



Wharton Blockchain and  
Digital Asset Project

# Back to the Future

The Sixth Reg@Tech  
Roundtable on Digital Assets

## Foreword

The Wharton Blockchain and Digital Asset Project (BDAP) is a research initiative focused on the evolving blockchain phenomenon. BDAP functions as a think tank and a connection point. It provides balanced, research-based perspectives on topics such as regulation of digital assets, governance of blockchain networks, emergence of decentralized finance (DeFi), and prospects for a new era of Web3. It also draws on world-class Wharton/Penn faculty, alumni, and students, as well as relationships with officials and industry experts from around the world, to bridge gaps among stakeholder communities.

Since 2017, BDAP has hosted the Wharton Reg@Tech Roundtable, which brings together academics, industry legal experts, and regulators from across the federal government, as well as Europe and Asia, to discuss public policy questions around digital assets. The inaugural roundtable took place at a time when regulators were first struggling with Initial Coin Offerings (ICOs) and the classification of tokens. Ideas discussed at the first Reg@Tech inspired token classifications developed by regulatory bodies. Much has happened since, such as the astronomic rise of Decentralized Finance (DeFi), stablecoins, Decentralized Autonomous Organizations (DAOs) and Non-Fungible Tokens (NFTs). While old challenges persist, such as how to combat financial crime and on how to make digital asset trading platforms which operate globally legally compliant.

Reg@Tech 6 was our first virtual session, held via Zoom on October 14–15, 2021. When we postponed the event in March 2020 due to the Covid-19 pandemic, we expected to resume in-person meetings within a few months. With pandemic restrictions still in effect more than a year later, we decided to move forward to bring the community together to the best extent possible. After the extended pause, Reg@Tech participants reflected again on the status quo of various blockchain applications and discussed whether regulation is feasible at all, and if it is, where it is desirable.



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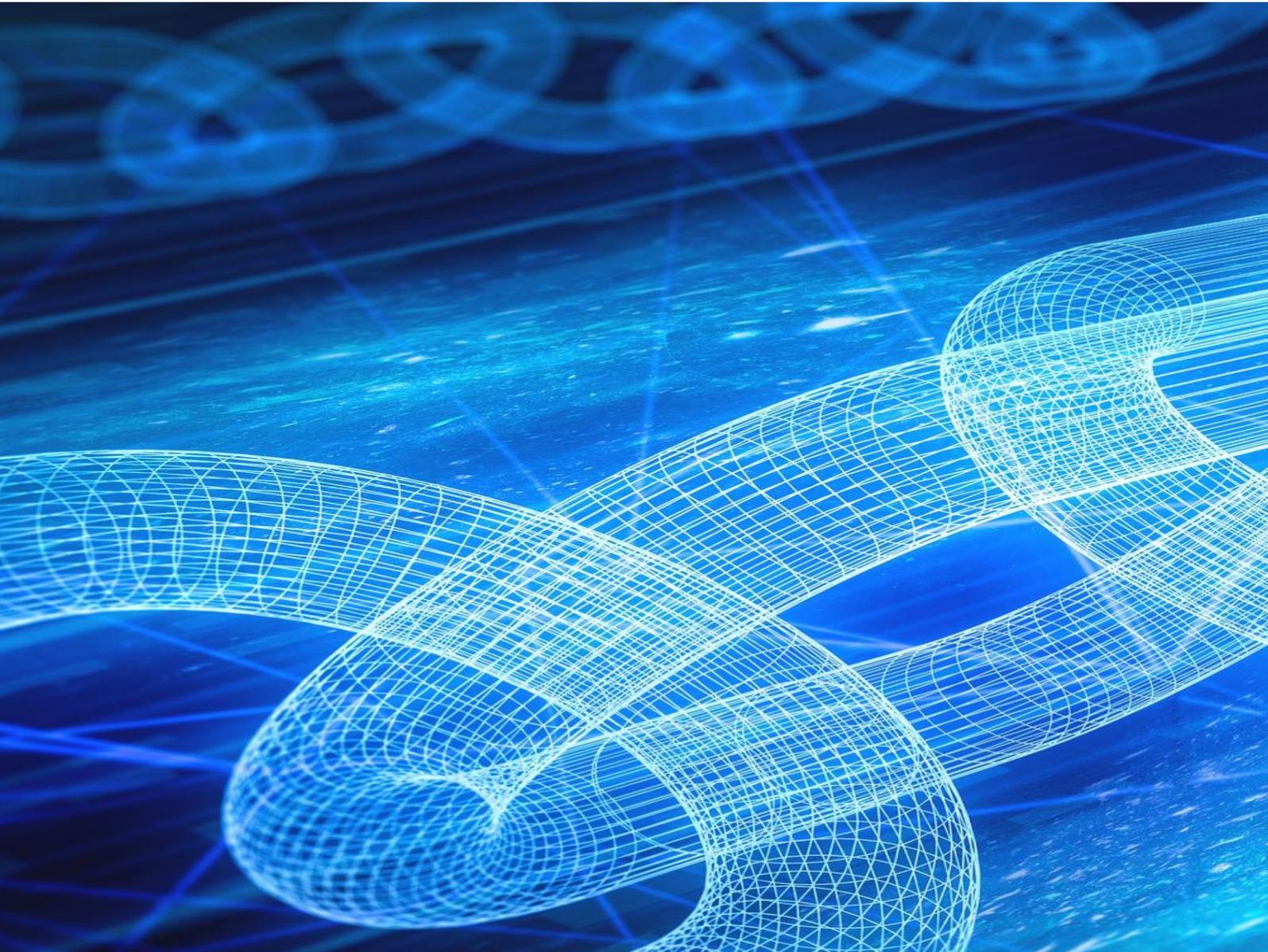
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# Introduction

