GLOBAL DIGITAL FINANCE

2024 | Year in Review

THE ESTABLISHMENT ADOPTS DIGITAL FINANCE TECHNOLOGY

THE US SEEKS TO LEAD ON POLICY AND REGULATION GLOBALLY

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Lawrence Wintermeyer
Chair
GDF

2024 was the year that crypto had its "Berlin Wall" moment, following years of regulatory uncertainty for crypto and digital assets.

The US launch of Bitcoin ETFs was a seminal milestone for crypto. Following the SEC approval of 10 ETFs in January, the Bitcoin ETF was Blackrock's fastest selling ETF in history. The popularity of the ETF signalled the pent up market demand for bitcoin from investors with institutional investors holding an estimated 20 percent of spot ETFs. ETH ETFs were approved in July to applause from the community.

Following the US election in November, and with President-elect Trump promising to safeguard the national bitcoin stockpile, the "Crypto Wall" fell. The US is embracing crypto and digital assets to assert its global leadership in fintech innovation, and the community applauded, loudly. The new appointments of agency chairs, a 'crypto czar', and committee heads to support new policy, regulation, and innovation, is breathtaking.

At the date of publishing this report, and following the President's inauguration on January 20th, a Digital Assets Executive Order has set the course for US policy to be put into law over the next 12 months, banning CBDCs and securing industry backed stablecoins, promoting public blockchains, ensuring access to banking, and providing regulatory clarity with tech-neutral regulators, and, the SEC has repealed SAB121.

This historic shift was unthinkable just a few months ago.

A new global Digital Finance Forum along with regional policy Working Groups ensured GDF kept is finger on the pulse of emerging global digital assets policy and regulation and helping to respond to 18 regulatory consultations around the global - a GDF record! With policy outreach in the US, the UK, Europe, the Emirates, and Singapore, these boots on the ground roundtables with members ensured GDF was on top of the voice of the community on consultation responses and advocacy.

New member-led innovation Forums and Working Groups were established to deliver on 2024 member priorities. The Tokenization Forum and the Digital Payments Forum, focused on dFMI themes such as interoperability, digital asset custody, and stablecoins. A new VASP Forum was established towards the end of 2024 to focus on VASP best practices, standards, and the FATF Travel Rule. This year, across 12 sessions of different GDF Forums, we hosted just shy of 1,000 industry participants with speakers and fireside chats delivered by CxOs from over a dozen leading top tier firms.

The 2024 Programme has again demonstrated GDF's unique strength as an open innovation platform for digital finance innovators that included both GDF member and non-member participants, from regulated and unregulated firms, from early stage fintechs to institutions, to convene to share, discover, and deliver industry best practices and demonstrate leadership.

GDF led 11 member and community roundtables in 2024 – including 3 evidence sessions hosted as part of the former Digital Finance APPG. GDF co-delivered the GDF and Hogan Lovells Digital Summit in London in September and brought together our community for Digital Finance Days in New York, Washington D.C. and Dubai - with plans to increase the number of hybrid GDF Forums for 2025 in the making.

On external conference fixture contribution, GDF team members chaired, delivered keynotes, moderated, or were panellists, participating in over 60 conferences in 2024 with just shy of 90 team speaking slots and partnering on 29 external global events. GDF partnered with Digital Asset Week (DAW) on their San Francisco, London, and Singapore fixtures, and saw over 30 team and member FINTECH.TV interviews.

Notable outcomes across the GDF 2024 Programme include:

- The GFMA/GDF Smart Contract Primer – delivering provides an overview of what smart contracts are;
- The voice of global digital finance at Parliament - a report delivering 10 recommendations for Digital Britain from the global financial services and fintech sector; and
- The GDF/FIX Whitepaper - FinP2P router use cases for connecting any FIX OMS to tokenized assets protocols.

The refreshed and energized GDF Executive Branch set off in 2024 with this bold new member driven programme and delivered, significantly exceeding expectations - Bravo TEAM GDF!

The mark of the dedicated hard work put in by the Executive Branch is not just evident in the prolific and high-quality engagements and outcomes in 2024, but in in our member and community engagement in Forums and Working Groups, feedback through the member led Advisory Council, and, as importantly, our GDF paying member retention numbers, and the growing list of new members.

GDF net member retention was close to 100% in 2024 with a staggering 40% increase in new paying members coming into the association. This is nothing short of an outstanding team performance and a welcome change from the market volatility of 2022 and 2023 where the membership experienced only marginal growth and “GDF’s working capital runway” suffered. Going into 2025, it has vastly improved.

The GDF Regulator-ONLY Forum delivered four gatherings over each quarter in 2024 with guest speakers from the: BIS (Project Dynamo), GFMA (GMAC Digital Asset Markets Subcommittee Recommendations), Bank of England (Digital Securities Sandbox), and IOSCO / SEC (IOSCO AI Survey Findings). A very big thank you to Dawn Stump for a steady hand in the chair for the past two years which will be handed over in 2025 to Jennifer Lassiter, former FDIC, CFPB, and board member of the Digital Dollar Project.

We strengthened the GDF governance model in 2024 to ensure we were better equipped to deal with liquidity and control, that we have had a more attractive environment for independent board members to offer guidance, and to attract regulators and policymakers as board observers. The result, now implemented in 2025, is a two-board structure: a Member Board, chaired by myself, Lawrence Wintermeyer, and a Board of Advisors and Observers, chaired by Greg Medcraft.

The Member Board is comprised of six company members (the UK not-for-profit legal entity), three of whom are fiduciary directors, and eleven Leadership category member representatives (the annual member paying subscribers). The Board of Advisors and Observers is comprised of up to twelve independent preeminent professionals with a pedigree from across the global crypto and digital assets industry, policymaker, and regulator landscape, five of whom will begin in the first cohort in Q1 2025.

Members of the Board of Advisors and Observers are open to offer their guidance, networks, and resources to the GDF Member Board, or observe the board meetings, without the encumbrance of fiduciary responsibilities of a UK not-for-profit entity.

The Executive Branch introduced an Executive in Residence (EIR), and a Practitioner in Residence Programme (PIR). EIRs are independent external executives and PIRs are GDF member executives. Twelve new EIR / PIRs have been onboarded to date that will help to bolster capacity and capabilities of the GDF Executive Branch.

The EIR / PIRs have already begun to represent GDF at functions, contribute to technical work, participate in regulatory engagement, and promote the GDF ethos and ecosystem collaboration.

Finally, I must thank our members and partners for their continued support for GDF through thick and thin, we are humbled and could not deliver your annual programme priorities without you, your support, your network, and your resources.

This year's Annual Report tells our story through thought leadership submissions from a record 27 members and partners, and agency submissions from IOSCO, FATF, the FSB, and VARA. The report also showcases 10 new member working groups in a year that has delivered 17 new industry partnerships. A very special thank you goes to Madeleine Boys, our Director of Programmes and Innovation, and the editor of this perennial publication, for her skilled and diligent work.

2025 promises to be one of the most exciting, if not somewhat daunting years, our community has ever faced. With all the anticipated progress for the crypto and digital assets community in 2025, and the US in a new leading role, we must be better prepared for the continuing global economic and political volatility that has been afoot for the past few years.

We demonstrated in 2024 that, from across our industry, our community can speak with a single voice to policymakers and regulators on matters critical to crypto and digital assets. Let us now amplify this voice to scale our teams, partners, and networks even further in 2025 to the mass global adoption of digital finance. ■

Chair's Foreword of Board of Advisors and Observers

Greg Medcraft
Chair, GDF Board of Advisors and Observers
GDF

GDF plays an important role as a bridge between the industry and the public sector in many areas of digital finance, with a specific focus on crypto and digital assets. This puts GDF at the crossroads of a two-way engagement that convenes the greater community in often, a very technical dialogue, that helps to shape policy outcomes for the future of digital finance.

Our mission is, "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."

GDF is a proud member of IOSCO's AMCC and now part of the AMCC Steering Committee. We engage in the IOSCO FinTech Working Group on matters ranging from tokenization to AI, and support IOSCO's efforts to gather data (via a public survey) and input from our members and community on the key issues for the working group to address.

We were honored to have Tajinder Singh, the 2024 Acting Secretary General of IOSCO, present to the GDF Member Board in June as we aimed to align our member-driven policy programme to that of the both the global agencies and regional conduct regulators.

2024 was a pivotal policy year for crypto and digital assets policy globally, and also one that was shaped politically. Half the world's population voted, and many countries voted for change. In turn, this moulded much of the financial services landscape, and the approaches to be taken towards financial regulation.

There is little doubt that the US intends to lead with crypto and digital asset policy and regulation with the President's commitment to crypto and digital innovators. The seeming deluge of new appointments along with Executive Order in the first days of the new administration is delivering at a pace many policymakers and regulators are unfamiliar with.

Key policy issues dominating 2024 included the implementation of FATF's travel rule, consumer protection, stablecoins, the tokenization of real-world assets, staking, and taxation. Policy in 2024 has been influenced significantly by the popularity of the Bitcoin ETF in the US with both retail and institutional investors, and demonstrating the latent pent up demand for this new asset class.

Looking ahead to 2025, one issue which may significantly shift in the global policy landscape is CBDCs. With the US now declaring a "ban" in CBDCs favouring industry stablecoins, and the slow pace of development of CBDCs in other major jurisdictions, the race to develop digital central bank money may be slowed as focus and priorities land in the private sector.

I am honored to be chairing the new GDF Board of Advisors and Observers, as we prepare to onboard the first cohort of 5 members in 2025. The creation of the Board was born out of requirement to have industry leaders and policymakers contribute their time, knowledge and network to the GDF Member Board without having the fiduciary obligations of the annual financial accounts, which for a small not-for-profit, are relatively marginal, but idiosyncratic, and best left to professional finance managers and directors with the experience of the volatility of fintech members associations.

On a personal note, I would like to thank Dawn Stump for her service to the GDF board, and as the chair of the GDF Regulator-Only Forum. When we invited Dawn to the board in 2022, she accepted a two-year term which she has now fulfilled. Her contribution to GDF over that period has gone above and beyond the call of duty expected of a board director, and we are grateful. We wish Dawn the best for her future endeavours and are delighted she will continue supporting GDF Executive Branch personnel with guidance and coaching.

Going into 2025, I am delighted to announce that GDF will be a knowledge partner to the 2025 Salzburg Global Finance Forum. I have been on the board of Salzburg Global for seven years and have been delighted to introduce Lawrence Wintermeyer and GDF, and a number of our community colleagues to the annual finance forum. As a content partner, we will be extending opportunities to GDF Leadership category members to sponsor and engage with the forum in June 2025.

Salzburg Global is an international non-profit organization and unique in its mission of continuing to build the intellectual and emotional bridge between US and European relations (building on the Marshall plan following WWII) - a mission as important today as it was then.

Salzburg Global was founded in 1947, and its Salzburg Global Finance Forum has been held annually since 2011.

Last but certainly not least, I must thank the GDF Executive Branch for an outstanding performance in 2024 - the best year in GDF's history. The breadth and depth (and number) of the GDF consultations responses along with fidelity of our forum and working group outcomes and reports demonstrate GDF's "policy first" approach, and our members great efforts to propose solutions to build future-proof digital frameworks and solutions around the globe.

It is an honor for me to be a part of the GDF team and serve the Member Board and Chair, Lawrence Wintermeyer, who deftly navigated GDF and the team through a challenging start to 2024. I have worked with GDF since its inception in 2018, starting as a sponsor in my role as Director of IOSCO's Financial Services Directorate, and our track record positions us to be well prepared for the road ahead.

GDF could not be better placed to deal with exciting challenges that 2025 will present to our members, and our greater community of policymakers and regulators, in the developments and global scaling of digital finance.

GDF Membership and Community Update: GDF 2024 in Review

Elise Soucie Watts
Executive Director
GDF

Madeleine Boys
Director of Programmes and Innovation
GDF

Melissa Corthorn
Director of Member Services and Events
GDF

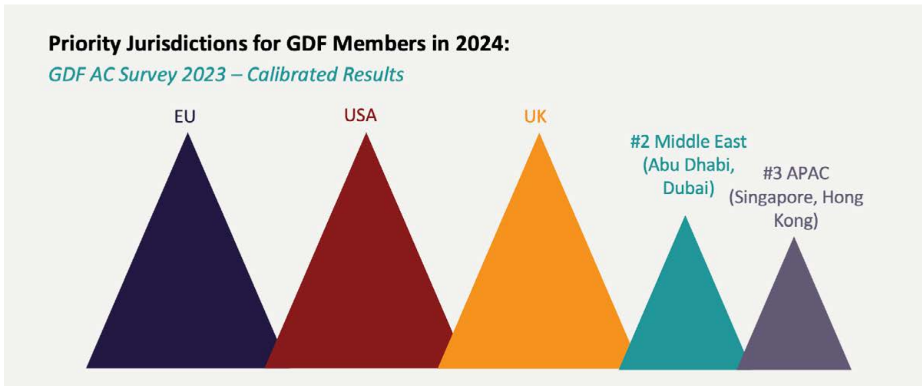
2024 was a landmark year for GDF, as we advanced our mission to support responsible innovation in digital finance. As the digital finance ecosystem continues its shift from proof-of-concept to real-world implementation, GDF has played a critical role in supporting the industry's journey. Through advocacy, collaboration, and member-led initiatives, GDF continues to supports its members and the regulatory community by addressing the evolving needs of the ecosystem and bringing to the forefront the opportunities and challenges that come with developing best practice standards for the industry.

At the centre of this year's member proposition was our strategic launch of GDF Forums. At member request, these Forums enabled us to convene our community and bring to the forefront the latest in digital asset policy and innovation and socialize the plethora of activity undertaken across both policy and open innovation programmes.

Addressing the top regulatory and policy challenges flagged by our members across their priority jurisdictions, GDF's advocacy efforts scaled to unprecedented levels. We responded to **18 consultations** globally addressing critical regulatory challenges across jurisdictions, including 2 responses to consultations issued by global agencies, 8 UK consultations, 7 EU consultations, and 1 consultations in the Emirates.

The GDF team engaged with regulators and policy makers in the US on early pieces of legislation such as FIT 21, however given the previous hesitancy around crypto and digital assets in the region there were no formal consultation responses tallied in the roundup.

Our **EU/MiCA Working Group** - first launched in 2020 - delivered seven detailed responses, offering technical guidance on issues such as



GDF Team and Baronness Swinburne at the launch of 'The voice of global digital finance in Parliament'

market abuse guidelines and the classification of cryptoassets under MiCA.

The flurry of digital asset related consultations across the Channel warranted the set-up of our new **UK Policy Working Group**. The group convened members' input to engage UK authorities, including eight consultation responses and three public private sector roundtables. With the recently published FCA cryptoasset roadmap, the group will continue to support the public sector in building a robust framework for cryptoassets focusing on key areas such as stablecoins, custody, staking, and the recently announced UK digital gilt (DIGIT).

To further our UK advocacy efforts, the **2024 Digital Finance All Parliamentary Group (APPG)** was set up with DLA Piper serving as the independent secretariat. Chaired by Sir Stephen Timms, with Lord Philip Hammond, Adam Afriyie, and Martin Docherty-Hughes as vice-chairs, the group focused on how digital finance can help transform the UK economy and funnelled these findings in the report: "The voice of global digital finance at Parliament". The report advocates that the UK can catalyze this change, progress digitisation, boost growth, create new jobs, promote greater social inclusion, and deliver greater prosperity by working across three key pillars of digitization:

- **Competition –** how the UK will better compete with traditional and new and emerging digital financial hubs to positively exploit its premier position as a global financial services and fintech hub.
- **Productivity –** how the UK will leverage the implementation of this new era of digitisation to boost productivity, growth, and new jobs in digital financial innovation across all regions of the UK
- **New products –** how the UK will nurture innovation to create access to new and innovative products and services to better meet the needs of our citizens and businesses.

The expansion of GDF's policy advocacy extended to international bodies like IOSCO and FATF, ensuring that global regulatory dialogues incorporated the perspectives of our diverse membership. Regionally, we deepened collaborations both in MENA and APAC – launching two new policy Working Groups to address developments in both these regions.

As part of these Groups' mandates, GDF collaborated with the Virtual Assets Regulatory Authority (VARA) on a **Digital Finance Day in Dubai**, bringing together industry leaders for a closed-door roundtable to develop recommendations for regulating DeFi and Staking. As part of our engagement in APAC, GDF formalized a collaboration with Web3 Harbour – a Hong Kong based Web3 industry association – and extensively engagement members in Singapore

GDF & VARA Roundtable in Dubai

Afternoon chair opening remarks at Digital Assets Week Singapore by Elise Soucie Watts

during Singapore Fintech Week. Notably, GDF hosted a roundtable in collaboration with the GFMA and Hogan Lovells to conduct a deep dive on next steps for the Smart Contract Primer, which we were pleased to see was also included in the Monetary Authority of Singapore (MAS) Project Guardian Fixed Income Framework (GFIF) also announced that week.

GDF delved into many of our own policy initiatives, those of our members and the broader industry in our new **Digital Finance Forum**. This Forum served as a platform to shed light onto some of the latest crypto and digital asset market data and industry developments, and deep dives into topics through a series of fireside chats with industry – including many of our members - and public sector experts, including the CEO of VARA, the European Banking Authority and the European Supervisory and Markets Authority.

Central to our policy proposition this year was the theme of collaboration. GDF expanded its influence through strategic collaborations, notably with other industry associations like Crypto Council for Innovation, The Digital Pound Foundation, and standard-setting

associations like the Global LEI Foundation, the Association of National Numbering Agencies and the DTI Foundation. These partnerships have strengthened our collaborative endeavours bringing additional resource, expertise and weight to several of our advocacy initiatives including consultation responses, roundtables and bilateral engagement with policymakers and regulators across the globe.

We were particularly pleased to partner with the Global Financial Markets Association (GFMA) to publish **The Smart Contract Primer**, a practical guide to implementing smart contracts in financial services in collaboration with two of our Leadership member firms: Hogan Lovells and Steptoe. The Primer provides an initial overview of what smart contracts are, how they are being implemented within financial services and sets forth 8 principles as to how to apply existing legal and regulatory frameworks to mitigate risks from utilizing such technology, including:

Elise Soucie Watts, Lavan Thasarathakumar and Laurence Van der Loo at a closed door roundtable for the Smart Contract Primer in Singapore

1. Supporting the development and growth of internal risk and control or compliance function with appropriate resourcing;
2. Having a clear and proportionate incident response mechanism/policy;
3. Standardized requirements for smart contract audits, while working towards a template-based approach for broader smart contract standardization;
4. Ensuring smart contracts are written in clear, well-documented code that is easy to understand and audit;
5. Extensively testing smart contracts before deployment using various scenarios and stress tests;
6. Implementing strong access controls to restrict who can modify or interact with the smart contract;
7. Integrating smart contracts with existing workflows with human intervention at critical points for added security; and
8. Endorsing the agreement of contractual obligations between relevant parties.

We also furthened our collaboration with our lonstanding partners: the ACI Financial Markets Association (ACI FMA). We jointly launched the **Standards Stewardship Working Group** to advance the adoption of the GDF Global Cryptoassets Standards, building on the foundational work of the Global Financial Institutions for Crypto Working Group (GFIC). As institutional sentiment towards crypto and digital assets continues to improve, the need for fair and transparent markets has never been more pressing. This new Working Group has been poised to address this need by focusing on several key initiatives, including:

- Developing applicable scenarios and use cases for the implementation of the Standards on the ACI FMA's ELAC (E-Learning, Attestation, and Certification) education Portal.
- Providing a sandbox environment for firms to test attestation and certification to the Standards through ELAC, thus supporting better alignment among market participants and promoting the consistent application of the Standards.
- Ensuring the Standards evolve as industry matures by maintaining it as a living document that reflects the industry's ongoing priorities and concerns.

Against this backdrop and under the guidance and leadership of this year's Advisory Council (AC) Chair Breige Tinnelly, Head of Market

Priority Areas for GDF Members in 2024:

GDF AC Survey 2023 – Calibrated Results

Development at GDF Leadership Member Archax, this year was equally defined by meaningful achievements across our member priority areas – real-world asset tokenization, digital asset custody, exchanges and platforms, interoperability, and payments - in GDF's open innovation programme agenda.

Amid these achievements, 2024 was not without its challenges. In a year of global elections, geopolitical uncertainty and inflationary pressures tested the resilience of the digital finance ecosystem. However, institutions that have been building for years continue to drive progress, as evidenced by the rising adoption of digital asset products such as bitcoin and ether ETFs. These instruments, which cater to growing institutional demand, reflect the industry's maturation and its potential to unlock liquidity in traditionally illiquid markets.

We were also pleased to see a bounce back within our crypto community. The sector has risen above the turbulences of 2022 as exemplified by strong market performances of some assets, including Bitcoin hitting $100,000.

Tokenization as a member and industry priority remained central to our efforts throughout the year. The **GDF Tokenization Forum**, new to 2024, convened on a bi-monthly basis over 130 participants providing a dynamic and high-profile platform for bringing to the forefront the latest industry challenges and know-how to

Madeleine Boys at GDF's Tokenization Forum held in New York

support scaling tokenization projects – notably around the themes of interoperability, custody, and payments. Bringing together representatives from major financial institutions across buy and sell-side firms, to capital market fintech leaders, the Forum's preeminent community – led by co-chairs Archax and Ownera - supported several new work streams to GDF in 2024.

Under the aegis of the Tokenization Forum, GDF formalized a partnership with the FIX Trading Community marking a significant milestone in our open innovation agenda. The partnership set the basis for forming the FIX/FinP2P Protocol Interoperability Alliance focusing on enabling seamless interoperability between traditional finance systems and blockchain-based platforms. Such collaborations are not just technical exercises, they bring to life our vision of helping build a more interconnected and efficient financial ecosystem through managed and collaborative processes – the findings of which are available in our recently published report.

Central to our thesis in the GDF Tokenization Forum has been the growing institutional adoption of digital assets. To further reinforce our understanding of this increasingly rapid development, GDF commissioned a **major piece of research in collaboration with Perception A**, surveying 100 senior executives from leading financial institutions managing over $221 billion in assets. The results put in the spotlight a sector poised for expansion: the majority of respondents already handle tokenized securities or commodities, with 100% planning to do so in the near future. Key asset classes such as corporate debt, sovereign debt, and private market securities emerged as the front-runners in tokenization, reflecting institutional appetite for transparency, liquidity, and efficiency. This data not only validated our strategic focus but also underscored the urgency for harmonized frameworks to support this accelerating adoption.

With this drive in RWA tokenization, the theme of **digital payments infrastructure** rose to the forefront as a key part in the transition to providing safe and resilient on and off ramps to a new generation of **digital financial market infrastructure (dFMI)**. Scalability and liquidity are key, and facilitating seamless settlement using cash on ledger is a prerequisite to delivering this. Digital payments use cases - from stablecoins, to tokenized deposits, and CBDCs – are increasing at rapid pace and GDF members signalled a need for a space to collaborate on discussing and further articulating the key benefits and challenges in the digital money ecosystem, and where necessary, engage with regulators and policymakers. As such, GDF also mobilized a new **Digital Payments Forum in 2024** under the leadership of Hogan Lovells and Block for quarterly sessions.

Beyond payments considerations, dFMI was a central theme to these discussions and our community noted that lack of or poor dFMI was a key challenge to scaling RWA tokenization. We unpicked this further in our **digital asset custody (DAC) programme**. Through a series of roundtables, we convened industry leaders to continue to shed light on the opportunities and barriers DAC providers have to successfully navigate moving to these new digital technologies and ways of working, particularly as it pertains to custody of tokenized RWA. We also hosted a session in the Tokenization Forum with incumbents and tech native firms to analyze developments in the DAC landscape exploring prospects of convergence, co-existence, and disintermediation in the market during which we announced the new DAC x Tokenization Working Group to kick-off in early 2025 under the leadership of Zodia Custody and Deloitte.

Amid these achievements, 2024 was not without its challenges. In a year of global elections, geopolitical uncertainty and inflationary pressures tested the resilience of the digital finance ecosystem. However, institutions that have been building for years continue to drive progress, as evidenced by the rising adoption of digital asset products such as bitcoin and ether ETFs. GDF is confident that our community of experts and innovators are helping drive this adoption and early days of scale being brought to this market.

In particular, we were also pleased to see a bounce back within our crypto community. The sector has risen above the turbulences of 2022 as exemplified by strong market performances of some assets, including Bitcoin hitting $100,000.

Within our programmes, we were pleased to see our **Joint interVASP Standards Working Group (ISWG)** release an update to interVASP Messaging Standard 101 (IVMS101), the universal standard for virtual asset service providers (VASPs) to communicate required originator and beneficiary info. This iteration addressed various errors, implementation challenges, and enhancements that were identified and proposed by technical subject-matter experts during the adoption process of IVMS.101 originally published in May 2020.

GDF also announced a new **Travel Rule VASP Working Group** led by OKX and other global crypto exchanges as founding members. This initiative aims to address critical challenges faced by VASPs in implementing the Financial Action Task Force (FATF) Travel Rule and has set out to:

- Develop best practices for VASPs, such as, screening protocols, requests for information (RFIs), transaction returns, and exception handling.
- Support global regulatory engagement to align industry practices and policies.

Separately, GDF also had the opportunity to pursue a programme exploring the benefits of tokenization in carbon markets - a highly relevant topic in our regulatory community and at the cornerstone of our transition economy focused efforts. The **Sustainable Finance Tokenization Working Group** set out to bring to the forefront knowledge around how DLT and tokenization can help address integrity challenges seen in voluntary carbon markets to date. Central to our efforts has been bringing to the forefront clear use cases with industry leaders like Tokenovate and Northern Trust who demonstrate the inherent value of digitalizing these markets.

Amidst a dense programme agenda, there was no shortage of engagement from the team on an events front. 2024 saw GDF grow our thought leadership in our digital asset community at industry events that we partnered with and the GDF team spoke at as well as at our own fixtures in London, Paris, Dubai, Abu Dhabi, Singapore, New York and globally via virtual webinars and on media platforms including FINTECH.TV. In

Madeleine Boys on stage with our partners ANNA, DTIF and GLEIF at the European Blockchain Convention in Barcelona

Lawrence Wintermeyer, Opening Remarks at the City & Financel Tokenisation Forum in London

Greg Medcraft, Opening Keynote at Digital Assets Week London

Elise Soucie Watts & Richard Crook at ADFW for FintechTV

September our Annual Digital Assets Summit in partnership with Hogan Lovells heard from experts across the value chain on their views of digital asset adoption in financial institutions. 2024 also brought us to Washington D.C., Brussels, Frankfurt, and Barcelona for regulatory and institutional engagement along with running roundtables in some of these cities.

In support of our recently instated diversity and inclusion policy, we also soft-launched the GDF Women in Digital Assets Mentorship Programme (WIMDAP). Formally launching in Q1 2025, WIMDAP aims to foster diversity and inclusion within the digital assets industry by supporting and empowering aspiring females. The initiative will provide opportunities for professional growth through mentorship, access to industry events, and networking.

At the top of the agenda for 2025, we are partnering with DLA Piper to host our 2nd Global Digital Forum in February. The Forum will cover the opportunities that digital finance brings spanning key jurisdictions and a range of topics as well as the policy landscape in agenda setting regions. We have also confirmed partnerships with Juliet Media, City & Financial, Currency Research, Paris Blockchain Week, European Blockchain Convention & Hogan Lovells.

As we reflect on 2024, one theme emerges consistently: progress through collaboration. GDF remains an open innovation community, driven by the collective efforts of our members and the broader digital finance community. From advocacy to technical standards, we have shown that collaboration is not just a strategy but a necessity for building a sustainable and inclusive digital finance ecosystem and we are grateful for the dedication and leadership of our members helping us drive our mission. It is their insights, expertise, and commitment that fuel our work and inspire our vision for the future.

As we embark on our 2025 programme agenda, we remain guided by our member priorities and the leadership of our Advisory Council, under the Chairship of Melissa Netram in 2025. With her outstanding pedigree in technology and software innovation coupled with public sector experience serving as Chief Innovation Officer and Director of LabCFTC - the innovation office of the US CFTC -, she is well poised to assume this role within GDF and help guide this year's programme agenda.

Let us continue to drive and amplify our mission as we enter 2025. The GDF team remains steadfast in our mission to lead, advocate, and innovate - together with our leading community of innovators building together the future of finance. ■

GDF 2024 EVENT PARTNERSHIPS

GDF ADVOCACY AND OUTREACH

Navigating the Crossroads:
US Digital Asset Regulation in 2024

Dawn Stump
Board Member and Chair of
GDF Regulator-Only Forum
GDF

Jennifer Lassiter
Advisor
Board of Advisors & Observers, GDF

While 2023 hinted at a potential US resurgence in the digital asset space, 2024 has been marked by both significant progress and persistent challenges. Advancements span across AI and blockchain technology, with a particular focus on real-world asset tokenization and navigating the intersection of traditional finance and digital assets, occurring amidst a backdrop of ongoing debates about the role of digital assets in the broader financial system and concerns about consumer protection.

Federal Level Activity
Legislative progress: The House Financial Services Committee advanced key legislation clarifying digital asset regulations, including defining the jurisdictions of the SEC and CFTC, addressing stablecoin regulation, and providing tax guidelines for digital assets. Though these bills face ongoing debate, they represent significant bipartisan efforts towards a comprehensive regulatory framework.

