie Madoff, and countless other scandals have taught us.

Money crypto leading the regulatory debate

Because money crypto has been driving the regulatory discussion, regulators world-over have generally over-emphasized the investment aspect of crypto. The good coming from money crypto

taking the lead is that money crypto risks are front and center when it comes to prospective regulation. The bad is that policymakers too easily make the mistake that policy solutions for money crypto should be applied in equal measure to tech crypto, despite the different risk profile.

Tech crypto has not been as prominent a voice, in part because it does not have existential regulatory questions that it must call to move forward. As a result, policymakers are generally much less informed about tech crypto, or fail to recognize it as being at all distinct. For example, while regulators have heard of Ethereum and the meteoric price rise of ETH tokens, few understand that Ethereum is a computing platform. Almost no one understands the protocols being built on it.

The regulatory conversation should acknowledge both sides

The balance in the conversation needs to shift to accommodate the reality that money crypto and tech crypto present different baskets of public policy challenges. In order to have a smarter discussion and reach better solutions, regulators around the world should engage with the tech crypto ecosystem to better understand the challenges and, importantly, to start thinking about solutions that leverage not only public policy but also all of the potential the tech itself holds.

A coherent approach would mean addressing money crypto regulation first and then getting to tech crypto later. This is what we generally see happening in certain jurisdictions like the European Union (EU), where the Markets in Crypto Assets regulation (MiCA) covers CeFi and MiCA II, a follow on effort, will tackle DeFi more purposefully. This tiered approach makes sense because money crypto is much more readily regulated. While we are doing that, we can more closely study, evolve our views, and hopefully reach greater consensus about risks and mitigation strategies relating to the global, permissionless peer-to-peer crypto space. ■

As Seen Through the Data:

The Collapse of FTX and What it Means for the Industry

Alissa Ostrove
Chief of Staff
CryptoCompare

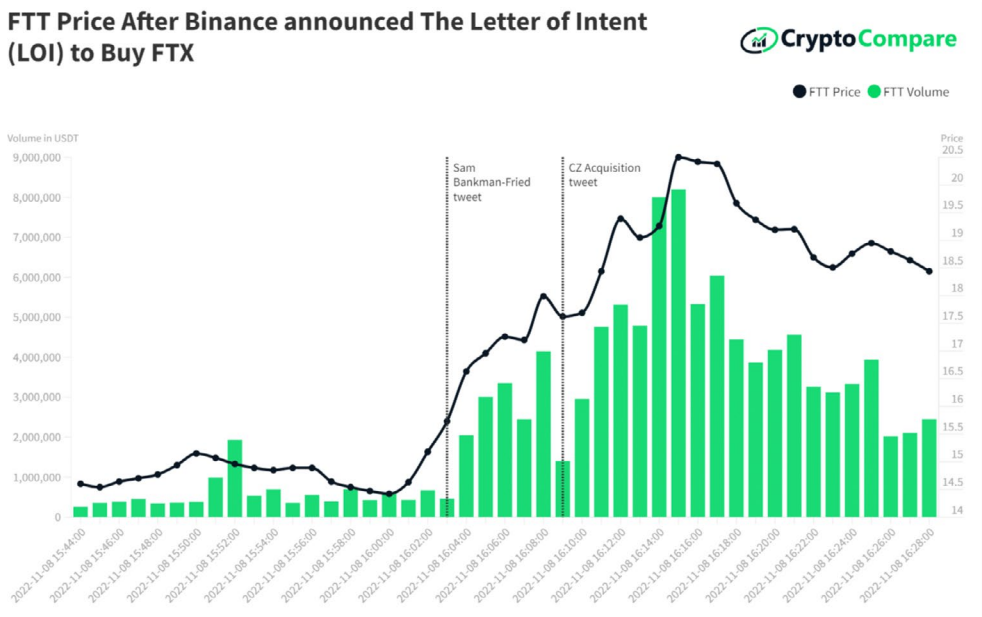
On Wednesday 2 November 2022, concerns surrounding the insolvency of FTX started circulating, when the balance sheet of Alameda Research, a hedge fund closely affiliated with FTX, and also founded by FTX CEO, Sam Bankman-Fried, was leaked. A surge in user withdrawals followed, resulting in a bank-run and the eventual insolvency of the exchange. Using CryptoCompare data to tell the story of what exactly unfolded, we briefly touch on the events that led to the exchanges insolvency, and where the industry stands today in wake of its collapse.

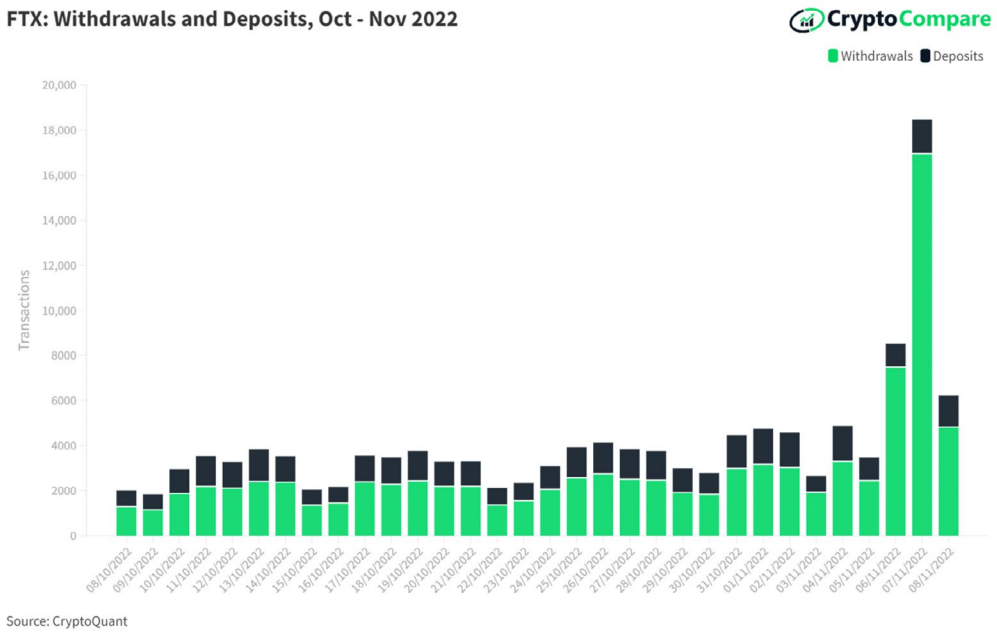
On November 2nd, a Coindesk article revealed that Bankman-Fried's trading firm Alameda Research held $3.66 billion of unlocked FTX Token (FTT) as of Q2 2022, making it the largest asset on its balance sheet at the time. Moreover, the fund also held $2.16 billion of FTT collateral as assets and $292 million of locked FTT in liabilities. This was concerning as a substantial part of the multibillion-dollar hedge fund's balance sheet was tied to the native token of its sister company, which had little to no utility or demand. Thus, a significant decline in the price of FTT would have dire consequences for Alameda Research and Bandman-Fried's crypto empire.

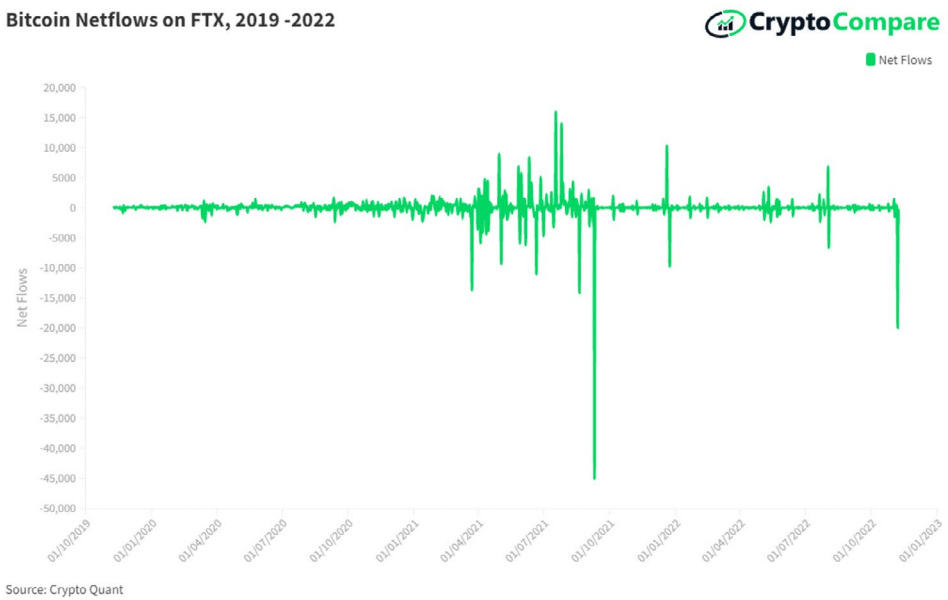
Following the leak, Changpeng Zhao, the CEO of Binance, disclosed Binance's intention to liquidate its FTT position - worth around $580 million at the time - that was allocated to them as FTX equity last year. This added fuel to the fire and increased concerns over the potential insolvency of FTX, something which was still considered improbable at the time.

The repercussions of the collapse of LUNA/Terra and the meltdown of multiple crypto lending products was still being felt in the sector, and the potential insolvency of one of the largest crypto exchanges fuelled significant market panic. As a result, the stablecoin reserves on FTX declined 59.3% to $121 million following Zhao's announcement on the 6th of November.

FTX recorded the largest number of withdrawal transactions in its history on November 7, suggesting that users were concerned about the





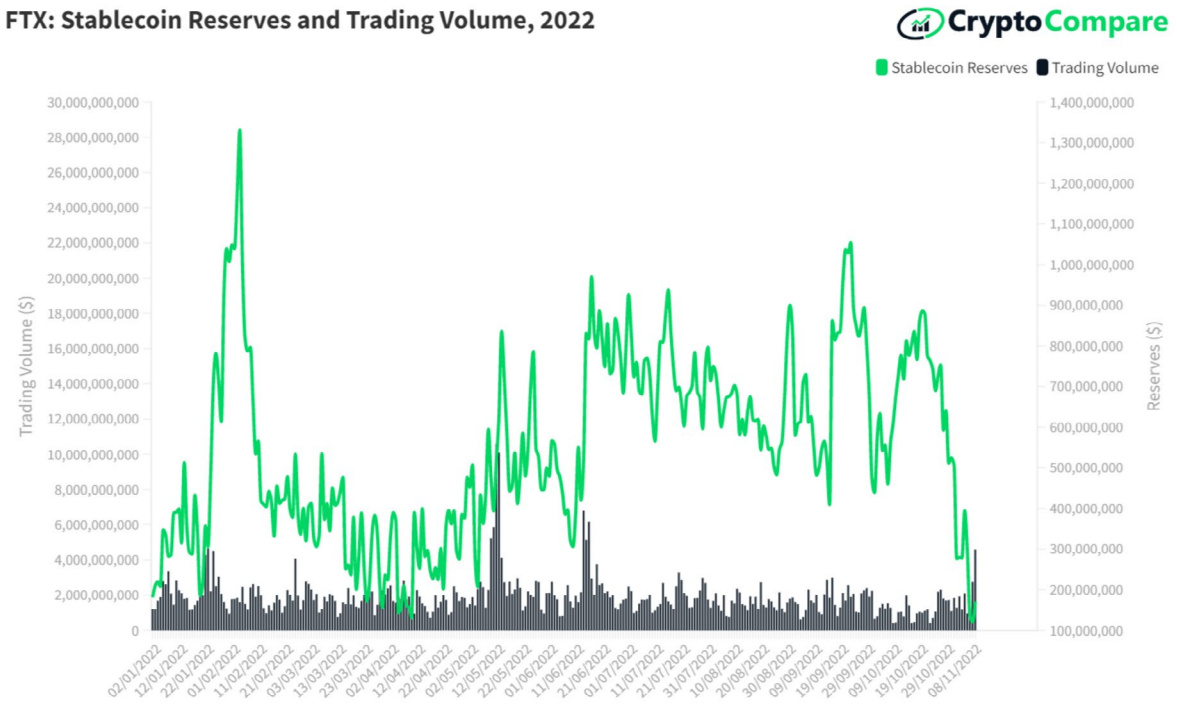


situation and were looking to migrate to other venues.

A combination of the above factors resulted in an inevitable liquidity crisis for the exchange, as it attempted to fulfill the sudden spike in withdrawal demands from users. On-chain data suggests that withdrawals were halted with zero announcements or communication from either FTX or Bankman-Fried.

Exceeding all expectations, Bankman-Fried announced the acquisition agreement of FTX by Binance. While this initially appeared to alleviate concerns of further contagion in the industry, it was, unfortunately, short lived. Days later, Binance announced its decision to withdraw from the acquisition, stating “our hope was to be able to support FTX’s customers to provide liquidity, but the issues are beyond our control or ability to help.” FTX and FTX US have since declared bankruptcy, with former Bankman-Fried recently pleading “not guilty” to all criminal charges in the New York federal court.

So, what does it mean for the crypto industry?
Despite clear evidence that this was a case of fraudulent business practices and opaque



Source: CryptoCompare, CryptoQuant

governance structures, there has been overwhelming media and public backlash suggesting regulators should come down heavily on the industry.

FTX's decline was unprecedented and will continue to have a ripple effect on market participants. In light of the event, it has become clear that only a handful of high-level executives at FTX were aware of the underlying structural deficiencies within the exchange, but these events have proven that the accurate assessment of centralized exchange risk is now more relevant than ever.

We have already seen this come to light via the call to action for exchanges to share proof of reserve audits with users, alongside other transparency measures. Exchanges that do not follow this standard will likely lose market share to competitors with more transparent business practices.

CryptoCompare holds its belief that digital assets and blockchain technology will continue to revolutionize the financial services industry in the long term. We will continue working towards making that goal a reality via our industry-leading methodologies, aggregate pricing, benchmarking, research and overarching digital asset data offering. You can subscribe to our weekly research or read previous reports at *data.cryptocompare.com/research.* ■

Establishing a Global Regulatory Framework for Crypto

Roeland Vaderstappen
VP of Policy of EMEA
Crypto.com

2022 was a challenging year for the crypto industry. The fallout of various bankrupt entities such as FTX and Celsius, and the collapse of certain decentralized products, such as UST, has undermined the industry's and broader crypto community's reputation. The failures of last year were predominantly confined to individual human misconduct, poor risk management and the unsustainable business models on the part of few centralized players, but the technologies underpinning crypto remain as relevant as ever.

Despite the hard hits, it is important not to lose sight of the positive developments of the past year, notably the successful transition of Ethereum to a proof-of-stake consensus mechanism, resulting in dramatically less energy use and setting the stage for increased scalability and other improvements; growing consumer use of crypto assets globally; continued institutional interest in and adoption of crypto products; and expanded constructive dialogue around the world over regulatory clarity and right-sizing of rules for centralised crypto market participants.

More importantly, we should maintain our focus on the ongoing current and potential application of crypto and blockchain technologies to innovate and grow our economies in financial services and the broader digital economy, which are as real as ever. For example, decentralized cloud storage networks are advancing along with decentralized identity credentials; commercial and retail property has transferred hands by means of non-fungible tokens (NFT); and remittances are being made faster and cheaper. Given these advances, those building the crypto industry will now focus around the most promising projects across multiple industries.

