

NEBRASKA

Good Life. Great Opportunity.

DEPARTMENT OF BANKING
AND FINANCE

Digital Asset Depository Nebraska Charter Ecosystem Guidance

Nebraska Department of Banking and Finance

Version 2.0 – July 2023

TABLE OF CONTENTS

Contents

TABLE OF CONTENTS	2
EXECUTIVE SUMMARY.....	4
INDUSTRY LANDSCAPE	5
Digital Asset Custodians	5
Digital Asset Exchanges	5
Digital Asset Market Maker.....	5
OTC Trading Firms and Brokerages.....	5
Proprietary Trading Firms.....	5
Investment Funds	6
Lenders	6
Administrators.....	6
Key Management Technology and Service Providers	6
Payment Gateways/Processors	6
Tools and Service Providers.....	6
Insurance Providers.....	7
NFT Marketplaces	7
Mining Companies.....	7
ATMs.....	7
DAOs	7
REGULATORY LANDSCAPE	8
Considerations for Licenses and Registrations.....	8
Considerations Related to Digital Asset Products and Services.....	8
List of Notable Proposed Bills and Regulations (Non-exhaustive).....	10
STANDARDS.....	12
Travel Rule Universal Solution Technology (TRUST).....	12
American Institute of Certified Public Accountants (AICPA).....	12
International Organization for Standardization (ISO) and International Electrotechnical Commission (IEC).....	12
Cryptocurrency Security Standard	12
NIST	13

FFIEC Cybersecurity Assessment Tool	13
Committee of Sponsoring Organizations of the Treadway Commission (COSO).....	13
EMERGING TRENDS AND RISKS	14
Emerging Trends.....	14
Emerging Risks.....	15

EXECUTIVE SUMMARY

The mapping of the overall ecosystem of digital asset participants allowed for a comprehensive understanding of the roles played by each participant in this space, ranging from digital asset custodians and exchanges to key management technology and service providers.

Current and proposed regulatory regimes addressing digital asset-specific use cases and nuances, both domestically and internationally, have served to shape the digital asset ecosystem. These include, but are not limited to, current licensing and registration considerations for various digital asset service providers and regulatory authority over certain digital asset products. Proposed bills, including the Responsible Financial Innovation Act (RFIA) and the Blockchain Regulatory Certainty Act seek to further regulate the industry.

Beyond regulation, the industry benefits from an extensive list of standards and thought leadership pieces, such as the Travel Rule Universal Solution Technology, which was designed for AML/CFT and OFAC Compliance purposes to promote best practices amongst industry participants.

Finally, wider adoption and ecosystem development over the last few years has shaped new emerging trends and risks.

INDUSTRY LANDSCAPE

The mapping of the overall ecosystem of digital asset participants, including but not limited to digital asset custodians, exchanges, lenders, brokerages, funds, market makers, administrators and miners allows for the development of a comprehensive understanding of the roles played by each of the participants and the interconnections amongst them. The following list highlights the main digital asset participants and their role in the industry.

Digital Asset Custodians

Custodians provide secure storage of digital assets on behalf of their clients. Clients generally include digital asset exchanges and investment funds that need to secure their own clients' digital assets. The danger of hackers compromising the security of an exchange has prompted the rise of digital asset custodians to provide reliable, secure storage of digital assets. Custodians combine physical and cyber security practices to deter hackers and prevent theft of client funds.

Digital Asset Exchanges

Digital asset exchanges are businesses that provide a platform for their clients to buy/sell or hold digital assets. Digital asset exchanges generally hold the funds of their clients on the platform in accounts called "wallets". Some exchanges allow clients to fund their wallets with fiat and digital assets, while others might only allow funding through digital assets. Digital asset exchanges could be centralized (centrally governed and operated) or decentralized (no central operator).

Digital Asset Market Maker

Market makers facilitate order flow by actively buying and selling digital assets to provide market liquidity.

OTC Trading Firms and Brokerages

OTC trading firms and brokerages operate similarly to exchanges in that they connect buyers and sellers. They are typically used to facilitate large private transactions that can be conducted as principal or agent. The rise in demand for prime brokerage services can be attributed to increasing institutional investor participation in the industry.

Proprietary Trading Firms

Businesses or individuals that buy and sell digital assets for their own benefit.