Legislative progress stalls: Despite bipartisan efforts, key legislation like the Financial Innovation and Technology for the 21st Century Act (FIT21) remains stalled due to disagreements over the balance of federal and state oversight, particularly regarding stablecoins. This highlights the ongoing struggle to establish clear jurisdictional boundaries between the SEC and CFTC. Other key legislation like the Lummis-Gillibrand Responsible Financial Innovation Act faced hurdles in the Senate due to disagreements over federal oversight of state-chartered stablecoin issuers. Similarly, CBDC proposals like the "ECASH Act" faced strong opposition due to privacy concerns and the role of the Federal Reserve in the digital age. The legislative landscape remains complex, with comprehensive digital asset regulation still pending.

"Operation Choke Point 2.0" pushback: Senate Banking Committee leadership actively challenged the pressure reportedly exerted on banks to sever ties with crypto firms. This highlights the growing political significance of digital assets and the potential for legislative action to address concerns about access to banking services for the crypto industry.

SEC embraces bitcoin ETFs: The SEC's landmark approval of several Bitcoin ETF applications, such as those from BlackRock and Fidelity, marked a turning point. This move provides a regulated pathway for institutional and individual investors to gain Bitcoin exposure, fostering greater mainstream adoption and legitimizing cryptocurrencies within traditional finance. This shift is expected to attract significant institutional capital into the digital asset market.

Enforcement actions continue: The SEC and CFTC maintained their active enforcement approach, targeting unregistered offerings and market manipulation. Notable cases included actions against major exchanges, highlighting the need for compliance with existing securities laws.

Tokenization
Regulatory challenges: Tokenization of real-world assets remains in its early stages, hindered by regulatory uncertainty and the complexity of integrating blockchain technology with traditional financial infrastructure. Tokenization of securities continues to face regulatory hurdles, with ongoing debate regarding the classification of security tokens and the appropriate regulatory oversight. However, the SEC had signaled a willingness to engage with innovators, providing guidance and exploring potential regulatory sandboxes for tokenization projects.

Pilot Projects: Despite regulatory uncertainty surrounding the tokenization of real-world assets, pilot projects exploring applications in real estate (e.g., fractional ownership of commercial properties), supply chain management (e.g., tracking and verifying the provenance of goods), and intellectual property gained momentum. These initiatives demonstrated the potential of tokenization to enhance efficiency and transparency in various sectors.

Regulatory sandbox exploration: Several states, including Wyoming and Nevada, leveraged regulatory sandboxes to facilitate the development and testing of tokenization platforms. This approach allows for experimentation while mitigating risks.

Enforcement Actions

SEC vs. Ripple Labs: The recently settled but long ongoing lawsuit between the SEC and Ripple Labs over the XRP token highlights the ambiguity surrounding the classification of digital assets as securities.

CFTC actions: The CFTC has continued to pursue enforcement actions against platforms engaged in unregistered derivatives trading or market manipulation, emphasizing its role in overseeing the digital asset derivatives market.

Key Trends

Institutional adoption grows: The approval of Bitcoin ETFs and increasing regulatory clarity fueled institutional interest in digital assets. Major financial institutions explored custody solutions, investment products, and trading platforms tailored to this emerging asset class.

DeFi faces scrutiny: Decentralized finance (DeFi) protocols attracted increased regulatory attention due to concerns about investor protection and potential systemic risks. Regulators grappled with how to apply existing frameworks to this rapidly evolving space.

CBDC debate intensifies: Discussions surrounding a potential US CBDC continued, with proponents highlighting its potential benefits for financial inclusion and innovation, while critics raised concerns about privacy, security, and potential impact on the banking system.

State level activity: Several U.S. states have made significant strides in digital asset regulation. New York refined its stringent BitLicense framework, clarifying rules for stablecoins and exploring blockchain applications in financial services. California enacted a comprehensive Digital Financial Assets Law, launched a regulatory sandbox to foster innovation, and positioned itself as a key player in shaping the digital asset landscape. Meanwhile, Wyoming advanced innovation by legally recognizing decentralized autonomous organizations (DAOs) as unique legal entities.

Looking Ahead

With the SEC's Bitcoin ETF approvals, coupled with ongoing legislative efforts and state-level initiatives, 2024 laid the groundwork for a more mature and regulated digital asset market. While challenges remain, the US appears poised to solidify its position as a leading jurisdiction for digital asset innovation and adoption.

The US election in November followed by President Trump's recent inauguration has only strengthened this position and is already delivering on the promise of fast-forwarding the roll out of pro-crypto regulation. The recently published Digital Assets Executive Order sets the course for comprehensive policy reforms over the next 12 months with key provisions banning CBDCs, securing industry-backed stablecoins, promoting public blockchains, ensuring access to banking, and providing regulatory clarity under tech-neutral regulators. The SEC's repeal of SAB121 marks another milestone, addressing long-standing industry concerns and industry expects a continued shift away from a 'regulation by enforcement' model under the new SEC Crypto Task Force Led by Commissioner Hester Peirce and close guidance of the newly appointed David Sacks as the White House AI and Crypto 'Czar'.

Continued advocacy and engagement from industry stakeholders will be crucial to shaping a balanced and pro-innovation regulatory framework that fosters responsible growth in the digital asset space. ■

The UK's Steps Towards Being a Digital Hub:
Accelerating Digital Innovation to Further Economic Growth

Nicole Sandler
Executive in Residence
GDF

2024 was both a transitional and 'wait and see' year for digital finance in the UK with advancements and necessary building blocks for 2025 being put in place. The EU, amongst other jurisdictions, forged ahead with regulation and initiatives for cryptoassets, most notably including the Markets in Crypto-Assets Regulation (MiCA), the DLT Pilot Scheme and the AI Act. Amidst this progress, concerns arose across the Channel that the UK risked falling behind other markets.

Prior to the general election, the Labour Party had shown interest in emerging and disruptive technologies and expressed ambition to make the UK a global hub for securities tokenization – though details were unclear. Following the election, the new Government has emphasized its stance that emerging technologies are essential to assist with economic growth and maintain the UK's position as a leading financial services centre.

Key developments included the Government's January 2025 **AI Opportunities Action Plan**, featuring 50 recommendations in areas like secure infrastructure, talent development, and public sector AI adoption. Similarly, the **National Payments Vision (NPV)** aims to modernize retail payments, central bank digital currencies (CBDCs), and digital identity—all of which stand to benefit from distributed ledger technology (DLT). The role of stablecoins within this vision warrants close attention.

In addition, key developments regarding digital assets include the Bank of England (BoE) and Financial Conduct Authority's (FCA) **Digital Securities Sandbox** (DSS) which was launched in September. The DSS facilitates the use of developing technology such as distributed ledgers in the issuance, trading and settlement of securities in the UK.

Demonstrating further commitment, the Chancellor of the Exchequer Rachel Reeves, announced in her Mansion House speech that the Government will use the DSS to issue a **Digital Gilt Instrument (DIGIT)**, demonstrating to global markets the government's support for DLT innovation and indicating that it is open to more innovative business. This development is expected to attract investment and showcase UK leadership in DLT. Collaboration between industry and policymakers is key for future of fintech and adoption of DLT in financial services and this announcement illustrates that the policymakers have been listening to feedback from industry, as numerous GDF members have been involved in advocating for this initiative. Further, it also allows the UK policymakers to understand first-hand the opportunities that DLT could bring to the debt issuance process.

With regards to cryptoassets, in October 2023, the then UK government and financial services regulators had announced plans for a phased approach to cryptoasset regulation. However, a general election and change of government instated a holding pattern in 2024 whilst the direction of travel for such regulation in the UK was deliberated. Crypto market participants were no doubt delighted by the speech in November at the Tokenisation Summit by Tulip Siddiq, the now former Economic Secretary to the Treasury, which confirmed that the Labour Government would continue with the prior government's proposals to regulate these assets.

Further, the FCA published a roadmap which set out the timeline and actions for regulating cryptoassets by 2026. Of interest, and a change from the previous government's approach, is that rather than rolling out the framework in two phases as originally anticipated, the Government intends to implement the proposals for both stablecoins and broader cryptoassets simultaneously. In addition, stablecoins will not be brought into UK payments regulation as originally proposed. The industry will have

the chance to respond to the government's consultation on draft legislation in early 2025.

In what is likely to be welcome news to the crypto-market community, it also appears that there will be clarification regarding some existing legal uncertainty about cryptoasset staking services by confirming that they do not necessarily constitute a collective investment scheme under financial services law. This is another area where policymakers appear to have listened to feedback from industry including GDF. As 2025 progresses it will be interesting to see what other amendments are made to areas that have caused concern.

It is essential that the UK continues to participate in global initiatives and collaborates internationally. These technologies are border agnostic - interoperability and cross-border collaboration are key themes that need to continue in 2025. Where feasible, policymakers should look to have harmonized regulatory frameworks and standards that facilitate cross-border transactions and mitigate risks such as regulatory arbitrage.

This approach is supported by the FCA's active involvement and leading role in the International Organisation of Securities Commission's (IOSCO) implementation of crypto regulatory standards. Further, the BoE is part of Project Agora, which aims to explore the interoperability between wholesale central bank digital currencies (CBDCs) and tokenized deposits as potential ways to improve cross-border payments and settlement.

2025 has the chance to be a pivotal year for digital assets and the wider digital finance agenda. If the UK is to regain its position as a global leader in financial innovation, it must be ambitious, move swiftly and take an even bigger step in 2025. GDF stands ready to assist. ■

Balancing Innovation and Compliance:
Europe's Digital Asset Landscape

Lavan Thasarathakumar
Board Member
GDF

2024 marked significant strides in the EU's regulatory journey for digital assets, highlighted by the implementation of the **Markets in Crypto-Assets Regulation (MiCA)**. MiCA's phased rollout began with Titles III and IV on Asset-Referenced Tokens (ARTs) and E-Money Tokens (EMTs) in June, followed by Title V on Crypto-Asset Service Providers (CASPs) in December. While providing a much-needed regulatory framework, uncertainties remain regarding Level 2 text clarifications. Key debates, such as distinguishing financial instruments from crypto-assets, continue to create anxiety among firms about compliance requirements and scope.

A central narrative of 2024 was the competition among EU Member States to position themselves as the premier MiCA hub. National Competent Authorities' (NCAs) approaches to passporting and authorizations have raised questions about potential fragmentation within the single market. These dynamics will likely shape the regulatory landscape as transition periods elapse in 2025.

Complementing MiCA is the A**nti-Money Laundering (AML) package**, including the establishment of the **Anti-Money Laundering Authority (AMLA)** and the **Transfer of Funds Regulation**. AMLA's direct supervision over high-risk entities has sparked speculation about its implications for crypto firms and the strategic advantages of locating in Frankfurt. Meanwhile, the Transfer of Funds Regulation aims to enhance transparency and traceability in crypto transactions. Linking back to the question of where will become the MiCA hub, this will certainly come into contemplation for firms.

The compliance burden on CASPs extends beyond MiCA, with additional frameworks like **Digital Operational Resilience Act (DORA)** and **Financial Data Access (FIDA)** coming into effect. DORA requires robust ICT resilience measures, posing challenges for CASPs already grappling with MiCA compliance. The obligations are wide ranging and if seasoned market players are ringing alarm bells, the impact will certainly be compounded for CASPs just getting to grips with MiCA. FIDA on the other hand is a dark horse, perhaps flying under the radar a little but one that will again be significant. If we consider that this is the Commission's proposal to move from open banking to open finance, this proposal will require firms to rethink the value-chain and deliver large scale changes to ensure that they are able to set up data sharing schemes with other financial entities.

Despite these advancements from a regulatory perspective, the image here is that the crypto asset sector has a great job of work on its hands from a compliance perspective and criticisms have arisen about the EU's regulatory rigor stifling innovation. Reports like those from Letta and Draghi highlight the risk of firms relocating overseas due to compliance costs. Balancing stringent regulations with a more business-friendly environment remains a pressing challenge for the EU.

Whilst we are not going to see these regulation pieces go, what we may see is an EU environment created that is more business friendly, open to growth and open to risk - although this may take time.

The use of technology has emerged as a critical topic - positioned as a driver supporting growth and EU competitiveness and enabler for eliminating EU productivity challenges. Tokenization emerged as a critical focus in 2024, recognized as a potential solution to unlock silos of capital and address Europe's €800 billion investment gap. The DLT Pilot Regime has offered some insights, but broader, technology-driven ambitions are needed.

Key to driving tokenization's growth will be achieving on-chain settlement. Whilst we may be able to see this more through the DLT pilot regime now that EMTs can be used, what will be a bigger driver from a liquidity perspective, is when a wholesale euro is developed. Conversations around the digital euro have increasingly shifted from retail to wholesale, signaling potential liquidity benefits for tokenized markets in 2025.

There is much to look forward to in 2025. MiCA's impact will be tested as transition periods conclude and its integration unfolds. The EU's response to external pressures - such as a crypto-friendly US administration and the UK's progress in initiatives like the Digital Securities Sandbox - will further shape its regulatory approach. There is certainly much to look forward to, and over the course of the year we will see whether MiCA has been a success, or whether it has driven an industry out of Europe due to high levels of cost of compliance. ■

Digital Assets Regulation and Policy Trends in APAC/Middle East: 2024-2025

Greg Medcraft
Chair, GDF Board of Advisors and Observers
GDF

The regulatory landscape for digital assets across Asia-Pacific and the Middle East continues to evolve rapidly, with jurisdictions taking increasingly sophisticated approaches to balance innovation with risk management. Several key trends have emerged that are shaping the regulatory environment in these regions.

Regional financial hubs leading the way
Singapore and Dubai have emerged as the primary trendsetters in digital asset regulation. Singapore's Payment Services Act 2019 (PSA) and subsequent amendments have created a comprehensive framework for digital payment tokens and digital asset service providers. The Monetary Authority of Singapore (MAS) has maintained its stringent approach while introducing new guidelines for stablecoin regulation and environmental risk management for crypto activities.

Dubai's Virtual Assets Regulatory Authority (VARA) has established itself as a model for dedicated crypto regulation in the Middle East. The emirate's framework covers all aspects of digital asset operations, from trading to custody services, while emphasizing consumer protection and market integrity. This approach has attracted major crypto firms to the Dubai International Financial Centre (DIFC).

Institutional integration and CBDC development
Central Bank Digital Currencies (CBDCs) have become a major focus across both regions. The People's Bank of China has expanded its digital yuan trials, while other nations like South Korea, Japan, and the UAE have accelerated their CBDC research and development programs. The Hong Kong Monetary Authority's e-HKD project has progressed significantly, with plans for broader implementation.

Cross-border CBDC initiatives have gained momentum, particularly the Multiple CBDC (mCBDC) Bridge project involving Thailand, Hong Kong, China, and the UAE. These collaborations are reshaping how regulators approach digital currency governance and international payments.

Enhanced consumer protection measures
Following various market incidents and increased retail participation, regulators have strengthened consumer protection measures. Japan's Financial Services Agency (FSA) has implemented stricter requirements for crypto exchanges, including enhanced disclosure requirements and segregation of customer assets. South Korea has introduced comprehensive crypto regulations through the Act on Virtual Asset Service Providers, focusing on anti-money laundering (AML) compliance and investor protection.

Environmental considerations in regulatory frameworks

Environmental concerns have become increasingly central to digital asset regulation. Singapore has pioneered the integration of environmental risk assessment into crypto licensing requirements, while other jurisdictions are following suit. This trend reflects growing awareness of the environmental impact of crypto mining and blockchain operations.

Islamic finance integration

In the Middle East, the integration of digital assets with Islamic finance principles has emerged as a unique regulatory consideration. Bahrain and Saudi Arabia have developed frameworks for Shariah-compliant crypto products and services, while Malaysia's Securities Commission has issued guidelines for Islamic digital asset offerings.

Regulatory technology and supervision

Regulators are increasingly employing advanced technologies for supervision. The Hong Kong Securities and Futures Commission has implemented sophisticated monitoring systems for virtual asset trading platforms, while Singapore has expanded its regulatory technology initiatives to include AI-powered risk assessment tools.

Looking ahead to 2025

Moving into 2025, several trends are likely to dominate the regulatory landscape:

1. Increased harmonization of regulatory approaches across jurisdictions, particularly in ASEAN and GCC countries,
2. Greater focus on decentralized finance (DeFi) regulation and oversight,
3. Enhanced integration of traditional financial services with digital asset frameworks,
4. Stricter environmental, social, and governance (ESG) requirements for digital asset operations, and
5. Expanded CBDC implementations and cross-border payment solutions.

The regulatory environment will continue to mature as these regions balance innovation with stability and security. Success will largely depend on regulators' ability to adapt to rapid technological changes while maintaining robust consumer protection and market integrity measures. ■

The State of Digital Finance 2024:
Global Trends, Highlights & Key Developments

Simon Taylor
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2024 represented a fundamental shift across the digital finance industry with geographical expansion and infrastructure shifts occurring across the market. It was the dawn of the Fintech hyperscaler with strong performance from both U.S. banks and the ongoing rise of neobanks.

Yet the past year can also be remembered as the year of the stablecoin. Traditional and digital native firms alike have been laying the groundwork to be reading for new payment rails, and stablecoin adoption steadily rose – as did their use cases.

Finally, this year can also be remembered as a foundational year for digital finance regulation. Many jurisdictions finalized their regimes, while others, following on from broader geopolitical changes, took steps to change their tone and approach to regulating new technologies such as AI and digital assets.

Overall for the financial services industry it was a positive year and U.S. money center banks outperformed the S&P 500 index on higher rates, economic strength and investment banking fees. The market saw deposit repricing normalizing, investment banking fees coming back, credit card loan balances rising, charge-off rates normalizing, and base rates remaining high.

Yet alongside this, the narrative that "Fintech is back" was echoed across the markets. Many companies such as Stripe, Revolut, Nubank, and Klarna demonstrated that Fintechs can hyperscale to be as big as, if not sometimes bigger, than traditional banks and vendor classes.

Alongside growth in market cap, international expansion was also a key trend in 2024 and with the digital finance industry being global by nature this can be expected to continue in the years ahead.

The past year can also be remembered as a critical turning point for the payments industry in their adoption of stablecoins. Across the market many traditional payment providers either launched new products or acquired businesses that would enable them to take advantage of the efficiencies stablecoins provide, while preparing for the larger infrastructure shift being brought about by DLT.

For example, Stripe acquired stablecoin startup Bridge for $1.1 billion, PayPal enabled business accounts to send, receive and hold cryptocurrencies, Visa launched the Visa Tokenized Asset Platform to help banks issue stablecoins and Mastercard supported Metamask in launching a debit card that connects directly to self-custodial wallets.

Stablecoins have also found better product market fit. For example, two key use cases they provide are for money market funds as well as cross border transactions (particularly in the global south).

Most money market funds are open 5 days a week and available nationally meaning that digital businesses operating globally lose billions to those delays. The BUIDL token (and competitors like Ondo) are available 24/7 between treasuries and Stablecoins.

For cross border transactions stablecoins combined with bank book transfers are a viable alternative to payment messaging networks. Cargo is tokenized (e.g., oil), and the Stablecoin payment (e.g., USDC, USDT) is held in escrow until the delivery is complete. Following delivery the smart contract unlocks the stablecoins and pushes a book transfer at the bank with near instant settlement. For global south x global south transactions this is much faster than the ~14 day wait via SWIFT, which also often has a high failure rate of transactions.

These acquisitions, use cases, and consistent actions taken to digitally scale by firms across the payments and financial services industry demonstrate clear preparation for further digitisation. This is linked to the broader shift in market sentiment towards the crypto and digital asset industry which allowed institutions to begin (or continue) meaningfully allocating and investing in crypto markets.

Alongside this momentum, regulation continued to rapidly evolve. Notably the past year saw the finalization of the Level 2 measures for the EU's MiCA framework, now being implemented across member states in 2025. Yet not every jurisdiction has achieved a similar level of legal and regulatory clarity. The UK published a roadmap which set an ambition of finalizing market conduct regulation by 2026, and the new Labour Government set out their intention to support the digital industry. The FSRA of the ADGM proposed competitive stablecoin rules, yet they are still consulting on other updates to their digital asset rules. However, in the light of the new crypto friendly Trump administration, many see the US as once again being a key jurisdiction for the year ahead. If the US completes a regulatory regime, jurisdictions who are behind may risk losing market share to the US and others such as the UAE and Singapore where firms are able to find more clarity. Keeping pace with the regulatory developments, GDF responded to 18 consultations globally alongside a consistent programme of strategic policy engagement programmes.

2024 was a foundational year and looking ahead to 2025 there is still much work to be done.

The banking sector must consider how to combat two of its biggest challenges, fraud (which is up 44%) and credit risk (up 34%). They will also need to consider how to keep pace with consumer behaviour and stay relevant in the neobank hyperscaling era. In the brave new world of stablecoins, it is important for their implementation and adoption to be supported by clear and proportionate regulation.

As we look to 2025, we are hopeful for continued growth across the digital finance industry, public fintech stocks continuing to outperform, and smarter regulation that supports responsible innovation. ■

GLOBAL AGENCY INSIGHTS

IOSCO's Implementation Efforts of its Crypto and Digital Assets Recommendations

Jean-Paul Servais
Chairman
IOSCO

At the International Organization of Securities Commissions (IOSCO), we develop, implement and promote adherence to internationally recognized standards for capital markets. IOSCO is uniquely placed to take up this challenge, as a truly global body with its membership regulating more than 95% of the world's securities markets in some 130 jurisdictions.

The cross-border nature of crypto markets, the risks of regulatory arbitrage and the significant risk of harm for retail investors called on IOSCO to action to protect investors and promote the integrity of financial markets.

One of our primary goals is to promote greater consistency in how IOSCO members approach the regulation and oversight of cryptoasset activities. This is why IOSCO worked with a sense of urgency to design recommendation for the regulation of Crypto and Digital Assets at the end of 2023.
In 2024, IOSCO conducted an initial internal stocktake which concluded that jurisdictions are at different stages of implementing frameworks to regulate crypto-asset activities. This is normal, and it means IOSCO has an important role to play to help jurisdictions in this journey and to reduce market fragmentation.

We also took measures to enhance collaboration and cooperation between IOSCO members.
In fact, the IOSCO's enforcement Multilateral Memorandum of Understanding (MMoU) was already instrumental to fulfil international cooperation between our members in cross border investigations regarding crypto assets fraud.

Protecting retail investors in light of ongoing digitization of the financial sector
From the outset, protecting retail investors lies at the heart of IOSCO's mission statement. Given technological changes and the increasingly cross border dimension of retail participation in financial markets, IOSCO has reinforced is work in this area. It has designed a specific strategy to combat online harm and mitigate risks of fraud and mis-selling for retail investors.

In 2024, IOSCO recently published three consultations to improve retail investor online safety, which we will be finalise in the next few months: 1) On finfluencers to foster a safer, more transparent digital environment for retail investors; 2) On copy trading – to promote better oversight of copy trading platforms. And 3) on digital engagement practices – things like gamification and targeted prompts – to make sure they promote informed and safe trading behaviours.

IOSCO's approach to AI
Artificial Intelligence and its use within the financial sector has received significant attention over the past few years for its transformative potential and for the risks it creates. Generative AI and related technological developments have the potential to increase the efficiency of capital markets across core activities including trading, investments, asset allocation. AI is already being used across financial markets ecosystem, e.g. to optimise portfolio management, improve internal research capabilities, to analyse complex unstructured data, or to make investment recommendations.

Beside the opportunities, there are substantial risks that must be addressed to safeguard investor protection, market integrity, and financial stability. IOSCO has therefore initiated work on AI with a view to develop a shared understanding among IOSCO members of the issues, risks, and challenges through the lens of market integrity, financial stability and investor protection, as well as assist members in their policy responses.

The issues, risks, and challenges of AI can be classified into micro and macro levels. At micro level, issues around explainability of AI processes, bias within models, robustness of outcomes, conflicts of interest are at stake. The macro level issues however refer to system-wide risk,

including financial stability concerns, herding behaviours brought about by common datasets, base models, or data aggregators, and fair and efficient competition amid dominance by a few AI providers. Macro issues raise legitimate questions about the type of influence AI models can wield upon price formation, discovery, transparency and potential for market disruptions.

What about tokenization?

In 2024, IOSCO developed a shared understanding among IOSCO members on adoption and use-cases of tokenization in securities markets, and jurisdictions' response to these developments. We sought to identify possible novel issues and potential risks that may have implications on market integrity and investor protection and consider the need for further policy development. Our assessment concluded that while topical, tokenization has yet to scale and that market participants are generally cautious in pursuing tokenization also considering that models and structures adopted for tokenization remain at early stage of development. IOSCO will continue its assessment in 2025. ■

Safeguarding the International Financial Sector so that Economies can Safely Benefit from Opportunities of New Technologies

Violaine Clerc
Executive Secretary
Financial Action Task Force

As significant cases highlighted in 2024, the appeal of virtual assets as channels for criminals to conceal and launder illicit profits continues to pose a threat to the global financial system. Virtual assets continue to be used to support the proliferation of weapons of mass destruction, as well as by terrorist groups to raise and move funds and scammers and other illicit actors. So, the impacts on human lives are real.

Yet, as the Financial Action Task Force (FATF)'s Fifth Targeted Update on Implementation of FATF Standards on Virtual Assets (VAs) and Virtual Asset Service Providers (VASPs) shows, global implementation of the FATF recommendations that apply to VAs/VASPs is still lagging. This slow implementation creates loopholes for criminals to exploit.

While some jurisdictions have made progress in putting anti-money laundering and counter-terrorist financing and proliferation financing (AML/CFT/CPF) measures in place, the global picture shows that there is a lot more work to do. By looking at 130 country assessments and follow-up reports across the FATF Global Network we found that 75% of jurisdictions are only partially or not compliant with the FATF's requirements.

The picture is better in countries with materially important VA sectors, with a majority of these ensuring that providers of virtual asset services have safeguards in place on illicit finance, through licensing or registration processes. We have also seen an increase in the implementation of FATF's 'Travel Rule'[1] which ensures transparency on transactions and so protects VA providers from being abused by criminals.

The key to responsible innovation is a good understanding of risks. Governments continue to face challenges in understanding the potential risks presented by the misuse of VAs and VASPs.

To address this, the FATF works in close partnership with the public and private sector. The FATF held a symposium in December 2024, to specifically focus on this issue with more than 650 people from over 100 jurisdictions participating in the event to share experiences on what worked in understanding the risks in this sector.

In addition to setting the global standards, the FATF also provides support to ensure we have a global safety net against illicit finance. To that end, the FATF monitors the levels of implementation as part of the VACG Roadmap, which was agreed in February 2023. The Roadmap not only enables us to identify gaps and encourage policy makers to implement the Standards, it also helps us pinpoint areas where further outreach and assistance are required. We will continue to deliver the Roadmap, which will see the publication of a 6th targeted update in 2025.

Over the coming year, it is vital that those countries whose economies continue to be exposed to risks of the misuse of VAs and VASPs put in place the FATF's Global Standards on VAs. To support these countries, the FATF will continue to identify shortcomings and continue to facilitate sharing of best practices, findings, and challenges.

International and cross-sector cooperation as well as public private partnership are key to protecting the integrity of the global financial system and ensuring that economies can safely benefit from the opportunities that virtual currencies present. The FATF plays a central role in this cooperation by working with its Global Network of over 200 jurisdictions that have committed to working together to take a coordinated global approach to combating illicit finance and supporting responsible innovation. ■

[1] The 'Travel Rule' is a key AML/CFT measure which requires providers of virtual asset services to obtain, hold and exchange information about the originators and beneficiaries of virtual asset transfers. This enables financial institutions and providers of virtual asset services to conduct sanctions screening and to detect suspicious transactions.

Promoting Broad and Consistent Implementation of the FSB's Global Regulatory Framework for Cryptoassets

Martin Moloney
Deputy Secretary General
Financial Stability Board

Peter Goodrich
Member of Secretariat
Financial Stability Board

While the financial stability risks posed by cryptoasset markets remain limited, their continued growth and their increasing interlinkages with the traditional financial system could present systemic risks. Recognizing this, the G20 tasked the Financial Stability Board (FSB) with coordinating the development of an effective regulatory, supervisory and oversight framework for cryptoasset assets. In July 2023, the FSB finalised its global regulatory framework for cryptoasset activities (FSB Framework), comprising two distinct sets of recommendations:

- High-level recommendations for the regulation, supervision and oversight of cryptoasset activities and markets, and
- Revised high-level recommendations for the regulation, supervision and oversight of "global stablecoin arrangements (GSCs)."

Following the finalization of the FSB Framework, the FSB has been actively promoting, supporting, and monitoring its effective implementation. This effort is part of the IMF-FSB Synthesis paper policy implementation roadmap, or "Roadmap." Last month, the FSB delivered to the G20 the "Cryptoasset Policy Implementation Roadmap: Status report", which outlines progress and discusses experiences and challenges encountered during the implementation process.

To further support the implementation of the FSB Framework beyond the G20 membership, the FSB conducted a survey on implementation status and challenges. The survey received responses from 24 FSB members and 49 non-FSB members via the Regional Consultative Groups (RCGs). The results indicate that jurisdictions are making significant progress in developing new or revising existing regulatory frameworks for cryptoassets and stablecoins. Nearly all FSB member jurisdictions have plans or existing frameworks in place, and a majority expect to align with the FSB framework by 2025. Cross-border cooperation was identified by most FSB members as a very important implementation challenge while non-FSB members identified consumer education as a very important implementation challenge.