**Blockchain-based activity continues to pose challenging questions for policy-makers. Although regulatory engagement has increased, the digital asset sector has not remained static. Even as old controversies are resolved, new market developments pose familiar questions, such as how to best categorize novel services and products.**

This report summarizes major topics of discussion at Reg@Tech 6, and connects them to relevant contemporary developments. Reg@Tech is conducted under Chatham House Rules. Participants include government officials who speak on the understanding they are not representing the official positions of their agencies. Because the participant list is global and diverse in perspectives, there is no consensus on many topics. Thus, while this summary attempts to capture the spirit of the meeting, its conclusions are those of the author. It should not be taken as representing the views of any participant, nor their organizations.



# The Rise of Smart Contracts, Digital Assets, and DeFi

DeFi taps into the aspiration for an open financial system that operates globally and achieves financial inclusion. A system with no central authority and full transparency based on open-source software code, which anyone can audit. Users enjoy ultimate control over their assets. Smart contracts and digital assets on top of programmable blockchains power this new world of decentralized finance.

DeFi already existed at the time of the first Reg@Tech Roundtable in 2017, in the form of MakerDAO, a decentralized application (DApp) on the Ethereum blockchain and the stablecoin DAI. Yet it is only recently that DeFi has achieved significant adoption and rapid growth. Ethereum and its smart contract functionality paved the way to what is emerging as a vibrant DeFi ecosystem with an abundance of digital assets, the creation of novel, decentralized financial infrastructures, DAOs and decentralized exchanges (DEXs). A term often used in the context of DeFi is “total value locked” (TVL), which is a way to demonstrate how many digital assets in total are put into DeFi services. The value has seen tremendous growth, from \$1 million in late 2017 to \$110 billion in late 2021.<sup>1</sup> DeFi, however, is still in its early stages.

Considering this development and putting the promises and benefits that come with DeFi to the side, it is paramount to

understand the kinds of risks associated with this emerging alternative financial ecosystem, especially those with no direct comparison to the traditional financial world. Examples include such notions of decentralization and the different governance structures that are being experimented with in DAOs. Regulatory agencies and policy-makers have a limited toolbox to keep up.

Some DeFi platforms portray themselves as being decentralized when in reality they are not. An important question raised during the Reg@Tech discussions was how to best capture decentralization and whether the highest form of decentralization is necessarily pure automation. There are no generally accepted metrics for decentralization and there is no decentralization index to aid policy-makers in understanding whether any given DApp, DAO, or DEX is decentralized and if so, to what degree. Some Reg@Tech participants observed that decentralization can be used as a mere smokescreen to avoid regulation, when in fact the DApp or trading platform is not decentralized at all but rather “DINO”, *i.e.*, Decentralized In Name Only. Some referred to this as the “veil of decentralization”, behind which some platforms and token issuers hide to avoid liability or classification as a security. Such tactics, however, are not immune to unveiling. In August 2021, for example, in its first enforcement action against DeFi, the U.S. Securities and Exchange Commission (SEC)

charged DeFi Money Market and its executives for unregistered securities sales of more than \$30 million as well as misleading investors.<sup>2</sup> The SEC in its press release specifically stated that “the labeling of the offering as decentralized and the securities as governance tokens did not hinder us from ensuring that DeFi Money Market was immediately shut down and that investors were paid back”.<sup>3</sup>



# The Challenge of Decentralization

### ***Global Multi-Asset Trading Platforms***

Blockchain ecosystems have seen the rise not only of many different tokens and digital assets with potentially many different legal classifications, but also of global platforms, through which these tokens can be traded, lent, borrowed, saved, fractionalized, used as collateral, and more. Decentralized platforms offer important benefits in terms of security and user sovereignty since they do not serve as a single point of failure and users can self-custody their digital assets. In October 2021, Facebook had a major outage that lasted several hours and affected all of its services, including Whatsapp, Instagram, and Facebook messenger.<sup>4</sup> These types of outages seen in centralized platforms with cascading effects are not as likely to occur in decentralized platforms, where systems are not run from the same place but are spread and distributed.<sup>5</sup> Often decentralized applications and blockchain-based platforms are open source, which makes the code transparent and auditable.

Reg@Tech participants offered their own perspectives and raised questions, such as on how to tackle the challenges associated with these platforms when they do not have a real home in any one jurisdiction. Take Binance as an example: As the world's biggest cryptocurrency exchange and digital asset platform, it has for a long time held the view that as a decentralized entity it needed no formal headquarters.<sup>6</sup> In 2020, Binance's CEO Changpeng Zhao (CZ) stated that "this is the beauty of the blockchain" and argued that

"Bitcoin doesn't have an office" either.<sup>7</sup> This perspective changed in 2021. Amid mounting pressure from regulators, Binance's CEO acknowledged that the exchange needed to "make it easier to work with regulators",<sup>8</sup> although whether it can take sufficient steps remains to be seen.