Investment Funds

Digital asset investment funds' primary objectives are to invest in digital assets. They raise money from third parties to execute their investment strategy. Fund managers typically should be experienced in both digital assets and traditional securities.

Lenders

Digital asset lenders provide loans denominated in fiat currency or digital assets. The lenders may lend digital assets to a business or lend fiat. These loans are usually highly collateralized because of the potential price fluctuations of the various digital assets, which may expose borrowers to margin calls initiated by the lender to re-collateralize the loan or else force a liquidation.

Administrators

An administrator establishes the structure of the blockchain and/or creates and distributes its own tokens/coins. The administrator may be able to control the amount of their issued digital assets available in the market by issuing or burning units from circulation.

Key Management Technology and Service Providers

Key management technology and service providers are entities involved in developing infrastructure services that would manage keys on behalf of users and/or enable users to manage their own private keys (self-custody). These service providers tend to provide auxiliary services associated with digital asset ownership.

Mixers and privacy wallets are particularly noteworthy examples of key management technology and service providers because of their high risk for money laundering.

- Mixers are services that help users transact with greater privacy by obfuscating the source of funds by pooling together user deposits and mixing them together at random. Users can then receive funds back from the co-mingled pool equivalent to what they contributed, minus a service fee.
- Privacy wallets are digital asset wallets that combine security features like encryption and IP address anonymization with tools to obfuscate digital asset transaction trails. Privacy wallets facilitate mixing through decentralized mixing protocols which automatically mix the funds of all users of that wallet on every transaction they conduct. According to Elliptic, a blockchain analytics provider, privacy wallets overtook mixers as a preferred avenue for laundering illicit gains.

Payment Gateways/Processors

Payment gateways/processores enable digital asset payments and receive fiat currency in exchange.

Tools and Service Providers

Digital asset tools and service providers create, develop or maintain software, applications, or platforms supporting digital assets, blockchain applications or companies/individuals involved with digital assets or blockchain applications. These include oracles, wallet providers, and blockchain analytics firms.

Insurance Providers

Insurance providers in digital assets typically insure against cybersecurity breaches. Given the diversity of operational risks in the digital asset space, insurance providers are careful to clearly delineate the often-limited conditions in which their coverage may be redeemed. Digital asset firms, such as DDs, should be careful to understand the true extent and limitations of their coverage.

NFT Marketplaces

NFT marketplaces are platforms where NFTs can be traded, auctioned, displayed, stored, and in some cases minted (created).

Mining Companies

Digital asset mining companies are entities that earn digital assets by verifying transactions on the blockchain in a Proof-of-Work (PoW) mechanism. Miners secure the blockchain network and process transactions by solving complex computational problems, allowing them to chain blocks of transactions together.

ATMs

A digital asset ATM is a standalone device or kiosk that allows members of the public to purchase or sell digital assets at a terminal by using cash or debit and bypassing an exchange. Digital asset ATMs may be bidirectional, supporting both the purchase and sale of digital assets for cash, or unidirectional, enabling solely the purchase of digital assets without facilitating the sale of digital assets by the user in exchange for cash. Digital asset ATMs are regulated as MSBs.

DAOs

Decentralized Autonomous Organizations (DAOs) are internet-native organizations which are governed in a decentralized manner by way of voting shares that are held by members of the DAO. Voting shares are typically commensurate with the members' level of investment in the DAO, assets associated with the DAO, or a linked ecosystem. DAOs are managed from the bottom up, and decisions are often made based on a precise set of rules implemented on a smart contract in a blockchain. DAOs often have a treasury and decision on what to do with the funds in the treasury are often contingent on community polls.

REGULATORY LANDSCAPE

Although the regulatory landscape for digital assets is constantly evolving, there are some regulatory regimes currently in place that address digital assets specifically, as well as current regulations that are thought to be inclusive of digital asset use cases. The following provides an illustrative list of some regulatory considerations and proposed regulation (both domestically and internationally) shaping the digital asset ecosystem.