For the industry to build and innovate, it must also build back trust. It is incumbent on all players in the ecosystem to do so. Advancing effective regulation in 2023 will be an important component of rebuilding trust. Currently, the regulation of issuers of stablecoins is being prioritised in jurisdictions that have a major focus on crypto. This focus is complemented by debate on the regulation of centralized exchanges and custodians to support ongoing responsible innovation.

Minimum global standards

The main tenets for a harmonized global regulatory framework and licensing regime for centralized crypto trading platforms and custodians are:

- **Effective KYC and AML/CFT policies:** virtual asset service providers (VASP) should implement robust know-your-customer (KYC), anti-money laundering (AML) and counter-terrorist financing (CFT) policies and procedures, while being encouraged to use next generation compliance solutions, such as best-in-class digital onboarding, identity and verification solutions as well as use of blockchain analytical tools for ex-post monitoring of transactions. As important, policy-makers should promote a consistent and global implementation of the Financial Action Task Force (FATF) so-called Travel Rule to avoid potential arbitrage as crypto markets are inherently global.

- **Legal segregation of customer assets:** Legal segregation of customer assets and a VASP's own assets should become the norm (where

not already required) both to minimise the risk of misuse and to protect customers in case where a VASP becomes insolvent.

- **Minimum standards for safeguarding clients' assets:** VASPs that hold clients' crypto assets or have the means to access clients' crypto assets should make adequate arrangements to safeguard the private keys of clients. Adequate safeguards could be achieved in partnership with specialized custody service providers that meet a global standard or by crypto trading platforms themselves if they exhibit the required mix of technical, data security, and internal controls.

- **Market integrity rules:** Integrity of cryptoasset markets is key for institutional adoption and retail protection. Transparent trading and reporting practices as well as standards for monitoring and surveillance are key to prevent and detect manipulation and fraud. Similarly, token listing standards should protect customers against scams like "pump and dumps" and "rug pulls" as well as review the basic legitimacy and integrity of new token projects and their developer teams.

- **Security:** VASPs should establish ICT business continuity and disaster recovery plans that ensure that data and the maintenance of crypto asset services are preserved, recovered and resumed in a timely fashion in the case of an interruption to their ICT systems and procedures. To this end, VASPs should undertake third party audits of their cyber risk practices.

A baseline of global regulatory standards can mitigate regulatory arbitrage opportunities and ensure that customers are not driven to unregulated centralised platforms. The use of technology-based detection and investigation techniques and increased cross-border cooperation between authorities will help supervisors effectively to curb illegal online conduct.

Discussions on regulation of decentralized finance (DeFi) will follow a separate and slower track, not at least as DeFi remains relatively nascent, has unique characteristics, presents different benefits and risks than centralized services, and a variety of use-cases and security mechanisms that are ever-evolving. It is clear that regulation of DeFi requires a novel approach to account for these unique characteristics given that the traditional approach to regulating centralized finance is not applicable.

Looking ahead

"Verification" and "transparency" will be the watch words of the crypto industry in 2023. Sound regulation will support these dual endeavours, but it will take time to evolve this and that is why responsible crypto actors are working now to improve transparency and industry best practices in advance of future regulation. ■

Programmable Policies:
Hybrid Digital Asset Custody

Rashid Hoosenally
Co-Founder
Guardian

The events of 2022 have prompted much soul searching by digital asset investors globally, who feel caught between the rock of self-custody and the hard place of having to entirely trust your money to a third party.

In the early days, blockchain pioneers promised a future for digital asset investors where the only person we needed to trust was ourselves. We could dispose of all those inefficient middlemen and have 24/7, instant, continuous settlement with no post-trade reconciliation. We had the revolution of self-custody: I could safely keep – and directly trade – all my crypto and digital tokens myself.

But as markets and investments grew in size and complexity, the downsides became clear: self-sovereignty, attractive in principle, comes handcuffed to its evil twin – total self-reliance. Yes, you only need to trust yourself. The problem is, we are all fallible.

Between this and the clunky user-experience of most self-custody solutions, the attractiveness of having a third party take care of your assets for you and deliver a familiar Web2-style username and password experience became obvious.

Of course, as FTX users have learned, depositing with a third party has equally huge downsides: once your keys/assets are with a third party, the key keeper can move them, use, them, lend them – and steal them. This is especially easy where legal recourse to get your assets back are minimal, even non-existent.

But what if you can secure your assets so that you both always have total control over them but you also can always retrieve your key even if you lose it? What if we can set and securely control the rules about how shared assets are used?

The world of hybrid custody

Hybrid custody is a form of verifiable, "joint custody" that sits between self- and third-party. Though you might "share" custody of assets with others, the user always sets the rules on how they are used and can always see and independently verify that these are being enforced. What's more, it's not just the digital assets that are secure but the rules and policies governing them, which are transparent, not under any one party's control, and can't be manipulated in anyone's favor.

The hybrid custody approach can deliver far more than a retrievable seed phrase and therefore offers an anchor for independence. It allows you to set the rules governing your assets and always verify that they are being followed. No one can change the rules without your approval.

Consider the example of an exchange that needs customers to leave balances on it for trading to be sure that the customer can satisfy their settlement or margin obligations. With hybrid custody, the customer and exchange can operate to a set of clear and agreed rules (for example, do not transfer the balance somewhere else) and always know they are enforced on-chain – i.e. transparently and externally verifiable. This is in addition to any legal agreement not to misuse the assets, as we know that such agreements may well be ignored.

Such transparent rules are not just important to protect against external risks. As we have seen in the case of FTX, it is critical in defense against insider risk, which many in the community have long argued is a much bigger risk factor than external hacking, and yet has received far less attention.

Conditional custody and programmable finance
The natural extension of hybrid custody is conditional custody. This not only uses immutable, blockchain-published policies to allow providers, venues, and platforms to 'share' custody with owners, who retain full control, but also allows them to set all sorts of conditions about how they operate in different circumstances — hence the term "programmable" finance.

Users can, for instance, write their own 'self-protection' rules into their wallet to protect themselves from errors - e.g. "do not let me send WETH to an ETH address" or "don't move more than $5k/day without extra approvals". Such rules can protect against malware, phishing, and social engineering attacks, as well as simple errors.

And, going back to seed phrases, as well as decentralized phrase backup, users can incorporate rules about inheritance to ensure that loved ones will get all their digital assets in line with their wishes.

These features are crucial across finance and Web3: whether non-fungible token (NFT) gaming assets, derivatives trading, or decentralized autonomous organization (DAO) governance — if you can think of an 'if, then' statement, you can implement any combination of them through hybrid custody.

How does hybrid custody work?
Our vision for hybrid custody draws on our learning from decentralized finance (DeFi) which has demonstrated quite clearly trustless enforcement of pre-defined, pre-published rules — rules that are consensus-based and also arranged so they operate in sequence so that all the steps defined are followed.

How do we know the rules themselves aren't vulnerable to manipulation? This brings me to a central and crucial feature of any robust hybrid custody system: external, immutable, and transparent rules.

The foundation stone of confidence in a custody system are the rules and rights that are agreed by all, transparent to all, and which cannot be broken. But such rules are useless if they can be subverted, manipulated, or hidden. The more you can verify policy, the less you risk.

However, policy underpinned by centralized code that sits on top of keys is not (or should not be) good enough. Centralized code is opaque, insecure, internalized — and therefore vulnerable. Manipulate the policy (e.g. change the policy to add a new withdrawal address and remove size limits) and you have a back door to allow a 100% drain of assets. Such policies are easy for anyone from a dishonest CEO to an IT contractor to manipulate.

> **That is why hybrid custody is built on trustless, neutral, enforcement of agreed rules via a decentralized network, and cryptographically tied to keys so that they cannot be used without it.**

Putting policy on-chain, fully decentralized via smart contracts means it is transparent, immutable, and externalized.

On-chain means every policy and rule can be proven to and verified by any and all stakeholders, customers, creditors, auditors, and regulators. These are the principles we need to

uphold in any good custody system: verification, trust, and transparency.

Transformational implications

Hybrid custody will end the self vs third party custody dilemma, offer sovereign owner-led control of crypto assets, as well ensure audit and regulatory compliance, and adherence to governance frameworks.

Unprecedented transparency will also provide a "golden record" of multi-party transactional data. This data can preserve privacy but also permission specific viewing rights, starting with the counterparties, and then the auditors and regulators. This will significantly streamline both audit and regulatory discovery. It can provide bulletproof Proof-of-Reserve and Proof-of-Liability data in real-time, using zero knowledge proof (ZKP) protocols for privacy preservation and aggregation.

By providing institutions with a cryptographic means of enforcing their rights on assets as outlined in agreements between them, their partners, and their customers, we can ensure that all transactions are in compliance with all internal policies, procedures, and role-based approvals.

By protecting users, enforcing rights, allowing for secure and dynamic exchange of value, hybrid custody is the best-of-both worlds paradigm that can solve the problems of the past and open the door to an exciting Web3 future. ■

The Annual Summit on Crypto and Digital Assets for Financial Institutions

John Salmon
Technology Partner
Hogan Lovells

Christina Wu
Associate, Commercial Technology & Fintech
Hogan Lovells

Joseph Scott
Trainee Solicitor
Hogan Lovells

On 30 November 2022, Hogan Lovells and GDF convened their annual crypto and digital assets summit, involving a series of panels in which industry leaders exchanged insights on the regulatory landscape and emerging risks and opportunities related to digital assets and the financial services sector.

Panelists that contributed to the conversation included representatives from policymakers (including the US Federal Commodity Futures Trading Commission), leading global banks (including Barclays, Standard Chartered, and Goldman Sachs), as well as a variety of players within the digital asset space (including Ownera, Elliptic, Chainalysis, and TRM Labs). A diverse range of perspectives and views were shared during the event, but a number of common themes permeated the discussions.

Difficulties in light of recent events in the market

The impact of recent and high-profile corporate insolvencies within the digital assets industry was discussed at various points during the day. There was a general consensus that, despite these events leading to a significant setback in public sentiment towards cryptoassets, the events do not necessarily reflect a failure in digital asset regulation, or hamper the potential for digital assets to positively transform the financial services sector.

Some panelists contemplated how the current "crypto winter" may in fact advance the digital assets agenda by focusing minds on the core capabilities of the technology and reducing focus on the hype around cryptocurrencies.

Moreover, in the aftermath of such events there is likely to be a push to implement new digital asset regulations — some of the issues that are likely to be addressed include custody, segregation of client assets, conflicts of interest regarding activities undertaken on behalf of firms versus activities undertaken on behalf of their clients, and insolvency situations.

It was noted that existing regulatory efforts, including the Markets in Crypto Assets Regulation (MiCA) in the European Union (EU), have already sought to tackle a number of these issues and that any additional regulations elsewhere in the world should be proportionate and considered, rather than swift and reactionary.

Challenges and opportunities

Despite the macroeconomic and political headwinds of the past year, it was broadly agreed by the panelists that the adoption of cryptoassets and tokenization will continue to grow across jurisdictions around the world. Panelists discussed the efficiencies that can be gained from the use of distributed ledger technology (DLT) such as in the context of securities tokenization. Additionally, the potential implications of DLT (particularly in terms of traceability and transparency) in the areas of anti-money laundering, civil litigation, and

criminal investigations, as well as environmental and social governance, were touched upon.

Regarding decentralized finance (DeFi), it was noted that there are very few truly decentralized financial products and services currently offered on the market. As DeFi solutions continue to proliferate, however, panelists noted that the regulatory challenges related to liability and accountability of DeFi entities will need to be addressed.

Sharon Lewis, Partner at Hogan Lovells, leads the discussion on tokenization at the Summit

The hybrid event meant Hogan Lovells offices globally were connected for the Summit

The future of regulation

There was widespread acknowledgement of the significance of the recent adoption of MiCA by the EU, the first comprehensive digital assets regulatory regime to apply across all 27 Member States. In general, the passing of MiCA was applauded throughout the conference as a positive development, and there was recognition for the potential for MiCA to serve as a reference point for the regulation of digital assets globally. There is a danger of MiCA becoming quickly outdated, however, in light of numerous industry developments and the manifestation of new issues since the original draft of MiCA was first conceived in 2020.

The importance of distinguishing between "retail" and "wholesale" services in the context of creating regulatory regimes was raised. It was further suggested that while the former category should be more stringently regulated to protect retail investors, authorities may be able to take a more flexible approach to regulating wholesale activities provided that the relevant firms have appropriate risk management controls in place. Panelists stressed the significance of DLT being a "borderless" technology, noting the difficulties of applying legislation under different jurisdictions in the absence of a harmonized global approach and potential litigation risks. Additionally, it was noted that much of existing financial services legislation in the developed world was introduced in light of the financial crisis of 2008, and may therefore be ineffective in dealing with current problems and challenges within the digital asset space.

While increased regulation may not be favored by all, industry players across the globe generally welcome regulatory clarity, the development of a common taxonomy, and coordination between policymakers of different jurisdictions as well as with market participants. The panelists noted that there remains work to be done on this even after MiCA comes into force. ■

The Evolution of the Digital Assets Revolution:

A Look Ahead to 2023

Todd McDonald
Co-Founder & Chief Product Officer
R3

As we look back on yet another year of continued economic instability, it is difficult to ignore the growing influence of distributed ledger technology (DLT) on our lives and in our financial markets.

This influence has not gone unnoticed by governments, with 2022 seeing great strides to regulate DLT use in financial services. This progress is exemplified by the European Union's (EU) Markets in Crypto Asset (MiCA) regulation, which prompted both the US and UK to stake their claims as the natural home for regulated, responsible blockchain companies.

But efforts to normalize the technology have been overshadowed by market shocks in the crypto space, with the implosions of Terra Luna and FTX prompting many to question whether such markets have a future. Despite this sound and fury, the world's leading financial institutions have continued adopting digital assets at pace, with many using 2022 to move trialled DLT solutions into production. Our focus remains on helping those organizations to overhaul inefficient processes and workflows. And while these changes are often evolutionary rather than revolutionary, they are delivering on the potential of DLT, making businesses more efficient and profitable in the process.

Digital twinning of traditional assets

Almost any financial instrument has the potential to be tokenized using DLT. Done correctly, this can unlock faster, cheaper asset transfers, create new markets in fractionalized securities, and increase liquidity for niche markets. Payments (via digital currencies) and settlement are core to the lifecycle of digital assets. Bridging payments across different networks (on and off ledger) is, therefore, crucial, as clients expect their deployment of DLT to facilitate the movement of assets between DLT platforms.

In response, we are seeing an increased focus on interoperability from all major players, including R3. Such interoperability opens a myriad of options to financial services firms, including the trading of native digital assets with tokenized digital assets across multiple networks, regardless of the protocol used. From R3's perspective, this interoperability focus represents the next generation of services to be unlocked by DLT – a conversation we are now able to have with our customers due to the significant progress they have made in building or operating their own networks in 2022.

Bringing together the digital ecosystem

Looking ahead, we see opportunities for firms to leverage multiple and complimentary parts of the digital ecosystem - digital assets, interop bridges, digital currencies, and the distributed ledger. Firms may focus on one of these initially but will see the benefits of all once their strategy matures alongside the opportunities afforded by true interoperability.