Much uncertainty exists when it comes to such decentralized, globally operating platforms, especially for those where founders may have given up control but still exert some influence over the operations, which may lead to questions of conflicts of interest or duty of care and loyalty. It may be necessary to go back to first principles and be mindful that the main objectives are fundamentally fraud prevention and assuring market integrity. Regulatory uncertainty, however, contributes to instability, which clashes with the objective of financial system stability. Participants debated possible solutions with a globally harmonized approach, such as immunity for whistleblowers, and the possible necessity to distinguish between the notions of knowledge and revelation, and how to fix problems brought to light, whether they be on-chain or off-chain. Another important issue discussed were the different roles that could be held in such a system, and the need to delineate expectations, obligations and consequences associated with these roles.

## ***Addressing Financial Crime and Market Integrity***

Financial crime prevention and surveillance continue to be important because blockchains provide fertile ground for criminal activity, alongside their legitimate uses. As more retail and institutional investors enter the crypto space and allocate capital into these technologies, these topics are only growing in significance.

According to a 2018 Wall Street Journal article, ShapeShift, a cryptocurrency trading platform, may have facilitated money laundering in the amount of \$9 million,<sup>9</sup> although this amount was later contested.<sup>10</sup> Under regulatory pressure Shapeshift implemented Know Your Customer (KYC) requirements that year, causing it to lose almost all of its customer base.<sup>11</sup> Early in 2021, it announced that it was dissolving its corporate structure in order to evolve into a DAO, “a community-owned and governed crypto platform,”<sup>12</sup> which would operate without KYC or other explicit compliance measures. The balance between protecting user privacy and preventing money laundering, in ShapeShift’s case, seems to have tilted towards the former.<sup>13</sup> Will this be a harbinger of the direction other platforms move as DeFi takes hold?

During Reg@Tech 6, some participants suggested better measures were needed to assess the levels of financial crime risk. Some studies have found as little as 0.34% of all cryptocurrency activity is illicit.<sup>14</sup> However, there are frequent reports about hacks and other crimes related to crypto activities, and with the significant increase of transactions

through unregulated, unsupervised platforms, such as DEX platforms, these risks may grow. There is widespread concern that money laundering may have increased due to cryptocurrencies. The adoption of NFTs, which even large and reputable auction houses, such as Sotheby’s and Christie’s have embraced wholeheartedly,<sup>15</sup> heighten the concern.<sup>16</sup>

In 2019, the Financial Action Task Force (FATF) introduced the Guidance for a Risk-Based Approach to Virtual Assets (VAs) and Virtual Asset Service Providers (VASPs).<sup>17</sup> Participants debated whether VASPs was a viable solution, and discussed “operation” of trading platforms, as well as notions of “control”, “facilitation”, or “decentralization”. Some expressed the concern that the FATF’s proposed guidelines would not work long-term.

FATF is an inter-governmental body which sets standards and guidelines to prevent money laundering (ML) and terrorist financing (TF). The 2019 FATF guidelines urged countries to understand the ML and TF risks associated with crypto-related activities, and the need for Virtual Asset Service Providers (VASPs) to be registered and supervised by national authorities. However, FATF’s 12-month review of implementation indicates that the majority of jurisdictions have not followed these guidelines.<sup>18</sup> In October 2021, the FATF updated its VASPs guidance, clarifying among other things, the definitions of virtual assets and VASPs, outlining guidance on how FATF standards apply to stablecoins and NFTs.<sup>19</sup> The lack of global harmonization in this area of financial crime is alarming

since criminals can easily move from a regulated country to an unregulated one, which is why properly enforcing the “travel rule” can aid in mitigating the risk of forum-shopping.

Some suggestions on innovative approaches to compliance risk were made. It may be necessary for regulators to work with technology experts to enable the introduction of a more compliance focused application of blockchain technology, such as atomic oracles, encoded into a smart contract, in which case transactions would get rejected automatically if the risk was detected as being too high. Other examples provided were Proof of KYC on chain, public blockchains and whitelisting as well as Decentralized Identifiers (DIDs) to track entities. Points of regulatory

access to establish compliant procedures may be so-called “CeFi-Defi” bridges, which are connecting factors between the centralized and decentralized world of finance. In discussing the way forward, some debated that there was a need to create greater understanding of what was happening, and where exactly the risky activity was taking place. Furthermore, regulators and policy-makers, need to continuously receive training and education to be able to accompany the developments. Some Reg@Tech 6 participants also highlighted the need for real engagement and creativity, even open-mindedness and courage to create novel approaches in balancing financial inclusion vs. illicit behavior.