Considerations for Licenses and Registrations

Digital Asset Custodians

- Obtain an OCC National Bank Charter – Interpretive letter 1170 clarifies national banks’ and federal savings associations’ authority to provide digital asset custody services.
- Obtain a Wyoming Special Purpose Depository Institution (SPDI) Charter
- Obtain a NYDFS Trust Company Charter (or other state Trust Charter)

Digital Asset Exchanges, ATMs, Gateways, and Certain Mining Arrangements

- Register as a Money Service Business with FinCEN
- Obtain a state money transmitter license (or BitLicense with NYDFS)
- Obtain a UK Financial Conduct Authority E-money License
- Obtain a Monetary Authority of Singapore’s Digital Payment Token Service License

Trade & Fund Management

- Register with FINRA and SEC
- Register with CFTC or NFA, or satisfy an exemption if investing in digital asset futures contracts

Miners

- Register as a Money Service Business with FinCEN (if mining pools are hosting digital asset wallets on behalf of pool members)

Considerations Related to Digital Asset Products and Services

Derivatives Trading

- In 2019, the CFTC was first to approve derivatives referencing digital assets. Since its initial approval of bitcoin futures products, the CFTC has also approved Ether futures to trade on the CME.
-

- The SEC has taken more time in granting approval of digital asset ETFs; however, the Commission recently approved two Bitcoin futures ETFs in October 2021. The SEC has yet to grant approval for a “spot” digital asset ETF.
- The CFTC has to date certified futures and options contracts on Bitcoin, Ether, and Ether/Bitcoin pair. The earliest to be certified was a Bitcoin binary option contract swap by Nadex. Exchanges that have been granted such certification include:
 - o CME
 - o FTX
 - o ICE Futures U.S.
- The SEC recently approved the first futures-based Bitcoin ETFs, including the ProShares Bitcoin Strategy ETF and the Valkyrie Bitcoin Strategy ETF. The SEC had previously explicitly rejected Bitcoin ETF applications, including:
 - o Fidelity Wise Origin Bitcoin ETF
 - o VanEck Bitcoin Trust
 - o Winklevoss Bitcoin Trust

Presidents Working Group on Financial Markets (PWG) Report on Stablecoins

- The report highlights gaps in the authority of regulators to reduce risks associated with stablecoins, including but not limited to the potential for destabilizing runs, disruptions in the payment system, and concentration of economic power.

Digital Commodity Exchange Act (2022)

- In September 2020, representatives Glenn Thompson, Ro Khanna, Tom Emmer, and Darren Soto created a definition for "digital commodity" and allowed the CFTC to oversee companies issuing or letting people trade these types of tokens, while having the SEC continue to oversee tokens that fall under U.S. securities laws.
- This version of the DCEA is an updated version of a bill originally introduced in 2020 by former Rep. Michael Conaway.
- The DCEA is intended to fill in the regulatory gaps that exist between the U.S. Commodity Futures Trading Commission (CFTC) and the U.S. Securities and Exchange Commission (SEC) in digital asset markets.
- New Framework for Digital Commodity Exchanges and Custodians: The DCEA provides authority for the CFTC to register and regulate Digital Commodity Exchanges (DCEs) as a new type of registered entity with requirements that mirror the requirements for existing intermediaries in commodity derivatives markets.
- Simplified Regulation: The law simplifies the spot market for digital assets by providing trading venues an alternative to the cumbersome state-by-state money transmitter regulations.
- Digital Commodity Exchanges: A registered DCE would be subject to comprehensive CFTC oversight and regulations, including:
 - o Limitations on which digital commodities they would be permitted to offer for trading.
 - o A requirement to segregate customer assets and hold them in separately regulated entities which are licensed to custody digital assets.
- Voluntary Registration: The registration regime is voluntary, but with strong incentives for properly placed trading venues to seek registration.

- Jurisdictional Lines: DCEA simplifies the process of bringing new digital commodities to market by creating clear jurisdictional lines between the CFTC and the SEC.

List of Notable Proposed Bills and Regulations (Non-exhaustive)

Responsible Financial Innovation Act (RFIA)

- Among other things, the legislation provides the CFTC with regulatory authority over digital asset spot markets (i.e., digital asset exchanges), currently subject to state money transmission laws. This additional layer of regulation means that exchanges will be subject to CFTC rules on investor protection and handling of funds in addition to other requirements.

Cryptocurrency Taxation Reporting Requirements of the Infrastructure Investment and Jobs Act

- The Infrastructure Investment and Jobs Act provided a definition for digital assets in addition to creating a new definition for “broker”, which the IRS would consider for purposes of required tax reporting.
- The wording in the Act could potentially include digital asset miners and stakers who would not have access to the same level of information necessary to report to the IRS as digital asset exchanges.
- There is a considerable number of bills that have been introduced in an attempt to modify or reverse the impact of this legislation.