The natural endgame to this transition is a Token-versus-Token (TvT) economy, with assets moving freely between ecosystems, regardless of type, origin or destination. This will be the enterprise version of the "financial legos" seen in DeFi, powering core financial actions like tokenized debt and equity trading, tokenized collateral in repo, and tokenized currency in foreign exchange and cross border transactions.

There are many paths forward for digital assets

The path for digital assets is intertwined with digital currencies (e.g. central bank digital currencies (CBDC), fiat-backed stablecoins) and interoperability. There are countless paths to creating truly useful digital assets, and the enterprise-grade blockchain that they rest on, yet there are also dead ends lurking to trip-up the unwary. Therefore it is no surprise that 2022 also saw several players exit this space in pursuit of shorter-term goals.

In contrast, 2023 will see R3 continue to forge its own path for its customers through the release of Corda 5 and its networks-of-networks features. It's this commitment and consistency that is giving major industry players like DTCC and SDX the confidence to transform their own infrastructure – not only to reduce cost and processing times, but also to ready their business for the proliferation of digital assets that is to come.

DeFi(ning) the market

These initiatives are laying the foundation for leading financial market infrastructures and market participants to embrace decentralized finance concepts whilst maintaining the strong governance that society requires and expects from these regulated players. The European Securities and Markets Authority (ESMA) DLT Pilot Regime and UK Financial Market Infrastructure (FMI) Sandbox will provide a great opportunity to become active in this space. This gives us plenty of optimism and excitement for 2023 and beyond.

What's next

If, as we have suggested, 2023 marks a pivotal point in the adoption of digital assets, then collaboration will be key to maintaining momentum. Interoperability should be as wide ranging and all-encompassing as the technology allows, but it is the imagination of financial institutions when considering new products that will help to prioritize the development of enterprise DLT platforms.

So, if, as you read this, new ideas come to mind about what might be possible, get in touch; we'd love to explore them together. ■

The Future of Financial Market Infrastructure

David Newns
Head of SIX Digital Exchange

The last five years we have seen a dramatic increase in the adoption of digital assets, the most prominent example being cryptocurrencies. Currently, more than 300 million people around the world use or own cryptocurrencies and take up from institutional investors is rising. According to a recent study by Fidelity Digital Assets, over half (52%) of investors globally have exposure to digital assets, while nine in 10 said they found digital assets to be attractive. Institutional and retail participation in the cryptocurrency market will only accelerate despite the recent market turmoil.

Despite the evolution of its underlying market infrastructure, cryptocurrencies remain a volatile asset and are currently experiencing a downturn. The current 'crypto winter' has been exposing structural problems the industry still needs to address and solve. Problems boil down to lack of institutional grade infrastructure, standard practices, and often a lack of regulatory oversight leading to know-your-customer (KYC) and fraud issues as well as companies going belly-up. Self-governance will likely not be enough to make cryptocurrencies less volatile and investors more confident. Regulators and high-ranking officials – such as Janet Yellen, US Secretary of the Treasury, and Christine Lagarde, president of the European Central Bank (ECB) – are calling for regulation of cryptocurrencies.

Cryptocurrencies cannot be taken standalone though. They are a part of a much bigger market segment: digital assets. While the rise of the internet, and technology in general, has changed many industries completely, the financial industry has so far only experienced modifications to existing, old structures. Digital assets include a wide range of assets including cryptocurrencies, central bank digital currencies (CBDC), other synthetic CBDCs, and digital securities which are native and tokenized. As an example, private equity has the potential to benefit greatly from tokenization as companies can acquire funding more easily and efficiently, as well as accessing new services in the Web3 economy. With tokenization, investors could also gain easier access to other non-traditional industries such as vintage cars, wine, art, and real estate.

How can we accelerate the spread and adoption of digital assets? We at SDX believe we need a new financial ecosystem. The powerful roots of current financial market infrastructures (FMI), the systemically important exchanges, clearing houses, central securities depositories (CSD), and payment systems that support the world's monetary and financial markets, were embedded back in the 1960s and '70s. FMIs were built, for very understandable reasons including different regulatory regimes, in a manner that resulted in several silos to develop. The new 21st century digital market infrastructure (DMI) is designed to break down those silos and create value at the intersection of previously walled gardens. At its core, DMI is all about breaking down silos and decentralizing workflows.

In this spirit, we have recently seen a dual-listed, natively digital bond being issued on our platform, in close cooperation with SIX Swiss Exchange and SIX SIS. This new structure simplifies the digital bond issuance process on SDX whilst simultaneously maximising market reach through the connectivity between SDX's

blockchain based platform and SIX's traditional infrastructure. This dual-listed digital bond, in effect, establishes a migration path for the market to move from issuing traditional securities to issuing natively digital securities on a fully regulated blockchain-based financial markets infrastructure.

We now have a materially evolved and richer set of analytical and executional tools to work with than back in the 1970s. Globalization has changed the way financial institutions can service their clients and how they trade assets. Regulatory regimes have significantly evolved and the technology innovations and choices we have are totally different and significantly enhanced compared to those 50 years ago. From the internet and cloud computing to machine learning and artificial intelligence to distributed ledger technology and native digital assets, soon quantum and cognitive computing will be pervasive.

The financial industry is going through a seismic transformation right in front of our eyes. These are incredibly interesting times, and we at SDX are right at the forefront, working alongside many others to shape, not predict, the future. We strongly believe that digital assets, including cryptocurrencies, are here to stay. As Winston Churchill said 'never let a good crisis go to waste' – let's use this crypto winter as a time to invest in building a future financial system that is more secure, stable, and inclusive than the financial system we currently have. ■

FINANCE AND TALENT

Talent and Governance Update

Abdul Haseeb Basit
CFO & Board Member
GDF

2022 was a major year for the development of industry associations in the blockchain and digital assets sectors as GBBC and GDF merged. Our combined strength across our member firms and internal team sets us up to be successful as the largest global industry group for blockchain and digital assets.

GBBC Switzerland, as a Swiss non-profit became the parent entity for the GBBC group, with the GBBC Digital Finance subsidiary retaining its own board and governance model as a UK company limited by guarantee. The group, led by Sandra Ro, CEO GBBC, benefits from a larger Executive and team. A number of the GBBC and GDF team assumed larger roles across the group.

From a financial perspective, 2022 was a stable year for the combined organization with the merger bringing a greater interest in membership.

Board and Executive Team

In 2022 the GBBC Board continued to be led by David Treat (Accenture), and welcomed Lawrence Wintermeyer, Chair of the GDF Board, and Donna Parisi from Sherman & Sterling as new board members alongside, Yuval Rooz (Digital Asset), John deVadoss (NGD Enterprise) and Staci Warden (Algorand Foundation).

Through 2022 the GDF Board and Executive continued to be led by Lawrence Wintermeyer, with Simon Taylor, Greg Medcraft and Sandra Ro continuing in their capacity of Non-Executive Directors. During the year we added Dimitrios Psarrakis and Dawn Stump as incoming Non-Executive Directors.

Dimitrios is a financial economist and financial markets innovator working in the interface of economics and regulation with a focus on digital finance, crypto-assets, DeFi and DAOs. He worked for seven years in the European Union (EU), drafting or co-drafting reports and regulations in the field of blockchain technology, capital markets union, the Fintech and Digital Finance Strategy of the EU, the Crowdfunding Regulation, and he was active in shaping the final texts of the Markets in Crypto Assets Regulation (MiCA), Transfer of Funds Regulation (TFR), and the Distributed Ledger Technology (DLT) Pilot Regime.

Dawn is a regulatory expert, widely respected for her leadership, bipartisanship, and consensus building among senior government officials, senior regulatory ministry officials, corporate, and academic leaders worldwide. Most recently, she served on the Commodity Futures Trading Commission (CFTC). As one of five Commissioners, she helped to shape the

The GDF team together at Hogan Lovells

CFTC's regulatory priorities. During her early career in public service, Dawn served as senior professional staff for the U.S. Senate Committee on Agriculture, Nutrition & Forestry where she was actively involved in negotiating reform of derivatives market regulations contained in the Dodd-Frank Act.

Jeff Bandman completed his term as Non-Executive Director after 4 years, and we're delighted that he remains affiliated with the firm as an Ambassador and as Co-Chair of the Regulators' Only Forum for 2023, supporting fellow Co-Chair Dawn Stump.

Emma Joyce, GDF CEO, and I comprise the Executive Directors on the GDF Board.

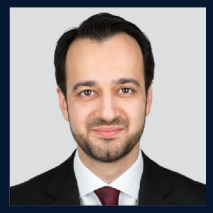
Our core team saw the addition of Madeleine Boys as Head of Community upon completion of her studies, joining us full time after a successful internship. In addition, Malcolm Wright joined as Director of Government & Regulatory Affairs – APAC for GDF and Dina Ellis Rochkind joined as US Policy Advisor.

We would like to take this opportunity to thank the members and team who have contributed to the success of GBBC and GDF, and we look forward to continuing our mission in 2023. ■

The 2022 Program was delivered by

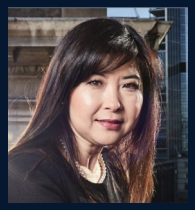
GBBC DIGITAL FINANCE

Emma Joyce
Chief Executive Officer & Board Member



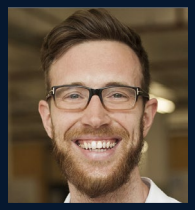
Abdul Haseeb Basit
Chief Financial Officer & Board Member

Lawrence Wintermeyer
Chair of the Board



Sandra Ro
Board Member

Jeff Bandman
Board Member



Simon Taylor
Board Member

Dawn Stump
Board Member

Dimitrios Psarrakis
Board Member

Greg Medcraft
Board Member

Lavan Thasarathakumar
Government & Regulatory Affairs Director - EMEA

Andrew Smith
Government & Regulatory Affairs Director - Americas

Malcolm Wright
Government & Regulatory Affairs Director - APAC

Dina Ellis Rochkind
US Policy Advisor

Anastasia Kinsky
Head of Programmes & Content

Melissa Corthorn
Head of Events

Madeleine Boys
Head of Community

Tatyana Marsh
Communications Manager

Natalia Neuber
Analyst

Sophia Hassel
Analyst

OUR MEMBERS' WORK

FINANCIAL INCLUSION

DEMOCRATIZING AND INSTITUTIONALIZING BLOCKCHAIN FINANCIAL PRODUCTS IN LATAM

We are proud to announce that 7CC Blockchain Investments established a partnership with Visions Brasil Investments, to form 7Visions LATAM Digital.

Founded in 2021, 7Visions LATAM Digital is focused on being the leading provider of real asset tokenization in Latin America. By leveraging blockchain technology, 7Visions democratizes access to Latin American institutional-grade financial products by bridging the gap between traditional finance, ESG, and the blockchain world.

Across 2022 and 2023, 7Visions LATAM Digital has been implementing three unique projects, supported by cutting-edge technical expertise and vast local market experience:

Tokenization of Structured Credit

Precatórios are considered a high-grade structured credit issued by public entities such as the federal, state, and city governments in Brazil. This type of credit is currently only accessible to institutional investors or high-net-worth individuals, given the required capital-intensive investment. 7Visions is actively tokenizing Precatórios to give individual retail investors access to fractional ownership of this type of product and its attractive returns by distributing tokenized structured credits through both crypto exchanges and local banks.

Tokenization of Environmental Assets

On March 3rd, 2022, the Global Environmental Asset Platform (GEAP), a subsidiary of 7Visions LATAM Digital, signed an agreement to develop a minimal viable product (MVP) with Nasdaq and the State of Rio de Janeiro for an environmental asset platform based on blockchain technology. The agreement seeks to take advantage of Rio's environmental assets (estimated US$ 25 billion) and promote the creation of the GEAP platform in conjunction with fiscal policies to stimulate the consumption and trade of tokenized carbon credits and other environmental assets.

Helium (HNT) MVP

The Helium project is a decentralized wireless network built around an open-source protocol. Our objective is to wirelessly connect remote large-scale farms through a network of devices installed and owned by 7Visions LATAM Digital using the Helium protocol and tokenomics.

7Visions' central goal is to democratize and institutionalize blockchain financial products for Latin American markets by developing institutional-grade tokenized products, partnering with top retail distributors, and supporting our products with liquidity pools and active market making.

For more information, please contact:
alex.nascimento@7visions.co ■

SUPPORTING AFGHANISTAN WITH THE RIGHT PAYMENT SYSTEMS

Ninety seven percent of the Afghan population lives below the poverty line. Almost 20 million people – half the population – are suffering from high levels of food insecurity according to the United Nations' World Food Programme (WFP). Many are on the brink of starvation, including more than one million children under the age of 5 who are in the throes of prolonged malnutrition. For those children lucky enough to survive, the maladies that will afflict them for the rest of their lives are daunting. In this context, perhaps more than in any other, the need for humanitarian aid is not only crucial, it is a matter of life and death.

Sanctions, frozen assets, a paralyzed banking sector, and a shortage of physical currency are drastically constraining liquidity in Afghanistan's economy which exacerbates the humanitarian crisis. Often the only resources available to the average Afghan come from agencies like WFP, UNICEF, or large Non-Governmental Organizations. In the face of all of this, an Afghan company called HesabPay has built a payments platform on the Algorand Blockchain to facilitate digital payments from international relief organizations directly to recipients.

HesabPay issues digital Afghani (Afn) – the Afghan fiat currency – based on fiat deposits, and settles transactions on the Algorand blockchain network. To aid in humanitarian relief efforts and bridge the financial exclusion gap in Afghanistan, anyone can send and spend their digital Afn with any phone that has an account. Users can make digital payments using the network to shop at merchants, buy airtime, pay electric bills, and go to the nearest HesabPay offices to on-ramp and off-ramp their fiat and digital Afghani. So far, there have been 4.5 million transactions by 400,000 users with 3,000 merchants across all 34 provinces.

The humanitarian impact in Afghanistan of a direct payment system that is fast, reliable, and traceable is profound. Recent evaluations have documented the positive changes that occur when women are the direct recipients of payments, and what that means for their families and their communities. In this case, blockchain technology is the best answer possible. It's an answer that could be replicated in some of the most difficult places to work in the world. Places where lives may literally depend on its adoption. ■

COMMUNITY-LED, SHARIAH-COMPLIANT FINANCE

Muslims make up roughly one-fifth of the world's population and live predominantly in emerging and frontier markets. Yet, an estimated 70% of the 1.5 billion Muslims do not use basic banking products. Many of these people are deterred from traditional banks and fintechs due to the lack of Sharia-compliant financial products. Similarly, in just nine countries across the MENA region, the International Finance Corporation (IFC) estimates that small and medium enterprises (SME) are in need of up to $13.2 billion in Islamic finance. It is estimated that Sharia-compliant assets are growing 12% per year but still represent only 1% of global financial assets.