The FSB has also engaged in extensive outreach to raise awareness of the FSB Framework. Activities have included workshops, outreach sessions, knowledge sharing events, and participation in capacity building programmes. The FSB's RCGs have discussed domestic implementation experiences and challenges, with RCG Americas taking stock of regional practices.

As a hub for information sharing among member authorities, the FSB, in collaboration with the IMF, organised a workshop for FSB and RCG member authorities to share experiences and challenges in implementing the FSB Framework. The workshop brought together policymakers and supervisors from both FSB and non-FSB jurisdictions and was attended in-person by 75 participants from 34 different jurisdictions and over 250 virtual participants from 52 different countries. Recognizing that some emerging market and developing economies may be exposed to additional risks and challenges with stablecoin activities, in July 2023, the FSB published a report on cross-border regulatory and supervisory issues of global stablecoin arrangements in emerging markets and developing economies (EMDEs).

Through these outreach activities, the FSB has identified three key implementation challenges:

1. **Cross-border cryptoasset activities:** Offshore jurisdictions present elevated regulatory and supervisory challenges. Inconsistent implementation of the FSB Framework may hinder its effectiveness and lead to regulatory arbitrage. Implementation challenges are amplified when many such activities originate from non-FSB member jurisdictions. If the risks from cross-border cryptoasset activities originating from jurisdictions without appropriate regulation and supervision increase, international organisations, SSBs and jurisdictional authorities would need to consider whether additional tools to promote implementation beyond the G20 membership are needed.

2. **Non-compliance with laws and regulations:** Non-compliance significantly undermines efforts to implement the FSB Framework and other international standards on cryptoassets. These efforts to undermine implementation of the FSB Framework may further encourage wider non-compliance and regulatory arbitrage, and can also exacerbate data gaps, require greater enforcement resources, and lead to heightened cross-border challenges for enforcement.

3. **Stablecoins:** Due to their vulnerability to a sudden loss in confidence and potential runs, stablecoins should be subject to specific regulatory requirements. These challenges are particularly significant for EMDEs, as over 99% of existing stablecoins are pegged to the US dollar. The widespread use of these foreign currency-pegged stablecoins can destabilize financial flows and strain fiscal resources. EMDEs may face additional implementation challenges due to capacity constraints and the cross-border operations of stablecoins.

The FSB will continue to monitor the global financial stability risks of cryptoassets and facilitate information sharing among its members to address common challenges. Looking ahead to 2025, the FSB will shift its focus to monitoring implementation and conduct a review of the status of implementation of the FSB Framework in FSB member jurisdictions and select non-FSB jurisdictions by end-2025. The implementation review will take stock of jurisdictional progress made and planned to implement the FSB Framework, identify good practices and shared challenges and if necessary make recommendations to the FSB, its members, SSBs, or other relevant international organisations. ■

Future of Finance that is Built to Last – Programming for Resilience at the Convergence of Regulations, Technology, and Market Maturity

Deepa Raja Carbon
Managing Director and Vice Chair - Executive Board Dubai
Virtual Asset Regulatory Authority

The promise of virtual assets has been inextricably linked to its potential to purposefully transform global financial markets - paving the way for sustainable and inclusive socio-economic empowerment. Despite its nascency, this industry has already withstood cycles of extreme volatility, most notably two crypto winters within one short decade, highlighting structural inadequacies that demand cohesive reform.

Yet, the more noteworthy datapoint that frames today's global context, is the impressive pace and magnitude of recovery following each phase contraction. These cycles, while challenging, have shone light on (i) the catalytic power of this sector to accelerate towards a more secure and equitable tomorrow, and (ii) its proven tenacity to navigate the unknowns of a borderless, decentralized, and transparent Future of Future.

Understanding crypto winters
Crypto winters to-date are not merely a reflection of downturns in cryptocurrency valuation. They represent prolonged periods of recalibration, where unchecked optimism gives way to tempered caution. 2022–2023 was a watershed moment that saw the global market capitalisation of cryptocurrencies plummet from over 2 trillion to $829 billion - a contraction that underscored systemic vulnerabilities and inefficiencies.

High-profile implosions of native crypto and traditional finance flagships called into question the 'decentralized' foundations that could trigger such a systemic collapse in real-time by virtue of being across a hyperconnected 24/7 network. These failures reverberated globally, presenting regulators with an urgent mandate: fortify consumer protections, bolster governance frameworks, and craft regulatory mechanisms that can act as circuit-breakers, yet enable innovation.

To navigate an uncertain future, the virtual asset ecosystem must adopt a three-pronged approach rooted in progressive regulation, sustainable technology, and responsible market engagement.

Progressive regulation
Regulation serves as the bedrock of trust and stability in any financial ecosystem. The absence of robust oversight exposes vulnerabilities, often with devastating consequences. The Virtual Assets Regulatory Authority (VARA) embraces a principles-based regulatory model, balancing proactive enablement with decisive enforcement. The Marketing Regulations introduced in 2022, is one example of our commitment to consumer protection and ethical market practices.

Similarly, VARA regulations are set up to be evolutionary with market maturity and technological advancement. Static frameworks risk obsolescence in a sector defined by its pace of change. Agility is hence a pre-requisite for jurisdictions to be able to create environments that safeguard participants and investors, while fostering innovation.

Sustainable technology
The future of virtual assets will be inherently linked to its technological underpinnings. Scalability, with cost and time efficiency, security and sustainability are the 3-anchors framing fundamental questions of industry tenacity and continued relevance. The transition of Ethereum from Proof-of-Work (PoW) to Proof-of-Stake (PoS) is one such example that demonstrates the sector's capacity for meaningful transformation. This shift not only reduced energy consumption by over 99% but also set a precedent for aligning environmental responsibility with technological advancement.

As with any instances of socio-economic or industry evolution, the most impactful success case-studies have been when all stakeholders - community, industry, and government - have taken it upon themselves to come together and emulate models of sustainability seen in other domains. We have recently seen strong examples of Government Pension Funds that have led the way in future-proofing their models by integrating financial returns with environmental stewardship. Virtual assets as an industry can certainly be guided by such and other benchmarks, to embrace innovation that harmonises profitability with planetary imperatives.

Responsible market engagement
Trust is the currency of enduring ecosystems. Responsible operations, ethical marketing, and fail-safe governance are non-negotiables for market participants. VARA's emphasis on transparency, disclosure and accountability underscores our belief that trustworthiness as an ingredient to long-term profitability, will define the sector's trajectory. By fostering an environment of ecosystem integrity and informed participation, we expect to accelerate the development of a mature ecosystem capable of weathering a wide spectrum of uncertainties.

Lessons learned
History is replete with lessons from periods of economic contraction, and crypto winters are no exception. Three key insights stand out:

1. **Risk management:** The volatility of Virtual Assets necessitates rigorous due diligence, backed by well-defined mitigatory frameworks. Both private institutions and regulators must prioritise investment in responsive action, and systemic resilience over protectionist reaction, with prohibitive curtailment of business.

2. **Transparency and accountability:** The near-collapse of the industry has reaffirmed the universal fact: governance is indispensable. Consistency in operational standards, coupled with third-party audits, can restore confidence in global markets.

3. **Consumer education:** An informed consumer base is the cornerstone of a progressive ecosystem. Regular financial and fin-tech literacy initiatives can empower participants, fostering shared accountability and advancing the sector toward a truly decentralised, equitable future.

Towards a resilient tomorrow
Crypto winters were not merely periods of contraction; they presented us with opportunities for recalibration, so that we may reframe the context for future-proofing. They have challenged stakeholders to refine their strategies, learn from past missteps, and shape a more secure, cohesive and inclusive landscape.

Under the D33 Agenda set nearly 2-years ago, Dubai has already set itself on the path that brings to light the symbiosis of visionary governance and technological innovation. By integrating progressive regulations, sustainable technological practices, and responsible engagement, the UAE is positioning itself as a global standards flag-bearer for virtual asset governance.

Today at the start of 2025, resilience is not a nice-to-have consideration - it is the must-have imperative of our time. It demands a united front (i) from regulators steering with clarity; (ii) from technologists innovating with purpose; and (iii) from market participants acting with integrity. This enables the industry as a whole to reset the frame-of-reference with a grid that doesn't merely withstand the pressures of disruption but instead, becomes the benchmark for the Future of Finance that is truly sustainable by virtue of being inclusive, decentralized and trustless.

The future we aim for is one of complementary coexistence with traditional finance and decentralized finance amplifying their collective reach rather than cannibalising the other, allowing for increased participation with resilient guardrails to ring-fence risk and vulnerability. This is not just a path forward - it is the blueprint for a financial paradigm that is enduring, equitable, and unrelentingly forward-looking. ■

GDF PRIORITIES, FORUMS AND WORKING GROUPS

Digital Finance Forum

GDF Forum

In 2024, GDF launched the Digital Finance Forum, to gather an open community of financial services professionals to hear updates on, and discuss, the latest developments in digital finance.

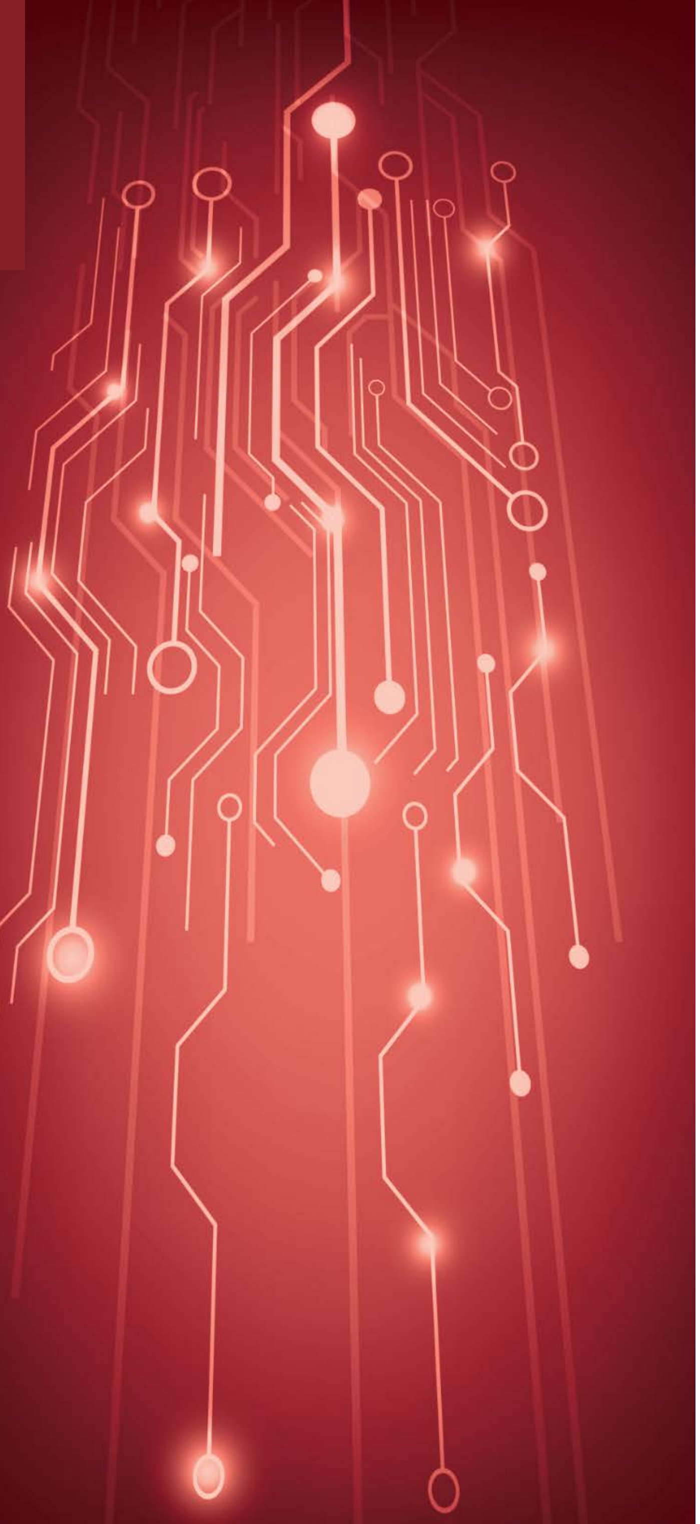
The Forum, which ran on a bi-monthly basis, covered policy and consultation updates from around the world, provided attendees with some of the latest crypto and digital asset market data and industry developments, and deep dives into topics through a series of fireside chats with industry and public sector experts.

GDF thanks its members who took part. Highlights from the Forum included:

2024 Forum Chair

Elise Soucie Watts
Executive Director
GDF

- **Elise Soucie (GDF Executive Director)** delivered Global Policy & Regulatory Updates during each Forum,
- **Matthew White (CEO of the Virtual Assets Regulatory Authority - VARA)** discussing key trends in Dubai's virtual assets markets,
- **Alissa Ostrove (CCData)** and **Chen Arad (Solidus Labs)** with market data presentations,
- **Angela Ang** and **Isabella Chase (TRM Labs)** on their Global Crypto Policy Review & Outlook 2023/24,
- **Catarina Veloso** and **Lana Schwartzman (Notabene)** with a presentation on the Travel Rule and how to prepare for compliance with FATF requirements,
- **Amy-Rose Goodey (CEO of Blockchain Australia)** on recent legislative developments in the APAC region and the impact these changes are having on the digital assets industry,
- **Adam Israel (Mesh)** on the impact of US Legislative Developments on American Grown Startups;



- **Denis Dounaev (DTI Foundation)** and **Stephen Dreyer (ANNA)** on the Digital Token Identifier for MiCA Transparency Reporting and how to prepare to comply with MiCA requirements,
- **Abdul Haseeb Basit (GDF)** and **Shaf Choudry (Confluent)** on solving policy issues for the muslim community including those relating to de-banking false flags in risk monitoring and the implications for the broader financial services industry,
- **Jordan Wain (Chainalysis)** on stablecoins, how they are being used and how the market is developing from their vantage point as a blockchain analytics provider,
- **Alain Otaegui (EBA)** and **Laura Weil (ESMA)** discussed the new staking Q&A Guidance from the European Commission with the EBA & ESMA including covering, how staking fits in to MiCA requirements, why the European Commission doesn't view staking as lending, and the topics they are currently researching in order to further develop regulatory frameworks in the EU,
- **Chen Arad (Solidus Labs)** and **Nathan Catania (XReg)** took an in depth look at the current staking landscape following their recent paper, including covering what staking is and what it isn't, how various regulatory approaches may apply, and how the industry is evolving,
- **Kirsteen Harrison (Zumo)** on the new MiCA sustainability disclosure requirements and how to prepare, and
- **Malcolm Wright (OKX)** on travel rule readiness, what VASPs are still concerned about, how to prepare for connectivity as well as interoperability, and how regulators are working with industry to ensure compliance across the ecosystem.

The community highlights from each Forum can be found **here** and members will have received detailed readouts from each session.

The Digital Finance Forum will continue in 2025. GDF Members who are interested in presenting in the forums are encouraged to reach out to elise@gdf.io ■

EU/Markets in Crypto-Assets (MiCA)

GDF Working Group

The Working Group (WG) for the EU/Markets in Crypto-Assets (MiCA) was launched in 2020 to formulate the GDF community response to the EU's proposed regulation. The WG convened members' input to engage with the EU as the framework was developed on both the level 1 and 2 measures. With the bill passing through Parliament, and MiCA coming into effect, through the years the working group continues to convene members to engage with EU authorities.

Over the course of 2024 the WG responded to seven consultations on the Regulatory Technical Standards (RTSs) for MiCA's Level 2 Measures. These included responses to the:

- The European Supervisory & Markets Authority (ESMA) Consultation Paper on the draft guidelines on the conditions and criteria for the qualification of crypto-assets as financial instruments;
- The ESMA Consultation Paper on the draft guidelines on reverse solicitation under the Markets in Crypto Assets Regulation (MiCA);
- The European Banking Authority (EBA) Consultation Paper on Redemption Plans under MiCAR;
- The ESMA Consultation Paper on MiCA Market Abuse Guidelines;
- The ESMA Call for Evidence on the review of the Undertakings for the Collective Investment in Transferable Securities (UCITS) Eligible Assets Directive;
- The European Supervisory Authorities' (ESA's) Consultation Paper on templates for explanations and opinions, and the standardised test for the classification of cryptoassets, under Article 97(1) of Regulation (EU) 2023/1114; and
- The EBA Consultation Paper on templates to assist competent authorities in performing their supervisory duties regarding issuers' compliance under Titles III and IV of Regulation (EU) 2023/1114.

The responses were developed in collaboration with GDF members, as well as community partners. In particular, GDF was pleased to collaborate on these responses with the ACI Financial Markets Association and are grateful for their contributions. As the WG continues to grow and scale, it looks forward to continuing to work towards EU standard setting and best practices with our existing partners, as well as new market leading partners such as Adan and Blockchain for Europe.

Overall, the working group appreciated the timing of authorities in working through the Level 2 measures in 2024 in order to meet MICA's implementation deadline in the EU, bringing crypto assets within the regulatory permitter. GDF considers that the development of the market leading regulatory framework to mitigate risks to the digital finance ecosystem is imperative for the successful advancement of appropriately and proportionally regulated digital asset markets. GDF believes that including crypto assets within regulated financial markets is an important step for the broader development of the EU's digital objectives, and that achieving a common supervisory approach ahead of implementation of the requirements will contribute to the strength of the market while also supporting innovation, fairness and market integrity.

Looking ahead to 2025, with MiCA coming into force in December 2024 the group will continue to engage with EU authorities while also working to support member firms and the broader industry in complying with MiCA requirements. ■

2024 Working Group Co-Chairs

John Salmon
Partner
Hogan Lovells

Nathan Catania
Partner
XReg Consulting

UK POLICY

UK Policy and Regulation

GDF Working Group

2024 was a critical year in the evolution of the UK's digital assets regulatory frameworks. After resting in the shadow of the Markets in Cryptoassets Regulation (MiCA), the UK needed to seize the opportunity of its second mover advantage to truly deliver on the opportunities for growth and innovation that digitization can provide.

Launched to meet a surge of regulatory activity in 2024, the GDF UK Policy & Regulatory Working Group (WG) aimed to serve as a collaborative body to formulate the GDF community response to ongoing and upcoming consultations on the UK legal and regulatory framework for crypto and digital assets. The group convened members' input to engage UK authorities, including seven consultation responses and three public private sector roundtables.

These efforts also demonstrated the WG's efforts to unite the UK digital asset industry through cross-industry engagement with other associations and several joint consultation responses with other leading organizations such as the Crypto Council for Innovation, The Digital Pound Foundation, and the UK Cryptoasset Business Council. Presenting unified technical feedback on a range of topics from the Digital Securities Sandbox (DSS) to digital wallets and staking enabled the WG and its partners to build foundational relationships with UK authorities and influence the next phase of framework development as the UK looks to 2025.

With the recently published FCA cryptoasset roadmap it is clear that the WG has much work to do in the months ahead to support the public sector in building a robust framework for cryptoassets that supports responsible innovation. Key focus areas for 2025 will include stablecoins, custody, staking, and the recently announced UK digital gilt (DIGIT).

In further support of GDF's efforts to encourage the UK in realizing its ambition to become a digital hub, the 2024 Digital Finance All Parliamentary Group (APPG) was set up with DLA Piper serving as the independent secretariat. Chaired by Sir Stephen Timms, with Lord Philip Hammond, Adam Afriyie, and Martin Docherty-Hughes as vice-chairs, the group focused on how digital finance can help transform the UK economy. The 2024 evidence sessions covered productivity, the release of trapped capital, capital creation competition and new products.

The evidence sessions from the former APPG culminated in a report which distils the ten key

2024 Working Group Co-Chairs

Stuart Davis
Partner
Latham & Watkins

Raphael Landesmann
Regulatory Counsel
GSR

recommendations and industry feedback. The former 2024 Digital Finance APPG endeavoured to raise the bar for purveyors of the digital finance policy narrative by addressing what digital finance means to Digital Britain. Ultimately, this report addresses why digital finance is a critical matter for both MPs, their constituents, and industry. The recommendations are set out in a timeframe that allows government to respond more expediently, to deliver tangible improvements with benefits for both the broader financial services system and the British public, and to be seen to be leading the global space race in digital finance. The report was launched in Westminster on November 11, and the APPG will be reconstituted under the new government in 2025. ■

MENA Policy and Regulation

GDF Working Group

2024 Working Group Co-Chairs

Abdallah Mukalled
Senior Policy Manager, MEA
Ripple

Arushi Goel
Policy Lead, Middle East and Africa
Chainalysis

The Working Group (WG) for the Middle East and North Africa (MENA) region was launched in 2024 to formulate the GDF community response to proposed regulation that has been rapidly evolving in MENA jurisdictions. The WG convenes members' input to engage with jurisdictional regulators, policymakers, and innovators in the region as the region continues to draw in the digital assets community through its forward-thinking regulatory proposals, as well as a thriving ecosystem of VCs and investors who are poised to support the digital industry.

One crucial consultation that the group engaged on was the FSRA of the ADGM Consultation Paper (CP) on Proposed Regulatory Framework for the issuance of Fiat-Referenced Tokens. The MENA WG was supportive of the aim of the CP, as well as the FSRA's broader aims of developing a comprehensive regime for crypto and digital assets. Many jurisdictions still have not finalized their proposals regarding stablecoins so this consultation was a welcome step forward.

Notably however, where jurisdictions have made progress and set out clear proposals, the FSRA took note of and considered how these might apply in the ADGM. For example, they reviewed the approaches of the New York DFS, the European Supervisory Authorities, and Bank of England/FCA with regards to stablecoins. This consideration of evolving approaches in pursuit of broader harmonisation, while balancing the FSRA's competition objectives is most welcome and demonstrates their understanding that the digitisation occurring is global and will have implications beyond any one regulatory regime.

The GDF MENA WG aimed to provide technical feedback in its response, as well as high-level analysis on the proposals, taking into consideration the requirements that industry must also comply with in other jurisdictions. Through this process GDF members identified key areas that we believe the ADGM should consider as they move forward to develop a regulatory regime for FRTs. The core areas identified were:

1. Support FRTs being a unique regulated Activity
2. Encouraged Amending of Attestation Timing from Monthly to Quarterly
3. Further Clarity Requested on Redemption Actions to be Taken in T+2 Timeframe
4. Additional Guidance Requested with Regards to Foreign Stablecoins

Closing out the year, the WG also organized a half day event with the Dubai Virtual Asset Regulatory Authority (VARA). The event, 'Drawing Outside the Regulatory Lines' explored areas of digital finance and digital asset innovation that don't neatly fit within regulatory frameworks. With discussions ranging from the DeFi sector to staking, GDF appreciated this opportunity to have candid dialogue with the authorities on what unique approaches might be needed as well as the regional consideration on how to develop solutions for these 'out of the box areas'.

With much focus on the MENA region as multiple jurisdictions such as the UAE & Qatar continue to progress their legislation and set out competitive policies for the digital finance industry, the WG will continue convening members to engage on new policy proposals and also produce cooperative thought-leadership pieces on key regional themes. ■

GDF x W3H APAC
Policy and Regulatory Working Group

Terminal 3

Joint GDF and W3H Policy and Regulation

GDF Working Group

As part of our new partnership with Web 3 Harbour (W3H) GDF formed an APAC Policy & Regulatory Working Group (WG) in 2024, with the official hybrid launch following in January 2025. This WG is a place to convene GDF and W3H community responses to ongoing and upcoming consultations in the APAC region as they relate to member priority topics on digital finance and Web3. The WG will focus on key jurisdictions in the APAC region including Hong Kong, Singapore, Japan, Australia and South Korea.

The WG convenes input from the associations' diverse memberships to engage with authorities in the priority jurisdictions across the APAC region. Members can also engage with both associations on key thematic areas for the APAC region such as the Travel Rule, digital ID, stablecoins, and other critical focus areas as they arise.

As part of GDF's ongoing commitment to engagement and supporting policy development and standards setting in the APAC region GDF's Executive Director Elise Soucie Watts & Director of Programmes & Innovation Madeleine Boys travelled to Singapore in the autumn to engage with the broader community there.

GDF was delighted to continue working with Digital Assets Week Singapore as their thought leadership partner. Furthermore, GDF partnered with The Reg Tech Association & Zodia Custody to host a Women Leaders Breakfast. Elise & Madeleine also participated in the Elevandi Insights Forum as part of Singapore Fintech Festival (SFF).

Building on the global work done throughout the year, GDF also hosted The Smart Contract Roundtable in Singapore alongside the Global Financial Markets Association and Hogan Lovells. The GDF APAC Working Group, as well as W3H members were invited to participate in the session which took a deep dive into The Smart Contract Primer and covered next steps in supporting DLT scaling. Notably, the primer itself was cited in the Project Guardian Fixed Income Framework (GFIF) which was published during SFF and discussed throughout the insights forum as a critical next step in global harmonisation and wider DLT Adoption.

GDF's APAC engagement for 2024 concluded with a vibrant dinner with regional members and community partners. We would like to thank Latham & Watkins for sponsoring and helping organise a fantastic evening and also to thank Standard Chartered & Zodia Custody for co-hosting.

2024 Working Group Chair

Gary Liu
CEO
Terminal 3

Looking ahead to 2025 the GDF & W3H APAC Policy Working Group will form a crucial part of both GDF and W3H's regulatory advocacy work, and also provides a vector for sharing information on a cross-border basis in support of global policy harmonisation. ■

Tokenization
GDF Forum

TOKENIZATION FORUM

The GDF Tokenization Forum, launched in early 2024, has rapidly established itself as a central pillar of the organization's efforts to advance real-world asset (RWA) tokenization. This collaborative initiative was created to address key challenges facing the industry and to provide a platform for exploring innovative solutions that will enable tokenization to scale effectively. Over the past year, the Forum has become a hub for dialogue and action, convening bi-monthly over 120 diverse stakeholders representing buy and sell side institutions with capital market fintech leaders shaping together the future of financial services.

A year of insightful engagement

Throughout 2024, the Tokenization Forum hosted five strategic sessions, each delving into critical aspects of tokenization. These discussions shed light onto both the opportunities and barriers within the field, offering a comprehensive perspective on the path to scalability. Early sessions highlighted the shifting landscape of investor expectations, including the demand for more liquid and accessible markets. Speakers emphasized the role of tokenization in delivering operational efficiencies, reducing costs, and addressing margin pressures faced by asset managers.

As the Forum evolved, deeper technical and strategic challenges came to the fore. Interoperability emerged as a key theme, with participants exploring the interconnected layers of blockchain, network, and monetary systems required for seamless market-wide distribution. Insights from industry leaders underscored the importance of leveraging tokenization to

2024 Forum Co-Chairs

Breige Tinnelly
Head of Market Development
Archax

Anthony Woolley
Head of Business Development and Marketing
Ownera

streamline complex investment processes, create new data opportunities, and improve collateral management.

Digital asset custody also featured prominently in the discussions, as the Forum examined the evolving custodial landscape. The interplay between regulatory frameworks, buy-side demand, and institutional initiatives was highlighted as a critical factor in shaping the future of digital asset custody. These dialogues underscored the necessity of collaboration and trust-building to address the challenges that custody providers face in this emerging space.

In its final session of the year, the Forum reflected on the progress made and identified priority areas for further action. Key takeaways included the need to bridge educational gaps within the industry, foster trust among stakeholders, and manage risks effectively. Participants also emphasized the importance of regulatory clarity and standardization in accelerating adoption.

The community highlights from each session are available here and members have received detailed readouts from each session.

Driving action through working groups

The Forum's activities culminated in the establishment of three key working groups, each addressing a pivotal area of tokenization:

- The FIX/FinP2P Protocol Interoperability Alliance, launched in partnership with the FIX Trading Community, is creating frameworks to enable seamless integration between traditional and blockchain-based financial systems. More details on this initiative available on p.45
- The Sustainable Finance Tokenization Working Group is investigating how tokenization can enhance transparency and integrity in voluntary carbon markets, contributing to broader sustainability goals. More details on this initiative available on p.47
- The Digital Asset Custody Working Group was initiated to address the convergence of tokenization with traditional finance, focusing on the operational and regulatory considerations critical to custody providers. This initiative is kicking-off in early 2025 under the co-chairship of Zodia Custody and Deloitte.

Charting the path forward

As tokenization gains traction across financial markets, the GDF Tokenization Forum will continue to bring together market participants to address technical and operational challenges, serve as a sandbox to develop industry use cases and promote regulatory engagement. Its ongoing efforts to align stakeholders and mobilize resources underscore GDF's commitment to driving innovation and adoption in tokenization, ensuring the financial ecosystem is well-positioned for a digital future. ■

GDF / FIX
FIX - FinP2P Protocol Interoperability Alliance

Joint GDF & FIX Trading Community

Joint GDF & FIX Trading Community Working Group: FIX – FinP2P Protocol Interoperability Alliance

The FIX/FinP2P Protocol Interoperability Alliance, initiated through a strategic partnership between Global Digital Finance (GDF) and FIX Trading Community, represents a groundbreaking effort to bridge traditional finance with digital securities. This alliance leverages the strengths of the open-source FIX protocol, widely used in financial markets, with the open-source FinP2P tokenisation interoperability protocol, governed by GDF under a Creative Commons license. Through this collaboration, the Alliance aims to modernise existing financial infrastructure, allowing for seamless interactions between traditional and blockchain-based platforms.