# The Second Wave of Digital Assets



**Stablecoins**

Unlike cryptocurrencies, which are known for their high volatility,<sup>20</sup> stablecoins – as the name suggests – are meant to be stable. They may be pegged to fiat money or any other asset. Although the first stablecoins were created as early as 2014, they have only recently seen tremendous rise in popularity, especially due to DeFi.<sup>21</sup> Stablecoins have enabled crypto users and businesses to avoid lengthy, costly, and slow bank processes to convert cryptocurrencies back into dollars or euros. Users involved in crypto turn to stablecoins because of the convenience of a digital, fast, near instant blockchain-native way that allows for seamless conversion 24/7, while being a viable fiat money alternative, since stablecoins fulfill all the main properties of money.<sup>22</sup> That is why some consider stablecoins to be the “killer app of banking”, combining the best of both worlds.<sup>23</sup>

Today, Coinmarketcap lists at least seventy different stablecoins, whose combined market cap surpassed \$140 billion.<sup>24</sup> The most popular stablecoins are pegged to the U.S. dollar, the largest being Tether (USDT), followed by USD Coin (USDC), Binance USD (BUSD), Dai, and TerraUSD (UST).<sup>25</sup> Stablecoins can remain stable by being tied to other assets as well, such as gold.

Stablecoins can generally be divided into the following three main categories:

Fiat-linked Stablecoins	Asset-Backed Algorithmic Stablecoins	Pure Algorithmic Stablecoins
Bridge to off-chain, Fiat (e.g. USDC, PAX, GUSD, Tether)	Bridge to on-chain, cryptocurrency (e.g. DAI)	No bridge (e.g. Fei)



Fiat-linked stablecoins, such as USDC, Tether, BUSD, are currently being issued by private companies and operate in a legal gray zone.<sup>26</sup> They use standard fiat currency as collateral to issue cryptocurrencies, such stablecoins are thus closely linked to the asset they represent by being redeemable for these.<sup>27</sup> Asset-backed stablecoins, such as MakerDAO's DAI, use smart contracts to manage collateral in the form of cryptocurrencies, stablecoins, or tokenized traditional assets.<sup>28</sup> These can be thought of as algorithmic stablecoins with a bridge to the off-chain world, by still connecting with assets that are not directly blockchain-native digital assets. In general, these are over-collateralized to minimize the high price volatility in the cryptocurrency market.<sup>29</sup> Then there are pure algorithmic stablecoins, which attempt to automatically balance supply and demand to keep prices constant.<sup>30</sup> Examples of such purely algorithmic stablecoins with no direct or indirect link to the off-chain world, include Ampleforth (AMPL), Fei, and Terra Luna.

During the debate an important topic surfaced regarding the fact that all these different categories are called stablecoins but that it makes a difference to the consumer and end-user depending at which end of the spectrum one finds oneself. While the stablecoins represented on the left as pictured above, may be representations of fiat currency, such as the U.S. dollar and are redeemable for these, the more one moves to the right, the more the term "stablecoins" raises concern from a consumer protection

lens, branding them as U.S. dollar representations could thus be regarded as misleading consumers.

There is a whole spectrum of regulation that might apply to stablecoins, from banking regulation to access to central banks' master accounts. Given the risks, capital reserve requirements for traditional banks to hold stablecoins are likely to be significant.<sup>31</sup> Currently fiat-linked stablecoins have much thinner reserve requirements, since they are generally registered as state-licensed money transmitters or state-chartered trust companies. Another concern is that a stablecoin issuer with access to central bank reserves may default on the payment system, which may result in a chain of contagion.

Conversations were also held regarding "rightness" and "fitness". One of the questions was whether the different categories of stablecoins and the spectrum of how regulation may be approached in relation to these, is fit to purpose. As these entities scale, the requirements could increase and liken banking regulatory requirements. Here one needs to question whether that is the right approach to take since one would simply have recreated banks in a blockchain setting. That is why participants suggested that design is an important aspect to consider so as to not mismanage the risk.

### Non-Fungible Tokens (NFTs)

Non-Fungible Tokens have seen an explosion in activity since 2020. A defining moment was the sale of Mike Winkelman’s aka Beeple’s NFT called “Everydays, the first 5000 days” at Christie’s for a record-breaking \$69 million in March 2021, instantly making the digital artist the “third most valuable living artist”.<sup>32</sup> NFTs can be defined as unique and non-interchangeable units of data stored on a distributed ledger. The paradigm shift concerns the notion of ownership in the digital space. Christie’s explains in its Collection Guide that “NFTs represent ownership of digital work. Similar to how the existence of copies of a physical work do not affect ownership of the actual physical work, the existence of copies of digital works do no impact ownership of the digital work.”<sup>33</sup> However, there is uncertainty not only to the precise definition of NFTs but also whether NFTs confer title of ownership of an asset, as existing legal principles may also differ from jurisdiction to jurisdiction.

Generally, one may differentiate between NFTs that are the representation of an off-chain asset and purely on-chain NFTs that have no off-chain counterpart. During Reg@Tech 6, the wide-ranging possible use cases for NFTs were discussed. They can be collectibles, artworks, event tickets, music and media, gaming, virtual items, real-world assets, identity, memes, domain names, and more. Aside these possible use cases, NFTs can also serve the DeFi ecosystem by being traded, collateralized, fractionalized, or securitized.