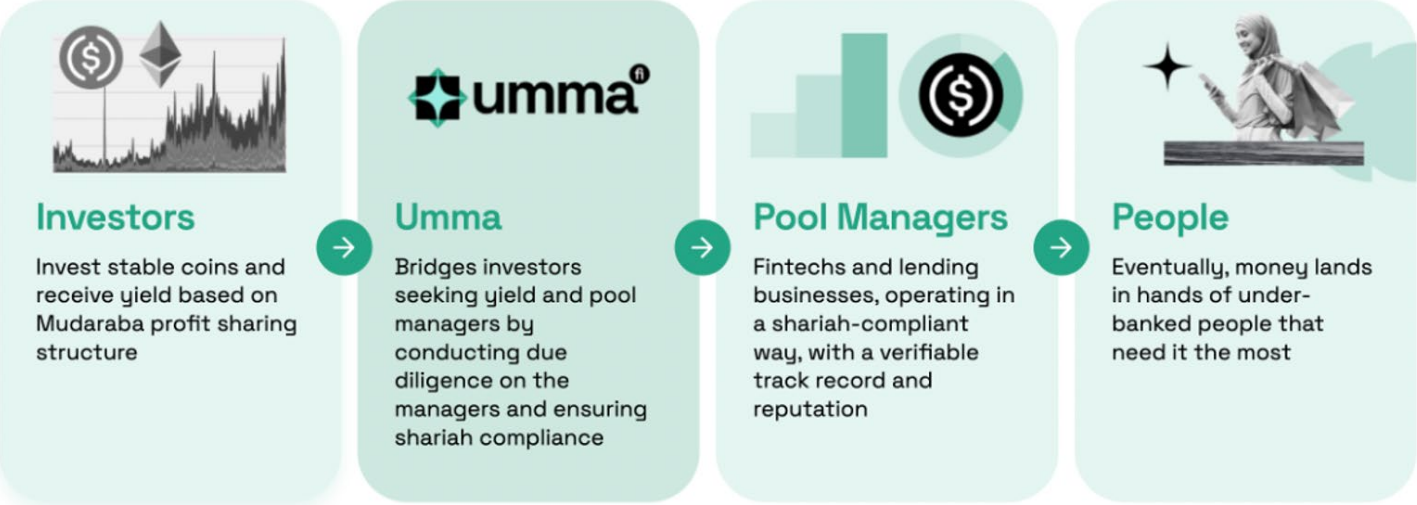
Founded in 2021, IMAN addresses the gap in access to Shariah-compliant products by offering a halal finance one-stop shop for merchants, shoppers, and investors. IMAN's tailored mobile platform for Muslim majority markets consists of IMAN Invest, an investment platform, and IMAN Pay, a halal buy-now-pay-later (BNPL) solution, enabling people to invest or get funding in line with their beliefs. With 60,000+ active users, IMAN Invest manages over $5 million from 10,000+ retail investors with the vision to become a full-fledged Islamic neobank.

To scale the investment product throughout the world and facilitate the development of a global Islamic finance ecosystem, IMAN team is building Umma.Finance, a decentralized finance (DeFi) protocol that bridges the crypto world with fintechs that provide Sharia-compliant funding to individuals and businesses off-chain.

With the recent downturn in the crypto markets, the pressing need for sustainable income in DeFi has ignited the growth of protocols that generate a yield from real-world assets (RWA). Goldfinch, Credix, and Mohash have all emerged as decentralized liquidity protocols that expand access to capital for fintech lenders in emerging markets. Amidst market volatility, they have been able to maintain strong yield stemming from the companies' real-world returns not correlated to crypto markets.

Umma differentiates itself in the RWA lending space by focusing on the $3 trillion market for Islamic finance liquidity. Today, close to no Islamic assets are locked in DeFi as most DeFi protocols are interest-based, preventing both retail and institutional Islamic investors from entering the crypto markets. Umma intends to become the first protocol to offer a low-risk, diversified, sustainable, Sharia-compliant yield for stablecoins, all while easing access to halal financing for consumers and SMEs in the most underserved markets. Additionally, Umma is employing the power of DeFi to reduce the hefty transaction costs traditionally associated with Islamic securitization, costs ultimately passed on to the end borrowers (i.e. small businesses or individuals). The team intends to launch the protocol by Q2 2023.

Islamic finance principles are rooted in Islamic ethics but are not exclusive to Muslims. With its underlying principles of equitable distribution for all, more emphasis on productive investment, judicious spending of wealth, and the well-being of the community as a whole, Islamic finance presents an ethical alternative for non-Muslims and goes hand-in-hand with sustainable or responsible investing. As the demand for sustainable investing continues to rise even during what is highly likely to be a period of global recession, a defensive and low-debt investment philosophy of Islamic investing is intrinsically attractive for institutions. ■



BACKING EVERYDAY DEFI SOLUTIONS TO ACCELERATE THE DAY-TO-DAY USE OF DECENTRALIZED FINANCE

IOVlabs
Building Value Networks

Current decentralized finance (DeFi) solutions are too complex for the average user. IOVlabs is dedicated to creating decentralized solutions that facilitate ease of use and affordability for average people and help to enable financial freedom in emerging economies.

> **"We are building a DeFi ecosystem for everybody, everywhere. We are creating the first generation of Everyday DeFi."**
> **- Diego Gutierrez Zaldivar, IOVlabs CEO.**

In July 2022, IOVlabs delivered RIF Aggregation - the first product released for the Everyday DeFi venture. A Layer 2 solution that uses highly scalable rails in order to process transactions between users, RIF Aggregation removes the barriers of existing DeFi technology by allowing low-fee near-instant transactions using Zero-Knowledge rollups and giving users the ability to pay transaction fees using the token being transferred.

In August, IOVlabs delivered further on their Everyday DeFi promise through a partnership with El Salvador-based finance cooperative ASCAV. IOVlabs provided a loan to ASCAV using the rDOC stablecoin valued at 20,000 USD. ASCAV used the rDOC value to generate loans for entrepreneurs without access to the traditional banking system. Loans were made available to two hundred borrowers in El Salvador using ASCAV's product.

IOVlab's most recent integration with Buenbit in November 2022 established access to Everyday DeFi products and services for users in Latin America through the Buenbit marketplace. This integration enables users in the region to use crypto to pay their bills, receive their salary, send money overseas, and lend-borrow at fair rates in a safe, secure way.

Going forward, IOVlabs endeavors to build and integrate new technologies to enable fintech and Web3 innovators to develop the first generation of everyday DeFi applications. ■

NEXT-GENERATION INFRASTRUCTURE

THE ANSWER FOR GENERATING YIELD WITH CRIPTONITE-WAVE

The crypto industry offers unique yield generation strategies and represents huge opportunities for investors looking at the crypto market. Another wave of institutional adoption will likely occur during the next bull run when institutions see their competitors profiting. Institutional investors increased allocations during the crypto winter, with many using this as an opportunity to onboard crypto to learn and build for the future. Digital assets are seen as offering one of the most attractive opportunities to generate alpha, especially giving access to yield opportunities. Here are some interesting yield generating investment strategies:

Staking your digital assets to support transaction processing on the underlying network offers a unique yield source. Staking can also provide an improved risk profile compared to traditional asset lending.

Centralized finance (CeFi) lending is a more traditional credit underwriting process where a thorough due diligence of balance sheets is conducted, and management practices, the executive team, and corporate structure, all ensure clients' funds are handled carefully and that counterparties are over 100% collateralized.

Collateralized borrowing is another investment strategy, which uses clients custodied staked assets as collateral to borrow stablecoins and deploy into high yielding strategies.

Decentralized finance (DeFi) applications are composable, which generates sophisticated, complex, and ever-changing capital markets but are also a powerful strategy to generate yield.

DeFi expertise can be leveraged to allow clients to take advantage of the attractive yield opportunities available in the burgeoning ecosystem regarding **lending, liquidity provision, and hybrid yield opportunities.**

Criptonite-Wave Financial's strongest expertise lies in yield generating strategies. We strive to provide unparalleled expertise in digital assets to guide investment exposure with a strong risk management framework and credit due-diligence structure to avoid any exposure to distressed entities. One of our core products, the Wave Bitcoin Income & Growth, uses derivatives to generate a monthly target yield of 1.5% through the sale of out-of-the-money bitcoin call options. ■

DRIVING A DIGITAL FUTURE FOR CAPITAL MARKETS

The past few years have been profound for digital assets and blockchain ecosystems, particularly for capital markets. As an industry, we've been on a multi-decade journey towards full digitization, from the advancement of paper-based trading to electronic platforms; and now the tokenization of financial instruments. It's an exciting time for market participants. Tokenizing the entire lifecycle of financial assets brings many new opportunities - greater

liquidity, reach, speed-to-market, and reduced risks are among the benefits.

Let's examine securities and, in particular, the issuance process of these asset classes. The current state of issuance processes for any asset class is defined by error-prone, manual processes between multiple participants, leading to high costs and long lead times. Paper-based issuance results in minimal standards, no rules for streamlining, and lacks real-time visibility into the state of the asset, pricing, and allocation, all of which create bottlenecks and lowers the opportunity for greater liquidity.

Deutsche Börse is one organization tackling these industry challenges, paving the way for an innovative future for European markets with D7, a digital post-trade platform. D7, powered by Daml, enables same-day issuance and paperless, automated straight-through processing (STP) for the entire value chain of issuance, custody, settlement, and asset servicing for digital securities.

As of October 2022, European issuers can leverage the new infrastructure to issue digital securities. The first automated issuances on D7 were performed by LBBW and Vontobel and facilitated by Clearstream, Deutsche Börse's post-trade service provider. Underpinned by Daml, Digital Asset's smart contract language, Clearstream reduced the issuance time from days to minutes. Market participants were equally impressed with the "go-live." Vontobel said, "Issuances are 21 hours faster than before." And LBBW said, "We are taking the next technologically important step towards end-to-end digitalization."

New business models are emerging. Market leaders are rethinking how they create value using open technology frameworks to connect with customers in new ways. Tokenization and the digitization of financial instruments, done right, unlock these opportunities. Deutsche Börse, and other market leaders, showcase how early adopters are not just tokenizing assets but creating new digitally interconnected markets, leveraging the best of smart contract and blockchain technologies. ■

DEDICATED CRYPTO INSURANCE

Evertas

In business, there are many advantages realized through specialization, including efficiencies achieved by investment in developing highly specialized tools and the unique perspectives that can only come from repeatedly focusing on solving a very narrow set of problems.

Evertas is the first and only dedicated crypto insurance company. Our business model leverages many proprietary tools and technologies, in addition to insights into the risks associated with cryptoasset custody. The outcome is a set of insurance products that not only safeguard our Web3 clients' customers and their assets, but that also make our clients more resilient.

Nowhere has this been made more evident in 2022 than in the insolvency events we've all observed with concern and, in particular, how those events have resulted in the customers losing their cryptoassets to creditors and investors.

Over three years ago, Evertas underwriters preemptively acknowledged that market downturns were a threat to this industry. We expanded our already exhaustive custodial crypto underwriting application to include requirements that customer and institutional funds be thoroughly segregated, to keep customers' property from being used to pay the exchange's debts. We also added underwriting, ensuring that the custodian responsible for making unambiguous trust arrangements returns assets to their owners in case of insolvency.

It's impossible to say whether these operational changes alone would have prevented the unfortunate recent failures of centralized exchanges, but we can be certain they would have left their customers in possession of what is rightfully theirs. Evertas is proud to be the first and only dedicated crypto insurance provider, and prouder still of the benefit our customers and the Web3 space as a whole gain from our high degree of specialization. ■

USING DATA TO PREVENT THE NEXT BLACK SWAN EVENT

Kaiko

A neglect of proper risk management and a poor understanding of liquidity caused some of the largest (and most opaque) crypto firms to become insolvent throughout the year. If one lesson is to be learned going into 2023, it is that risk management is paramount.

Understanding an asset's liquidity is a vital component in a robust risk management framework. The valuation of a fund's balance sheet is only as strong as its ability to efficiently liquidate their holdings in a black swan scenario.

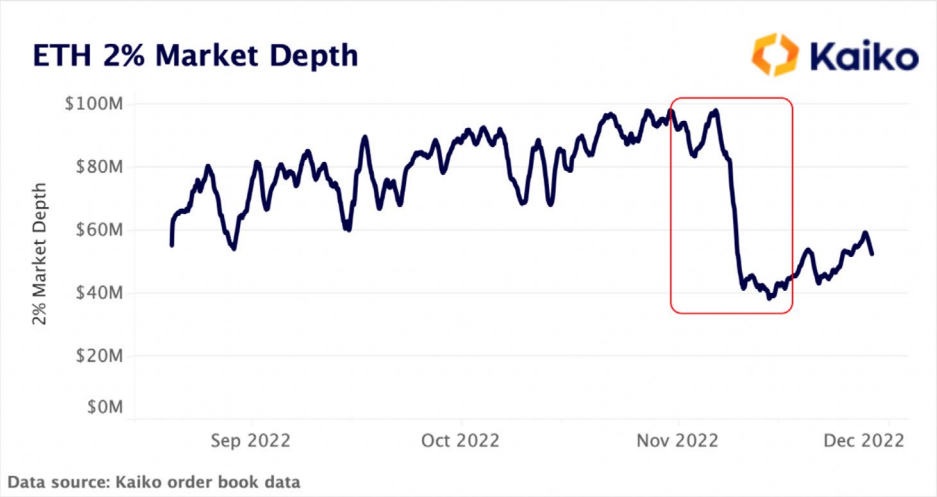
In crypto, liquidity is fragmented across thousands of centralized and decentralized markets. As such, each asset has a unique risk profile that can only be understood with access to the right data.

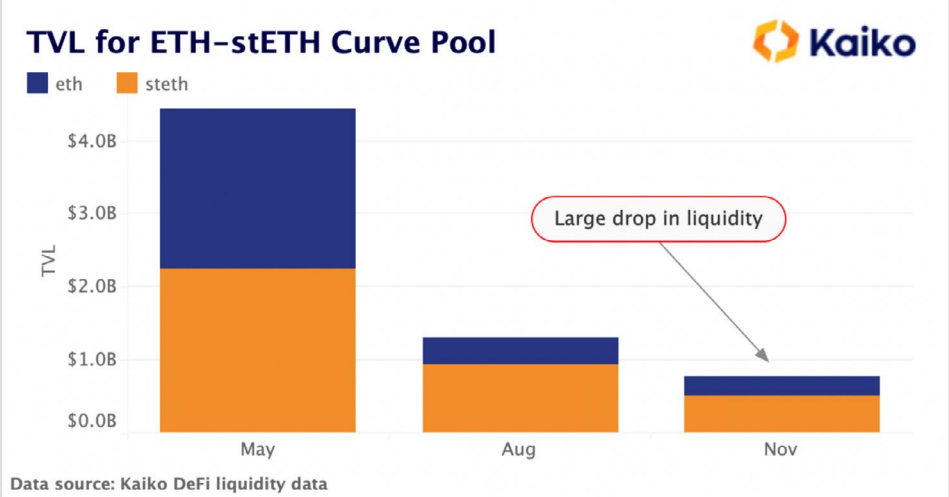
Let's take the example of ethereum (ETH). ETH's total market depth before the collapse of FTX was around $100m across the largest centralized exchanges. After the collapse, market depth halved to between $50-$60m. If I were a portfolio manager, I would need to incorporate this sharp drop in liquidity into my risk framework to account for higher price slippage in the event of liquidation.