Addressing the challenges of integration and interoperability
Despite the rapid growth of digital assets, integrating them into traditional systems has posed significant challenges due to the complexities of blockchain technology and regulatory compliance requirements to date. This integration has the potential to unlock vast new revenue streams, facilitate greater investment opportunities, and provide traditional financial institutions with access to tokenised assets. Key benefits include:

- **Increased market participation:** By connecting traditional financial institutions to digital asset markets, the Alliance aims to promote wider market participation, allowing traditional investors to explore tokenised investment options.

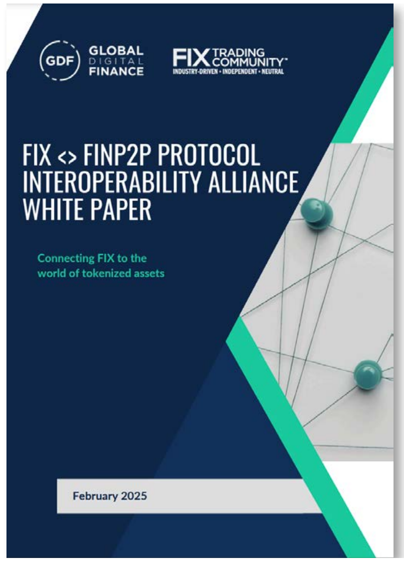
- **Enhanced operational efficiency:** The initiative automates trading and settlement processes, reducing manual intervention, mitigating errors, and thus increasing operational efficiency across the transaction lifecycle.

- **Broader adoption of standards:** The Alliance uses FIX, a globally recognised standard in trading, to support tokenised transactions. This strategy ensures that the ecosystem remains compliant with regulatory standards, ultimately enabling digital assets to be adopted more readily in institutional finance.

Bridging tradition finance with the digital asset ecosystem
The FIX/FinP2P Alliance has been structured to progress through a multi-phase approach, with a Sandbox Lab serving as the initial phase. This collaborative testing environment allows for iterative feedback from participating organizations and facilitates real-time testing across multiple use cases. Below is an outline of the Alliance's phased approach:

2024 Working Group Chair

Anthony Woolley
Co-chair of the GDF Tokenization Forum / Head of Business Development and Marketing
Ownera



The recently published white paper is available for download here.

Phase 1: Establishing the Sandbox Lab

The Sandbox Lab, supported by Ownera as an integration partner, has served as a controlled environment where participants could experiment with connecting traditional FIX-based systems to blockchain-enabled tokenized assets. This Lab comprises three essential components: a **Sell-Side Router** for asset issuance, a **Payment Router** for diverse payment solutions, and a **Digital Custody Router** for secure asset management.

Phase 2: Documenting outcomes and publishing a whitepaper

Deloitte, in collaboration with GDF and FIX, is developing a whitepaper to outline the key findings from the Sandbox. The whitepaper is intended to serve as a reference for industry participants, regulators, and other stakeholders interested in modernizing their financial infrastructure to include tokenised assets, and was delivered in Q1 2025.

Phase 3: Scaling to live assets and expanding the network

Following the publication of the whitepaper, the Alliance intends to transition from Sandbox testing to live environments. In this phase, the Alliance will connect to actual tokenized assets on participating platforms, thus moving from controlled testing to real-world applications. ■

Sustainable Finance Tokenization

GDF Working Group

The Sustainable Finance Tokenization Working Group (WG) was launched under the GDF Tokenization Forum in mid-2024 to address pressing challenges in voluntary carbon markets (VCM) and explore how distributed ledger technology (DLT) and tokenization can enhance integrity, transparency, and scalability in these markets. Bringing together a diverse group of stakeholders, the (WG) focused on producing a comprehensive report that examines the current state of VCM and outlines the potential for tokenization to address longstanding market inefficiencies.

Technological innovation addressing integrity challenges in VCM
Throughout 2024, the group concentrated on assessing how tokenization can resolve critical challenges within VCM, including questions of integrity, permanence, additionality and transparency issues. The report, due for publication in early 2025, provides a detailed analysis of how tokenization offers innovative solutions to issues such as:

- **Ensuring Credibility:** By leveraging blockchain-based digital tokens, each carbon credit can be uniquely and immutably linked to its associated data, including project details, verification status, and emissions reductions. This traceability enhances market confidence by reducing the risk of fraudulent or duplicate credits.

- **Improving transparency:** Tokenization allows for real-time recording of a carbon credit's lifecycle, from issuance to retirement. This level of transparency addresses concerns over double-counting and opaque pricing, fostering greater trust among market participants and allows purchasers to verify the environmental integrity of each carbon credit, ensuring that each token represents a legitimate reduction or removal of emissions.

- **Strengthening existing market standards:** Integrating new distributed ledger based technologies with established frameworks can support standards implementation and enhancement, particularly in the areas of transparency, data access and traceability (tracking units from source to credit), offering some solutions for current challenges with data quality (including delayed data provision), reporting inconsistencies and transparency gaps, that reflect known shortcomings in existing VCM offerings.

2024 Working Group Co-Chairs

Bryony Widdup
Partner
Hogan Lovells

Deanna Reitman
Partner
Faegre Drinker

Building momentum for 2025
The report aims to serve as a foundational resource for stakeholders navigating the evolving voluntary carbon market landscape. By demonstrating how tokenization addresses integrity challenges, the WG intends to provide actionable recommendations for regulators, market participants, and technology providers. Future priorities include:

- Engaging policymakers to advocate for tokenization's role in enhancing market reliability.
- Exploring pilot initiatives to validate the solutions proposed in the report.
- Expanding the dialogue to include additional use cases in sustainability-focused applications, such as climate data and natural capital markets. ■

DIGITAL PAYMENTS FORUM

Digital Payments Forum

GDF Forum

With the increase in digital payments use cases, from stablecoins to tokenized deposits and CBDCs, digital payments has been a key focus area for GDF members in 2024 and is closely interlinked with other top priorities, including real-world asset (RWA) tokenization and interoperability. Recognizing this, the GDF Digital Payments Forum was launched in Q4 2024 to address the challenges and opportunities of this rapidly evolving space.

Since its soft launch at the GDF and Hogan Lovells Digital Assets Summit, the Forum has convened a wide range of participants, including financial institutions, technology providers, and regulators. This diversity of perspectives has been instrumental in fostering a deeper understanding of the opportunities and challenges posed by digital payments.

Sessions featured insights into emerging trends and evolving regulatory landscapes, helping participants better prepare for the adoption of innovative payment solutions. Participants explored regulatory and policy frameworks, including the Bank of England's approach to stablecoins and CBDCs, as well as the implications of European regulations such as MiCA and PSD2 on the payments ecosystem.

S&P Global · XReg Consulting · CIRCLE · FORGE · Hogan Lovells · BLOCK · Bank of England

2024 Forum Co-Chairs

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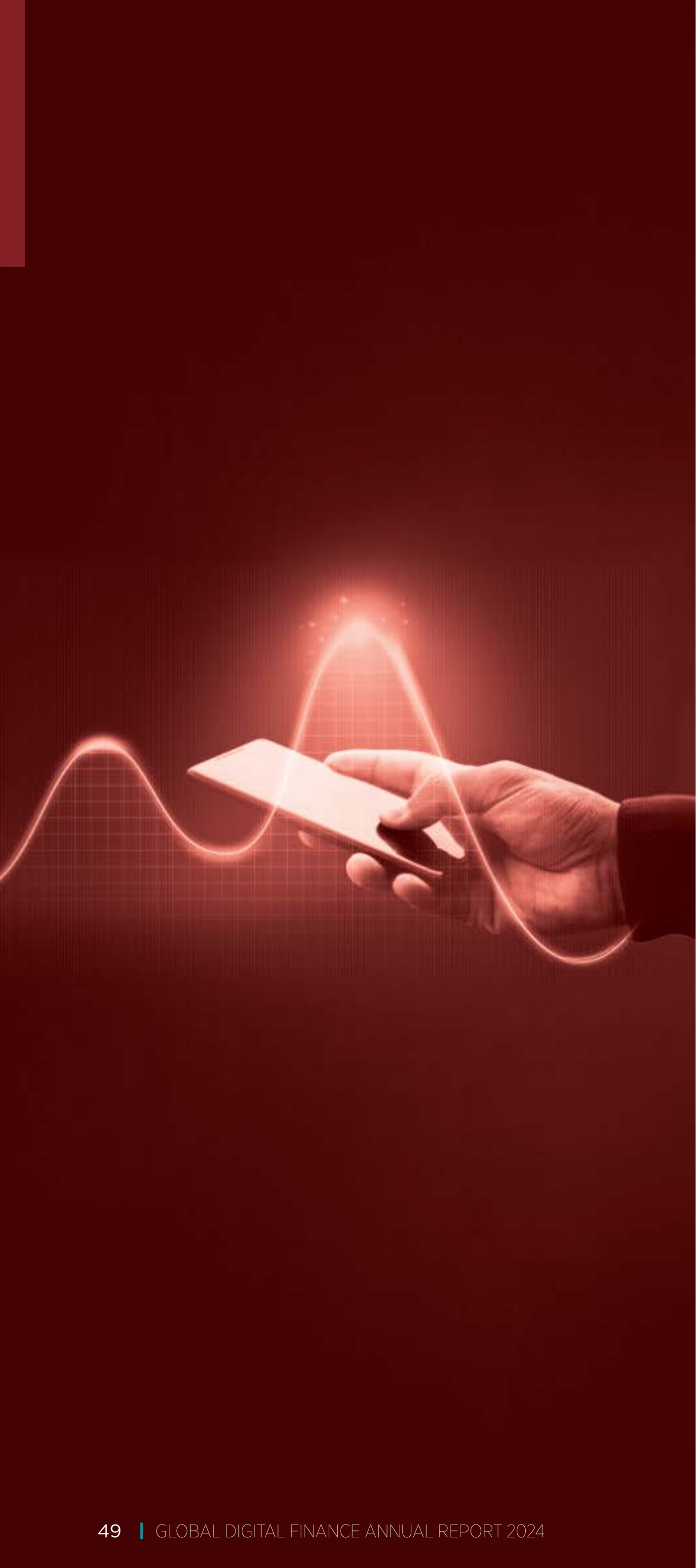
Will Paul
Public Policy Lead (Payments, Hardware, SMBs)
Block, Inc



These discussions underscored the importance of harmonized global regulatory frameworks while addressing the nuanced needs of local markets and GDF is positioned to use this Forum as a means to engage regulators and policymakers on many of these topics with relevant partners on an as needed basis.

In addition to regulatory themes, the Forum delved into technical and operational topics. The crossover between digital payments infrastructure and real-world asset tokenization, scalability challenges, and the role of distributed ledger technology (DLT) in improving settlement systems were key areas of focus. Insights from industry leaders highlighted the potential of innovations like programmable money, cross-border stablecoins, and tokenized deposits to transform payment networks. These discussions also emphasized the need for resilient digital payments infrastructure that supports seamless settlement processes, efficient on- and off-ramps for digital financial systems, and enhanced liquidity. These themes highlighted the growing interdependence between digital payments and the broader digital assets ecosystem.

Looking ahead, the Forum remains committed to fostering innovation, driving collaboration, and supporting the adoption of digital payment solutions that are both inclusive and efficient. By bridging gaps between technology, regulation, and market adoption, the Digital Payments Forum will continue to play a pivotal role in shaping the future of digital finance. ■

Travel Rule VASP

GDF Working Group

In November 2024, Global Digital Finance (GDF) announced the formation of the Travel Rule VASP Working Group (WG), marking an important step in addressing the implementation challenges associated with the Financial Action Task Force's (FATF) Travel Rule. This initiative builds on GDF's legacy of fostering collaboration and advancing standards within the digital asset ecosystem, exemplified by its earlier work in developing the IVMS101 standard.

The WG founded OKX and other leading exchanges aims to provide a platform for Virtual Asset Service Providers (VASPs) to tackle the complexities of Travel Rule compliance. This includes addressing operational issues like screening protocols, transaction returns, and exception handling, while also engaging with Travel Rule solution providers to refine industry requirements.

Governed by an Organising Committee, the WG will facilitate regular meetings and develop actionable outputs such as industry guidance and policy recommendations. Key objectives include fostering engagement with regulators and international bodies to influence policy development and support mutual understanding between the public and private sectors.

As global regulatory frameworks continue to evolve, this WG represents a significant effort to unify the digital asset industry under a shared vision for compliance and innovation. By aligning stakeholders and driving best practices, the initiative is poised to help VASPs navigate the regulatory landscape while promoting trust and security within the financial ecosystem.

Looking forward, the Travel Rule VASP WG will look to broaden its remit into a VASP Forum in H2 2025 to better enable the digital asset and VASP community to meet regulatory challenges with coordinated and effective strategies. ■

2024 Working Group Chair

Malcolm Wright
Deputy Chief Compliance Officer
OKX

Joint GDF and ACI FMA Standards Stewardship
Working Group

In September 2024, GDF and the ACI Financial Markets Association (ACI FMA) launched the Joint Standards Stewardship Working Group (WG), marking a significant milestone in advancing the adoption and application of the GDF Global Cryptoasset Standards (Standards), developed and published in 2023 by the GDF Global Financial Institutions for Crypto (GFIC) WG. Key stakeholders from both projects outlined the context and ambitions for the new Joint WG in a webinar hosted shortly after the announcement.

Since its launch, the WG has made significant progress in driving the adoption and practical application of the Standards, which were initially published in 2023 and modeled after the FX Global Code. These principles offer financial institutions a comprehensive framework for conducting activities such as brokerage, custody, and settlement within crypto markets. Its specific mandate has been to support:

- **Scenario development for ELAC integration:** The Working Group, supported by EY and other partners, is in the process of creating real-world scenarios for the ACI FMA's E-Learning, Attestation, and Certification (ELAC) platform. These scenarios are tailored to reflect the unique dynamics of crypto markets, such as market manipulation risks, pricing transparency, and algorithmic trading practices.

- **Sandbox testing for standards application:** Participants are also exploring how institutions can use ELAC as a sandbox environment to test the Standards' implementation, with flexibility for proportionality based on firm size, role, and market participation. This initiative supports consistent and practical application across diverse market participants.

- **Cross-jurisdictional regulatory alignment:** Since its publication, the Standards has also gained strong endorsements from regulators, including the UK's FCA, as a valuable complement to emerging crypto regulations. This recognition underscores the Standards' role in addressing regulatory gaps and supporting global consistency in market practices. The WG endeavours to continue to engage regulators and policymakers globally to ensure the Standards receives appropriate momentum and can be used by market participants to support regulatory compliance in the jurisdictions in which they operate.

2024 Working Group Co-Chairs

Madeleine Boys
Director of Programmes and Innovation
GDF

Rui Correia
Executive Director of Education
ACI

This work is set to continue in 2025 and the WG endeavours to set benchmarks for ethical and professional conduct in digital asset markets and create training and attestation models to support this best practice. This collaborative initiative is helping shape a more consistent and transparent ecosystem, paving the way for broader institutional participation in crypto markets. ■

VOICE OF THE COMMUNITY

Achieving Excellence by Being Excellent in our Practices

Kim Winding Larsen
President
ACI FMA

Rui Correia
Executive Director of Education
ACI FMA

The financial markets industry is constantly changing, and we cannot afford to be complacent.

Continuous education allows us to keep up with all the changes. As Henry Ford mentioned: "Anyone who stops learning is old, whether at twenty or eighty. Anyone who keeps learning stays young.".

Recently, the importance of continuous education has increased in several countries, considering the general rise in life expectancy, the extension of retirement age, and the growing old-age dependency ratio, among other factors. Furthermore, we all have a desire to improve the quality of our lives, and to maintain good physical and mental health, and to recognise that education plays a key role in achieving these goals.

In fact, the right to continuous education has been promulgated in Principle 1 of the European Pillar of Social Rights, and it is expected that, by 2030, 60% of all adults will participate in educational methodologies on an annual basis.

Firms benefit immensely from continuous education, as it leads to higher levels of staff retention, encourages the development of leadership skills, allows staff members to feel more valued and engaged, boosts positivity and productivity, fosters a more positive and collaborative working environment, improves teamwork, reinforces internal culture, enhances integrity and results in financial savings. Consequently, it is natural that some firms are already considering the willingness to learn as a critical factor when hiring new staff, with academic performance becoming less relevant.

Staff members also have a lot to gain. Continuous education boosts performance and productivity, grants a sense of achievement, supports confidence gains, provides opportunities to upskill, allows for personal and professional development, improves ethical and professional behaviour, facilitates career growth, empowers self-marketing and enhances competence.

Various sports personalities spend several hours on their daily learning and training routines, even when they are at the peak of their careers. They practice and practice to become excellent at what they do, and we all admire their performance.

In the context of global financial markets, education is also of critical importance and it is our firm belief that education related to best market practices should be continuous. Given the rapid evolution of our industry, we think that it is even more important now, as ongoing education enhances market fairness, integrity and transparency, whilst also allowing for professional development and proof of adherence to the highest standards of ethical and professional conduct, such as the ones presented by the Global Digital Finance (GDF) Global Cryptoasset Standards (among others).

To apply the best market practices in our daily roles, we should be continuously educated and embed these practices consistently and effectively, as they promote robust, liquid, open, and appropriately transparent financial markets. Excellence will naturally follow. As one of the most successful coaches in the NBA, Pat Riley, once stated: "Excellence is the gradual result of always striving to do better."

Over the years, ACI FMA has developed its training and certification tools to support compliance with ethical conduct requirements and best market practices. We remain fully dedicated to assisting market participants in achieving that excellence, as it will certainly contribute to the effectiveness of financial markets. ■

Web3 is not Science Fiction Innovation

Faustine Fleuret
President & Managing Director
ADAN

Web3, built on decentralization and user empowerment, presents an extraordinary opportunity for Europe to assert its digital sovereignty. With its innovative regulatory framework, the European Union stands out globally by striking a balance between fostering innovation and protecting its citizens. However, to fully capitalize on this potential, Europe must overcome several challenges, particularly its ability to compete with the United States, which remains the epicenter of technological innovation.

A Unique Position with MiCA
The adoption of the MiCA regulation (Markets in Crypto-Assets) is a significant advantage for Europe. It provides a clear and coherent legal framework that inspires confidence among investors and businesses. Unlike other jurisdictions where legal uncertainty often hinders the development of the sector, the European Union offers a structured roadmap to regulate Web3 players while ensuring user safety.

This proactive approach enhances Europe's credibility as a mature economic zone capable of attracting ambitious projects and fostering an environment conducive to innovation. This positioning could enable Europe to become a global model for Web3 regulation, demonstrating that economic development, technological sovereignty, and consumer protection can coexist harmoniously.

Challenges to Address
Nevertheless, this strategy comes with its limitations. Europe still faces a significant investment gap in digital technologies, especially when compared to the United States, where both public and private funding flows heavily into Web3 initiatives. European companies, often smaller in scale, must navigate complex regulatory and operational constraints, such as limited access to tailored banking solutions or specific insurance products.

Furthermore, delays in publishing technical standards critical to implementing MiCA and still some unsolved questions create uncertainty that could hinder the adoption of cryptoassets and the development of local projects. While these challenges are significant, they are not insurmountable and can be addressed through more ambitious public policies and improved coordination among member states.

Untapped Potential
Despite these hurdles, Europe possesses numerous strengths to establish itself as a global Web3 leader. Its unified market, tradition of cross-border collaboration, and expertise in strategic sectors such as finance, cybersecurity, and data protection provide fertile ground for the emergence of European Web3 champions.

European businesses, while facing fierce competition, can leverage the clear regulatory framework to attract talent and investments while innovating in areas such as decentralized digital identities, decentralized finance (DeFi), and next-generation video games.

Accelerating the Momentum
To remain competitive against the United States and Asia, Europe must step up its efforts. This involves increasing public and private funding, providing stronger support for startups, and adapting quickly to technological advancements.

As highlighted in the Draghi report, the European Union needs technological champions to "close the innovation gap" and assert its economic and geopolitical sovereignty. These champions can only emerge if Europe adopts a more pragmatic approach, reducing unnecessary constraints while enhancing its attractiveness to international investors.

Building a Sustainable Digital Sovereignty
Web3 presents Europe with a historic opportunity to close its technological gap and position itself as a key player in the digital economy. By capitalizing on its strengths—a structured regulatory framework, an integrated market, and recognized sectoral expertise—the Union can create a dynamic and innovative ecosystem.

However, swift action is essential to address structural weaknesses and provide stronger support for local players. By balancing regulation and innovation, Europe can not only compete with the United States but also become a global benchmark for a responsible and sustainable Web3. The challenge is significant, but the opportunity is unprecedented. Europe is well-positioned to take on this challenge and demonstrate its ability to meet the demands of tomorrow's digital landscape. ■

How Traditional Markets are Navigating the Digital Asset Landscape

Stephan Dreyer
Managing Director
ANNA

Rowan Varrall
Associate Director
DTIF

The rise of crypto and digital assets has transformed financial markets, introducing new opportunities and complexities for participants and regulators alike.

New products and new markets

Large financial institutions and corporations are increasingly exploring the transformative potential of distributed ledger technology (DLT) — the technology behind crypto — to streamline operations, reduce costs, and unlock new business opportunities.

Pioneers like the World Bank, European Investment Bank (EIB), and the Hong Kong Government, along with major banks, have already issued digital bonds. Other institutions have utilised DLT for digital equity issuance, while some now offer exposure to cryptocurrencies through financial products like crypto-based funds and derivatives.

At the same time, leading banks and market infrastructure providers are developing innovative DLT-based platforms to transform the issuance, settlement, and trading of digital assets, signalling a shift toward a more efficient and interconnected financial ecosystem.

As these markets continue to expand, it is crucial to establish industry standards and best practices that integrate traditional and digital ecosystems seamlessly. Alignment with such standards has already proven effective in streamlining operational efficiencies and enabling straight-through processing (STP) across the lifecycle of traditional financial products.

Robust oversight and transparency are also top priorities for regulatory bodies worldwide. As authorities craft regulatory frameworks for crypto and digital assets, agreed-upon industry standards and practices will be essential. They will not only empower market participants but also provide regulators with the necessary tools to oversee digital markets, fostering trust and transparency across the financial landscape.

Tools of the trade

Globally recognized standards, such as ISINs for securities identification, have been central to traditional financial market operations for decades. In the digital asset space, Digital Token Identifiers (DTIs) provide a complementary standard for uniquely identifying digital tokens on DLT. By aligning these two standards, the Association of National Numbering Agencies (ANNA) and the Digital Token Identifier Foundation (DTIF) aim to support transparency, efficiency, and confidence across digital asset markets.

This alignment allows for a unified framework that enhances market transparency through interoperable identifiers. Key applications include:

- **DLT-based financial instruments:** Linking ISINs and DTIs provides a more transparent view of natively issued and tokenised securities.
- **Stablecoins:** Many stablecoins are offered across multiple ledgers. With ISIN and DTI, the market can unambiguously identify all implementations of the one asset.
- **Crypto-derivatives:** The DTI efficiently identifies digital asset underliers for derivative products and is already integrated with the ISIN, and UPI, for regulatory reporting.
- **Wider crypto universe:** Cryptoassets that are not financial instruments are treated as referential instruments and are in scope of the new XT ISIN, alongside DTI.

By integrating ISINs and DTIs, market participants can access critical reference data for informed decision-making while minimising operational complexities. This effort aims to reduce industry costs and streamline processes through ISIN:DTI mapping and parallel identifier code allocations.

Progress and next steps

Throughout the year, the ANNA-DTIF taskforce has advanced the integration of ISINs and DTIs, mapping over 80 DLT-based securities and allocating XT ISINs for more than 200 stablecoins and unbacked cryptoassets. This work addresses the potential one-to-many relationship between ISINs and DTIs by establishing grouping criteria based on shared technical specifications and governance structures.

Etrading Software, as Registration Authority for the ISO 24165 DTI standard and operating through its non-profit DTIF unit, has joined ANNA as Partner and Designated Numbering Agency of XT ISINs for tokenised referential instruments. As part of building collaboration with the ISO standards family, ANNA and DTIF are also working with GLEIF to provide an additional mapping between security and token reference data to the Legal Entity Identifier (LEI), expanding on the existing ISIN:LEI mapping initiative.

As the digital asset landscape continues to mature, collaboration between industry participants, regulators, and standards organisations will be essential to unlocking its full potential while ensuring trust, stability, and innovation remain at the forefront. ■

Stablecoins - Why All The Fuss Around The “Killer App” Of Tokenization?

Breige Tinnelly
Head of Market Development
Archax

The adoption of blockchain and distributed ledger technology (DLT) in financial markets hinges on full on-chain integration, including a digitally native payment leg. Stablecoins are emerging as the dominant solution for the cash-leg in digital asset settlement, bridging traditional finance (TradFi) and decentralized finance (DeFi).

As the largest successful use case for tokenization, stablecoins are gaining traction with major players in financial services including PayPal, Stripe, Visa, Société Générale Forge, BBVA, Circle and HashNote. With increasing regulatory clarity across jurisdictions and a notable significant pro crypto policy shift in the US, the stablecoin market is poised for accelerated growth. In the near term, this will fuel demand for liquid yield bearing tokenized assets including money market funds (MMFs) and other digital assets. Expect these to also grow at pace in 2025.

Market size
At the time of writing, stablecoins have reached a total market cap exceeding $200billion, with expectations to double in 2025 thanks to global legislation, blockchain adoption and global payments driving the growth[1]. Tether’s USDT leads in market cap at ~$140bn followed by Circle’s USDC at over $40bn. Market share data from 2024 highlights the dominance of stablecoins, which accounted for 46% of transactions on digital asset exchanges, surpassing Bitcoin (21.8%), altcoins (24%), and Ether (8%). As digital adoption grows, stablecoins will solidify their role in the financial system.[2]

Defining stablecoins
Stablecoins reduce cryptocurrency volatility while aiming to maintain the stability of traditional fiat currencies. There are a few different species:

1. **Fiat-backed stablecoins** - Pegged 1:1 to fiat currencies backed by cash and liquid assets. Examples include USDT, USDC, and EUR.

2. **Commodity-backed stablecoins:** Pegged to assets like gold e.g., PAXG, XAUT.

3. **Crypto-backed stablecoins:** Collateralized by cryptocurrencies, such as DAI.

4. **Yield-bearing stablecoins:** Backed by US Treasuries, such as Ondo USDY and HashNote’s USYC.

5. **Algorithmic stablecoins:** Maintain value through supply adjustments, like Frax USDe.

What pain points are stablecoins solving for today?
Stablecoins aim to enhance financial efficiency by offering global accessibility, serving as a medium of exchange, and acting as a store of value across international and interbank payments, remittances, liquidity management. They also act as a protection against currency fluctuations.

They facilitate trade on cryptocurrency exchanges where settlement in real time enables an agile response to market changes, enhances liquidity and reduces settlement and counterparty risks. Stablecoins are also used in e-commerce and supply chains finance to optimize cash flow, reduce capital requirements and enable operational efficiency for businesses through automated workflows. In DeFi applications, stablecoins serve as collateral for lending and borrowing platforms.

They also enable financial inclusion reaching underserved markets with banking limitations or limited access to fiat by offering a digital currency solution.

[1] CCData and DefiLlama
[2] ChainLink

Current risks and challenges as stablecoins integrate into the global financial system
Stablecoins present the strongest opportunities for industry adoption and scale in the near to medium term – above other current digital cash alternatives including Deposit Tokens or Central Bank Digital Currencies (CBDC's).

Regulatory uncertainty exists with fragmented or absent frameworks for stablecoin issuance, trading and use and concerns over monetary policy, the singleness of money,[3] financial stability, reserve management and consumer protection persisting.

Furthermore, most stablecoins are issued by centralized entities, creating potential single points of failure. They also retain the power to freeze transactions, reducing trust and user autonomy. Technical vulnerabilities also exist. Issues such as cybersecurity threats, network congestion, high transaction fees, and stablecoins' interdependence with DeFi protocols pose systemic risk.

Despite these risks, 2025 promises much needed clarity of the global legal landscape. This is welcome but care is needed to ensure regulations are proportionate, operate effectively and enable stablecoins to remain accessible and harnessed to deliver on their true potential.

How can institutions seize the opportunity?
For financial institutions, the need for a regulated counterparty and full infrastructure stack, such as that provided by Archax,[4] is a prerequisite – whether this be in TradFi or DeFi. Stablecoin issuers and investors must expect bankruptcy-remote reserves to be held safely in bankruptcy remote custody where those stablecoins can also benefit from yield by placing those reserves into products like MMFs. In addition to yield, these MMFs can also be used as collateral. Where stablecoins and MMFs are used as collateral in bilateral transactions and beyond, participants will want connectivity across a multi-asset, multi-chain, permissioned protocol for regulated participants to transfer, borrow, lend or pledge tokenized or natively digital assets, including stablecoins & securities.

The success of stablecoins – a catalyst for growing adoption and scale of digital assets ?
Adopting and scaling the use of blockchain has been and continues to be a journey. 2024 marked a turning point with the launch of BlackRock's Bitcoin ETP, tokenized MMF (BUIDL), and Franklin Templeton's BENJ fund. These developments, alongside clearer regulatory frameworks and cross-chain interoperability, including a push on policy and change of sentiment in the US - not least with the Executive Order on Digital – have all aligned to open the gate to the industry's best year yet in 2025 with stablecoin innovation at the centre stage.