While some Reg@Tech participants believed NFTs and their issuance should not be regulated *per se*, suggesting that if there is no investment purpose identifiable by the reasonable expectation of the vast majority of NFT holders, there may not be a need for investor protection or market integrity regulation, others were more cautious and determined that regulation of these activities would be desirable.

Discussions were held regarding the right balance to strike between categorizing an NFT based on the nature of the asset, or the activity associated with the NFT. It was seen as particularly delicate to strike the right balance between investor and consumer protection, while keeping in mind the wider overarching policy goals of market integrity and the prevention of financial crime.

The following table was drafted to explore the different activities, associated risks and possible regulatory responses relating to NFTs:

Activity	Risks
Securitizing, Bundling, Fractionalizing	Investor protection
Collateralizing	Financial stability, market integrity
Trading	Marketplace integrity, property rights, AML/KYC
Issuing	Investor protection, insider risks, authenticity

Since NFTs can represent anything, the activity associated with NFTs may have risks yet unforeseen, which indicates that a regulatory response is indeed required. The updated FATF guidelines on VASPs, for example, suggests that countries apply FATF standards to NFTs based on a functional approach and the nature of the NFT on a case-by-case basis, since “[s]ome NFTs that on their face do not appear to constitute VAs may fall under the VA definition if they are to be used for payment or investment purposes in practice”, or may be “digital representations of other financial assets already covered by the FATF Standards”.<sup>34</sup>

### ***Decentralized Autonomous Organizations (DAOs)***

Vitalik Buterin once described a DAO as “an entity that lives on the internet and exists autonomously, but also heavily relies on hiring individuals to perform certain tasks that the automaton itself cannot do”.<sup>35</sup> However, definitions vary and there is still much uncertainty as to what exactly a DAO is, and what law – if any – from which jurisdiction applies to these collectives.

In 2016 “The DAO” hack led to the failure of what should have become the first major functional decentralized autonomous organization on the Ethereum blockchain. An exploit of a bug in the code led to a major theft that ultimately resulted in the Ethereum blockchain forking in two.<sup>36</sup> It was also in relation to The DAO that the SEC issued its first report on digital assets, concluding that DAO tokens were in fact securities that had been issued in violation of registration requirements.<sup>37</sup>

Experimentation with the concept of DAOs was not stifled by this setback, although much of the development seems to have advanced in the shadows of other blockchain applications, such as DeFi, stablecoins and NFTs. How does one design and legally categorize DAOs and their many governance structures? If it is true that DeFi disrupts the financial sector, DAOs may be an even more radical innovation in that they can disrupt the way society organizes itself, instead of bundling human activity in traditional organizations. The road to Web3 seems to be plastered with DAOs.

A major problem is that legal regimes generally do not recognize computer code as having capacity to enter legal contracts validly. The idea that a smart contract could autonomously conclude a legal contract as a party, clashes with existing legal concepts of who can be a party to a legal contract. While the concept of legal capacity and legal personhood is important to establish the validity of contracts and to determine liability in case of damages, one may wonder whether in a blockchain-context smart contracts of a certain sophistication would not satisfy the requirements of having some type of legal capacity. And if not, whether smart contracts require an entirely new conceptualization of what it means to have legal capacity in a blockchain context. Several pain points that DAOs often face were discussed during Reg@Tech 6. As introduced above, these arise primarily because DAOs (as a smart contract, or multiple smart contracts) under most legal regimes cannot conclude legally binding contracts. It thus becomes a challenge to open bank accounts, hire employees, or file

patents. DAOs are associated with a myriad of risks and uncertainties. Can DAO participants limit their liability, or will they be made jointly liable for any damages? Since DAOs operate globally, they may accidentally create unincorporated entities in several jurisdictions. Much seems to hinge on the question of the seat, such as where to file tax reports, which jurisdictions' regulatory obligations to observe, and much more. However, where is the legal seat of a DAO? Can this be determined? And if so, how?

Often DAOs are portrayed as a paradigm shift in human organizational structures by being borderless, digital native first, and aiming for decentralized governance. It seems as if DAOs can be used for anything by financially bundling a seemingly disperse group of strangers on the Internet to achieve a common goal, such as for charity purposes or as investment vehicles. However, many DAOs today resemble social clubs and status symbols that give token holders (*i.e.*, DAO members) exclusive rights.<sup>38</sup> Examples include being whitelisted for new token issuances, being awarded gifts in the form of airdrops, exclusive entry into private discord channels, events, and more.<sup>39</sup>

DAOs are still very much in their infancy and legal regimes have not extensively dealt with these emerging types of leaderless collectives. What is more, the governance mechanisms are not ideal at present, and the concept of identities is a core issue in both the legal and technological spheres when it comes to DAOs.

Questions naturally arise as to who carries the risks and becomes liable in cases of damage. Many DAOs have simple token voting structures, which do not optimally protect their minority token holders. The real risk exists that an entity might take out a flash loan to get hold of the majority of governance tokens and push through its own agenda. Power structures matter and sometimes, just as with DeFi, DAOs may not be as autonomous nor as decentralized as those employing such a denotation would like users to believe.