But centralized market depth is just one half of liquidity in crypto. Billions of dollars worth of ETH are traded on decentralized markets everyday and, as such, liquidity on decentralized exchanges (DEXs) must be accounted for too.

Looking at the Total Value Locked (TVL - the DeFi equivalent of market depth), we can observe an even sharper drop in liquidity for one of the largest ETH liquidity pools. This suggests that decentralized markets have been more heavily impacted than centralized, which could mean my portfolio would suffer depending on my exposure to DeFi.

This quick case study demonstrates the importance of both centralized and decentralized liquidity metrics in understanding an asset's risk profile. Liquidity metrics, combined with traditional risk metrics such as Value at Risk (VaR) or Expected Shortfall, will enable investors to better survive the next bear market. ■





ANTITRUST MATTERS: WHAT DIGITAL ASSET INNOVATORS NEED TO KNOW

LATHAM&WATKINS LLP

In a sea of regulatory hurdles, antitrust and competition laws may not be the first thing digital asset innovators and investors worry about. However, competition in the digital asset space is a focus of key industry regulators and enforcement agencies, including the Securities and Exchange Commission (SEC), the Federal Trade Commission (FTC), and the Department of Justice (DOJ). For digital asset ecosystem participants, overlooking antitrust can lead to company-threatening liabilities or stop innovators from executing on their strategic vision. The following are three essential antitrust issues for digital asset players to keep top of mind:

Mergers and acquisitions

When considering M&A opportunities, companies should remember that antitrust enforcement agencies globally are aggressively investigating and seeking to block acquisitions across a range of industries, including fintech. Assessing filing requirements and antitrust risk early (especially before negotiating deal terms such as outside dates and termination fees) can minimize regulatory costs and delays. Lengthy investigations can slow or even stop deals from closing (especially when access to capital is limited). Companies should not assume that regulators will ignore an acquisition of a distressed target, or even in the case of bankruptcy. Enforcers will investigate these deals if there are competition concerns, particularly if there are other buyers who raise fewer concerns.

Interlocking directorates

The DOJ's Antitrust Division has made a recent push to investigate competitors that share officers or directors. Section 8 of the Clayton Antitrust Act prohibits the same person (or company) from holding officer or director positions of companies that compete with one another unless certain exceptions apply. In addition, Section 8 investigations can lead to follow-on investigations under other antitrust laws that can lead to significant fines, damage awards, and even criminal penalties. In nascent industries, including those with active private capital and/or M&A, an extra degree of vigilance can help ensure against creating, or growing into, illegal interlocks.

Interoperability

As digital asset companies choose which firms they will partner with or integrate into their ecosystems, firms that are excluded or disintermediated may rely on antitrust laws to seek access (and/or damages). In the US, the government and private parties have used antitrust to argue that cutting off access to a "must-have" platform or input is illegal. Similar causes of action exist around the world. Bundling, tying, and predatory pricing are similar antitrust claims plaintiffs and regulators may pursue. The digital asset ecosystem, built on interconnected blockchains and exchanges, is likely fruitful ground for antitrust claims arising from ecosystem design decisions about how — and with whom — to collaborate. ■

ENCOURAGING AND EMPOWERING RISK MANAGEMENT FOR CRYPTO

Lukka

Recent developments within the crypto industry captured the public's attention. With the industry facing greater scrutiny, it is imperative for crypto entities to re-evaluate their business practices by instituting heightened risk management methods in order to build trust with anyone interacting in crypto. Protecting the market and its customers must be the priority. The risk management principles below will allow the industry to avoid the mistakes of the recent past:

Focus on substance over form

- The form and substance of transactions and agreements should both match, be made crystal clear, and look beyond marketing to the product's underlying components.

Use liquidity analysis and audited financials

- As a matter of course, entities should disclose internal controls, identify key board members, explain corporate governance, and issue audited financials and name the auditor.

Conduct ongoing performance monitoring of the transactions and the counterparty(ies)

- Entities loaning or investing should be responsible for substantive performance monitoring of the product and counterparty, e.g. financial trend, variance analysis, and smart contract audits.
- Reliable, third-party fair value assessments of crypto is key.

Clarify collateral, custody, and segregation of assets

- Collateral processes are vital for the maturation of the industry – custody should be clear, and pledged assets should not be commingled with corporate assets.
- Security interest should be carefully documented and crafted so lenders are adequately protected.

Enhanced disclosures and terms and conditions

- Consumer awareness is a necessity. Crypto platforms must be transparent about how customer assets are stored, whether and how assets are being rehypothecated, and identify the risks associated with all products. How businesses handle customer assets is not a trade secret.

Crypto ushered in new opportunities in financial services, but it opened the door to many risks. Institutional quality solutions are critical for businesses engaging with crypto. Lukka has built best-in-class data and software offerings to aid businesses in managing risks when they interact with crypto finance. ■

THE FUTURE OF VOUCHERS

Lykke

Through cooperative work and discussions with representatives of the city council and the business community, we have developed a blockchain-based platform for 'City Coins' and digital vouchers. This platform was designed for a flexible set of use cases, including the implementation of a city-based digital currency and tokens, the implementation of a city marketplace for local merchants to issue digital vouchers, and the improvement of existing loyalty programmes, providing additional functionalities for the benefit of end-users.

The ultimate aim of this project is to replace an out-dated voucher mechanism (that, despite its obsolescence, is highly amenable to replacement by blockchain) with a faster and more efficient process.

Our goal is to make the user experience seamless and to introduce end-users to blockchain/crypto gradually by making the blockchain aspect largely 'invisible' (initially, at least). Vouchers are a familiar and relatively straightforward means by which to enable digital payments within an app.

The launch of a spendable token on the platform will make the benefits of this innovation evident, because retailers will be able to create customer loyalty initiatives, while customers will be able to receive tokens as loyalty rewards.

We also aim to make adopting the technology as simple and risk-averse as possible for the organizations that implement it. That is why we have made this platform 'blockchain-invisible', meaning that we will introduce end-users to crypto/blockchain gradually in planned phases. This will allow organizations to learn how the technology works and discover its benefits at a pace that suits them.

Now, let's answer the most important question: what are the benefits?

They are twofold: for merchants, the platform brings improved security thanks to blockchain's enhanced fraud prevention and smart-contract-based process automation; for customers, the technology brings increased engagement thanks to its gamification aspect, spendable earned tokens, and access to personalized offers tailored to the customer's purchasing needs. ■

BRINGING ADVANCED TRADING ORDERS TO DEFI, POWERED BY ORBS

ORBS

Decentralized Finance (DeFi) has solidified itself as the killer feature for blockchain, with over $1B in daily trading volume across decentralized exchanges and protocols becoming more and more complex. That being said, due the inherently limited capabilities of smart contracts, DeFi markets lack features, such as advanced trade orders, that could help traders manage the heightened volatility and liquidity that characterize the space.

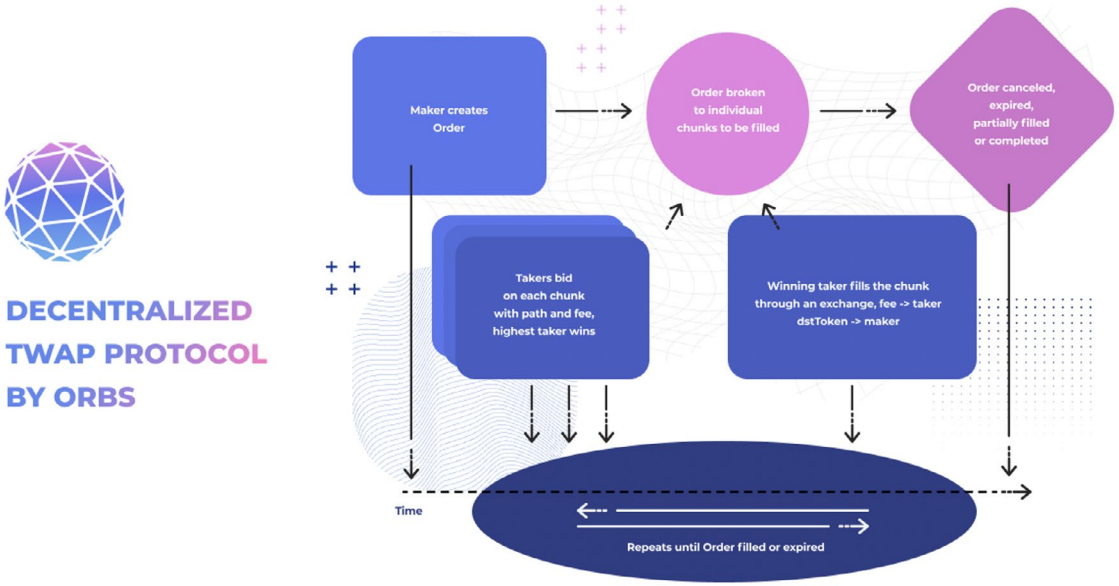
Orbs is a decentralized protocol executed by a public network of permissionless validators using Proof of Stake (PoS) consensus staked with over one hundred million dollars. Orbs pioneers the concept of L3 infrastructure, utilizing its decentralized network to enhance the execution capabilities of smart contracts that run on L1 blockchains. Orbs' unique L3 infrastructure can be used to expand the capabilities of DeFi platforms to provide highly efficient trading orders to its user base without sacrificing decentralization.

TWAP Use-case

Time-weighted average price (TWAP) is a common algorithmic trading executing strategy in traditional finance that seeks to minimize a large order's impact on the market by dividing it into a number of smaller trades and executing them over time.

Using Orbs validators as decentralized bidders, Orbs implements a decentralized TWAP protocol for decentralized exchanges (DEX) or automated market makers (AMM), which allows for advanced time-spread trades to be executed on these platforms in a decentralized manner.

With Orbs' L3 infrastructure ensuring that TWAP orders are executed at an optimal price and at fair fees, this type of trade can become a viable option for DEX users, giving them a number of new ways to optimize their trading activities. In turn, DEXs themselves, and their communities, can benefit from increased liquidity and attract new users by offering features that are currently unavailable on decentralized venues. ■



2022: INITIAL WAVE OF MEANINGFUL INSTITUTIONAL BLOCKCHAIN ADOPTION

PROVENANCE BLOCKCHAIN

Financial services industry adoption of blockchain technology continued this year in the most meaningful ways we've seen to date. In 2021, traditional financial firms made headlines on a global level, mainly asset managers and large banking institutions for their increased participation in cryptocurrencies and record-level investments in decentralized finance (DeFi) and centralized finance (CeFi) companies. Particularly, the investment activity has continued into 2022, with investments in the billions of dollars.

In 2022, the traditional financial services industry expanded their participation in blockchain technology by increasing the scope and number of real world financial assets issued in a digitally native format. Digitally native means that the financial assets are initially created on blockchain, which also enables the entire lifecycle to be managed on blockchain including servicing, trading, and securitization.

Specific sectors of the financial industry played leadership roles from an adoption perspective, including private market investment assets and lending. For example, Provenance Blockchain saw major institutional firms, such as Apollo, Hamilton Lane and Neuberger Berman all launching digitally-native funds on-chain. Hamilton Lane introduced the first digitally-native 1940 Act Registered fund, leveraging Figure Digital Fund Services and Provenance Blockchain. On the lending side, leading U.S. based lenders Homepoint and Movement Mortgage leveraged Provenance Blockchain and Figure's white-label home equity line of credit (HELOC) solution to originate HELOCs leveraging blockchain technology.

For these firms, blockchain technology reduces operating costs and time to market by removing intermediaries from the process, while also broadening access and affordability for their offerings. For example, traditionally it takes between two and six weeks for an individual to receive HELOC funding. Whereas a fully digital loan process leveraging blockchain technology enables approval in minutes, and HELOC funding in fewer than five days.

We are in the early stages of blockchain adoption, and these meaningful use cases and innovators are helping to pave a path for broader industry adoption. We expect that in 2023, the adoption curve of real world assets issued natively on chain will accelerate, scaling further across lending and private assets, with additional new asset classes being put on chain, including a range of special purpose vehicles (SPV), distressed, infrastructure and receivables. ■

BUILDING A DIGITAL ASSET ECOSYSTEM THROUGH INSTITUTIONAL DEFI

Recent market developments have evidenced the need for trusted anchors to lead the transformation of the financial services value chain. At SBI Digital Asset Holdings (DAH), we are preparing the groundwork for a true commercialization of financial services under DLT/blockchain rails with several of our new offerings to come live in 2023.

In November 2022, SBI DAH successfully executed an industry-first live trade of tokenized assets with JP Morgan on a public blockchain, conducted under the Project Guardian pilot project led by the Monetary Authority of Singapore (MAS). The pilot also included a simulated tokenized bond transaction between SBI DAH and DBS Bank.

Completion of the pilot demonstrated that cross-currency tokenized assets could be traded, cleared, and settled instantaneously and directly between institutional participants using the public blockchain, whilst ensuring appropriate compliance with risk management frameworks. Institutional decentralized finance (DeFi) promises to significantly reduce the requirement for reconciliation following transactions by fusing ledgers and networks in a way that allows different parties to view the same information.

The live transaction also brought insight into the challenges and bottlenecks preventing further adoption and has set a roadmap of issues to solve ro prepare for full commercialization.

SBI Digital Markets awarded license to launch institutional digital assets platform

SBI Digital Markets (DM) is now licensed to advise on corporate finance, to deal in capital markets products, and to provide custodial services after having been awarded the Capital Markets Services (CMS) License by the Monetary Authority of Singapore (MAS) in September 2022.

SBI DM is launching, in Q1 2023, an institutional platform for the issuance, custody, management, and liquidity of these digital assets. SBI DM's digital asset securities platform will provide a solution to help traditional financial service operators capture growth opportunities fuelled by the advent of digital assets and aims to become the go-to digital partner for institutional investors.

AsiaNext

AsiaNext, a joint venture by SBI Digital Asset Holdings and SIX, aims to go live mid-2023 and will operate a trusted and regulated exchange for institutional investors in Asia and globally. The venture will offer institutional grade infrastructure, technology, and processes, following the same strong principles of governance, risk, and compliance together with innovation in financial markets while benefiting from the core benefits of the distributed ledger technology (DLT), including faster settlements. The venue will offer crypto derivative, spot and digital securities once the respective licenses are approved. AsiaNext will provide listing, trading, settlement, and custody services. ■

SUPPORTING FINANCIAL INSTITUTIONS IN THE SAFE AND SECURE ADOPTION OF WEB3 TECHNOLOGY

Custody is a core requirement for any institution entering digital assets, and we know that setting up and managing crypto custody is complex. It requires the build-up of substantial capabilities, including technical, operations, risk, and compliance know-how.

In this context, the SDX Web3 offering abstracts away the complications of blockchain infrastructure management and provides best-in-class security and service. With SDX offering crypto custody-as-a-service, clients can quickly develop a crypto capability without the substantial cost and resource investment in building out in-house technology and operations.

SDX institutional custody enables client firms to offer secure and integrated access to the digital asset market without committing the extensive resources required to develop an in-house platform. It is a fully compliant custody solution with professional handling of value transfer, reporting, and blockchain management.