Looking ahead, more stablecoin issuers will align with centralized exchanges, DeFi protocols, and traditional financial institutions, bridging digital assets with mainstream finance. These partnerships will drive greater buy-side participation and accelerate adoption across crypto, tokenized real-world assets, and financial services ecosystems. ■

[3] Single-minded? Rethinking our approach to the 'singleness of money' could help to reap the benefits of stablecoins | King's College London
[4] Archax can provide all these services through its Regulated Custody, Brokerage and Exchange permissions. Furthermore, these transactions can flow through a digital Central Securities Depositary, like its subsidiary Montis. This complete infrastructure enables institutions to participate across the full breadth of digital assets whilst most critically incorporating the digital cash leg.

From Global Standards to National Strategies:
2025, The Defining Year for Responsible Crypto Innovation

Steven McWhirter
Global Policy Lead
Binance

2024 will be remembered as the year the crypto industry reached a crossroads, transforming challenges into opportunities and shifting from scrutiny to global acceptance.

It saw the work of the global standard-setting bodies bear fruit. In 2023, both IOSCO and the FSB, finalized their frameworks for crypto-assets and stablecoins. This seminal work was steered by the Indian G20 Presidency with the support of the IMF and the FSB. It provided key consumer protection and market integrity pillars to support the FATF's financial crime guidance on virtual assets and the OECD's tax reporting framework CARF, all goals which a responsible industry should welcome.

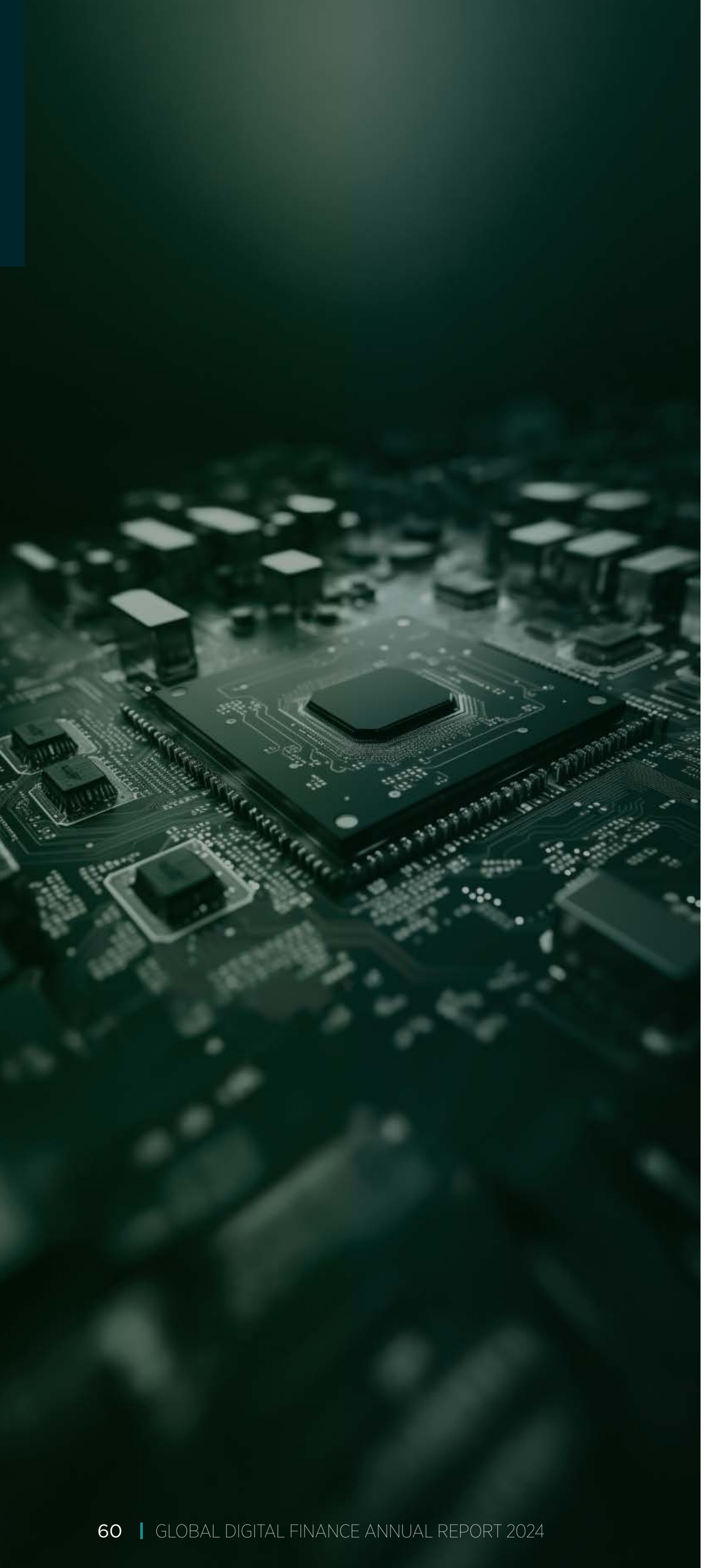
With the formalization of global standards, the narrative around crypto in 2024 shifted dramatically: from bans to opportunities, from fear to foresight. As the work of the past years started to filter down, both the FSB and FATF status reports indicated that regulators still have work to do. These updates were timely as 2024 was also marked with many industry highs, including for crypto adoption, market capitalization, Bitcoin ETFs, and "real-world" developments in tokenization and stablecoins. 2024 was also a pivotal year for Binance with many personal highs.

As a former UK FCA regulator, having worked extensively on financial services policy globally, the introduction of global standards was expected. Done well, they can help facilitate responsible innovation and provide users with access to new products and services. As the combination of blockchain, tokenization and cryptography increasingly gathers pace, the sum of these parts will also enable new products and services. This includes the ability for high-value assets to be fractionalized, unmonetized assets to be monetized, and cryptographically secure and efficient peer-to-peer transactions to occur using public and private keys. Combined with cloud, AI, and big data analytics these technologies will help to bridge legacy infrastructure unlocking new opportunities in economic value, greater financial inclusion and more seamless, efficient and economical financial services, amongst many other things.

If 2024 marked acceptance by regulators globally, 2025 will be marked by how regulators and lawmakers respond domestically as competition and adoption continues to accelerate. As with the cloud, and increasingly with AI, it can take time for adoption to occur. This can be for many reasons, including a firm's governance or risk appetite, a lack of infrastructure or skills, or concerns over "all or nothing" policy decisions. In 2025, a more competitive and dynamic digital user experience will shape global customer awareness and choice, pushing nations to adopt agile, forward-thinking policies to stay ahead. As blockchain infrastructures scale and real use cases increasingly add real value to the real economy, commercially minded countries know this.

In the EU, the European Commission was widely considered progressive with the introduction of MiCA in 2020, now law as of December 2024. One can only hypothesize whether the EU's efforts will continue to pay off in 2025 as other countries, including in the Americas, Middle East and Asia continue to support the development and expansion of the industry. To the credit of the G20, the global standards were the catalyst that helped forward-looking countries identify the guardrails required to enable responsible adoption, and to move forward in the face of procrastination and confusion elsewhere.

A post-election USA has also signaled its intent to embrace the crypto industry and lay the legal foundations within Congress and the Senate. Political appointees in key committees, including the House Financial Services Committee and the House Agriculture Committee, are clearly a statement of intent, as is the appointment of a White House "AI and Crypto Czar". With pro-industry legislation well developed, and an emphasis on competitiveness, the USA will be one to watch in 2025.



Ultimately, as the industry continues to mature in 2025, it will be important for countries to "zoom out". Legislation and regulation directed at technologies such as cloud, AI and blockchain should be approached with care. Technologies are foundational, not sector-specific, and exist to support very many innovations across all industries globally, whether regulated or not. One only has to consider the number of innovations for blockchain, cryptography, or tokenization to understand the opportunity being offered by the appropriate application of the policy makers' toolkit.

In the same vein, thoughtful, proportionate principles-based regulation will continue to help the industry to mature responsibly. Binance understands the responsibility we, and every other major platform, have in collaborating with policymakers and regulators to help achieve this. In 2025, further innovation is inevitable: technology will continue to evolve markets and how consumers live their lives. Together, industry leaders and policymakers can champion a new era of responsible innovation, unlocking crypto's potential to empower consumers and redefine markets worldwide. ■

Safeguarding Empowerment in the Digital Future:

Custody and Self-Custody's Role in the UK's Strategy

Will Paul
Public Policy Lead (Payments, Hardware, SMBs)
Block, Inc

As part of UK Fintech Week in April 2024, Block and DLA Piper hosted a digital asset custody roundtable in London convened by GDF. This gathered leading voices across digital assets - including representatives from custodial, self-custody, exchange, law, and blockchain analytics firms, as well as the Bank of England, and HM Treasury to discuss custody solutions and their role in the UK's strategy to become a global digital asset hub.

At Bitkey, we think everyday about how self-custody - allowing individuals direct control over their digital assets - could redefine the financial services ecosystem, empower people around the world to truly own and manage their digital assets easily and safely. Nonetheless, a future where individuals are able to unlock the benefits of self-custody at scale will require partnerships across public and private organizations, building the regulatory, technological, and educational foundations. This article delves into some of the key themes shared by industry experts during the roundtable.

User empowerment

The roundtable explored how self-custody promotes and safeguards decentralization and user sovereignty. In so doing, it meets many regulatory objectives - including safety, security, and economic empowerment – and, in a digital future, it was argued it would play an important role in managing financial and non-financial assets online. Successfully differentiating self-custody from custodial financial services in regulatory frameworks is critical and the roundtable agreed that future custody regulations would need to support the unique architecture of decentralized systems rather than inadvertently stifling innovation.

Regulatory opportunities and challenges

Participants also discussed the UK's unique opportunity to lead in crafting regulations that balance innovation with consumer protection. While the EU's regulatory framework prioritizes data privacy, it can risk discouraging technological innovation. Meanwhile, the US faces a fragmented and partisan approach to digital assets. In contrast, the UK's more flexible stance offers an ideal environment for fostering growth.

Participants emphasized the need for nuanced policies tailored to the characteristics of digitally native assets and digital twins, ensuring that regulations do not hinder innovation or fail to address risks, whilst taking a proportionate and balanced approach to risk across custodial solutions.

Security and compliance were also recurring themes throughout the discussion. Participants highlighted the need for advanced cryptographic solutions, including hardware security modules and cold storage options, to protect against unauthorized access and cyber threats. At the same time, self-custody solutions must work with regulators to build trust and ensure understanding of new technologies. Developing technologies and responsible innovators that achieve this balance is crucial for building trust among users and regulators alike.

Technological advancements in self-custody

Self-custody's recent advancements also were debated as a transformative solution for digital asset management, offering heightened security, operational efficiency, and user empowerment. Technological advancements such as multi-signature protocols and smart contracts are reshaping how assets are managed, with self-custody being a vehicle for everyday users to easily benefit from these technologies. However, successful implementation depends heavily on education. Participants stressed the importance of equipping users and regulators with a clear understanding of self-custody mechanisms, addressing misconceptions about risks, and fostering trust in its security and usability.

The UK as a global leader

The UK's position as a leader in digital finance depends on its ability to harness the potential of self-custody. By fostering a regulatory environment that encourages innovation and investing in the development of robust, user-centric solutions, the UK can unlock new economic opportunities and drive growth in the digital asset sector. As the roundtable concluded, it was clear that self-custody represents not only a technical advancement but also a shift toward greater financial autonomy and inclusivity. With strategic collaboration and a commitment to innovation, the UK can set the global standard for the future of decentralized finance and unlock the benefits of custody for all. ■

BNY

The Talent Gap in Digital Assets:
A Call to Policymakers

Katey Neate
Managing Director, Chief Operating Officer
BNY Digital Assets

The digital assets industry is poised for significant growth over the next decade, driven by advancements in blockchain technology, widespread institutional adoption and regulatory maturity. This growth is accompanied by a pressing challenge: the need to attract, train, and retain a skilled workforce capable of harnessing these technologies. Whether in TradFi - in a large global bank - or in a start-up reg tech company, a detailed understanding of how blockchain technology works, its applications and its risks and opportunities will be a key differentiator for the workforce of the future. As the industry evolves, policymakers must take proactive steps to address this talent gap and ensure that their countries remain competitive in the global digital economy.

The demand for digital talent, including skills in distributed ledger technology (DLT), digital assets, and artificial intelligence (AI), is experiencing significant growth across the US, UK, EU, and Asia. For instance, in the US, job postings for AI and machine learning skills have grown by 450% since 2013, while the demand for blockchain skills has surged by 2000% since 2017. Similarly, the UK's digital sector, including blockchain and tokenization, is expected to create 1.2 million new jobs by 2030. Despite this demand, there is a significant shortage of qualified candidates, with only 10,000 job seekers in the US possessing DLT skills compared to over 6 million job postings requiring those skills.

The talent shortage is particularly acute in areas such as blockchain technology, product design, programming, cryptography, and cybersecurity. In the financial services sector, the combination of blockchain-focused skills and an understanding of financial markets is in short supply, with banks and asset managers competing with digital natives for top talent. The professional services sector also faces a similar challenge, with roles in audit, compliance, legal, and risk management functions supporting digital assets being critical. Whist this challenge is global, some markets such as Singapore and Hong Kong are leading in research output and talent supply for the crypto and digital assets industry.

Here at BNY, we've brought together a global team of product, engineering and operations professionals, with diverse experience across traditional and digital financial markets, including 12 graduate Analysts since the business was formed in 2023. In 2024 alone, we delivered 3500+ hours of training across the team, and we invest heavily in continuous development not just for BNY Digital Assets, but across the BNY franchise in recognition of the impact of this technology and role in delivering seamless solutions for clients.

To address this talent shortage, policymakers should consider a multi-faceted approach which prioritizes:

- **Investment in education and training**
  Governments should invest in expanding university programs, coding bootcamps, and online courses that focus on DLT, AI, and related technologies. For example, the European Commission has launched a €1 billion initiative to support the development of AI and blockchain technologies, including training programmes for digital talent. Similarly, the US government has launched a National Artificial Intelligence Initiative to support research and development in AI, including education and training programs.

- **Updating curriculums**
  Education systems must be updated to include DLT and its applications. Pre-university level qualifications in subjects such as Economics, Maths, and Computer Science should cover DLT and its uses. There are also opportunities across the curriculum to educate students on the societal impact of blockchain technologies.

- **Promoting apprenticeships and vocational training**
  Apprenticeships and vocational qualifications in these technologies, delivered in collaboration with industry, would be a welcome step. This will facilitate enhanced career outcomes and equip the workforce with the awareness to invest in and take advantage of these technologies as future retail consumers.

- **Reskilling and upskilling the existing workforce**
High-quality, accredited training programs should be made available at lower costs for those who need them. Empowering the third sector to partner with industry to deliver these programs can address the disproportionate impact of technological change on underrepresented groups.

- **Public-private partnerships**
The private sector can play a crucial role in formal education and partner with the government to educate retail consumers about the potential and risks of tokenization. Initiatives like the Digital Securities Sandbox in the UK and Project Guardian in Singapore provide a substantial platform to promote the subject. ■

Seizing the Second-Mover Advantage:
The UK's Path to Leadership in Cryptoasset Regulation

Ji Hun Kim
President and Acting CEO
Crypto Council for Innovation

Laura Navaratnam
UK Policy Lead
Crypto Council for Innovation

The UK currently stands at a critical juncture for cryptoasset regulation, uniquely positioned to leverage a "second-mover advantage" in this rapidly evolving global landscape.

The European Union's Markets in Crypto-Assets (MiCA) regulation has set a regulatory precedent for digital assets. However, as with all first-generation frameworks, MiCA has its limitations, with aspects already being viewed as needing to evolve given the pace of industry change. Meanwhile, developments in the United States are gathering momentum. With the US elections concluded and President-elect Trump, known for his pro-crypto stance re-entering the political conversation, there is a growing expectation that the US will look to lead when it comes to crypto, including providing a comprehensive regulatory framework at the first opportunity.

These developments present both a challenge and an opportunity for the UK. Unlike first movers that face the complexity of revising legacy rules, the UK can learn from and improve on existing models, crafting a regulatory framework that is proportionate, flexible and innovation-friendly. By acting swiftly, the UK has the chance to position itself as a global leader in crypto regulation – balancing growth, consumer protection, and market stability. But the window of opportunity is narrow. Delayed action risks the UK falling behind its global counterparts.

The UK looks to be rising to the challenge. Former Economic Secretary to the Treasury Tulip Siddiq has reiterated support for creating comprehensive digital assets regulation in the UK, and the FCA has subsequently published its regulatory roadmap which covers the full waterfront of activities between now and regime go-live. The FCA has also already met its first checkpoint on that journey, publishing a discussion paper on admissions, disclosures and market abuse. More broadly, the Government has also launched a roadmap to start issuing digital gilts on the blockchain within two years. This sits alongside the existing regulatory support schemes like the Digital Securities Sandbox.

Industry stakeholders, including associations like the Crypto Council for Innovation (CCI) and Global Digital Finance (GDF), are actively supporting this agenda. Collaborations between regulators, policymakers, and industry bodies aim to ensure that the regulatory framework promotes sustainable growth while maintaining accountability for large, well-capitalized projects with significant market influence. These public-private efforts align with broader ambitions to create a robust digital financial ecosystem in the UK.

Looking ahead, industry players are urging the UK government to act swiftly. By leveraging insights from global developments and fostering strong public-private collaboration, the UK can further solidify its leadership position. Associations like CCI, alongside other industry stakeholders, are committed to supporting the development of agile and forward-thinking regulatory frameworks. The window of opportunity is narrow, and timely intervention is essential to prevent the UK from falling behind its global counterparts. Progress is being made globally, and it is now a race to the top among jurisdictions to become leading hubs for digital assets, and it is critical for the UK to lead. ■

Forget the Travel Rule - Enhance Regulation on VASP to DeFi Wallet Transfers

Antonio Alvarez Lorenzo
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Crypto.com

Note: This article expresses the personal opinion of Antonio Alvarez Lorenzo about how transfers of cryptocurrencies between VASP accounts and DeFi addresses should be controlled, monitored and regulated from an anti-money laundering (AML) perspective.

A VASP account is a financial account held by a person or an entity at a reputable Virtual Asset Service Provider (VASP) that has an Anti-Money Laundering (AML) program fit for purpose and that is subject to local regulations in the jurisdiction in which it operates. Meanwhile, a De-Fi address is a balance privately held on a blockchain, managed[1] by a person or entity that is not required to have an AML program.

Accordingly, VASP accounts operate within the regulated financial system and De-Fi addresses operate outside of it. Hence, the movement of value between them are flows into and out of the regulated financial system, similar to cash deposits and withdrawals into and out of a bank account.

Before proceeding, let's acknowledge the three stages of money laundering: Placement, Layering and Integration. Placement refers to dirty-money coming into the regulated financial system, Layering refers to the moving around of that money within the regulated financial system to create distance from its original dirty-source, and finally Integration refers to the legitimization of that dirty-money within the regulated financial system, now considered clean money.

AML risks associated with each of the above three stages are monitored by regulated financial entities through a set of controls specific to each stage. For example, when an account holder at a bank wants to withdraw a significant amount of cash from his or her account, the bank (as the regulated financial institution) is required to learn and sometimes verify the purpose of the withdrawal. If the same account holder were to send the funds to another bank account (to another regulated financial institution), the bank would simply collect the beneficiary information from the account holder and then transmit that information of both the account holder and the beneficiary to the receiving bank. The first control is designed to identify potential Placement while the second one (a.k.a Travel Rule) is designed to prevent Layering.

Regulations should require VASPs to apply controls appropriate to the type of risk of money laundering a transaction may represent as defined by each of the three money laundering stages. Legislators and regulators should not look to use a Layering control, such as the Travel Rule, to mitigate the risk associated with transactions between VASP accounts and DeFi addresses since their primary risks are Placement and Integration, and NOT Layering.

A deposit into a VASP account from a DeFi address should trigger a collection of information relating to the source and legitimacy of the funds being received, just as a bank would for an account holder's attempt to deposit a significant amount of cash into their own account. On the other hand, a withdrawal transaction from a VASP account to a DeFi address should trigger a collection of information as to the legitimate purpose of the funds being sent, just as a bank would for an account holder to attempt to withdraw a significant amount of cash from their account. And yes, transactions between VASP accounts should trigger the travel rule. However, a VASP should not be held accountable for what happens to funds that were withdrawn from the regulated financial system, just like a bank is not responsible for how cash that has been withdrawn from an account is ultimately used. For example, if a bank account holder withdraws cash, via an ATM or via branch, from his or her

[1] DeFi addresses may be managed directly by the owner or indirectly via an App or Web interface. Such interfaces are available from third-party technology providers that have no access or control over the funds held on the DeFi addresses.

account to buy a secondhand car, and he or she reports the reason for the withdrawal as such, the bank may be required to file a CTR with its regulator, depending on jurisdiction, but it is not responsible for tracing the cash or for investigating the identity of the person selling the car and ultimately receiving the cash.

Blockchain traceability is preferred to the anonymity of cash. As blockchain behavior expands beyond its speculative phase and Web3, eCommerce and remittance transactions on the blockchain become more popular, it is important that we also set triggers for the above controls at levels that are modern, reasonable and prudent. To make the control effective and efficient, we need to focus on transaction amount AND velocity, rather than just on transaction amount - as current regulations do. We need to encourage these new transactions to take place within the regulated financial system, within the VASPs, and not push them into a DeFi environment that is not regulated or protected. For example, a VASP should not have to require a buyer on an eCommerce platform to collect beneficiary information from a seller in order to complete a small blockchain payment when both parties are using VASP accounts.

Regulators, banks and pretty much everyone involved in the crypto space has an opinion about DeFi accounts. Some see DeFi accounts as a way to free money from the claws of governments. Others see them as a way for criminals and terrorists to operate more effectively. But many of us view DeFi as an incredibly innovative space with great potential to advance the capabilities of the regulated financial ecosystem on many levels, from wholesale banking to retail payments. It is critical that we regulate the space in the most appropriate way and apply the right controls to the specific risk associated with each transaction type between VASP accounts and DeFi addresses, so that we can safely enable their interoperability. ■

Blockchain Finds its Killer App in Stablecoins

Richard Crook
CEO
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While all eyes have been on bitcoin reaching all-time highs, there has been another success story in the rapid adoption of stablecoin in the real economy. Stablecoins have outpaced Visa as an alternative international cross-border payment solution. Bitcoin has proven the blockchain technology that powers this new cryptoasset to hold value in an open market. Using this crypto technology as a format for tokenizing other assets is arguably the bigger story yet to come.

International (cross-border) payments are frustrating and inconvenient

For those living and working in a G7 country accessing a dollar (USD) account and sending USD to another person or company in a G7 country has friction. Outside the G7, this friction is much worse. The rapid growth in wealth beyond the G7 leads to a growing demand for access to USD accounts and movement across borders by individuals and companies settling for goods and services outside the G7.

The customer experience of making a cross-border (international) payment outside the G7 is slow and expensive (flat fees up to $50 + a % of the payment).

Most people and companies fail at the first hurdle because access to a USD or multi-currency account is limited or restricted. Opening a bank account may take months due to the KYB/KYC onboarding process.

Once this first hurdle is passed, another appears. Your payment cannot leap from your bank account to the one you are directing it to. Your bank likely lacks a direct relationship with the recipient's bank, rather corresponding relationships with other banks. A path can be traced across these relationships connecting your bank with the recipient's bank and your money must follow this path.

AML/CTF transaction monitoring systems delay this path further notwithstanding the risk of manual checking. For fear of 'tipping off', your bank and all the banks in this series of hops are not allowed to inform you that your payment has been delayed. The manual checking can take days or weeks and involve requests for further documents. No limit exists to how long your payment can be delayed, regardless of how urgent or important it is to you.

Most payments involve one or two hops, but some involve up to four particularly if you are outside the G7.

Stablecoins offer a faster, cheaper and safer alternative for cross-border payments

When bitcoin first emerged, McKinsey was one of the first to identify that its underlying technology could be used to solve challenges with cross-border payments.

Sending a digital dollar with the ease with which you would send an email didn't take long to follow bitcoin. One of the earliest market leaders is Tether, which minted its first digital dollar in 2014 as USDT. Others have followed, with Circle being the second largest, with their USDC released in 2018.

The crypto industry was the pioneer adopter of these digital dollars, using them for cryptocurrency trade settlement. It didn't take long for other industries to recognize the value of this faster, cheaper, and safer alternative payment solution. Traditional finance institutions have been early adopters, accepting stablecoins for client inflows, and many tech native firms like Deus X Pay have helped clients adopt this alternative payment solution to settle invoices for their goods and services, ranging from software services to private jet charters, and luxury real estate to oil settlement.

According to Visa's Onchain Analytics Dashboard, there are now $192bn digital dollars issued across a range of stablecoins. Outside of the crypto industry, we have seen $5.4tn across 1.2bn transactions in 2024. The volume and transactions have consistently grown since 2019 with volume increasing 58% and transactions growing 35% over the last 12

months, accounting for around half of all stablecoin transactions.

What makes them faster, cheaper and safer?
Stablecoins are tokens built on top of one of the many public blockchains - Tron, Solana, Polygon, or Ethereum. The tokens can be sent instantly and 24/7 across these chains for the price of their respective gas fees. Tron is one of the most popular because the fee is ~$0.35, and transfers are confirmed in ~3 seconds.

A stablecoin is "a cryptoasset that serves as a medium of exchange and a store of value and is structured to minimise price volatility". The most popular are those that are pegged 1:1 against USD - eg USDT, USDC, PYUSD, USDP.

These popular stablecoins use a relatively simple smart contract deployed on multiple public blockchains. The smart contract acts as a public, open, decentralized register of wallet addresses that own stablecoin tokens.

New tokens are registered when they are minted by the smart contract owner in exchange for USD in their bank account. Tokens are redeemed when they are returned to the owner by the holder, and USD is sent to the holder. Stablecoin token holders can transfer their tokens by updating the public register themselves.

All transfers are immutably recorded in the public blockchain, and tokens can be traced throughout their entire lifecycle. This allows regulated firms, like Deus X Pay, to perform higher-quality AML/CTF transaction monitoring in real-time while maintaining a safe and positive experience for our clients when making international payments. ■

Building Trust in Digital Finance:

A New Era of Transparency and Interoperability for Digital Assets

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The global digital economy is grappling with unprecedented levels of identity-related fraud.

In early 2024, the World Economic Forum estimated that the annual cost of cybercrime could reach $10.5 trillion annually by 2025. This surge in digital crime is not only causing substantial financial losses worldwide, but is also eroding trust between counterparties, especially those operating across borders and diverse legal systems.

Solving this problem is now critical to the global digital economy's health, stability, efficiency, and viability, but the challenges stand to escalate as levels of global business cooperation and competition continue to increase – and entire sectors are transformed by the power of digitalization.

Take the financial industry, where the growing adoption of digital assets in recent years has seen them move from niche products to mainstream financial instruments. This shift reinforces the need to establish a universal and trusted way for counterparty organizations and their key representatives to consistently and reliably verify their identities digitally.

Addressing the emergence of digital assets

As financial services become increasingly digitized, data standardization is critical to help build bridges and foster interoperability between the digital asset ecosystem and traditional finance. Regulatory frameworks, such as the EU's Markets in Crypto-Assets (MiCA) regulation, emphasize the importance of clear and consistent entity identification to promote this transparency and trust.

Standardized approaches, like the Legal Entity Identifier (LEI), have emerged as essential tools in meeting these objectives. The LEI, a globally recognized identifier, provides accurate, verified information about organizational identities and ownership structures. By enhancing transparency and accountability, it enables secure integration of digital assets into existing financial frameworks. Partnerships like that of the Global Legal Entity Identifier Foundation (GLEIF) and Global Digital Finance (GDF) demonstrate the potential of adopting these standards to foster collaboration and innovation across financial ecosystems.

Towards a digital asset-agnostic global infrastructure

One of the most critical aspects of this transformation is the shift to a digital asset-agnostic infrastructure, which allows for the seamless holding, transfer, and swapping of any asset. This global infrastructure, powered by (permissioned) private and public blockchains, ensures flexibility and interoperability.

Being digital asset-agnostic means that the infrastructure can support a variety of digital assets without being tied to any specific siloed platform. This flexibility ensures that new digital assets can be integrated into the system without significant overhauls, promoting interoperability and reducing the risk of obsolescence.

GLEIF's role as a neutral, globally trusted entity ensures that these identity services remain accessible and unbiased. By supporting secure deployment of smart contracts and facilitating compliant transactions, the LEI and vLEI can help strengthen the digital infrastructure necessary for decentralized financial markets. This innovation is a cornerstone of building trust in digital finance.

Realizing a new era of transparency and interoperability for digital assets

From a customer's standpoint, the future will bring a seamless experience, where accessing multiple Financial Market Infrastructures (FMI) and bank services will be possible through one unique set of accounts and wallets. A unified approach to digital identity will allow customers to engage with financial infrastructures and services through a single access point, streamlining operations while ensuring compliance with regulatory standards. Such advancements – supported by standards like the LEI and vLEI - promise a simplified user experience alongside robust security measures.

By adopting well-defined digital asset strategies, FMIs and banks will remain competitive and shape the future of finance. By adopting in parallel a global, platform-agnostic organisational identity and verifiable credential protocol, institutions can ensure they are ready and compliant for the next wave of innovation in value and data exchange. Put simply, secure corporate identities are the key to trust and transparency. ■

GSR

Crypto Market Structure at a Turning Point:
From Inequity to Innovation for Digital Assets

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The global crypto market is at a pivotal juncture, shaped by evolving regulatory frameworks and shifting political landscapes. MiCA[1] is poised to standardize crypto regulation across the EU. Meanwhile, Donald Trump's election signals imminent changes to the SEC's leadership and priorities. These developments could radically reshape the cross-Atlantic market structure, presenting both opportunities and challenges.