The solutions offered to DAOs today are limited. Some jurisdictions have started to recognize DAOs. Wyoming, where the first U.S. limited liability company (LLC) was created, adopted a supplement to its LLC Act, effectively becoming the first state to clarify the legal status of DAOs.<sup>40</sup> To register a Wyoming DAO LLC, a registered agent is needed, which may represent a contradiction to the decentralized nature of DAOs.<sup>41</sup> However, this new structure alleviates concerns for DAO members on facing general partnership liability.<sup>42</sup> A prominent model is the Swiss foundation model, which also lies at the core of the Ethereum foundation. Precisely categorizing different types of DAOs and their governance structures as well as finding the right balance between regulation and innovation remains an important undertaking.

## Conclusion

As economic activity and social interactions continue to move into the digital realm and society transitions into what some consider a future where offline and online merge into a metaverse with Augmented Reality (AR), Virtual Reality (VR), Internet of Things (IoT) powered by the third generation of the Internet or Web3, legal questions will only become more salient. The digital asset economy with stablecoins and DeFi, and a mixture of centralized and decentralized global trading platforms competing with and complementing each other, is starting to take shape, while amassing large sums of capital. And what started to disrupt the financial services industry, is now permeating culture, art, social media, and music, the very core of society with community building tools in NFTs and DAOs. The underlying connecting factor of all this innovation is blockchain.

The year 2021 is very different from 2017, when Reg@Tech started, not only because of the devastating effects of the Covid-19 pandemic, but also in how technology continues to accelerate with no indication of slowing down. New laws take time to be enforced while blockchain technology continues to develop rapidly. This will force us to rethink established procedures and to categorize new phenomena in an on-going fashion. The task of regulators in this new era is perhaps harder than ever and getting harder still.

As the regulatory cycle advances, Reg@Tech will continue to facilitate the exchange of ideas among experts and regulators around the world to best navigate these challenges.

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# Endnotes

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<sup>1</sup> See Total Value Locked (USD) in DeFi, <https://defipulse.com/>.

<sup>2</sup> See Press Release, SEC Charges Decentralized Finance Lender and Top Executive for Raising \$30 Million Through Fraudulent Offerings – Case is Agency’s First Involving Securities Using DeFi Technology, SEC (Aug. 6, 2021), <https://www.sec.gov/news/press-release/2021-145>.

<sup>3</sup> *Ibid.*

<sup>4</sup> See, e.g., Santosh Janardhan, Update about the October 4th outage, Meta (formerly Facebook), (Oct. 4, 2021), <https://engineering.fb.com/2021/10/04/networking-traffic/outage/>.

<sup>5</sup> See, e.g., Josh Taylor, Facebook outage: what went wrong and why did it take so long to fix after social platform went down?, The Guardian, (Oct. 5, 2021), <https://www.theguardian.com/technology/2021/oct/05/facebook-outage-what-went-wrong-and-why-did-it-take-so-long-to-fix>.

<sup>6</sup> See Tom Wilson, Binance trading volumes soar despite regulatory crackdown, Reuters, (Oct. 4, 2021), <https://www.reuters.com/technology/binance-trading-volumes-soar-despite-regulatory-crackdown-2021-10-04/>; see also Paddy Baker, “Binance Doesn’t Have a Headquarters Because Bitcoin Doesn’t, Says CEO”, Coindesk (May 8, 2020), <https://www.coindesk.com/markets/2020/05/08/binance-doesnt-have-a-headquarters-because-bitcoin-doesnt-says-ceo/>.

<sup>7</sup> See Paddy Baker, “Binance Doesn’t Have a Headquarters Because Bitcoin Doesn’t, Says CEO”, Coindesk (May 8, 2020), <https://www.coindesk.com/markets/2020/05/08/binance-doesnt-have-a-headquarters-because-bitcoin-doesnt-says-ceo/>.

<sup>8</sup> See Carla Mozée, “Binance CEO says the crypto exchange needs centralized headquarters to work well with regulators”, Market Insider (Sep. 16, 2021), <https://markets.businessinsider.com/news/currencies/binance-changpeng-zhao-cryptocurrency-regulators-warnings-bans-headquarters-2021-9>.

<sup>9</sup> See Justin Scheck and Shane Shifflett, “How Dirty Money Disappears Into the Black Hole of Cryptocurrency”, The Wall Street Journal (Sept. 28, 2018), <https://www.wsj.com/articles/how-dirty-money-disappears-into-the-black-hole-of-cryptocurrency-1538149743>.

<sup>10</sup> See Leigh Cuen, “WSJ’s ShapeShift Exposé Overstated Money Laundering by \$6 Million, Analysis Says”, Coindesk (Mar. 20, 2019), <https://www.coindesk.com/markets/2019/03/20/wsjs-shapeshift-expose-overstated-money-laundering-by-6-million-analysis-says/>.

<sup>11</sup> See Naomi Brockwell, “Shapeshift Ends KYC! Interview with Erik Voorhees”, Youtube (Jan. 6, 2021), <https://www.youtube.com/watch?v=RN3wcDFXAFE>. According to Shapeshift’s CEO and founder, Erik Voorhees, this happened due to the user’s perception that Shapeshift had abandoned its principles.