The advantage of using the SDX Web3 Custody offering is that it is operated by a riskless counterparty – we are not financially exposed, as might be the case for a crypto exchange. We offer institutional-grade custody services with the built-in security and resilience that are to be expected from an operator of regulated market infrastructure – giving clients additional confidence and peace of mind.

Our strategy is to provide key infrastructure services to address various crypto-related topics for our clients. Firstly, we're starting with custody for key tokens. We will then look to continuously expand it to support additional protocols, improved integration/interfacing for clients, and integration with other market participants for automated straight-through-processing (STP) of crypto transactions. In a second stage, we will add additional services to the initial custody offering by integrating it with our existing non-custodial ETH staking service. Thirdly, we plan to expand our crypto services further into the trade and post-trade area, aiming to provide our clients with a comprehensive gateway to interact with the digital asset ecosystem. ■

CBDCs FOR RETAIL PAYMENTS

SORAMITSU

SORAMITSU is a boutique FinTech company with a diverse and highly skilled international team of around 150 employees. We build innovative payment and asset management systems, focusing exclusively on blockchain technology. While we work with several blockchains, our platform of choice is Hyperledger Iroha, an open-source blockchain that we designed and contributed to the Linux Foundation.

Hyperledger Iroha is a secure and scalable blockchain that was designed specifically to be used in systemically important infrastructure, such as Bakong, a central bank digital currency (CBDC) developed by SORAMITSU in cooperation with the National Bank of Cambodia. Bakong is the first blockchain-based retail payment system to be launched by a central bank, and has processed over $8.5 billion in transactions over hundreds of thousands of users across 41 financial institutions; its user base is growing daily.

Using Bakong, anyone with a Cambodian phone number and smartphone can send and receive instant payments in Khmer Riel or USD. Bakong is integrated with all other QR code-based payments in Cambodia via the KHQR standard and marks a new stage in the modernization of the Cambodian financial system, creating new opportunities for those who are currently unbanked or underbanked. For SORAMITSU, Bakong is an important milestone on the path toward our goals of empowering people with control over their assets and improving the efficiency, security, and accessibility of financial systems worldwide.

SORAMITSU's work on Bakong is also being applied to other countries. We have received several grants from the Japanese government to work with the Central Bank of the People's Democratic Republic and to study the applicability of a CBDC to the financial systems in Vietnam, the Philippines, Fiji, the Solomon Islands, Tonga, and Vanuatu.

SORAMITSU is also a contributor to decentralized finance (DeFi) projects. We actively contribute to SORA, a decentralized economic system designed to enable high economic growth. We were awarded a Web3 Foundation grant to build Polkaswap, a decentralized exchange (DEX) for the Polkadot ecosystem, and we are also grant recipients for the C++ implementation of Polkadot Host (Kagome). The Klaytn Foundation awarded us a grant to build an open source DEX for the Klaytn ecosystem as well. We have also developed Fearless Wallet, a cryptocurrency wallet that is designed specifically to enable ease-of-use and self-custody of cryptoassets. ■

CENTRAL BANKING FINTECH REGTECH Global Awards 2020
CENTRAL BANK DIGITAL CURRENCY PARTNER

A BETTER DIGITAL ASSET EXCHANGE

The recent implosion of FTX sparked a brushfire that is cleaning out crypto-industry undergrowth while turning up the heat on TradFi to offer a superior digital asset exchange. In fact, the CEOs of JP Morgan, Blackrock, Goldman Sachs, and Wisdom Tree recently reiterated a growing demand for tokenized assets powered by blockchain-enabled infrastructure. Ultimately, investors want exchanges that are managed by reputable brands, well-regulated and secured, and offer a diverse range of assets including tokenized traditional assets such as stocks, bonds, and digital currency, as well as crypto-native assets. A well-managed, trusted, and regulated exchange can provide a secure and transparent platform for users to buy, sell, trade, and hold digital assets.

Tel Aviv Stock Exchange "Eden" powered by VMware Blockchain for Ethereum and Fireblocks
The Tel Aviv Stock Exchange announced its plan to introduce a new digital asset exchange dubbed "Eden" in concert with Israel's Ministry of Finance and its primary dealers. The roadmap for the exchange plans to offer a wide range of digital products starting with digital government bonds in 2023 then leading into private markets, crypto-native assets, utility tokens, non-fungible tokens (NFT) and lending pools. VMware Blockchain for Ethereum will be used to quickly and securely issue assets and trade while institutional-grade digital asset custody is provided by Fireblocks MPC wallets. These core technologies enable benefits for:

Buyers and sellers: The use of smart contracts streamlines the trading process and reduces the risk of errors by enabling more efficient and secure trade.

Financial institutions: Reduces the need for intermediaries and data reconciliation in the trading process, which can save time and reduce costs for these institutions.

Regulators: The blockchain provides a transparent and auditable record of transactions, which can help regulators to effectively monitor and oversee the trading process.

Consumers: Reduce the risk of fraud and other types of malicious activity, which can benefit consumers by providing a more secure and trustworthy trading and custody environment.

The broader economy: The increased efficiency and security of the trading process enabled by blockchain can help to support economic growth by making markets accessible to more investors. ■

WAVE FINANCIAL'S SUCCESSFUL MANAGEMENT OF TERRA / LUNA'S STABLECOIN DEPEGGING: A CASE STUDY IN RISK MANAGEMENT, DUE DILIGENCE, AND SOUND PRACTICES

During the past year, digital assets lost two-thirds of their value due to mismanaged centralized finance, over-leveraged investors, and possible fraud within crypto's marquis institutions like FTX and Alameda. While the spread of FTX's contagion is not yet known, digital assets have also been affected by geopolitical conflicts, surging inflation, flagging growth, and other macroeconomic headwinds.

More than ever, working with established professional entities to navigate crypto investing is critical. Wave Financial LLC is a 100% crypto and digital asset investment adviser regulated by the United States' Securities and Exchange Commission (SEC) as an investment adviser (Central Registration Depository #305726). As a fiduciary, we strive to uphold best-in-class risk management with rigorous and uncompromising processes and controls. Due to our counterparty due diligence, we avoided relationships with many of the firms that came under

pressure in June 2022, including Three Arrows Capital and Celsius. Additionally, our risk management protocols resulted in a successful timely removal of all Terra Luna exposure, thereby protecting our clients' assets.

UST Stablecoin Depegging Event

Saturday, May 7th - Wave Takes Action

Wave noticed signs of UST instability (increased price volatility, imbalanced Curve pool) and swiftly removed all exposure (~ $16M) to mitigate risk.

Sunday, May 8th - Calm Before the Storm

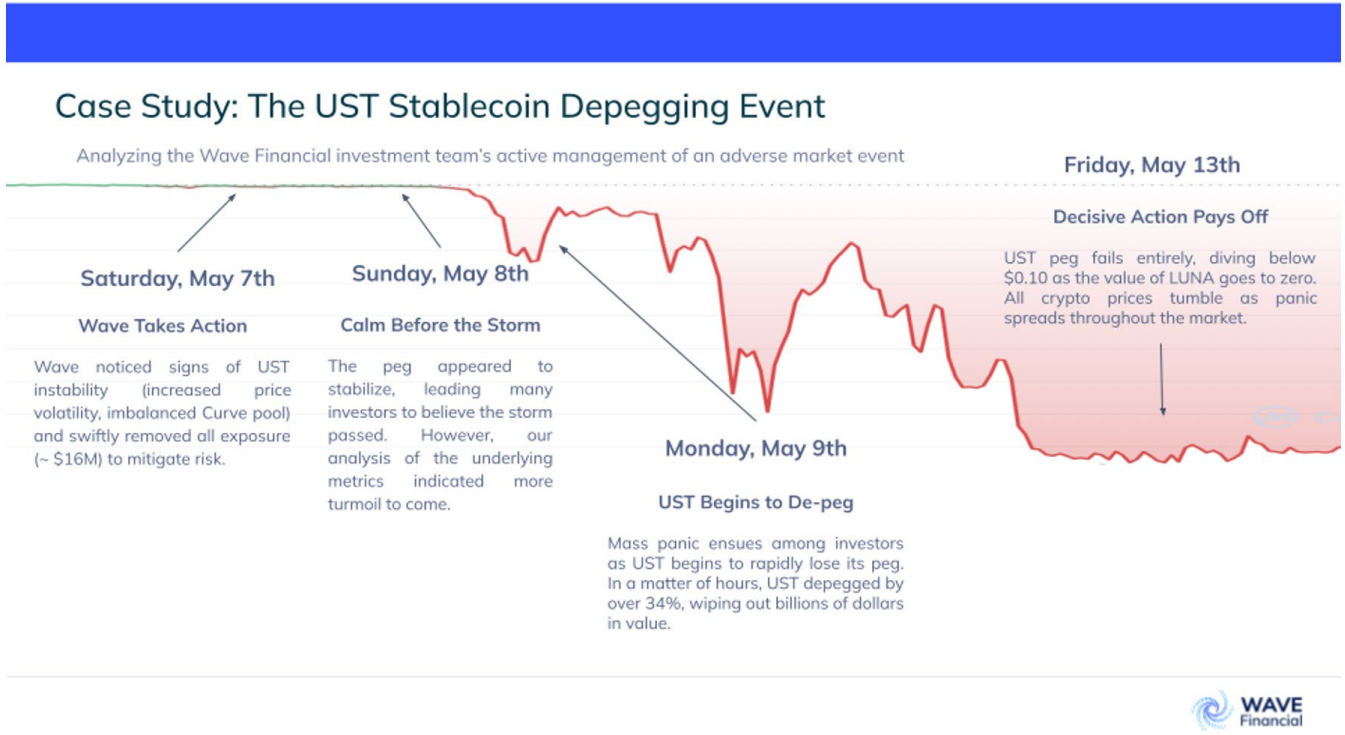
The peg appeared to stabilize, leading many investors to believe the storm passed. However, our analysis of the underlying metrics indicated more turmoil to come.

Monday, May 9th - UST Begins to De-peg

Mass panic ensues among investors as UST begins to rapidly lose its peg. In a matter of hours, UST depegged by over 34%, wiping out billions of dollars in value.

Friday, May 13th - Decisive Action Pays Off

UST peg fails entirely, diving below $0.10 as the value of LUNA goes to zero. All crypto prices tumble as panic spreads throughout the market. ■



SUSTAINABILITY

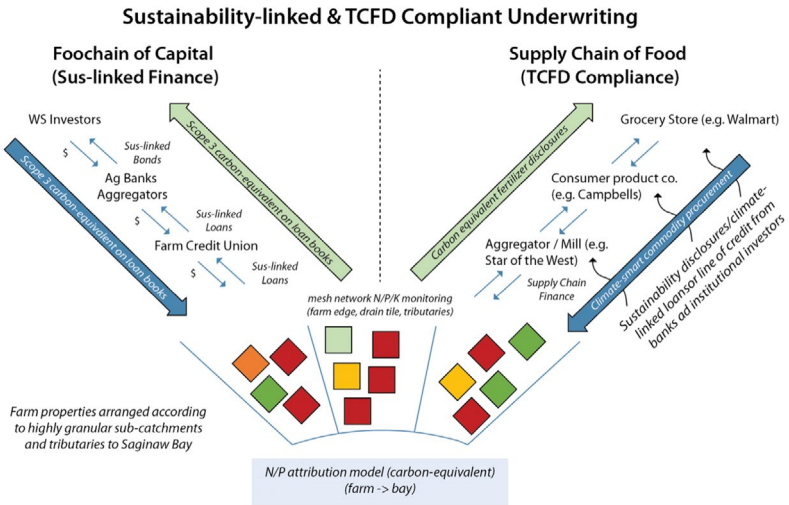
SUSTAINABILITY-LINKED AG FINANCE: THE SAGINAW BAY PILOT

BLOCKCHAIN TRIANGLE

Each year, more than one billion tons of carbon flow into the Great Lakes of North America in the form of nitrogen (N), phosphorus (P), and potassium (K) run-off that create algae fields and kill biodiversity. Cash crops (corn, wheat, and soybeans) release N, P, and K nutrients into the groundwater while cattle release methane into the air from manure pools at the farm, where N, P, and K leaches into ground water.

Blockchain Triangle (BCT), and its partners, seek to mitigate this outcome and align with the Task Force on Climate- Related Financial Disclosures (TCFD) climate compliance initiative to achieve the lowest cost of capital for farmers from institutional investors through the sustainability-linked bond market.

BCT collects Internet of Things (IoT) sensor data and links the data to sustainability-linked loans (SLL) that are tokenized. The SLL loans can be aggregated bundled as securitizations. The dataset referenced in the loans include traditional loan terms, IoT sensors for on-farm fertilizer use, edge of field sensors, tributary sensors, and water buoys in Lake Michigan and Ontario.



TCFD Value Chain:
Food Chain of Capital: Because asset managers require sustainability-linked assets for their portfolios, this program will qualify loans by linking each loan to IoT sensors to communicate both fertilizer usage and farm productivity. This will provide farmers with carbon credits and reduced cost of capital to improve profitability.

Supply Chain of Food:
New TCFD climate compliance will compel all the different hops (as one company's Scope 1 & 2 is another company's Scope 3 emissions) of the supply chain to report that information to stakeholders, suppliers, and customers. Starting at the farm level, farmers are the first part of that process to begin the reporting of information downstream to all of the stakeholders that will ultimately make up the carbon footprint for the product that is on the shelf. ■

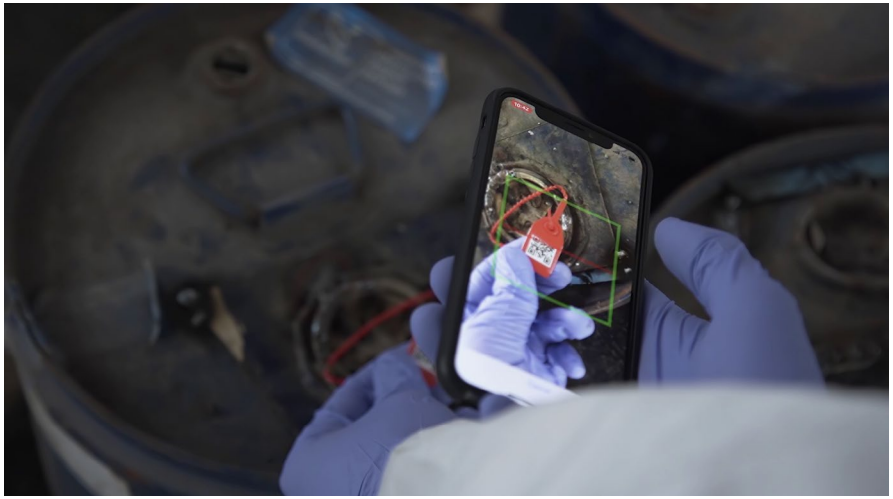
BLOCKCHAIN-ENABLED TRANSPARENCY FOR SUSTAINABLE AND CIRCULAR EV BATTERIES

Circulor

Electric vehicles (EV) are one of the most powerful climate change solutions. The growing need to prove what's in our vehicles and how sustainably they're produced is therefore essential to facilitate the energy transition.