Current issues in the crypto market structure
Regulatory constraints to date have led to a reliance on venture capital funding coupled with airdrops as the standard model for capital raising and token distribution. This market structure has given rise to the low float and high fully diluted valuation (FDV) paradigm, where there is limited token supply and liquidity in secondary markets when tokens are made available to retail investors and community members. At that point, community members often enter at inflated valuations only to see token prices decline as large initial token holdings of early investors (including venture capitalists and other angel investors) vest over time. Meanwhile, those early investors may realize significant gains, exacerbating inequities in the ecosystem and undermining broader participation in token projects.

This dynamic distorts price discovery, exposes users and community members to significant volatility, and erodes confidence in token ecosystems. It also perpetuates a system where institutional investors capture the lion's share of upside, leaving little room for ecosystem participants to benefit from early-stage growth. These issues have been exacerbated by restrictive regulatory environments in jurisdictions like the US, where retail investors are largely barred from participating in early-stage token offerings.

Learning from the ICO boom and bust
The Initial Coin Offering (ICO) boom of 2017-2018 demonstrated both the promise and pitfalls of crypto innovation. ICOs provided an unprecedented mechanism for startups to raise capital directly from retail investors, but they also led to fraud, misinformation, and market volatility. In the US, regulatory contraints – compounded by the SEC's enforcement-heavy stance – further curtailed ICO activity and discouraged token issuers from engaging with their broader communities. This pushed token issuers to pivot toward venture funding, exacerbating the "low float/high FTV" issue, and sidelining community members and retail participants from early-stage growth opportunities.

In response to these challenges, platforms like Echo.xyz have emerged, offering structured environments for presales in order to make tokens available earlier to community members. However, participation often remains limited to sophisticated investors due to regulatory constraints, highlighting the continued need for broader regulatory clarity and a more inclusive framework that ensures all community members can participate fairly.

MiCA and the return of "ICOs"
MiCA offers a pathway to address these issues by providing a clear legal framework for token offerings, including ICOs. By standardizing requirements for whitepapers, disclosure, and consumer protection, MiCA could revive the ICO model that enabled broader retail participation, thus allowing projects to engage more directly with their communities.

This approach could help to tackle the low float/ high FDV issue by enhancing liquidity, improving price discovery, and democratizing access to early-stage opportunities. MiCA's focus on transparency

[1]Regulation (EU) 2023/1114 of the European Parliament and of the Council of 31 May 2023 on markets in crypto-assets

and compliance ensures that these offerings occur in a regulated environment, balancing innovation with investor protection.

However, MiCA's restrictive approach to market access for non-EU firms could pose a material risk to the growth of the EU cryptoasset market. Crypto is inherently global and borderless, yet MiCA risks creating a regulatory "walled garden," which would reduce liquidity and consumer choice. If similar approaches are adopted globally, the market risks fragmenting into isolated ecosystems, undermining cross-border liquidity and decentralization. On the other hand, if jurisdictions adopt an open yet responsible attitude towards international businesses, the global cryptoasset market can become more robust and efficient.

The US remains a wild card

The US remains a wild card in the evolving crypto landscape. Under the current SEC administration, enforcement actions have largely stifled token issuances targeting ecosystem participants. A revamped SEC under Donald Trump is expected to provide much needed regulatory clarity, including potentially providing clear routes for token sales under the existing securities law framework, including Regulation A (Reg A) and Regulation Crowdfunding (Reg CF). Crucially, regulators must also clarify how utility tokens initially sold under that framework may be subsequently made available in the commodities markets to ensure liquid secondary markets.

This would address growing demand from retail participants, as evidenced by recent presales on platforms like Echo.xyz for projects such as MegaETH.[2] These presales highlight a clear appetite among users to access tokens at pre-public valuations, fostering a more inclusive market structure.

Balancing innovation and risk

While regulatory clarity can catalyze innovation, it also risks fragmenting the global market. Divergent approaches – such as Europe's embrace of ICOs versus the US's restrictive stance – could create competitive disparities. Projects may flock to jurisdictions with favorable regulations, potentially sidelining investors and community members in less progressive regions. Lessons from MiCA and platforms like Echo.xyz demonstrate that it is possible to design mechanisms that distribute upside more equitably without compromising market integrity.

Collaboration between jurisdictions that are committed to responsible innovation, and a focus on cross-border liquidity, are essential to avoid market fragmentation and to create a robust global crypto market. The stakes have never been higher. ■

[2] See https://www.theblock.co/post/330804/megaeth-funding-cobie-echo

Programmability is Central to Digital Transformation:
How Can We Support Institutional Adoption?

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Amongst the vast opportunities presented by tokenization, it is becoming clear that the ability for institutions to leverage programmable platforms is at the heart of digital transformation in financial services.

The programmable nature of smart contracts allows for the automated execution of an agreement when predetermined conditions have been met. In other words, the asset's activities and actions taken against it are *programmable*. Not only can transactions be triggered automatically and settled instantaneously, but all participants can immediately be certain of the outcome, without any intermediary's involvement or time loss. The combination of tokenization (where the asset's information, such as what it is, who owns it, and the conditions for its transfer, is integrated within the token) and programmability has the potential to enable transactions which involve a range of activities and which traditionally require multiple steps or stages to complete, to be carried out effectively, in one seamless operation.

This has a drastic impact on efficiency and costs of existing activities. It also provides an innovative environment in which to develop new activities and services. There has been a growing interest in institutional decentralized finance (DeFi), where DeFi products and technologies are underpinned by open-source software, smart contracts, and are inherently more programmable and composable in nature, relative to traditional finance solutions.

However, a lack of certainty is holding back adoption – whether from a regulatory and legislative perspective or driven by the absence of established industry standards. Certain new activities should not be shoehorned into existing frameworks, but rather may require new approaches. Such is the case for digital asset staking, for example, an activity which many regulators remain at the early stages of defining in terms of its regulatory treatment.

We welcome the progress that has been made over the past year on regulatory and legislative clarity, and those expected to develop over the course of 2025, for example, in relation to conflicts of laws, and the status of digital assets as property. We note the important work being carried out by the Law Commission of England and Wales in this regard, as well as the UK Parliament on the Property (Digital Assets etc.) Bill, introduced into the House of Lords in the autumn of 2024. Additionally, as the EU's Markets in Crypto-Assets (MiCA) regulation becomes fully applicable by the end of 2024, we look forwarding to seeing further developments of national, member state level frameworks to implement the relevant requirements.

Amidst such regulatory and legislative reform, we should not lose sight of how current regimes may be applied, especially when the digitalization in question optimizes an existing activity (rather than creating a new one). For example, many of the rules relating to digital operational resilience may already impose the relevant requirements on firms for mitigating the risks of smart contract use.

Importantly, a distinction must be drawn between regulating outcomes and use cases, as opposed to regulating the technology itself. Trust, consistency, and reliability can be driven through industry standards in lieu of new laws – a central focus of the GDF-GFMA Smart Contracts Primer.

Continued engagement between industry and public institutions, such as strong and efficient industry sandboxes, will be vital to developing a shared consensus on these activities and how they may differ from traditional financial activities.

As highlighted multiple times in the Digital Assets Summit this year, global harmony and avoiding regulatory arbitrage is paramount for sustained innovation. This issue is not new to DLT and digital

assets –many of the rules that govern financial market infrastructures were given direction at the G20 level. The issue is further emphasized by digitalization, and coordination between jurisdictions, working together with international bodies, will be crucial.

One example of this coordination is being led by International Organization of Securities Commissions (IOSCO), which has set out the recommendations for policymakers to drive consistency in regulatory standards for cryptoasset markets as well as DeFi.

Beyond the regulatory standards, there are also considerations for interoperability and development of global settlement solutions that would support the adoption of programmable platforms across financial markets. The concept of the “Finternet”, as presented by a Bank of International Settlements (BIS) Working Paper, addresses these issues by introducing a vision of the future financial system powered by DLT and smart contracts, whereby multiple financial ecosystems are interconnected with each other. It is envisioned that this would allow individuals and business to make secure, cheap, and near-instantaneous, cross-border transactions, relating to all types of financial asset, at any time.

The programmability of digital assets sits at the center of digital transformation for financial institutions. With policymakers globally focused on how digitalization is transforming financial services, we expect 2025 to be busy year for the institutional adoption of digital assets and programmable platforms. ■

2024 Review and outlook for 2025:
A Year of Institutionalization and Building a Sustainable Base for Growth

Adam McCarthy
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Kaiko

The institutions finally arrived in 2024 and have embedded themselves in the crypto ecosystem. While the launch of BTC ETFs in January might have been the catalyst for growth this year, these firms didn't stop there and the groundwork made in 2024 has set the stage for future cycles.

BTC ETFs were a roaring success, by all metrics. Smashing records across the board, with total assets under management (AUM) for the 11 funds currently over $100bn. The funds heightened the importance of the US market, with trading ticking higher during the US close, or the fixing windows for spot ETFs benchmarks.

The new products also increased demand, which no doubt played a part in BTC's meteoric rise this year, reaching $100k just over 6 months after the fourth halving. Inflows into these ETFs have persisted throughout the year at times when there were major headwinds, such as the Mt. Gox liquidations and US government selling. Essentially the funds improved liquidity making the underlying market more efficient in managing large selling pressure.

BlackRock was the big winner, signalling major institutional interest in Bitcoin and digital assets. Its spot BTC ETF has over $55bn in assets under management, after outstripping Grayscale's GBTC in a matter of months. GBTC, launched by digital asset manager Grayscale in 2013, was very much a crypto-first product and its large premiums/discounts to its net asset value meant it had limited buy-in from institutions. As such it was quickly overtaken by BlackRock this year after the ETFs launched.

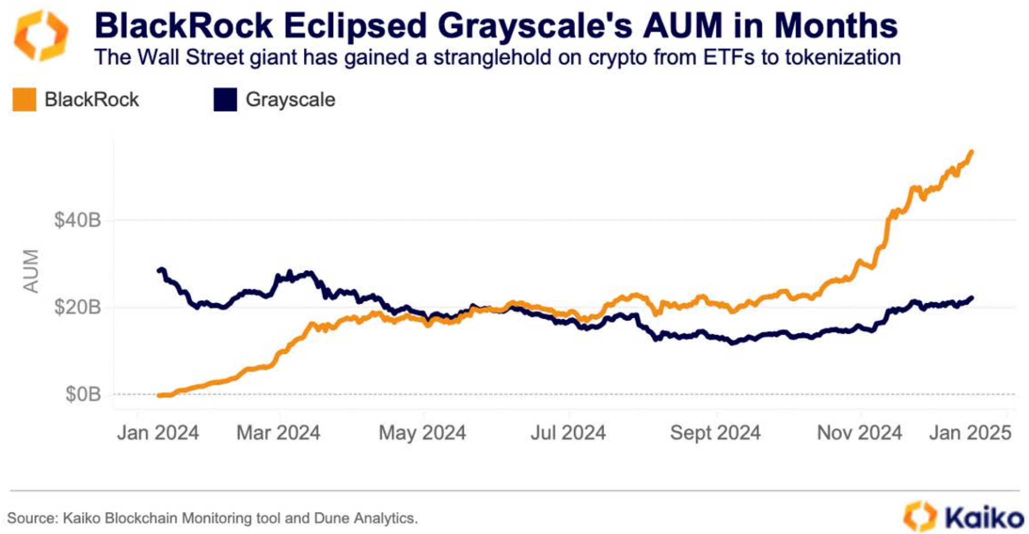
GBTC bled assets for most of the year following the firm's decision to keep fees elevated at 1.5%. In the ETF space in the US firms are accustomed to low fees and as such much of Wall Street preferred BlackRock and Fidelity over GBTC.

However, GBTC has benefited from a bull market subsidy of sorts. Despite over 400k BTC exiting the fund its dollar value is only down $6bn since January, and still above Fidelity. In other words, the gamble paid off and BTC's rise to $100k means Grayscale is likely the most profitable BTC ETF on the market, after ignoring fee waivers and staying out of the management fee war we saw prior to launch.

The next step forward in institutionalization comes from the launch of BTC ETFs options. These options launched in November and opened up more strategies for firms used to a wider universe of investible products, which should help to further embed BTC into funds strategies.

Keeping up with custody

Beyond market structure changes and growing demand the new ETF products are showing early signs of shaking up the custody space in the US. Prior to the spot BTC ETF



launch in January there was only one game in town, Coinbase. It was the sole custodian of GBTC's trust, over 600k BTC at the time.

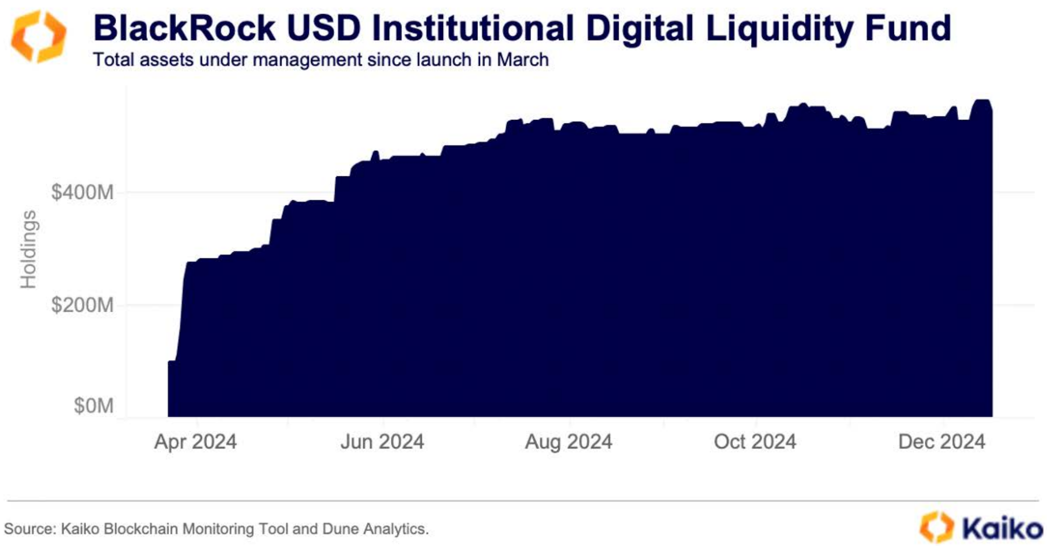
While Coinbase remains the dominant player, new firms are emerging in the space. Despite its assets under custody growing this year its share of the pie has slipped to roughly 80% since January. That might not seem like much, but the kicker is yet to come. The restrictive accounting rule the (soon-to-be former) SEC administration published in March, SAB 121, looks likely to be repealed in 2025. This will open the floodgates and bring traditional giants like BNY Mellon, State Street, and JP Morgan into play.

Fidelity custodies its own product, which has just over $20bn in assets. Other players taking a piece of the spot ETF action in the US include Bitgo, Gemini, and Anchorage .

Tokenization matters
BlackRock's on-chain tokenized fund, the BlackRock USD Institutional Digital Liquidity Fund, or BUIDL, is one of many tokenized funds launched in the past 18 months offering exposure to traditional debt instruments like US Treasuries.

Since its launch, it has quickly become the largest on-chain fund by AUM. Launched in collaboration with Securitize in March 2024, it has attracted over $540mn in inflows to date. It now operates on multiple chains after initially launching on Ethereum.

Despite the US Federal Reserve beginning its rate cutting cycle this year, it's unlikely this will impact the appeal of these tokenized funds. While the Fed did cut, the real Fed funds rate, adjusted for the Producer Price Index (PPI) – a measure of corporate pricing power – has moderately increased this year, even as the Fed has held nominal rates steady.



Beyond Bitcoin : ETH Gains Momentum
ETH ETFs began to see inflows towards the end of 2024 and the stage is set for more growth in the first half of 2025.

ETH is set to be one of the big winners from the regime change in Washington DC. While it has lagged BTC this year, the regulatory shift brought on by the changing administration in the US will significantly benefit the second largest asset by market cap. Clarity around ETH's classification, commodity or security, and on staking could be two major drivers for growth next year.

The same can be said for other assets the SEC has previously deemed to be cryptoasset securities, such as SOL, XRP, and even ADA. We've already seen some major rallies in these tokens since the election, with XRP even outperforming BTC year-to-date.

Time will tell if the industry can grow consistently in the coming months and years but this rally feels different.

The 2024 rally was not built on single points of failure – like high yield lending in 2020/21 – but instead by the arrival of established firms with risk frameworks that now include BTC and ETH. The rally is expected to extend beyond BTC and into other assets. ■

Navigating the Evolving Landscape of Tokenization: A Global Perspective

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The market's early appetite for blockchain technology led to an initial wave of interest in tokenization. However, projects struggled to gain traction and many subsequently pivoted to alternative business models or purely crypto activities until a recent surge of key global developments moved the dial forward.

Major drivers of this resurgence include increasing legal and regulatory certainty, maturing digital assets market infrastructure, and increasing convergence between traditional finance (TradFi) institutions and fintechs.

Increasing legal and regulatory certainty
Early tokenization efforts were hindered by a lack of legal and regulatory certainty, as the rapid emergence of technology enabling the on-chain representation of a broad array of assets prompted fundamental legal questions about creation, ownership, and transfer of different kinds of assets using tokens. It also prompted regulatory questions about token characterization and, for some assets, the use of regulated market infrastructures to enable issuance, custody, trading, and settlement.

Today, the landscape has changed and continues to evolve positively with, for example, jurisdictions around the world affording clarity around the property rights of digital assets, either via court judgments (Australia, Hong Kong, New Zealand, Singapore, UK) or statute (the UK's Property (Digital Assets Etc.) Bill). Moreover, market participants have joined forces with industry bodies and legal professionals to clarify the legal treatment of various forms of tokenized assets created via different legal structures, including digital bonds, equities, and fund interests.

This increasing clarity has been tailored in a way that facilitates market adoption of tokenization. For example, the Markets in Crypto-Assets (MiCA) regulation provides clear treatment for issuance, distribution, and provision of services relating to cryptoassets in the European Union and enables tokenization of both fiat and asset-referenced stablecoins. Specific stablecoin regulation has also been introduced in Singapore and is expected shortly in Hong Kong.

In the UK, the government has announced its ambition to make the UK a global hub for securities tokenization, including through regulatory initiatives like the UK's Digital Securities Sandbox (DSS). The DSS will facilitate the issuance, trading, and settlement of digital securities in the UK on distributed, programmable ledgers, through a modified regulatory framework for financial markets infrastructures. Hong Kong's Project Ensemble also provides a regulatory sandbox for traditional financial institutions and licensed digital assets firms to experiment with tokenization across various asset classes. Elsewhere, Singapore's Project Guardian has facilitated the development of pilot programmes between industry and regulators to enhance the liquidity and efficiency of financial markets through asset tokenisation and achieve broad industry alignment on tokenization frameworks and standards across diverse asset classes.

These global efforts demonstrate how clear and balanced regulatory environments are supporting innovation at scale.

Maturity of digital asset infrastructure
The maturation of digital asset infrastructure with the rise of increasingly well-established cryptoasset service providers, from retail brokers and trading platforms, to wholesale intermediaries and prime brokers, has enabled the growth of institutional-grade service providers. This, in turn, has led to comprehensive solutions addressing the security and compliance needs of regulated entities and institutional investors. Regulated financial markets infrastructures have also begun to offer trading, clearing, and settlement capabilities for digital assets that previously did not exist.

This maturation results in technological advancements, but also builds trust and reliability in digital assets. As a result, not only is institutional and retail adoption promoted through increased confidence in the broader ecosystem, but a range of technical solutions facilitate the development of new tokenised products and services leveraging blockchain technology.

TradFi convergence

As regulatory frameworks progress, the integration of digital assets with TradFi systems is gaining momentum. Just as we are seeing increased appetite from TradFi institutions for development of digital asset-related technology and products, so too are cryptoasset platforms expanding into the traditional securities markets. For example, opportunities for collaboration are evident in increasing acceptance of cryptoasset ETFs and ETPs, cryptoasset derivatives, and use of cryptoasset collateral, spurring partnerships between TradFi institutions and digital asset infrastructure providers. This represents a genuine strategic alignment between two previously distinct sectors, and – in addition to attracting increased institutional participation – again provides increased opportunity for creating new products and integrating existing assets with blockchain technology.

The path ahead

Tokenization of more complex forms of assets or rights continues to give rise to challenges, particularly when there is an element of yield or profit/return participation, or the need to deal with specific technical, practical, and regulatory challenges associated with real-world assets. As we look ahead to 2025, stakeholders have a huge opportunity to shape a more integrated and efficient financial landscape, setting the stage for long-term growth and transformation.

Adding to this dynamic landscape, the change in the US administration in January could significantly influence the regulatory environment for digital assets. Historically, shifts in US policy have profoundly impacted global financial markets, and a recalibration of tokenization policies under the new administration could act as a catalyst for broader adoption. ■

Navigating MiCA and the Travel Rule:

Balancing UX and Compliance for the Future of Crypto

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Mesh

There is no doubt that 2024 has been an incredible year for the crypto industry. With the US regulatory landscape drastically changing in posture and tone, the debut of bitcoin and ethereum ETFs, and an increased amount of financial giants and governmental bodies embracing the industry, the prices are simply a reflection of an incredible amount of momentum that has been building.

But there is one thing that has been slightly overlooked in this environment. A regulatory framework has been in the works for years and will finally take effect in one of the most important regions in the world. The Markets in Crypto-Assets regulation (MiCA) is a sweeping set of rules approved by European Union institutions to provide the crypto industry with clear laws on how to operate in the 27 EU countries.

With new rules come new challenges, and many companies operating in Europe still seem to be unprepared either from a compliance perspective or in terms of product experience. Many often forget that compliance does not exist in a vacuum and, when not properly dealt with, it can lead to shortcomings in other areas such as user experience.

The Travel Rule is a key component of MiCA. It has been introduced to enhance transparency and combat fraud in crypto transactions. According to the regulation, for every cryptoasset transfer they process, cryptoassets service providers (CASPs) must collect and verify certain information about both the sender and beneficiary – regardless of the size of transactions. In other words, they must capture identity information for the sender and recipient of every crypto transfer.

Furthermore, for transactions beyond a certain amount, facilitators must verify that the customer whose identity has been verified via traditional KYC/AML procedures controls the self-hosted wallet.

These requirements introduce a new layer of challenges for crypto companies operating in Europe, because it may require them to invest resources in burdensome compliance solutions that inherit the inefficiencies of traditional finance and expand their workforce. Ultimately, this will result in a worse experience for the end user, who has to deal with complex procedures to access crypto products.

That's why the solution for European companies dealing with this challenge lies in what is commonly referred to as "compliance by design" – a framework that achieves full compliance by anticipating the regulatory needs that will arise in the future and embedding them directly into the product.

Travel Rule is a perfect example of how compliance by design can address regulatory requirements without compromising the overall user experience.

Many firms looking to comply with the new rules may try introducing complicated systems that collect and verify customer information,exchange that customer information with counterparties, conduct due diligence on those counterparties, monitor and report any suspicious activities, and maintain records. It is easy to imagine how all of the above might not be burdensome only for the company, but also for the end user.

If, on the other hand, customers make a small, free deposit from their wallet to the platform and attest their ownership of funds, both the company and the user can be relieved of a lot of the complicated processes that would be needed to comply with Travel Rule. It is just a small crypto transaction, which functions as a cryptographic signature to ensure that information is traveling together with the funds.

As MiCA and Travel Rule usher in a new era of regulation, companies that will proactively embed compliance into their products will be better positioned to thrive and focus on other areas such as product development and business growth. By prioritizing seamless user experiences and regulatory adherence all at once, these businesses can build trust while reducing operational friction. For Europe's crypto industry, MiCA is not just a regulatory milestone; it is a chance to lead by example in shaping a more transparent and regulated financial future. ■

Building a New Alternative:
Where Trust is Verifiable and Access is Real

Hong Fang
President
OKX

The global financial system is being rewritten. With the successful launch of spot BTC and ETH ETFs, digital assets are entering the mainstream faster than ever. We are in the midst of a fundamental shift, with 69% of institutions planning to add digital assets to their portfolios in the next three years. Amid this transformation, we're focused on building infrastructure that makes crypto accessible to ordinary people and institutions alike.

The power of verifiable truth
Two years of running our Proof-of-Reserves (PoR) shows how blockchain technology makes transparency tangible for customers. Over 2 million people have used our PoR verification tool, with 100%+ reserves maintained across 22 major tokens and nearly 500,000 public wallet addresses published monthly. This shifts trust from promises to mathematical proof - verifiable by anyone, at any time.

Our security framework builds on this foundation:

- A multi-billion-dollar insurance fund protecting user assets
- SOC II compliance and platform-wide encryption
- Advanced wallet infrastructure combining security with usability
- Monthly PoR verification ensuring customers' funds are backed 1:1

Reshaping global finance
On-chain volume tells a compelling story. Stablecoin transactions now rival traditional payment networks in volume, offering significantly lower costs and faster settlement times. This isn't just about cheaper payments - it's about opening financial access to billions of people left behind by traditional systems.

Bitcoin stands as the foundation - humanity's first truly portable, divisible and verifiable store of value. As institutions and even sovereign nations recognize this reality, we're seeing a secular shift of wealth moving on-chain.

Building with purpose
Over the past year, we've launched in Australia, Netherlands, Singapore, Dubai and most recently Belgium, demonstrating our long-term commitment to building locally and sustainably. In Singapore, we've built deep integrations with local payment rails and identity verification systems. In Dubai, we're developing a comprehensive digital asset ecosystem under the regulatory framework. Each market requires patience and local expertise, but that's how real change happens – from the ground up.

The work isn't finished. We're focused on creating wallet infrastructure that's both secure and simple, making the transition on-chain easier for everyone. Between our OKX Wallet, Exchange and the broader industry's innovations, we're seeing a more mature infrastructure take shape.

Beyond finance
The on-chain revolution extends past payments. From decentralized identity to on-chain gaming and social media, we're seeing new use cases emerge that give individuals more control over digital lives. But the key remains the same: build something useful and safe.

Looking ahead
Market cycles come and go. Our mission endures: build infrastructure that works for everyone, not just the technically savvy. Make complex systems simple. Make security automatic. Make verification the standard, not the exception.

The transition to an on-chain world won't happen overnight, but it's happening. As people discover these tools, as more institutions adopt these systems and as more governments recognize their potential, we'll see this new alternative become real.

It's about creating a system where trust isn't just promised but proven, where access isn't promised but real, where power isn't just promised but verified. This is the new alternative we're building, block by block. ■

Stablecoins: The New Frontier in TradFi

Geoff Kendrick
Global Head of Digital Assets Research
Standard Chartered

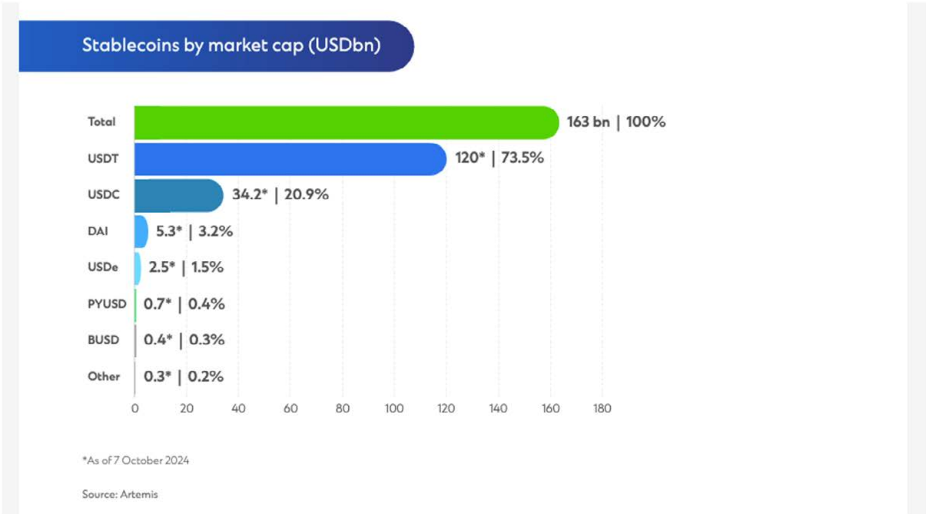
Nick Philpott
Co-Founder and Head of Partnerships
Zodia Markets

The Committee on Payments and Market Infrastructures (CPMI) has been working to arrest the decline in correspondent banking globally since 2015. The latest progress report highlighted that *'significant progress will be needed* to meet the targets across all market segments'. The growing use of stablecoins presents a practical solution to help address the challenge of improving cross border payments.

Stablecoins are digital assets designed to maintain a stable value relative to a national currency or other reference rate (the vast majority of stablecoins are pegged to the USD). Fiat-backed stablecoins, for example, hold one-for-one reserves in cash or cash equivalents of the currency backing the coins. The largest fiat-backed coins are Tether (USDT) and USD Coin (USDC), with 73% and 21% share of total market capitalisation, respectively.

Expanding beyond their original purpose as a means of settlement for crypto users and traders, stablecoins are becoming a general-purpose payment instrument used for everyday transactions in many parts of the world.