<sup>12</sup> See ShapeShift Decentralizes, <https://shapeshift.com/shapeshift-decentralize-airdrop>. See also Erik Voorhees, “ShapeShift is Decentralizing”, Medium (Jul. 14, 2021), <https://erikvoorhees.medium.com/shapeshift-is-decentralizing-639bb4c82fc8>. See also, William Foxley, “ShapeShift is Going Full DeFi to Lose KYC Rules”, Coindesk (Jan. 6, 2021), <https://www.coindesk.com/business/2021/01/06/shapeshift-is-going-full-defi-to-lose-kyc-rules/>.

<sup>13</sup> See Erik Voorhees, “No More KYC with ShapeShift”, Medium (Jan. 6, 2021), <https://erikvoorhees.medium.com/no-more-kyc-with-shapeshift-6d95a3e63ddf>. Voorhees states that “it’s time to fully embrace decentralized protocols for the protection and dignity of our users”.

<sup>14</sup> See Chainalysis 2021 Crypto Crime Report, <https://go.chainalysis.com/2021-Crypto-Crime-Report.html>. (“In 2020, the illicit share of all cryptocurrency activity fell to just 0.34%, or \$10.0 billion in transaction volume.”).

<sup>15</sup> Christie’s states that they “feel very confident that this is just the beginning. The impact of this nascent market has been far greater than just on the art world, affecting the worlds of music, retail, social media and sports.” See Christies, NFT 101 – NFT Background and Basics, <https://www.christies.com/features/NFT-101-Collection-Guide-to-NFT-11654-7.aspx>. In October 2021, Sotheby’s launched an NFT exclusive marketplace called “Metaverse”, see Shanti Escalante-De Mattei, Sotheby’s Launches an NFT-Only Marketplace, ARTnews

(Oct. 19, 2021), <https://www.artnews.com/art-news/market/sotheby-metaverse-nft-only-marketplace-1234607430>.

<sup>16</sup> See Scott Chipolina, “Art Has a Money Laundering Problem, NFTs Could Make It Worse”, Decrypt (May 8, 2021), <https://decrypt.co/70190/art-has-a-money-laundering-problem-nfts-could-make-it-worse>. A 147-page Congressional bipartisan report released last year, examines how the largest unregulated industry in the United States, the art market, advantages money laundering, and renders U.S. sanctions ineffective. See United States Senate, Permanent Subcommittee On Investigations, Committee on Homeland Security and Governmental Affairs, “The Art Industry and U.S. Policies that Undermine Sanctions”, [https://www.hsgac.senate.gov/subcommittees/investigations/hearings/majority-and-minority-staff-report\\_-the-art-industry-and-us-policies-that-undermine-sanctions](https://www.hsgac.senate.gov/subcommittees/investigations/hearings/majority-and-minority-staff-report_-the-art-industry-and-us-policies-that-undermine-sanctions).

<sup>17</sup> See “FATF Guidance for a Risk-Based Approach – Virtual Assets and Virtual Asset Service Providers”, <https://www.fatf-gafi.org/media/fatf/documents/recommendations/RBA-VA-VASPs.pdf>.

<sup>18</sup> See Outcomes FATF Plenary, 20–25 June 2021, <https://www.fatf-gafi.org/publications/fatfgeneral/documents/outcomes-fatf-plenary-june-2021.html>.

<sup>19</sup> See Updated Guidance for a Risk-Based Approach to Virtual Assets and Virtual Asset Service Providers, (Oct. 28, 2021) <https://www.fatf-gafi.org/publications/fatfrecommendations/documents/guidance-rba-virtual-assets-2021.html>.

<sup>20</sup> See “Healthy Volatility and Its Implications for Crypto Markets”, Cryptopedia, (Jun. 21, 2021), <https://www.gemini.com/cryptopedia/volatility-index-crypto-market-price>.

<sup>21</sup> See President’s Working Group on Financial Markets, the Federal Deposit Insurance Corporation, and the Office of the Comptroller of the Currency, Report on Stablecoins, (Nov.1, 2021), [https://home.treasury.gov/system/files/136/StableCoinReport\\_Nov1\\_508.pdf](https://home.treasury.gov/system/files/136/StableCoinReport_Nov1_508.pdf).

<sup>22</sup> By being a store of value, medium of exchange, and unit of account.

<sup>23</sup> See, e.g., Ras Vasilisin, “Why Defi Could Foster the Killer App of Banking”, Hackernoon (Sep. 8, 2020), <https://hackernoon.com/why-defi-could-foster-the-killer-app-of-banking-80y3ere>

<sup>24</sup> See Top Stablecoin Tokens by Market Capitalization, CoinMarketCap, <https://coinmarketcap.com/view/stablecoin/>.