This is no easy task given the geopolitical landscape and supply chain disruptions for critical minerals that highlight how fragile our supply chains are and the growing need for resource security. In parallel, increasing consumer awareness, mounting regulations, and investor pressure to prove products are sustainable compels organizations to analyze their supply chains and create 'digital product identifiers.'

The EU Battery Regulation, which was recently agreed on by the European Council and Parliament, requires proof of sourcing, recycled materials, ethical production, and embedded carbon for each battery with a 'digital battery passport' and QR code to make this information transparent. In the United States, the Clean Vehicle Tax Credit of the Inflation Reduction Act, calls for automakers to provide proof of where they are sourcing their critical minerals and manufacturing their battery components which, thanks to major technological advancements in cloud computing, edge computing, and software like blockchain, is possible today.



Circulor is the leading supply chain traceability solution for complex industrial supply chains that enables visibility into material flows, responsible sourcing, and embedded greenhouse gas (GHG) emissions of entire supply chains. Circulor's traceability solution creates a digital twin of the material itself at source and tracks materials as they change state through each stage of production, recycling, and end-of-life, encoding the data onto a blockchain which, in turn, provides visibility into what have been largely opaque supply chains.

Circulor and Polestar have been working together for a few years to trace battery materials and ensure responsible sourcing, which started with Circulor tracking cobalt for the Polestar 2. As the Polestar portfolio has expanded, so has the Circulor partnership, with the company now tracking mica, lithium, and nickel. This will enable Polestar to prove its progress in achieving its progressive sustainability strategy—to become a climate neutral company by 2040, to halve emissions per sold car by 2030 as compared to 2022, and to create a climate neutral car by 2030. Our short film, along with Polestar, shows the importance of tapping into supply chain transparency within EVs today.

Companies like Polestar have been leading the change to date. 2022 marks an important year in which global regulations have followed suit and will help in continuing to build a responsible, sustainable, circular battery economy and electrified future. ■

THE MERGE MADE ETHEREUM FUTURE READY

CONSENSYS

The year 2022 will go down in blockchain history as the year of the Merge. Ethereum, the world's largest programmable blockchain, transitioned from the energy-intensive Proof of Work (PoW) consensus mechanism to the more sustainable Proof of Stake (PoS). The transition created several changes.

1. It reduced Ethereum's energy consumption by 99.95%, making it one of the first technologies to effectively erase its carbon footprint.
2. It made Ethereum more secure, and set it up for future scalability. This likely made institutions more keen to engage with Web3. Despite the downward pressure on crypto valuations, institutional investors have been increasing their allocations to digital assets, a survey by *Institutional Investor* found.
3. It reduced Ether's (ETH) annual issuance by 89.4%, creating deflationary pressure on the ETH token.
4. It changed the way value is accrued across the Ethereum network. Earlier, any value that ETH generated was paid back to the network as rewards to miners. Following the Merge, the value from network usage accrues to both validators and token holders.
5. Finally, it increased the security of the Ethereum network by democratizing network participation and improving decentralization of PoS. As a result, the cost to attack the Ethereum blockchain running on PoS is roughly 10-20X more than PoW. In addition, the network running PoS will become more secure over time as more validators come on board, and the amount of staked ETH increases.

As a result of these changes, on-chain apps and Layer 2 solutions will likely leverage the improved security conditions and multiply on top of Ethereum.

Ethereum is a technology platform that forms the foundation of the future of the internet and finance. And as with any efficient technology, the Ethereum roadmap is full of upgrades to its infrastructure that make it future-proof. The Merge was the first.

In a post-Merge world, MetaMask Institutional can help organizations access and engage in DeFi and Web3 with institution-required security, operational efficiency, and compliance. ■

REDEFINING MINING

HUT 8

The blockchain and the digital asset mining industry has been criticized in the media for its positions on ESG because of the energy requirements for Proof of Work (PoW) mining. Hut 8, as one of the oldest and largest digital asset miners, is an industry leader with a stated commitment to focus on all facets of ESG, taking proactive steps to minimize impact to the environment, support communities, and advance inclusive and transparent corporate governance efforts.

As part of taking a leadership position in addressing these environmental challenges, Hut 8 has partnered with Sparta Group's carbon credit program established by their e-waste division, ERS International, to work toward their commitment to achieving carbon neutrality by 2025. Through the program, Hut 8 was able to reuse and recycle approximately 210 metric tonnes of electronic waste, which have translated into earning 5,200 verified carbon credits on the CSA registry.

ERS International's innovative program, the first of its kind in Canada, has allowed Hut 8 to responsibly recycle obsolete miners and divert CO2 from being released into the atmosphere. The carbon credits are generated for every metric tonne of carbon dioxide diverted from landfills, after accounting for shipping and processing costs. This program is annually verified by the AET Group Inc in accordance with the procedures set out in the ISO 14064 Standard. ■

REAL-TIME CLIMATE DATA COLLECTION WITH HYPHEN EARTH

HYPHEN

Hyphen provides higher climate data resolution to support source attribution with higher accuracy. Providing state-of-the-art infrastructure, Hyphen's methodology has been applied to environmental data, specifically tracking greenhouse gas (GHG) concentrations, fluxes, and observations from global to regional sources while providing this data of the highest scientific quality to any interested parties.

In the face of our climate crisis, it is vital that we have timely and accurate data on GHG emissions and sinks. Case studies to date have demonstrated that inventory-based estimates prepared with prevailing bookkeeping methodologies often do not correspond to values obtained based on observations of GHG fluxes into and out of the atmosphere. For policy applications, countries report on progress towards achieving their mitigation-related targets under the Paris Agreement. For these purposes, Intergovernmental Panel on Climate Change (IPCC) guidelines for preparation of national inventories are used. The private sector, on the other hand, uses the methods and emission factors provided by the GHG protocol. GHG protocol guidelines include the IPCC guidance as "third party" guidance. Although the IPCC guidance focuses on emission factor-based inventory preparation, it explicitly encourages complementing them with observation-based methods.

To achieve global climate goals we must understand what is actually happening in the atmosphere to match with environmental claims and targets in a timely manner. Hyphen provides automated systems for near real-time GHG data collection, aggregation, standardization, validation, and dynamic distribution through a decentralized oracle network. We achieve this through rigorously-collected, tamper-proof GHG data, in order to support various organizations with validated data to improve their validation methods of environmental claims through Digital Measurement, Reporting, and Verification (dMRV) in support of carbon trading markets. This improves climate accounting, physical and transition risk analysis, modeling, and forecasting. Hyphen empowers the private and public sectors with validated, near real-time global GHG observation data to ensure we are on track to building a more sustainable future for our planet. ■

THE DEMOCRATIZATION OF POWER, FOR A SUSTAINABLE FUTURE.

Powerledger

Powerledger develops software solutions for the tracking, tracing, and trading of renewable energy. The company has deployed its blockchain-enabled solutions across five continents, and in 2022 it expanded its blockchain capabilities even further with the launch of the Powerledger Energy Blockchain.

This blockchain consumes less energy than Powerledger's previous chain. The Powerledger Energy Blockchain is a customized permissioned Solana blockchain. The design is both faster and less energy intensive than Proof-of-Work (PoW) blockchains, as it utilizes Proof-of-History (PoH) and Proof-of-Stake (PoS) consensus mechanisms.

The blockchain allows Powerledger to build and scale energy projects across the globe, processing over 50,000 transactions per second. This scalable technology is fast, transparent and secure. Powerledger's blockchain technology facilitates secure trading and mitigates settlement risk, whilst also providing an immutable and verifiable audit trail.

Validators need to be invited by Powerledger and only those accepted by Powerledger can participate.

Powerledger has also successfully launched TraceX, a digital marketplace for the trading of Environmental Attribute Certificates (EAC). This platform enables users to trade EACs in a way that is simple, secure, and efficient. With real-time price discovery, users can make market-based decisions about their renewable energy procurement.

TraceX offers a standardized set of terms for all trades, meaning all marketplace participants are pre-qualified, resulting in no back-office costs.

Anonymised orders become visible for all market participants as soon as they are placed. When matched, TraceX streamlines the transfer of EAC ownership and financial settlement.

Powerledger is now migrating the TraceX digital marketplace to the new Energy Blockchain. With a mission to create markets that remove the obstacles to achieving 24/7 renewable energy, Powerledger is perfectly poised to offer a global marketplace for renewables. ■

USING BLOCKCHAIN TO COMBAT CLIMATE CHANGE

ripple

Ripple is a global blockchain solutions company that is transforming how the world moves, manages, and tokenizes value. We enable global financial institutions, businesses, and governments to facilitate instant cross-border payments, lower capital requirements, source crypto, and drive new revenue, unlocking greater economic opportunity globally. Ripple uses the XRP Ledger (XRPL), the world's first major global carbon neutral blockchain (since 2020), as a foundation for its products and services. Together with our partners, we're contributing to delivering a sustainable global economy —increasing access to inclusive and scalable financial systems while leveraging carbon-neutral blockchain technology. In this way we are delivering on our mission to build crypto solutions for a world without economic borders.

As co-founders and active members of Blockchain for Climate, the Crypto Climate Accord and WEF's Crypto Impact and Sustainability Accelerator (CISA), Ripple is committed to a low-carbon future. We work in partnership with respected climate players such as the non-profit RMI and crypto sustainability advocates like the Alliance for Innovative Regulation— with the goal of moving the crypto industry towards 100% renewable energy use and net-zero emissions. In 2020, we announced plans to go carbon neutral by 2030, and are on track to achieve this by 2030 or sooner.

Mitigating climate change is an urgent global priority. This is why, in 2022, Ripple announced a $100 million commitment to scale and strengthen carbon markets, the largest such pledge in the crypto industry. This funding will accelerate new, high-quality carbon removal activity and help modernize and scale carbon markets through the use of blockchain technology and capital investments.

The fight to mitigate climate change is not an individual effort. It requires all of us—nations, nonprofits, innovators, and more—to work together.

Read more about Ripple's commitment to sustainability ■

THE FUTURE OF TOKENIZED MARKETS

tergo

Climate change is one of the biggest issues humanity faces today. Following the alarming calls of scientists, people are starting to reduce greenhouse gas emissions to halt global warming and avoid the worst consequences. While we cannot stop emitting CO2 emissions immediately, we are entering a transition period. Before the entire economy is reshaped, carbon offsets provide an effective way to compensate for our actions.

> ***"Blockchain records immutability can solve most problems, but we must address off-chain concerns first. Tokenizing junk carbon credits will only recycle the old issues and won't improve the credibility of the voluntary offsets and carbon market as a whole,"*** **says Thuy Nguyen, Founder and CEO of TerGo.**

There should be one universal standard for each industry type without financial barriers. All carbon credits need to follow the rule of additionality.

Only after solving the current off-chain issues can we digitize the new, high-quality carbon credits and store their life cycle history as non-fungible tokens (NFTs) on the blockchain. We need a single,

coherent, worldwide system for voluntary offsets tracking and certification. It will solve the current issues, such as lack of transparency, double counting, impaired tracking, inconsistent third party audits, and oversight. These flaws provoke criticism of the general idea behind carbon offsetting and impede global climate action.

Automation with smart contracts will bring transparency to methodologies and payouts. Once an offset is generated through proven off-chain sources, it will be registered on-chain for immutable record-keeping. Using well-vetted smart contract technology enables the creation of an automated and transparent marketplace for carbon credits. Digitizing the entire carbon credits' life cycle history as NFTs is the most transparent and permanent solution to addressing challenges troubling the voluntary offsets market. Finally, blockchain-based offsetting can be done within seconds, globally, and immutably, allowing the market to grow internationally and assuring that purchases bring about a meaningful and measurable change. ■

BUILDING THE NEXT GENERATION OF INFRASTRUCTURE

EY is creating groundbreaking solutions to help build a better working world. As the only Big Four organization dedicated to the Ethereum network, EY has committed $100 million into blockchain and cryptoasset research and engineering over the next three years.

Latest products

Nightfall

EY pioneered Nightfall to help enable the management of private transactions on the public blockchain. To achieve privacy in the Mainnet, which is critical for enterprise users, EY and Polygon co-developed Nightfall – a privacy-focused rollup which will be a professional privacy solution available on Ethereum.

EY and Polygon will release production of open-source code for Nightfall Version 3, industrializing privacy on the Ethereum blockchain so developers can create privacy-enabled applications on Ethereum Layer 2 and 3 networks.

Starlight

Starlight bridges the gap by making an ordinary public blockchain application a zero-knowledge (ZK)-enabled privacy preserving one. Developers can input their existing code and receive a fully working application, custom to their use case, instantly.

There is nothing currently available which allows ordinary blockchain developers to create and use ZK applications for privacy.

EY OpsChain

There has been significant growth in companies establishing public commitments to drive net-zero emissions. EY OpsChain ESG provides a trusted platform for emissions and carbon credit traceability across value chains through the use of tokenization.

EY Blockchain Analyzer

The EY organization is deploying within Analyzer the tools and calculations necessary to determine tax liabilities from business transactions done on blockchains.

Reconciler

Reconciler released its latest/third version digital signature feature in May 2022 to simplify the access for EY Audit teams and clients, allowing demonstration of ownership of thousands of wallet addresses without the need to move cryptocurrencies.

API Services

Enterprises can perform functions including minting, transferring, and burning of tokens in either the Ethereum public blockchain or Polygon Layer 2 network.

Explore more at Blockchain.ey.com ■

FROM RECORDING HISTORY TO SPACE: THE FUTURE IS DECENTRALIZED

Filecoin Foundation

Filecoin is a decentralized storage network designed to store humanity's most important information.

Filecoin Foundation (FF) was founded to advocate for Filecoin and the decentralized web, facilitate governance of the Filecoin network, and fund critical development projects.

Today's internet is largely centralized, with control and distribution of information in the hands of a few powerful companies. Centralization makes the internet fragile: a recent FF survey found that a majority of Americans (71%) have lost information and records due to link rot. And over 80% of Americans want technology companies to do more to enable control over how their personal information is used.

Decentralized technologies like Filecoin let users harness the collective power of the web to store and share data. At FF, we share a common vision with our community for building a better internet – an internet that is more resilient, robust, and secure.

In 2022, FF supported some of the biggest Filecoin community events to-date to bring the ecosystem together, including the first cornerstone events hosted by the Foundation, FIL Austin and FIL Lisbon. We also established a presence at notable events – including the World Economic Forum, Consensus, and Web Summit – to introduce decentralized storage to a broader audience.

The Foundation secured critical partnerships to drive more widespread adoption of decentralized storage technology. In Davos, we announced a project with Lockheed Martin to deploy the Interplanetary File System (IPFS) in space. We continued our work with the Internet Archive to preserve their collection of digital history, including their new Democracy's Library initiative. And we announced our involvement in the Decentralized Storage Alliance, bringing together Web2 organizations, including AMD, EY, and Seagate, to foster decentralized storage at the enterprise level.