A recent joint report by Castle Island Ventures, Brevan Howard Digital and Artemis on the use of stablecoins in several emerging markets found that stablecoins are being adopted for cross-border payments, payroll, trade settlement, and remittances. It also noted the accelerating adoption of stablecoins for payments, currency substitution, and access to high-quality forms of yield. For non-crypto-based stablecoin activities, the most popular use of stablecoins is currency substitution (69%), followed by paying for goods and services (39%), and cross-border payments (39%).



Bridging the gaps in TradFi

Stablecoins can enhance cross-border payments by delivering faster, cheaper, and more transparent transactions. Traditionally, these are settled through centralized national settlement systems such as Fedwire in the US that link up with other settlement systems through infrastructure maintained by various service providers such as the correspondent banking system and SWIFT.

Fees in these settlement systems are generally charged based on membership fees, transaction charges, and volume-based discounts while settlement is governed on a time basis that is opaque to most customers. It is, in effect, based on the 'first come, first served' principle with no dynamic fee mechanism to accelerate settlement for those willing to pay more, and vice versa.

Stablecoins that run on permissionless blockchains allow users to pay higher gas fees - the charge for successfully conducting a transaction on the blockchain - or instruct their custodians to do so for faster transaction settlements. If these additional fees incentivize increased mining or staking power on the blockchain, the resulting enhancement in capacity and security benefits all participants.

In addition, permissionless blockchains provide transparency by allowing customers and custodians to track the status of transactions in real-time. This level of visibility offers a significant advantage over traditional wholesale cross-border settlement systems, which often lack such transparency and direct recourse.

When it comes to speed, stablecoins enable the cross-border transfer of an asset within seconds or minutes compared to the days that the correspondent banking system can take. This is particularly important in emerging markets, where the Bank for International Settlements has noted a decline in active correspondent banking relationships. In so doing, stablecoins are also helping fulfil one of the early tenets of digital assets – creating greater financial inclusion globally.

Real-life use case of efficient cross-border transactions

As they continue to gain traction in the financial ecosystem, stablecoins are poised to transform how individuals and businesses conduct cross-border transactions and improve on the limitations of traditional finance.

A recent use case of stablecoins emerged when the US Securities and Exchange Commission mandated a shift to T+1 settlement in May 2024 for American and Canadian equity transactions, which has posed challenges for global investors, especially those outside the Americas. Under the previous T+2 settlement regime, investors had ample time to hedge FX related to US equity transactions, benefiting from favorable liquidity during European hours.

The shift left eastern hemisphere equity traders in places like Australia or Singapore with little time to match and settle their FX hedges, potentially forcing them to consider pre-funding transactions or altering execution and settlement strategies.

With the use of stablecoins, however, investors can reduce the potential risks from switching to a T+1 settlement. Investors can estimate USD proceeds, purchase stablecoins linked to various Eastern hemisphere currencies during Asian hours, and use them to settle transactions 24/7 via blockchain platforms. This eliminates constraints of traditional settlement cut-off times and provides synchronous settlement with the USD needed for equity purchases.

While the advantages of using stablecoins for cross-border transactions are clear, risks remain and will need to be managed. However, because many stablecoins have similarities with deposits, e-money, and money-market funds, some of the frameworks used to assess the risks around those instruments can be applied, such as those involving credit, market, custody, and operational risks.

Financial institutions leading in this space like Standard Chartered – through its relationship with Circle, a major USD stablecoin issuer; its digital asset brokerage Zodia Markets; and its digital asset custody businesses, Zodia Custody and in the Dubai International Financial Centre – are poised to support the industry understand the risks involved, and effectively harness this technology to their benefit.

For more on this topic, read our whitepaper "Stablecoins: The first killer app". ■

2024 – A Pivotal Year for Digital Currencies and Tokenized Assets:

Progress, Challenges, and the Road Ahead

Jack Fletcher
Head of Policy and Government Relations (Digital Currencies)
R3

2024 has been a year of great activity in digital currencies and tokenized real-world assets, with public and private organizations collaborating to tackle the challenges of adoption at scale.

Digital currencies - private and public

Where once central bank digital currency (CBDC) discussions were dominated by retail, this year has seen a highly encouraging examination of the wholesale and payment infrastructure.

In the UK, the RLN project highlighted the benefits that DLT-based infrastructure can deliver where R3's Corda provided the technology layer alongside Quant, DXC and Coadjute, to a UK Finance-led initiative involving 11 of the country's largest banking and payments players. In the Eurozone, Project Leonidas also took center stage with R3 participating in this initiative testing the European Central Bank's wholesale CBDC models with ABI Labs, Banco d'Italia and Banque de France.

The project highlighted the growing recognition of the role that central bank money plays in the development of tokenized markets. In Switzerland, the Swiss National Bank and SIX Digital Exchange (SDX) completed the latest phase of Project Helvetia - a program of work exploring the settlement of trades undertaken on the SDX platform, which runs on Corda.

The Gulf region continues its ambitious path, with the United Arab Emirates Digital Dirham project having conducted live transactions in retail and cross-border scenarios throughout 2024.

Path to production

A focus of 2024 has been the integration of DLT-based infrastructures with existing legacy systems. These efforts, whilst highlighting the complexities of achieving production-grade deployments, have also enabled central banks and market participants to further clarify their roadmaps for adoption. 2024 has also seen a transformation of the narrative around CBDCs. It appears no longer a question of "if" but rather "when" and "how" they will be deployed in wholesale settlement.

Continued advances in asset tokenization have further reinforced the demand for settlement solutions backed by central bank money or regulated alternatives. These innovations promise to unlock the full potential of tokenization, including instant settlement through delivery-versus-payment (DvP) and greater automation via programmability.

US regulatory shift in 2025

The outcome of November's US elections has set the stage for greater regulatory clarity in 2025. A fragmented and divergent regulatory landscape has led to numerous legal disputes and unhelpful market uncertainty. With one party now in control of Congress and the White House, long-awaited legislation on stablecoins and the broader crypto market - such as the FIT21 proposal - is poised to advance.

For the relatively nascent use of DLT in US financial markets, in large part constrained by regulatory uncertainty, establishing a regulatory framework will mark a critical turning point. The EU's MiCA regulation offers a useful counterpoint, although the exact contours of US policy remain undecided. Nevertheless, 2025 is expected to catalyze US market activity, influencing wider global trends.

Cross-border activities

The deficiencies in cross-border transactions are well-recognized - a challenge not only for technology but for policy reform too. Against a geopolitical backdrop of international conflict, issues of sovereignty run alongside efforts to draw technical solutions and regulatory standards closer together.

This year, the Bank of International Settlements (BIS) launched Project Agorá, a groundbreaking initiative bringing together over 50 public and private entities to explore innovation in the correspondent banking model.

The project's development of a unified ledger model represents a significant step toward creating a more efficient, coordinated infrastructure for cross-border payments. Simultaneously, the BRICS nations have signaled their intent to play a larger role in this space, adding another layer to the evolving global landscape.

Conclusion

2024 has been a pivotal year for digital currencies and tokenized assets, with substantial progress across wholesale CBDCs, regulatory advancements, and cross-border payment innovation. Projects like RLN, Leonidas, and Agorá exemplify how public and private sector collaboration is overcoming barriers to adoption, laying the groundwork for a more integrated and efficient financial system.

Looking ahead to 2025, we see the focus shifting to production-grade implementations, particularly in the US, where regulatory clarity could unlock significant market potential. Meanwhile, the growing adoption of tokenization and DLT-based infrastructure will continue to reshape global financial markets, delivering innovation alongside enhanced efficiency, security and resilience. ■

The Next Wave of Digital Finance:
Why Custody is Key and How Institutions Can Prepare

Cassie Craddock
Managing Director, UK and Europe
Ripple

Blockchain and digital assets are permeating various industries as real-world use cases expand and progressive regulatory regimes come into play.

Across financial services, institutional adoption of digital assets is gaining momentum, driven by new use cases and subsequent revenue streams, as well as efficiency gains enabled by blockchain technology.

Institutional-grade digital asset infrastructure is essential for realizing blockchain's potential. Digital asset custody is one component of this infrastructure, and it is integral to adoption growth, security, stability, and compliance with global industry standards and regulations.

The value of cryptoassets held in custody solutions is expected to reach $10T by 2030, and 10% of all financial assets are expected to be tokenized by 2030.

There are a few custody options on the market, fit for different purposes, and institutions need to take a few considerations into account to select the appropriate provider for their business.

Institutional use cases
Real-world asset (RWA) tokenization is poised to transform finance. Many institutions are already leveraging blockchain technology to enhance established financial use cases like payments, treasury, staking, and trading.

With faster global transactions, real-time settlement, increased transparency, and 24/7/365 market access, the opportunities to improve financial services with blockchain are vast.

Outside of finance, tokenization will support emerging business models and applications - from stablecoins and real estate, to tokenizing carbon credits and electric vehicles, to luxury physical assets like jewels and artwork. The many possibilities are quickly becoming reality.

Digital asset custody is the linchpin for institutions realizing these efficiency gains, innovative use cases, and new revenue streams.

In this early stage of institutional adoption, ensuring the right choice of custody solution can provide the highest level of security and ability to meet regulatory compliance requirements. Doing so is fundamental to foster credibility and trust across the digital asset landscape.

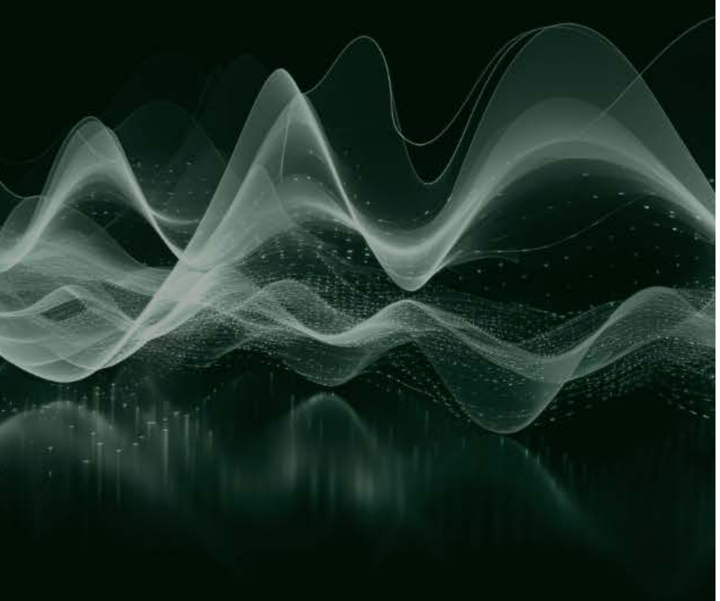
Traditional custody vs digital asset custody
In traditional finance, custody refers to the safekeeping of conventional financial assets like cash and securities. This can be carried out by a bank or a third-party financial institution like a trust company or a brokerage firm. Responsibilities include asset protection, regulatory compliance, and related asset management services.

Digital asset custody providers play a similar role but focus on securely storing cryptographic keys (also known as "private keys" or "secret keys") - required to access and manage these assets.

Digital asset custody can broadly be categorized into:

1. **Managed custody:** Not unlike traditional custody solutions, institutions place management, storage, and movement responsibilities on a third party.
2. **Self-custody:** Institutions manage digital assets independently without relying on a third party for support.

Considerations for institutions
Similar to the advent of the internet, there may be a significant learning curve for institutions on the different types of digital asset custody solutions, regulatory constraints, and what approach is best depending on the business model.



Each custody option has distinct trade-offs.

First, managed custody may require less operational overhead, as the third-party provider is responsible for storing and safeguarding private keys. While this reduces complexity for institutions, it introduces risk by outsourcing control of the assets. Furthermore, standardized approaches can hinder scalability, potentially restricting institutions' ability to adapt to evolving needs. Though managed custody solutions may offer quick onboarding, they can limit long-term growth and flexibility.

With self-custody, institutions can retain ownership and control over their private keys, enabling tailored, scalable solutions for specific business requirements. However, not all self-custody solutions are created equal. While some can appear cost-effective, flexible and out-of-the-box at initial deployment, the reality is those solutions oftentimes become difficult and expensive to scale alongside your business, and lack the necessary security and compliance requirements of institutional players such as global custodian banks.

This constitutes what many call the build vs. buy dilemma - financial institutions must evaluate whether to build proprietary solutions or collaborate with established custody providers. Partnering with a trusted, experienced provider can help institutions navigate the digital asset ecosystem while future-proofing their financial infrastructure. The right partner will offer solutions that meet current demands and evolve alongside the institution's goals and market developments.

The path forward

As the crypto industry continues to rapidly evolve, custody providers must continue to innovate. They will need to adapt and grow alongside the market to best serve institutions and emerging use cases.

Equally, institutions must carefully consider which digital asset custody solution can help them meet their current and future goals. Choosing the right provider can empower institutions to confidently navigate the digital asset ecosystem and prepare them for the future of finance. ■

Tokenized RWAs Demand a New Era of Enterprise-Grade Custody

JP Aumasson
Chief Security Officer
Taurus

The tokenization of real-world assets (RWAs) opens new opportunities for efficiency, liquidity, and accessibility. However, it also introduces challenges for institutions responsible for managing these assets. Traditional custody solutions – focused on secure storage and transaction facilitation – must now evolve to address the unique complexities of tokenized RWAs.

Managing tokenized RWAs isn't just about safeguarding cryptographic keys. It requires supporting the entire lifecycle of diverse, regulated assets. Institutions managing millions or billions in RWAs cannot rely on basic tools like browser extensions or single-signer wallets. They need custody solutions that seamlessly integrate with institutional systems, meet global regulatory standards, and support operational workflows.

Why custody solutions must evolve for tokenized RWAs
Custody solutions for tokenized RWAs must go beyond safeguarding cryptographic keys and facilitating token transfers. They should provide full-scale asset lifecycle management (ALM), which includes:

1. Issuance, management of corporate actions, and redemption - Custody platforms must manage RWAs from their initial issuance to ongoing lifecycle events, such as updating property ownership, splitting equity stakes, distributing dividend, or redeeming physical assets for token holders.

2. Support for a range of asset types
Custody solutions must handle both fungible RWAs (e.g., tokenized gold, renewable energy credits) and non-fungible RWAs (e.g., tokenized real estate deeds, art, or patents). ALM should be flexible enough to manage a variety of RWAs while ensuring uniform security and operational standards.

3. Cross-border compliance
Tokenized RWAs often involve global markets, requiring custody solutions to address diverse regulatory requirements across jurisdictions. Platforms should automate compliance processes, ensuring RWAs are issued, transferred, and managed in line with regional laws like property ownership regulations or commodity trading standards.

4. Smart contract flexibility
Custody solutions must also be compatible with the underlying technologies of RWAs, including:

- **Standard smart contracts:** Established token models for widely used tokenized assets, such as the CMTAT contract.
- **Bespoke smart contracts:** Tailored agreements for specific clients or assets, typically built atop a standard template.
- **Built-in token formats:** Supporting RWAs may rely on token creation mechanisms natively supported by a ledger technology, distinct from a "smart contract".

5. Enterprise-grade security controls
Platforms should implement stringent controls for high-stakes operations, such as:

- Transfers and redemptions of tokenized RWAs,
- Minting and burning of tokens tied to physical assets,
- Access controls and validation mechanisms to ensure secure, authorized transactions, and
- Seamless integration with institutional systems without requiring custom development.

Addressing security risks in RWA custody

As the scope of custody solutions for RWAs expands, so do the associated security risks. Protecting tokenized RWAs demands a combination of robust security, procedural governance, and rigorous auditing which include:

1. Hardware Security Modules (HSMs) and/or Multi-Party Computation (MPC)

Both technologies can support secure cryptographic key management, offering distinct security properties. These must be augmented by robust controls, including code reviews, penetration tests, and strict configuration oversight.

2. Transparency and auditability

Custody solutions should strive for simplicity in deployment, transparency in operation, and regular audits to ensure ongoing compliance and security.

3. Governance and access control

Custody platforms must enforce strict governance rules, ensuring only authorized users can initiate asset-related operations.

Future-proofing custody solutions for tokenized RWAs

The future of digital asset custody lies in combining secure storage with comprehensive servicing for tokenized RWAs. This includes supporting full lifecycle events, from ownership transfers and corporate actions to cross-border compliance. For RWAs, this also means aligning with the unique characteristics of physical assets, such as redemption logistics (e.g., redeeming a gold token for physical gold) or jurisdiction-specific property laws.

High-security storage environments, like HSMs, remain indispensable, but their success depends on integration with robust asset servicing and operational controls. Ultimately, custody solutions that prioritize both security and adaptability will be best positioned to support the growing demand for tokenized RWAs in modern financial markets. ■

Unlocking Digital Asset Potential:
The Role of Trust and Compliance

Gary Liu
CEO & Co-Founder
Terminal 3

Over the past few years, we have witnessed growing interest and adoption of regulated digital assets across use cases. Governments, enterprises, and investors have all been paying attention to how regulated digital assets might disrupt legacy financial systems.

Digital currency has the potential to power entirely new industries and economies. However, additional innovation is needed before regulated digital assets can truly scale.

The anonymity inherent on the blockchain has led to its reputation as a technology for money launderers, causing many regulators to shy away from embracing digital assets and Web3. Many of the compliance requirements created by global regulators, like the FATF Crypto Travel Rule, compete directly against the ethos of data privacy and decentralization held by the Web3 community.

There needs to be a framework in place that both embraces the possibilities of blockchain technology while respecting the need for trust architecture in Web3 to keep the ecosystem safe.

Meeting strict regulatory requirements
Transactions on the blockchain are transparent and immutable, but also inherently anonymous—user identities stay hidden (except for their wallet addresses and DIDs), while their activities are public. While this enhances user privacy, regulatory requirements to conduct customer due diligence exist for good reason, and current digital asset infrastructure is unsuited to fulfill anti-money laundering (AML) or counter-financing of terrorism (CFT) obligations.

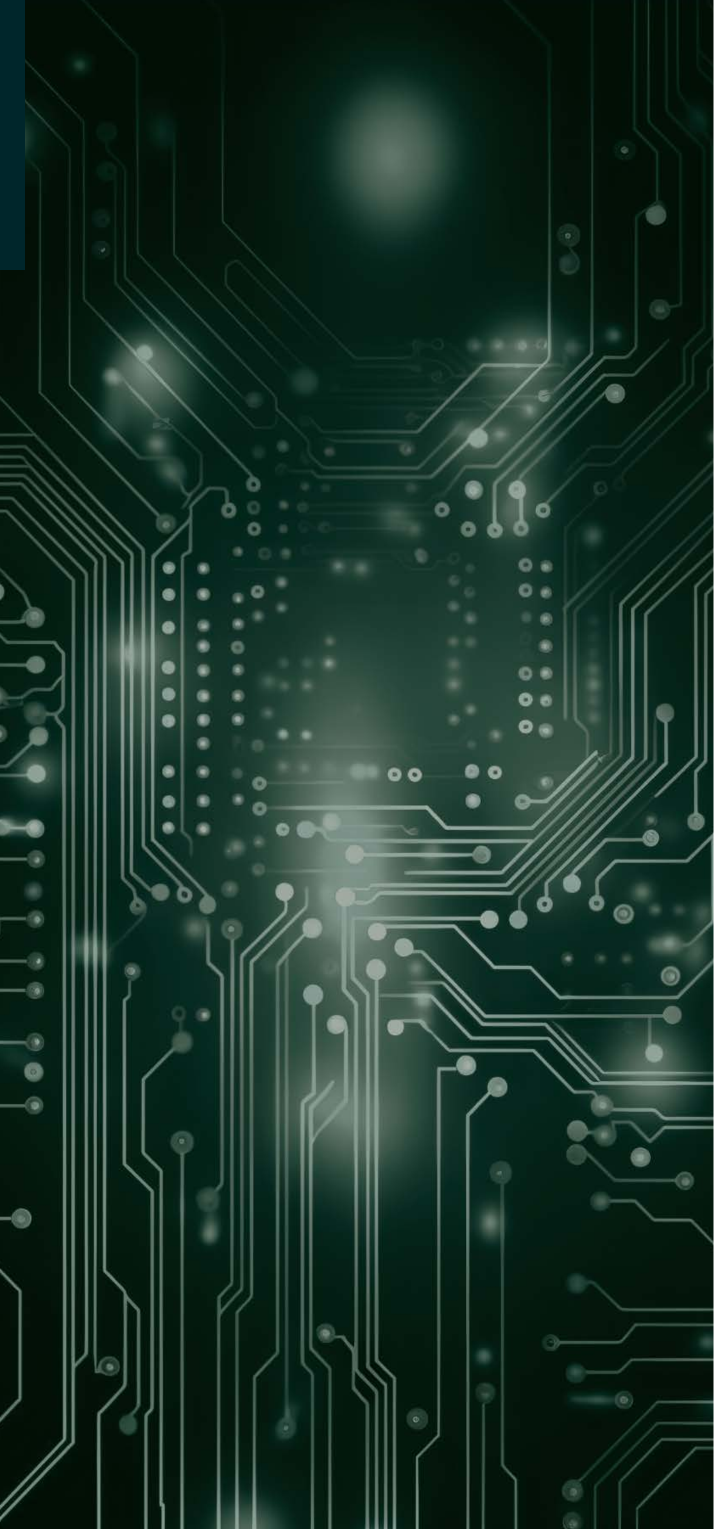
Regulators have sought to solve these problems with new rules, like the Crypto Travel Rule, which requires virtual asset service providers (VASPs) to pass customer data, including names and addresses, to a receiving VASP during transactions. Modeled after wire transfer requirements, this rule was created without regard to the information that is actually recorded in an on-chain transaction. Now, institutions that wish to engage with digital assets are saddled with the task of building or adopting new systems that are contradictory to the underlying design of blockchain for the sole purpose of satisfying the Travel Rule, while most of these new 'solutions' actually violate global user privacy and security laws.

By establishing the true identities of users through KYC, digital asset platforms can screen for potential illicit activities just like traditional financial institutions. But unlike traditional KYC, privacy-preserving KYC solutions powered by Verifiable Private Identities (VPIs), can provide a secure and auditable way to onboard and verify customers while their identity remains publicly anonymous.

VPIs provide a tamper-resistant audit trail of customer identities, transactions, and compliance-related information. In the event of regulatory audits or investigations, platforms can leverage Verifiable Credentials to demonstrate compliance, securely access identity data, and assist with official inquiries.

The bridge between regulated finance and Web3
Many large institutional investors remain cautious about entering the digital asset space due to concerns over regulatory compliance, custody, and market maturity. Without trusted and verified identities that are interoperable across platforms, institutions will remain hesitant to engage. The lack of institutional participation limits the inflow of capital and liquidity that is necessary to scale both the size of the crypto markets and also the scale of users across Web3.

It is also no secret that there are many anonymous bad actors using blockchain technology to commit financial crime. However, being able to verify a counterparty before making transactional decisions can greatly reduce the risks of fraud. Verifying identities will make it significantly more difficult for bad actors to operate because the ecosystem will begin to expect and demand genuine credentials



even for decentralized transactions where identities can and should remain publicly anonymous.

Terminal 3 believes that everybody has a right to privacy, which includes the right of ownership over your own information and selective disclosure. However, this right should not be interpreted as a free pass for bad behavior under the demand of anonymity. By implementing a trust system featuring decentralized identities and verifiable credentials, regulated digital asset markets can make sure that institutional-grade privacy and public anonymity can be simultaneously achieved, reducing fraud while protecting users.

Conclusion

Digital assets have expansive potential to improve the global economy and increase equity. Yet, without verifiable identity assets that meet global compliance and security requirements, it will be difficult to convince regulators and institutions to fully accept a decentralized economy. Conversely, traditional KYC and digital credentials fail to meet the privacy expectations of the Web3 community.

Therefore, identity and trust architecture are essential for overcoming both compliance and regulatory issues, as well as compliance and anonymity concerns for a global digital asset economy. Trust is one of the foundational building block for a more interoperable, secure, and equitable global financial system without compromising on user privacy and security. ■

Breaking the Silos:
The Path to Shared Liquidity with ERC-3643

Luc Falempin
CEO
Tokeny

Daniel Coheur
Co-Founder and CCO
Tokeny

Liquidity drives markets. Yet, in tokenized real-world asset (RWA) and securities markets, liquidity remains trapped in silos, unable to reach its full potential. Distributors operate as isolated ecosystems, and investors are limited to closed networks. As financial services progress on-chain, the question underpinning how to better facilitate this adoption is clear: how do we unlock true liquidity and scale the market?

The pain of siloed liquidity
Today, tokenized markets operate in isolation. Distributors list assets on their platforms, but each platform functions as a closed ecosystem, limiting liquidity to its internal investor base. An investor placing an offer on one distributor's platform relies entirely on that platform's order book to find a counterparty.

This fragmentation stifles market activity. Offers go unmatched, trades are delayed, and assets remain underutilized. Tokenization and its underlying technology promises to solve these inefficiencies, rather than exacerbate them. The issue is not with the concept of tokenization, but in evolving our understanding of how liquidity functions on-chain - a paradigm fundamentally different from anything we have seen before.

Shared liquidity is the future
On-chain liquidity is supposed to be shared. It breaks down silos, creating a global marketplace where offers flow seamlessly across platforms. Distributors still maintain their unique platforms and investor relationships but can now tap into a dynamic and giant order book shared by the entire ecosystem.

The benefits of shared liquidity are profound:

- **For investors:** Access to a global pool of liquidity without leaving their trusted distributor's platform. They see more opportunities, experience faster transactions, and benefit from a more vibrant market.
- **For distributors:** An expanded role as enablers of global liquidity. They can curate assets for their investor networks while participating in a larger and more active ecosystem.
- **For issuers:** Increased market activity and visibility for their assets, unlocking value and accelerating adoption.

ERC-3643: The open-source standard enabling market liquidity

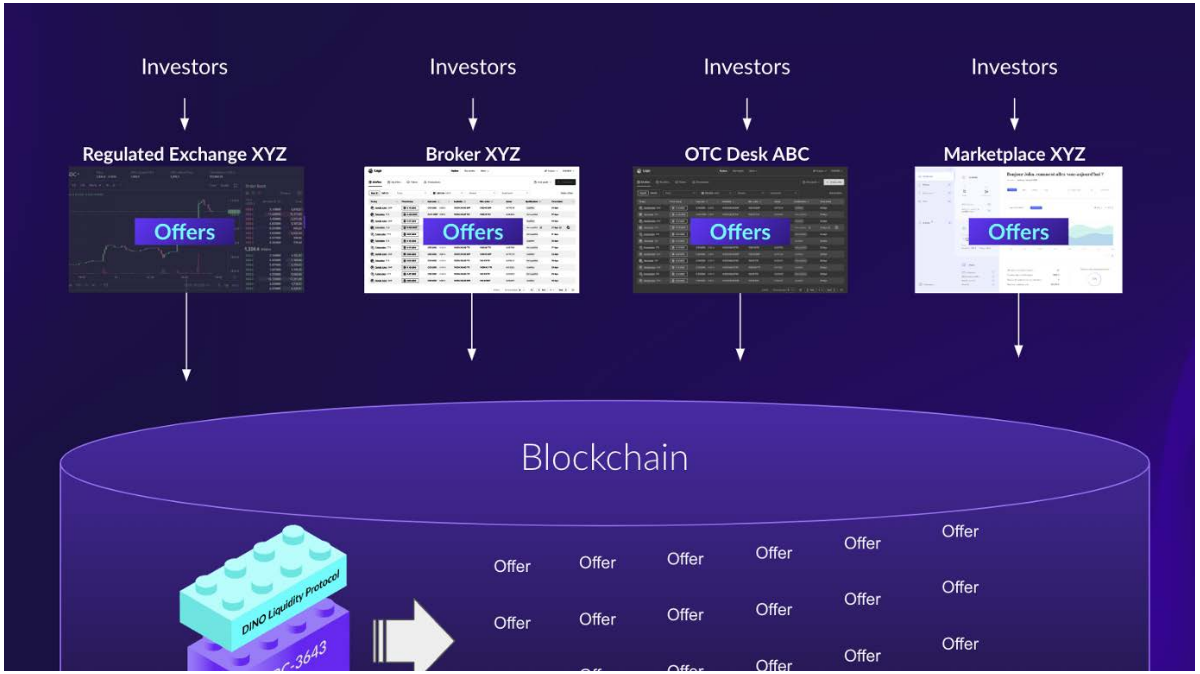
The ERC-3643 standard enables shared liquidity by allowing issuers to issue, manage, and distribute permissioned tokens. It enables compliance, composability, and interoperability.

- **Built-in compliance:** Compliance is embedded directly at the token level. ERC-3643 tokens include transfer restrictions and identity-based validation, ensuring that only eligible investors can participate. Unauthorized users and transactions will be denied automatically.
- **Interoperability:** ERC-3643 is built on top of ERC-20, making it interoperable directly with the entire EVM ecosystem. It brings a standardized compliance layer to ensure seamless and compliant interaction across platforms.
- **Composability:** ERC-3643 is modular and adaptable. It can add additional functionalities by combining them with other smart contracts, such as the DINO liquidity protocol, which allows investors (directly or via distribution platforms) to publish Delivery vs. Delivery (DvD) offers on-chain.

Shared DvD offers: Redefining liquidity as we know it

The DINO liquidity protocol transforms the blockchain network into a distributed marketplace, where distributors connect and seamlessly transact together, without sharing their clients.