<sup>25</sup> *Ibid.*

<sup>26</sup> While some stablecoin issuers in the U.S. have money transmission licenses, such as Circle, others operate as Trust companies. Examples of Trust companies include Paxos Standard (PAX), and Gemini Dollar (GUSD). See Circle US Licenses, <https://www.circle.com/en/legal/us-licenses>. See also Press Release, NYDFS, DFS continues to foster responsible growth in New York’s FinTech industry with new virtual currency product approvals (Sept. 10, 2018). [https://www.dfs.ny.gov/reports\\_and\\_publications/press\\_releases/pr1809101](https://www.dfs.ny.gov/reports_and_publications/press_releases/pr1809101). See also Kevin Werbach, Written Statement, Joint Economic Committee – Demystifying Crypto: Digital Assets and the Role of Government (Nov. 17, 2021), [https://www.jec.senate.gov/public/\\_cache/files/bccfc06e-6756-47bd-a075-acb5087a9e2c/werbach-testimony.pdf](https://www.jec.senate.gov/public/_cache/files/bccfc06e-6756-47bd-a075-acb5087a9e2c/werbach-testimony.pdf).

<sup>27</sup> See Shobhit Seth, Is Stablecoin the Answer to All Cryptocurrency Problems?, Investopedia (Oct. 24, 2021), <https://www.investopedia.com/tech/stablecoin-answer-all-cryptocurrency-problems>.

<sup>28</sup> The Whitepaper explains that “[t]he Dai stablecoin is a decentralized, unbiased, collateral-backed cryptocurrency soft-pegged to the US Dollar. Dai is held in cryptocurrency wallets or within platforms, and is supported on Ethereum and other popular blockchains.” See The Maker Protocol: MakerDAO’s Multi-Collateral Dai (MCD) System, <https://makerdao.com/en/whitepaper#the-dai-stablecoin>. It was first introduced on Reddit as “eDollar”, see Rune4444, “Introducing eDollar, the ultimate stablecoin built on Ethereum”, Subreddit Ethereum (Mar. 26, 2015),

[https://www.reddit.com/r/ethereum/comments/30f98i/introducing\\_edollar\\_the\\_ultimate\\_stablecoin\\_built/](https://www.reddit.com/r/ethereum/comments/30f98i/introducing_edollar_the_ultimate_stablecoin_built/).

<sup>29</sup> See Shobhit Seth, Is Stablecoin the Answer to All Cryptocurrency Problems?, Investopedia (Oct. 24, 2021), <https://www.investopedia.com/tech/stablecoin-answer-all-cryptocurrency-problems>.

<sup>30</sup> See Kent Barton, “New Frontiers, Algorithmic Stablecoins: Rai Frax and Fei”, Shapeshift Report 2021, <https://shapeshift.com/reports/algorithmic-stablecoins>.

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<sup>31</sup> In 2013, the Federal Reserve Board implemented Basel III capital rules, a regulatory reform framework developed by the Basel Committee on Banking Supervision (BCBS), which ensures that even during severe economic recessions, banks will remain resilient with strengthened capital positions in the United States. The Federal Reserve Board also introduced a standardized minimum liquidity requirement called a “Liquidity Coverage Ratio” (LCR) for large banks and systematically important, non-bank financial entities, which would be required to hold “minimum amounts of high-quality, liquid assets such as central bank reserves and government and corporate debt that can be converted easily and quickly into cash.” See Federal Reserve, Basel Regulatory Framework, <https://www.federalreserve.gov/supervisionreg/basel/basel-default.htm>.

<sup>32</sup> See Joel Khalili, An NFT just sold for \$69 million, making Bepple the ‘third most valuable living artist’, TechRader, (Mar. 12, 2021), <https://www.techradar.com/news/an-nft-just-sold-for-dollar69-million-making-beeple-the-third-most-valuable-living-artist>.

<sup>33</sup> See Christies, NFT 101 – NFT Background and Basics, <https://www.christies.com/features/NFT-101-Collection-Guide-to-NFT-11654-7.aspx>. The FAQ also state that “NFTs have the potential to transform how we think about and establish ownership.”

<sup>34</sup> See Updated Guidance for a Risk-Based Approach to Virtual Assets and Virtual Asset Service Providers, (Oct. 28, 2021) <https://www.fatf-gafi.org/publications/fatfrecommendations/documents/guidance-rba-virtual-assets-2021.html>.

<sup>35</sup> See Vitalik Buterin, “DAOs, DACs, DAs and More: An Incomplete Terminology Guide”, Ethereum Foundation Blog (May 6, 2014), <https://blog.ethereum.org/2014/05/06/daos-dacs-das-and-more-an-incomplete-terminology-guide/>.

<sup>36</sup> See, e.g., Kevin Werbach, *The Blockchain And The New Architecture of Trust* (MIT Press 2018) at 67 *et seq.*

<sup>37</sup> SEC issued a report concluding DAO tokens were securities, see <https://www.sec.gov/news/press-release/2017-131>.

<sup>38</sup> See Will Gottsegen, “What Do DAOs Actually Do?”, Coindesk (Sept. 27, 2021), <https://www.coindesk.com/business/2021/09/27/what-do-daos-actually-do/>.

<sup>39</sup> *Ibid.*

<sup>40</sup> See Nate DiCamillo, “State Lawmaker Explains Wyoming’s Newly Passed DAO LLC Law”, Coindesk (Aug. 22, 2021), <https://www.coindesk.com/policy/2021/04/22/state-lawmaker-explains-wyomings-newly-passed-dao-llc-law/>.

<sup>41</sup> *Ibid.*

<sup>42</sup> *Ibid.*



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