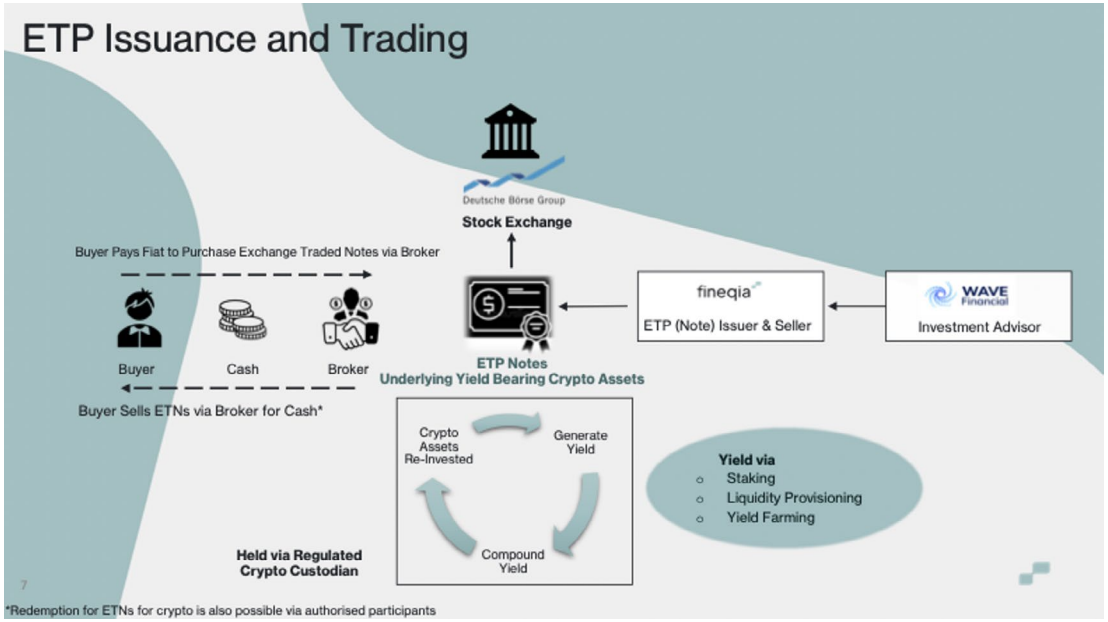
Together, we're building the backbone for the next generation of the web. ■

CRYPTO EXCHANGE TRADED PRODUCTS AND THE FUTURE OF MUSIC FINANCE

fineqia

Fineqia aims to be a leading and prudent asset manager in the emerging economy of decentralized assets. To that end, it will embark on two new businesses in 2023.

Fineqia plans to issue some of the most innovative crypto Exchange Traded Products (ETP) in Europe. The Fineqia FTSE ADA Enhanced Yield ETP, for example, will provide above market yields and launch with a significant commitment of assets under management (AUM). The ETP garners enhanced yield by providing liquidity to carefully selected projects in the Cardano DeFi ecosystem. Additional ETPs include the Fineqia FTSE Sustainable Staking Yield ETP, a risk-balanced exposure to top proof of stake (PoS) cryptocurrencies that adhere to sustainable investment requirements. Its yield is generated by committing a portion of its crypto assets to staking



pools. Both ETPs are supported by, and co-branded, with FTSE Russell, a unit of the London Stock Exchange Group.

Fineqia is partnering with one of the world's top music producers known as Naughty Boy, to create a new metaverse-oriented record label called NaughtyVerse Records. In addition to distributing music through digital platforms such as Spotify, Soundcloud, and YouTube, music non-fungible tokens (NFT) will be offered for specific tracks. Through partial ownership in such tracks, token holders will be entitled to a portion of ongoing royalty income. Naughty Boy's debut album, *Hotel Cabana*, featured singers Ed Sheeran, Emile Sandé, and Sam Smith, and peaked at No. 2 on the U.K. charts. His new album, to be released via NaughtyVerse Records, is expected to be a commercial success. Social media and press coverage of the new label will enhance Fineqia's position as an innovator in the digital asset industry. ■

TACKLING COUNTERFEIT DRUGS AND GOODS ON THE SUPPLY CHAIN WITH AVC

Hedera

AVC Global offers a next-generation, intelligent supply chain platform that maximizes efficiencies, eliminates fraud, and ensures the quality of goods, protecting both producers and consumers. AVC was developed in response to threats within pharmaceutical supply chains that stand in the way of moving drugs safely and securely, from production to the consumer. AVC saw that there was no existing mechanism of trust in place and developed a blockchain platform that reliably and securely validates and records all transactions across complex pharmaceutical supply chains.

To deal with the increasingly international nature of the pharmaceutical industry, AVC used Hedera to develop a blockchain platform with a consensus mechanism that reliably and securely validates and records all of the transactions across complex, multi-party supply chain networks in an immutable, transparent, and secure way. AVC has designed its platform to be auditable and capable of servicing supply chains regardless of their location.

AVC's platform ensures compliance with various national regulatory conditions as well as customs requirements – not just for the movement of pharmaceuticals in and out of different country jurisdictions, but also the collection of taxes and customs duties on these drugs. This has allowed the team to look beyond pharmaceuticals and apply the use of its Hedera Consensus Service-based platform to track and trace and customs processing of all asset classes such as oil and gas, halal-certified product provenance, humanitarian aid, and precious metals.

AVC Global's ongoing roadmap prioritizes environmental sustainability. Using Hedera, the most sustainable public ledger for the decentralized economy, AVC ensures that every transaction written to the Hedera ledger is carbon negative. Hedera also enables AVC to purchase transparent carbon offset credits to support the minimization of AVC's carbon footprint. This is a much-needed and important initiative in eliminating fraud and counterfeit drug businesses. ■

BLOCKCHAIN PROVENANCE SYMPOSIUM 2022

kenja

In 2020, Kenja K.K. entered the blockchain field by becoming the first content management system (CMS) platform to be blockchain-enabled and has since been incredibly active in the community. The past two years has seen numerous successful blockchain solutions developed as well as multiple participation in blockchain community activities and events such as the Blockchain Provenance Symposium.

The Purpose

The Blockchain Provenance Symposium was established with the belief in blockchain as a transformational technology which should be accessible to all. This drive to democratize the knowledge of blockchain experts led to the Symposium's launch in 2021, offering a stage where

experts may broadcast their insights and experiences for free to people all over the world.

The Concept: Reality & Beyond – Redefining the Business World and into the Metaverse

Following last year's success, the GBBC was proud to co-sponsor the Symposium alongside Kenja and BlockchainHub with Nagoya University of Commerce & Business (NUCB) as host. The event, held on November 17, centered on the new game-changer in the field: the Metaverse.

Seventeen world-renowned experts on Blockchain and the Metaverse from EY, Glimpse Group, and MetaTokyo amongst others were invited to present six sessions, four panel discussions, and two keynotes on several topics ranging from Fintech to Supply Chain.

The Results

- 198 Individuals Registered (53% APAC; 28% US; 19% Europe)
- 481 Views (52 Peak; 33 Average)
- 49:13 Minutes Average Watch Time
- 123 Impressions

First Hybrid Event

In celebration of its second year, the Symposium also held its first hybrid event at Nihonbashi Japan in partnership with BlockchainHub. There, Japanese industry and academic leaders enjoyed one keynote and two panels on the Metaverse followed by a social networking event. ■

DRINKING TO THE MOON

NOIR

NOIR is a luxury wine brand of the future. Our mission is to disrupt the worlds of art and wine through cosmic taste and innovation.

Web3 is the third major evolution of the internet. Through blockchain-enabled advancements such as non-fungible tokens (NFT) and cryptocurrencies, art and collectibles have been revolutionized. We are creating a luxury wine brand for a new wave of collectors and consumers that fits into their physical and digital worlds.

As the center of tech and innovation, California is now a premier wine destination, with the best climates for growing juicy and organic Pinot Noir grapes. Our winemaker uses biodynamic techniques, like harvesting under the full moon, to create euphoric, award-winning wines.

NOIR's first product was a sleek canned Sparkling Rosé. We were the first direct-to-consumer alcohol brand to accept crypto, starting with SORA's XOR token. We built a following within decentralized finance (DeFi) communities, shipping orders globally, and sponsoring events like ETHDenver and NFT. NYC. This futuristic wine won the Silver Medal at the Monterey Wine Festival with its delicious taste.

Our next innovation was to create the world's first phygital wine, by combining our luxury wine with a digital token. We minted 777 dynamically-priced $NOIR tokens, each one tied to a physical bottle, and created noir.digital, where users can buy, sell, and redeem $NOIR. When you redeem a $NOIR token, you receive a bottle of our Méthode Traditionelle Sparkling Rosé, NOIR New Moon.

$NOIR redeemers also receive a utility NFT, which is on-chain proof of their bottle's authenticity, bottle number, and ownership. This NFT provides holders with NOIR Club membership, granting them access to upcoming events, parties, and promotions.

We were honored to co-host the event "Drink the Moon" featuring a presentation and the first tasting of NOIR New Moon, in partnership with the GBBC, in Davos last May. Currently, the $NOIR token hovers around $500 and only 232 remain.

NOIR is the first wine brand to step into the world of Web3 — creating a more interactive, advanced, and immersive experience for collectors and consumers alike. In 2023, we will be working to scale NOIR into a massive wine and lifestyle brand. We will continue to utilize blockchain technology in our process, to build a more beautiful, sustainable, and phygital future. Cheers! ■

POA STUDIOS

A social impact focused start-up which partnered with Brij Lok Kala Foundation (BLKF) to bring an ancient art from India into the digital age via its inaugural non-fungible token (NFT) collection in 2022

Brij Kala is an art (Kala) form that comprises music, dance, singing, and painting based on Lord Krishna's life, his *leelas* (divine play, adventures), and his teachings. There are multiple forms of Brij Dance: Raas Leela (Holi & Mayur Dance), Charkula Dance, Deepak Dance, Bam Rasiya, and Dhol Wadan.

The term "**Raas Leela**" means "Dance of Divine Love." This divine dance depicts the story of love between

Lord Krishna, Radha, and their Gopi friends (milk maids). Raas Leela is a folk dance.

Banner photograph by Sonu Sharma

India is home to many art forms, but Brij Kala is unique in that it dates back 5,000 years.

This art form carries the original dance form through the people of the villages within 200 km of "Govardhan parvat" (Govardhan mountain) which is considered a sacred place.

Indigenous art like Brij Kala are under threat of extinction due to lack of investment and support to teach the next generation of artists.

There are now an estimated 30-40 actively practicing artists for Brij Kala. Further, lack of records means that Brij Kala will not be preserved for future generations.

Story of Sohait Kumar

Sohait is one of the few artists who can play Lord Krishna. He was associated with this art for the last 10 years. Unfortunately, as he is the main bread earner for a family of six, he had to leave the Brij region and take a job in Delhi. He no longer performs.

BLKF was founded to promote this art globally and partnered with PoA Studios to launch its inaugural NFT collection in 2022 to raise awareness, raise funds, and document.

The inaugural set of Brij dance video and photo NFTs released were sold to international buyers and supporters. BLKF is likely the first non-profit to combine technology & art to support indigenous art in India. Next year, BLKF hopes to launch more NFT collections to continue its mission to help support Brij art for generations to come.

Thank you to our contributors: Mr. Hiralal Sharma Saroj; Mr. Varun Arora; Mr. Vishnu Dutt Sharma; Ms. Sumiran Garg; Ms. Elizabeth Hui; and Ms. Heidi Pease. ■

DEVELOPING ROBUST BLOCKCHAIN STRATEGIES

Rethink Ledgers

Rethink Ledgers is a blockchain consulting firm focused on delivering impactful ledger and smart contract solutions for our clients. We recently received SOC2 compliance on a smart contract solution we built for TYDEI Heath. TYDEI Health offers a blockchain platform to manage physician preference items (medical devices) on behalf of hospitals and ambulatory surgical centers. They focus on end-to-end management of supply chain, financial transactions, patient safety and digital contract management. As part of this application, we were able to build a bridge to Discover's ACH payments to bring existing payment rails into the smart contracts for medical devices. Utilizing smart contracts and ledger technology is bringing greater transparency and cost efficiency to the healthcare industry.

Additionally, over the past year we have been helping clients build their blockchain strategy specifically focused on asset tokenization. We believe tokenization is the future for the way companies will conduct business. The World Economic Forum (WEF) estimates that up to 10% of global GDP, or around $10 trillion, could be tokenized by 2030 and PwC suggests that tokenization could unlock $1.7 trillion of value in the global economy by 2030. We have expertise in multiple tokenization platforms and technologies for clients such as VMware's Ethereum blockchain, Provenance Blockchain, Digital Asset's Canton, and Digital Asset Modeling Language (Daml). Rethink Ledgers' key offerings include Tokenization Strategy, Design Thinking & Use Case Development, and Smart Contract Development. ■

METAVERSE REAL ESTATE AND FUTURE OF GAMING

Tokens.com

Tokens.com Corp is a publicly traded company that invests in Web3 assets and builds Web3 businesses. The company focuses on three operating segments: i) crypto staking, ii) the metaverse and, iii) play-to-earn crypto gaming. Tokens.com owns digital assets and operating businesses within each of these three segments.

Staking operations occur within Tokens.com. Metaverse real estate and ecomm3 solutions operations occur within a subsidiary called Metaverse Group. Crypto gaming operations occur within a subsidiary called Hulk Labs. All three businesses are tied together through the use of blockchain technology and are linked to high-growth macro trends within Web3. By sharing resources and infrastructure across these business segments, Tokens.com is able to efficiently incubate these businesses from inception to revenue generation.

Tokens.com is one of the only publicly traded companies with such diverse Web3 business lines.

Metaverse Group, a Web3 technology company with products and services that bring businesses to life in Web3 environments, including metaverses, non-fungible tokens (NFT), and the next iteration of retail, ecomm3. We integrate Web3 technology solutions with a Web3 marketing agency and virtual real estate development services, so that our clients can own ecomm3, engage new audiences, and be first movers. Metaverse Group has worked with over 80 clients including Skechers, Forever 21, The UPS Store, and Miami Fashion Week to name a few. The company owns over 750 parcels of virtual land and has relationships with different metaverses and industry players, allowing them to deliver category leading solutions.

Hulk Labs is a Web3 technology company focused on building tools and systems to generate income from Play-to-Earn (P2E) blockchain games. Hulk Labs builds calculators to evaluate the profit potential and longevity of P2E games.

In addition, the company has built a global player network with over 1,500 players enrolled to date and a goal of 10,000 players enrolled in 2023, creating safe and livable wage jobs in the African economy. These players play games on behalf of asset-holders

and are building tools to securely delegate and track in-game NFTs.

Tokens.com builds businesses in the most exciting areas of Web3, with all three businesses being revenue positive, even in this crypto winter. We are early movers on new and exciting projects who further develop Web3 ecosystems. Tokens.com is not a fund or an exchange. All of the company's digital assets are self-custodied. Tokens.com is an easy way for investors to invest in Web3, available via the company's publicly traded shares in Canada, the USA, and Germany. ■

ACKNOWLEDGMENTS

The GBBC and GBBC Digital Finance are grateful for the extraordinary community who have contributed to the report this year.

Thank you for joining us as we continue to carry out our mission in 2023 to further adoption of blockchain technology through a shared forum with regulators, business leaders, and lawmakers on the benefits and applications of this groundbreaking technology.

THANK YOU TO THE MEMBERS, REGULATORS, AND POLICYMAKERS WHO CONTRIBUTED TO OUR REPORTS THIS YEAR:

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