The most fascinating aspect of the shared order book is the self-executing DvD smart contracts that power ERC-3643 token offers, enabling complete on-chain automation. By redefining liquidity and breaking down silos, they transform blockchain into a seamlessly interconnected global marketplace.



Once investors publish a DvD offer, it instantly becomes visible across all distribution platforms. When a buyer accepts the offer, whether on the same platform or a different one, the DvD smart contract verifies everything:

- **Eligibility:** The buyer's onchain identity is validated to ensure compliance.
- **Compliance rules:** Transfer restrictions and conditions are automatically enforced.
- **Balance check:** The buyer's wallet is checked to confirm sufficient funds.

Once all conditions are met, the transaction is settled instantly, without counterparty risk or intermediaries.

This is not only a faster way to trade, but also a completely new experience. Investors can participate in secondary trading with the simplicity and speed of an e-commerce transaction. Click. Trade. Done. DINO turns blockchain into a global marketplace where liquidity flows freely, trades are seamless, and markets are always active.

Shared Standards, Shared Success
The tokenized markets are advancing rapidly, driven by the adoption of shared standards that foster trust, compliance, and operational efficiency. ERC-3643, supported by major financial and regulatory institutions like MAS, ESMA, Citi, JPMorgan Chase, Global Digital Finance and Deloitte, has emerged as a cornerstone of this progress and exemplifies industry collaboration in creating a unified framework for issuers, distributors, and investors. Its success underscores the importance of standardization in unlocking liquidity, reducing market fragmentation, and enabling a more efficient, interconnected financial ecosystem. ■

2024 – The Year That Banks Went Crypto?

Ari Redbord
Global Head of Policy
TRM Labs

Isabella Chase
Senior Policy Advisor, EMEA
TRM Labs

Over the past few years, financial institutions (FIs) have increasingly recognized the potential of digital assets, responding to consumer demand and the innovation opportunities they present in financial services.
While this engagement has been gradual, it is driving a significant transformation in the global financial landscape, especially as banks begin to integrate digital asset services and blockchain technology into their operations. As institutions move into this space, many are faced with a surprise - just like the efficiency gains for financial products, compliance on blockchains is easier, faster and more suitable than ever before.

Banks embrace digital assets
The approval of Bitcoin Exchange-Traded Products (ETPs) by the U.S. Securities and Exchange Commission (SEC) in January 2024 marked a turning point for banks. The move by the SEC demonstrated that digital assets were becoming more accepted in mainstream finance, encouraging FIs to develop new strategies to engage with digital assets.

Opportunities in digital assets for financial institutions
FI engagement with digital assets presents several opportunities:

1. **Banking services for crypto businesses:** Banks provide essential services to crypto businesses by acting as the gateway between digital assets and fiat currencies.

2. **Tokenization:** Tokenization is the process of creating a digital representation of an asset on a blockchain. For FIs, tokenization offers benefits such as increased liquidity and transparency, as well as cost efficiencies in asset management.

3. **Private wealth services**: Some financial institutions serve high-net-worth individuals with significant wealth from crypto-related activities. Verifying the source of this wealth and mitigating risks from crypto transactions is essential to avoid reputational damage and ensure regulatory compliance.

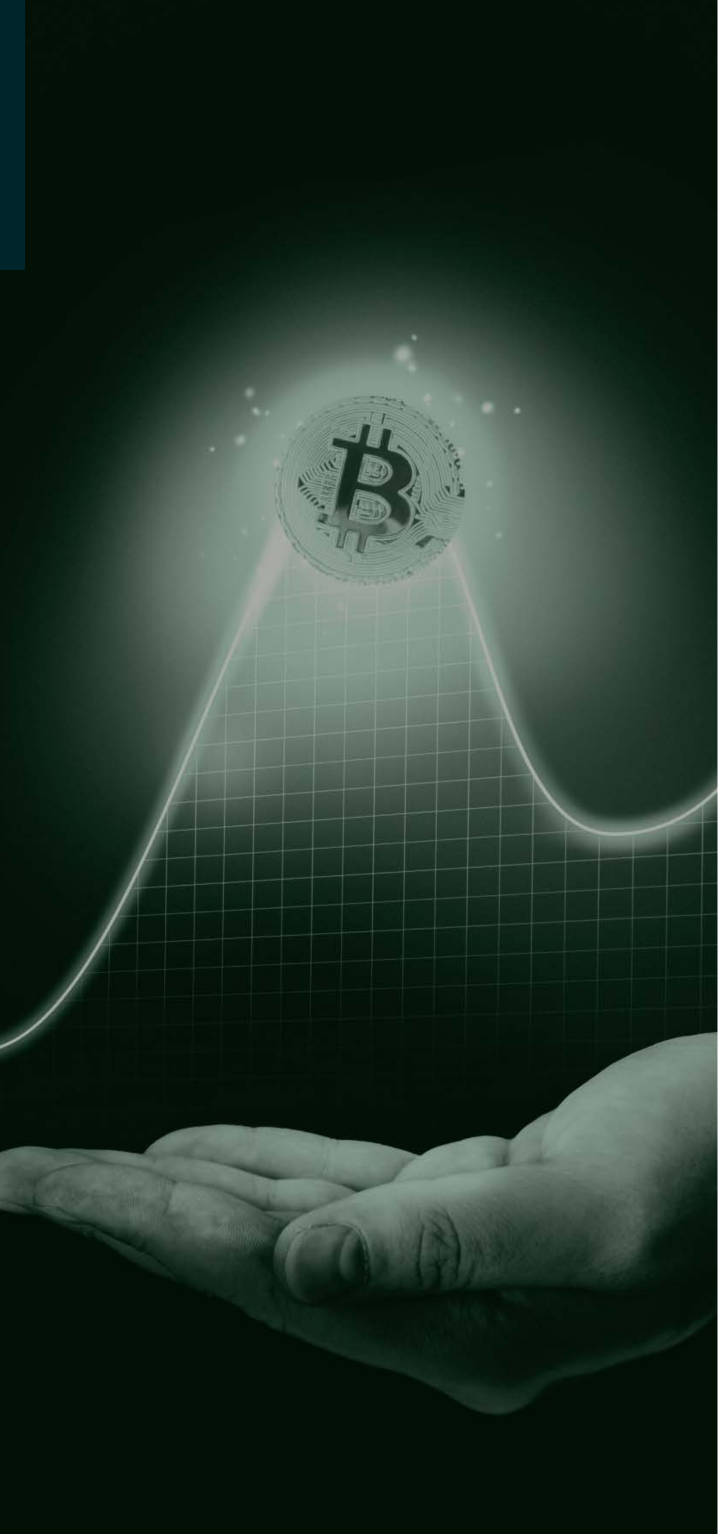
4. **Digital asset custody:** With rising market demand for digital assets, many FIs are developing digital asset custody services, allowing customers to buy, sell, and transfer assets like Bitcoin and Ethereum. This role, however, also brings added responsibilities for FIs to monitor AML risks and compliance with sanctions regulations.

Blockchain intelligence and compliance
Blockchain technology itself offers significant advantages for regulatory compliance. Its transparency, traceability, and immutability provide financial institutions with tools to manage risk effectively and efficiently. Blockchain intelligence - analyzing on-chain data to mitigate risk - can help FIs maintain robust compliance with regulatory requirements, streamline their operations, and detect financial crime.

1. **KYC and AML compliance:** Blockchain intelligence enables financial institutions to perform thorough Know-Your-Customer (KYC) and Anti-Money Laundering (AML) checks. By analyzing blockchain data, institutions can trace the origin of funds, detect suspicious activities, and ensure that customers' transactions align with expected patterns.

2. **Real-Time transaction monitoring:** Blockchain intelligence allows FIs to monitor screen transactions before they settle and monitor transaction in real-time, detecting anomalies and suspicious behavior that may indicate fraud or non-compliance. This capability helps ensure the integrity of financial systems and enables FIs to meet regulatory requirements efficiently.

3. **Risk management:** By leveraging blockchain intelligence, financial institutions can assess the risks associated with digital assets, such as potential market manipulation or involvement with high-risk jurisdictions. Understanding these risks allows FIs to implement appropriate controls and safeguards.



Best practices for engaging with digital assets

To make the most of the compliance gains possible on blockchains and safely navigate the digital asset landscape, financial institutions should adopt best practices such as:

1. **Creating centers of excellence (CoE):** Establishing internal teams dedicated to digital assets helps FIs centralize their expertise and manage risk consistently across their business lines. These centers can develop policies, provide training, and drive best practices for engaging with digital assets.
2. **Building for scalability:** Given the volatility of the crypto market, institutions need to ensure their compliance programs can scale to handle sudden surges in transaction volumes. Automated processes can help FIs efficiently manage the ebb and flow of digital asset activities.
3. **Focusing on risk, not just regulation:** The digital asset regulatory landscape is constantly evolving, but risks can change even faster. By focusing on managing emerging risks rather than simply complying with existing regulations, FIs can better protect themselves from potential threats and maintain a strong compliance posture.

Conclusion

As the integration of digital assets into traditional banking continues, financial institutions are increasingly embracing blockchain intelligence and innovative strategies to manage risks and ensure compliance. The transparent and immutable nature of blockchain offers significant advantages in detecting financial crime, making it a powerful tool for FIs as they engage with digital assets.

By adopting best practices such as establishing Centers of Excellence, building scalable compliance programs, and focusing on risk management, FIs can capitalize on the opportunities presented by digital assets while safeguarding against potential risks. As the digital finance ecosystem continues to evolve, the ability to adapt and innovate will be crucial for financial institutions seeking to thrive in this new landscape. ■

Hong Kong's Web3 and Digital Assets Landscape

Peter Brewin
Partner, PwC and W3H Advisory Committee Member
W3H

Jeffrey Tchui
Co-Chair, Web3 Harbour Enterprise Subcommittee
W3H

Hong Kong is rapidly emerging as a global hub for Web3 and virtual assets, driven by a series of strategic initiatives and regulatory advancements. The Hong Kong government, in collaboration with industry participants, is actively fostering innovation and investment in the Web3 space.

Summary of the Hong Kong digital assets ecosystem
Hong Kong has a strong pedigree in digital assets trading and has historically been a key location for many of the global crypto exchanges as well as for traditional finance. The Hong Kong government has been keen to capitalize on this to build Hong Kong as a global digital assets ecosystem, leveraging its robust financial infrastructure and regulatory framework to foster innovation and growth. Hong Kong positions itself as a super connector between mainland China and the rest of the world, opening up a number of interesting and compelling use cases for the tokenization of assets in areas like trade and supply chain finance, payments, and wealth management. However, in order to achieve these goals, as well as to ensure the integrity of its financial system, Hong Kong has been working fast to build out some of the core regulatory building blocks of the Web3 economy in key areas such as stablecoins, virtual asset trading platforms (VATP), over-the-counter (OTC) trading, custody solutions, tokenized funds, and spot crypto exchange-traded funds (ETFs).

Digital money and stablecoins
Hong Kong has been proactive in exploring the potential of stablecoins. The Hong Kong Monetary Authority (HKMA) has been working on regulatory guidelines to ensure the stability and security of stablecoins. This includes measures to mitigate risks related to money laundering and financial stability. Additionally, the HKMA is building out an ecosystem for a Hong Kong dollar Central Bank Digital Currency (CBDC) via Project Ensemble.

Virtual asset trading platforms (VATP)
The Securities and Futures Commission (SFC) of Hong Kong has introduced a licensing regime for VATPs, ensuring that these platforms operate under stringent regulatory standards. This move is designed to enhance investor protection and market integrity, following the 'same activity, same risk, same regulation' principle.

Other recent developments
Hong Kong will regulate OTC trading and conversion of virtual assets, including stringent KYC (Know Your Customer) and AML requirements. A new virtual asset custody regime will be created. This is important as currently only HKMA regulated banks or SFC regulated VATPs can be licensed to custody virtual assets which has prevented a lot of the global custody players from entering the market.

Asset and wealth management
The SFC has issued guidelines for the issuance and distribution of tokenized funds, ensuring they adhere to the same regulatory standards as traditional funds. Additionally spot crypto ETFs have been launched in Hong Kong which are unique in that they allow in-kind contributions with the underlying virtual assets.

Additionally, recent proposed changes to the unified fund tax exemption to expand this to cover funds that invest in virtual assets could, if enacted, make Hong Kong a very compelling place to manage a crypto fund.

Championing learning and standard-setting
Defining industry best-practices and advocating clear policy and regulatory enhancements supporting a sustainable, future-ready technology and financial ecosystem is critcal to supporting the responsible growth of this industry and Web3 Harbour is positioned to advance this effort with its members of Web3 builders, investors, government bodies, regulators and growing network of overseas partners like GDF. ■

The Future Regulation of Decentralized Finance:
A Paradigm Shift in Progress

Nathan Catania
Partner
XReg Consulting

In March 2024, policymakers, regulators, academics and crypto market participants gathered in Brussels for XReg Consulting's inaugural Regulation of DeFi Roundtable to deliberate on the future regulation of truly decentralized finance (tDeFi).

Attendees tackled the burgeoning question of how to regulate a financial ecosystem that operates without identifiable intermediaries or single points of failure.

Participants included representatives from regulatory authorities such as the Japan Financial Services Agency, the Malta Financial Services Authority, and European Commission officials, technology developers, and industry practitioners from both centralized finance (CeFi) and DeFi. These individuals contributed their expertise as individuals, not as representatives of their organisations, enabling an open exchange of ideas.

The roundtable sought to address key questions regarding the risks, challenges and opportunities presented by tDeFi and to explore the contours of a new regulatory paradigm.

CeFi vs. DeFi

Historically, the regulatory landscape has been designed for centralized models, where identifiable intermediaries such as exchanges and custodians operate within defined jurisdictions. Frameworks such as the European Union's Markets in Crypto-Assets Regulation (MiCA) have provided clarity for these intermediaries. Such frameworks apply concepts from existing regulatory regimes, which are familiar to many, and adjust these for crypto-specific nuances.

However, as blockchain technology advances and is adopted, these traditional models are becoming more challenging to apply. DeFi systems, which leverage blockchain-based smart contracts to provide financial services autonomously, challenge the notion of traditional intermediary-based regulation. CeFi regulation cannot seamlessly extend to a borderless, intermediary-free financial ecosystem like tDeFi.

DeFi represents a radical shift in financial services by removing intermediaries and relying on automated systems. The benefits of greater transparency, reduced counterparty risk, and improved financial inclusion come with unique risks, such as cybersecurity vulnerabilities, reliance on oracles for off-chain data and challenges in implementing AML/CFT protocols.

The concept of tDeFi pushes this transformation further, encompassing systems where no party can exert significant control or be held accountable.

As these systems mature, regulators face the challenge of addressing these risks where traditional approaches are incompatible.

As the regulatory landscape for CeFi solidifies, attention is turning to DeFi, driven by several key factors:

1. **Emerging risks:** While DeFi mitigates certain risks, such as human error, it amplifies others, such as the potential for code exploitation.

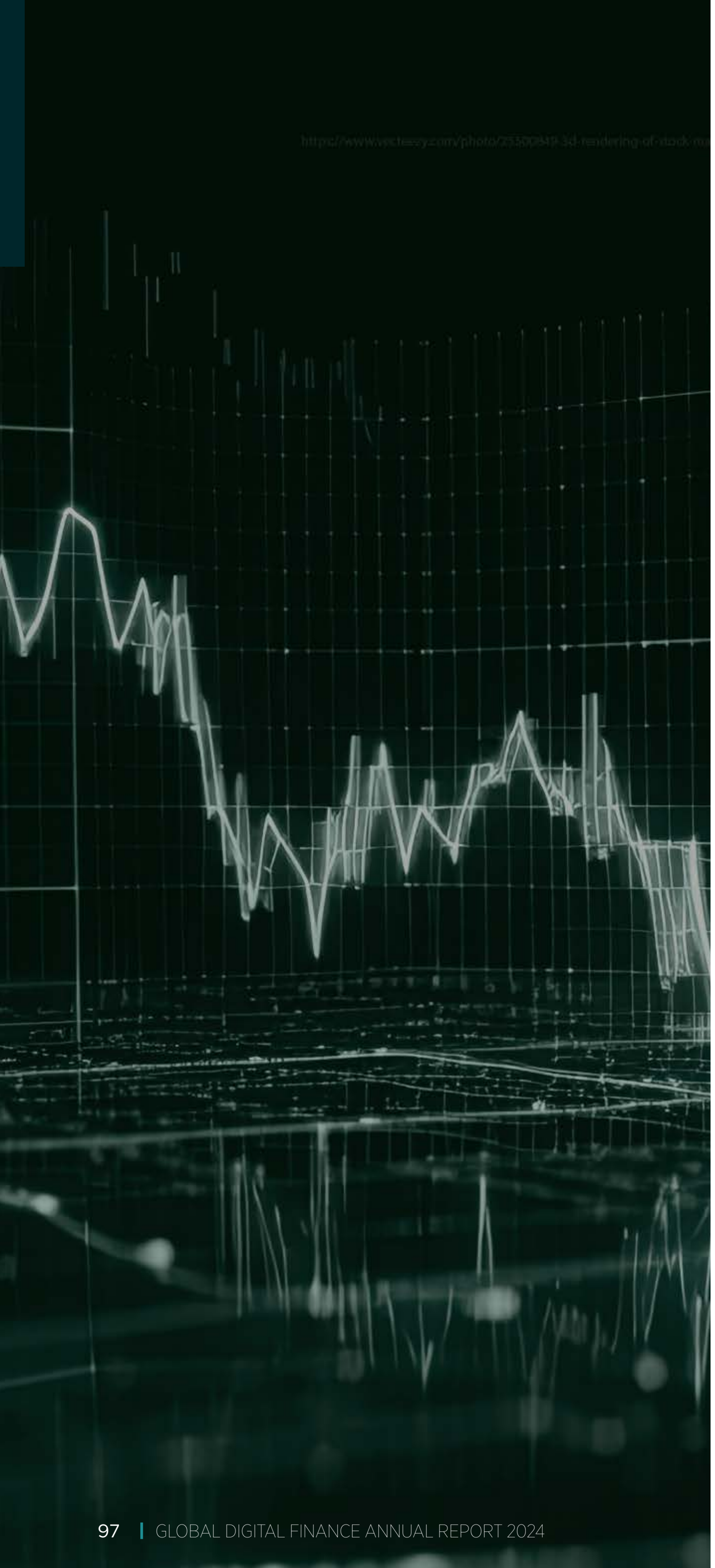
2. **Absence of intermediaries:** Regulation has traditionally relied on identifying and holding intermediaries accountable. This approach becomes impractical in tDeFi, where governance is decentralized, and services are automated.

3. **Global nature:** DeFi systems are inherently borderless, operating across jurisdictions. Applying geographically bound regulations to such systems is both challenging and ineffective.

4. **Technological neutrality:** Attempting to apply legacy frameworks to new technologies risks stifling innovation and failing to address the specific challenges posed by decentralized systems.

The roundtable's key findings

The roundtable discussions highlighted several insights about regulating DeFi:



1. **Current inapplicability of rules:** Applying traditional rules to DeFi is unlikely to achieve public policy objectives. The lack of identifiable intermediaries means no party can be held accountable for compliance with existing frameworks.

2. **Regulation at access points:** Policymakers may focus on regulating centralized intermediaries, such as front-end platforms, that facilitate user access to DeFi. However, this approach may result in the development of decentralized alternatives.

3. **Voluntary standards:** Incentivizing developers to adopt self-regulatory standards could encourage safer practices without stifling innovation. A certification regime for DeFi protocols could demonstrate compliance and foster trust.

4. **User accountability:** Adopting a disclosure-based approach, warning users of risks and holding them responsible for outcomes, could provide an interim solution while more robust frameworks are developed.

5. **Trust over time:** Mature DeFi protocols with proven security records may naturally gain user trust, mitigating risks over time without formal regulation.

Looking ahead: a new paradigm for DeFi regulation
Regulating DeFi requires a paradigm shift. The current approach, rooted in identifying and controlling intermediaries, is fundamentally incompatible with the decentralized nature of tDeFi. Policymakers have a unique opportunity to craft new frameworks that balance innovation with safety and align with the borderless, open-source ethos of DeFi.
Potential paths forward include:

- **Technology-driven regulation:** Leveraging blockchain's inherent transparency to develop automated compliance tools.

- **International collaboration:** Aligning global standards to manage the borderless nature of DeFi.

- **Incentivizing compliance:** Encouraging developers to build safer, certified systems that users naturally gravitate towards.

The **Regulation of DeFi Roundtable** underscored the urgent need to rethink financial regulation in light of DeFi's transformative potential. While tDeFi currently represents a subset of the crypto industry, its growth and innovation require a forward-looking approach that safeguards users without stifling innovation. ■

Getting Real – Exploring Real-World Asset Tokenization in Practice

Deborah Algeo
Global Head of Enterprise
Zodia Custody

Real-world asset (RWA) tokenization is being hailed as the "third revolution in asset management," with Boston Consulting Group predicting that tokenized assets could reach $16 trillion in market value by 2030. Tokenization promises to transform the financial landscape, offering greater accessibility, liquidity and operational efficiency.

However, the journey from concept to execution requires traditional financial (TradFi) institutions to navigate complex regulatory, operational, and technological challenges across several verticals outlined below.

Asset identification and structuring

TradFi organizations already possess robust systems for managing traditional assets, such as loans, bonds and real estate, which can serve as a foundation for identifying RWAs suitable for tokenization.

Institutions entering the market typically start with less complex assets, such as fixed-income products, before expanding into more intricate areas like real estate or private equity. For instance, UBS recently launched a tokenized fixed-income product, demonstrating how institutions can start with familiar, regulated asset classes and scale incrementally.

Legal and regulatory compliance

Navigating regulatory frameworks is one of the most critical aspects of RWA tokenization. Issuers must ensure that tokenized assets are legally recognized, token holders' rights are enforceable and compliance is maintained across jurisdictions.

Collaboration with global regulatory bodies such as the Bank for International Settlements (BIS) and Financial Stability Board (FSB) is crucial for establishing unified standards for tokenied assets. By aligning with global standards and leveraging existing processes, TradFi can streamline market entry while building investor confidence.

Custody and safekeeping

Digital asset custody is fundamentally different from custody in TradFi, focusing on safeguarding and managing cryptographic keys that grant access to tokenized assets, as opposed to that of physical or dematerialized assets.

Secure key management requires advanced solutions such as hardware security modules (HSMs) to store cryptographic keys securely. Some regulators notably mandate using cold wallets (offline storage) to minimize cybersecurity risks, though this introduces operational complexity, including strict access controls and multi-signature approvals.

By combining TradFi principles like segregation of duties with advanced digital asset technologies, custodians can create secure, compliant custody frameworks that build trust with institutional investors.

Issuance, trading, liquidity, and payments

Issuance and fractional ownership – Banks traditionally issue large-denomination financial products for institutional investors. Tokenizing these high-value assets into smaller, more accessible units may enable fractional ownership, thus builidng on traditional issuance practices but adding greater flexibility and accessibility for a broader range of investors.

Trading and liquidity - Blockchain enhances traditional banks' trading models by opening operations to 24/7 trading on digital platforms, thus improving accessibility and efficiency. Adopting this technology can help banks expand trading services for tokenized assets while retaining their role as trusted intermediaries.

Compliance and operational efficiency - Advanced token standards, such as ERC-3643, allow bank's traditional compliance controls like know-your-customer and anti-money laundering to be embedded directly into tokens. This automation can improve operational efficiency by reducing manual oversight and while maintaining regulatory standards.

*Payments and settlemen*t - Traditional payment systems are time-consuming and costly. Blockchain enables near-instant payments and settlements using stablecoins or CBDCs, helping banks build on their existing payment infrastructure to offer faster, more efficient solutions.

Risk management
Effective risk and collateral management are crucial in RWA tokenization. Blockchain analytics platforms or automated collateral management systems can be leveraged by institutions to help address the unique risks associated with digital assets – such as cybersecurity threats and smart contract vulnerabilities.

For example, data from TRM Labs has indicated that, contrary to common perceptions, decentralised finance (DeFi) is not inherently more risky than TradFi. The percentage of illicit activity in the DeFi ecosystem is estimated to be approximately 0.1% to 0.2%, compared to traditional financial systems.

Client services and reporting
Tokenization enhances client services by providing transparency and automation through blockchain's immutable ledger. Clients gain real-time access to their holdings, while smart contracts automate processes like dividend distributions and reporting.

Interoperability: Solving fragmentation in tokenized ecosystems
Interoperability - referring here to the ability for tokenized assets to move seamlessly across platforms and networks - is a critical challenge for scaling tokenization. Fragmentation diminishes liquidity and efficiency as assets are locked within siloed systems. Many technological solutions addressing interoperability have grown traction - like Chainlink who provides decentralized oracle networks that enable interoperability between blockchains or Ownera who developed an open-source protocol that connects multiple tokenization platforms and custodians.

The path forward
RWA tokenization offers transformative potential for asset management, unlocking new opportunities for liquidity, accessibility, and operational efficiency. By navigating the complex landscape of regulatory compliance, technological innovation, and operational restructuring, TradFi has an immense opportunity to leverage existing expertise and embrace blockchain technology to have a role in the next era of finance. ■

FINANCE AND TALENT

2024 Finance and Talent Update

Abdul Haseeb Basit
Executive Director
GDF

2024 has been one of the most exciting years in the development of the digital assets industry and GDF was proud to support our members as the global inclusive convening platform for the digital finance industry.

GDF net member retention was close to 100% in 2024 with a 40% increase in new paying members coming into the association - a welcome change from the market volatility of 2022 and 2023 where the membership experienced only marginal growth and "GDF's working capital runway" suffered. Going into 2025, though the runway is not entirely recovered, it has vastly improved. The increase in new members along with sponsorship fees that help GDF cover the cost of travel and expenses for member roundtables and outreach fixtures has helped immensely.

During the year GDF undertook a comprehensive review of our governance model to allow our organisation to attract best-in-class independent board members and observers to support the executive team in delivering our mission. The governance changes were started in H2 2024 and are now fully implemented for 2025.

In summary, GDF now operates a two-board structure:

The Member Board encompasses three fiduciary Directors, Lawrence Wintermeyer, Abdul Haseeb Basit and Elise Soucie Watts, three members (of the UK not-for profit entity) Greg Medcraft, Lavan Thasarathakumar and Simon Taylor as well as representatives of our Leadership category of member firms. The Member Board is chaired by Lawrence Wintermeyer.

We say farewell to departing board member Dawn Stump on the completion of her two-year term and thank her for her outstanding contribution to GDF. We're delighted that she will remain part of the GDF community.

In 2024, Elise Soucie Watts was appointed as a fiduciary Director, to the position of Executive Director, Policy & Regulation & Board Member. Elise's first year at GDF has seen several key initiatives launched under her stewardship that have boosted GDF's presence and impact in our current and new jurisdictions of operation.

The Board of Advisors and Observers is comprised of up to twelve independent professionals from the global crypto and digital assets industry. The first appointee to the Board in Q4 2024 was Jennifer Lassiter. Jennifer will chair the GDF Regulator-Only Board from 2025. Jennifer joins alongside her role as board member of the Digital Dollar Project, and has previously worked for the US FDIC and CFPB. Several new members were appointed in Q4 2024 to serve in 2025 including Chris Brummer, Georgetown University, Keith Bear, Cambridge Centre for Alternative Finance (CCAF), Peter Kerstens, European Commission, and Srivatsa Krishna, Standford University . The Board of Advisors and Observers is chaired by Greg Medcraft.

The Executive branch of GDF saw Madeleine Boys promoted to Director of Programmes and Innovation alongside Melissa Corthorn, Director of Member Services and Events.

Finally, the launch of the Executive in Residence (EIR), and Practitioner in Residence (PIR) Programmes launched in Q4 2024 and welcomed the following to GDF in the first two cohorts: Adriana Ennab, Armin Peter, Heather Goldman, Jannah Patchay, Khalid Howladar, Michael Bachina, Nicole Sandler, Previn Singh, Richard Crook and Will Paul.

We would like to take this opportunity to thank the members and team who have contributed to the success of GDF, and we look forward to continuing our collective mission in 2025. ■

The GDF Organization

The GDF Member Board*

Lawrence Wintermeyer
Chair, Executive Director

Greg Medcraft
Company Member

Simon Taylor
Company Member

Lavan Thasarathakumar
Company Member

Abdul Haseeb Basit
Executive Director

Elise Soucie Watts
Executive Director

** All Leadership Category fee paying GDF members are invited to nominate team members two discretionary board meetings a year.*

The GDF Executive Branch

Elise Soucie Watts
Policy & Regulation

Madeleine Boys
Programmes and Innovation

Melissa Corthorn
Events & Member Services

Lawrence Wintermeyer
Strategy

Abdul Haseeb Basit
Finance & Talent

The GDF Board of Advisors & Observers

Greg Medcraft
Chair

Keith Bear
Advisor

Chris Brummer
Advisor

Srivasta Krishan
Advisor

Jenn Lassiter
Advisor

Peter Kerstens
Observer

GDF Executive and Practitioners in Residence (EIRs & PIRs)

Michael Bacina
Executive in Residence

Richard Crook
Executive in Residence

Adriana Ennab
Executive in Residence

Heather Goldman
Executive in Residence

Khalid Howladar
Executive in Residence

Jannah Patchay
Executive in Residence

Will Paul
Practicioner in Residence

Armin Peter
Executive in Residence

Nicole Sandler
Executive in Residence

Previn Singh
Executive in Residence

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