Central Bank Digital Currency (CBDC) Study Act of 2021

- This bill would require the Board of Governors of the Fed, in consultation with the OCC, the FDIC, Treasury, the SEC, and the CFTC to study the impact of introducing a CBDC.

Blockchain Regulatory Certainty Act

- This Act offers protection for ‘non-controlling’ blockchain services and software developers. This would prevent any blockchain developer or provider of a blockchain service from being treated as a money transmitter or financial institution unless the developer has control over their users’ digital currency during the ordinary course of business.

MAS Financial Services and Markets Bill (2022)

- The section entitled "Services That Are Digital Token Services" expands the scope of digital asset activities for the purpose of regulation and to align both with enhanced FATF standards and Singapore's own Payment Services Act as amended in 2021. It also formalizes requirements regarding place of business, capacity for responding to AML queries or digital token service user complaints, and transaction recordkeeping, all of which enabled greater AML/CFT supervisory and inspection ability (which is also described in the bill but generally and not specific to digital assets).

- The bill broadens regulatory authority to impose technology risk requirements, backed by a 1 million Singaporean dollar fine (~722k USD) for non-compliance - this is seen as setting the foundation for industry-specific technology risk requirements for digital assets (e.g., on private key management) in the future.

STANDARDS

The following standard-setting bodies and thought leadership pieces have served to shape the regulatory landscape for digital asset service providers.

Travel Rule Universal Solution Technology (TRUST)

- TRUST, formerly the US Travel Rule Working Group, developed a protocol for trusted members to share information on transactions made within the permissioned network of participants.

American Institute of Certified Public Accountants (AICPA)

- AICPA developed criteria for organizations to use as a framework for demonstrating the confidentiality, integrity, and availability of systems and data
- System and Organization Control (SOC) 2 audits are used to report on the effectiveness of internal controls and safeguards over infrastructure, software, people, procedures, and data
- Organizations use SOC 2 reports to demonstrate due diligence to clients, differentiate themselves from competitors based on their security posture, or be proactive with auditors in measuring compliance against data protection regulations.

International Organization for Standardization (ISO) and International Electrotechnical Commission (IEC)

- The ISO 27001 standard provides a framework to support security practices, including, for example, how cryptographic keys may be developed and implemented through their lifecycle.
- The ISO 27001 security standard sets requirements governing the organizational implementation of policies, procedures, and controls and is designed to support companies in managing their information security by organizing people, processes, and technology to ensure the confidentiality, availability, and integrity of information.
- ISO 27001 helps organizations protect their information and supporting assets in an organized manner through the implementation of an Information Security Management System (ISMS).

Cryptocurrency Security Standard

- The CryptoCurrency Security Standard (CCSS) is a set of requirements for all information systems that make use of digital assets, including exchanges, web applications, and digital asset custody solutions.
- CCSS is designed to complement existing information security standards (i.e., ISO 27001) by introducing guidance for security best practices with respect to digital assets.

NIST

- NIST developed a whitepaper: Mitigating the Risk of Software Vulnerabilities by Adopting a Secure Software Development Framework (SSDF).
- The industry looks towards this whitepaper as a best practice to reduce the risk of software and smart contract vulnerability.

FFIEC Cybersecurity Assessment Tool

- Cyber Resilience is a key risk element within the digital asset space due to the enhanced reliance on third parties, the presence of smart contracts and the decentralized nature of the blockchain.
- This tool is often viewed as an industry best practice to evaluate cybersecurity risk.

Committee of Sponsoring Organizations of the Treadway Commission (COSO)

- COSO published a paper discussing the impacts of Distributed-Ledger Technology (DLT) on Internal Control frameworks. The paper focuses on the control environment, risk assessments, control activities, information and communications, and monitoring activities.

EMERGING TRENDS AND RISKS

Emerging trends and risks and the impact thereof on supervisory frameworks, including recommendations for the NDBF on how to adapt to this rapidly changing ecosystem.

Emerging Trends

- Emerging regulation
 - Nuances in addressing regulatory and compliance matters amongst both cryptonative and traditional financial institutions (TradFi) nuances in addressing regulatory and compliance matters.
- Enforcement Actions
 - Regulators are increasing the size of their digital asset examination staff and scrutiny of digital asset operations amidst wider consumer adoption
 - Consent orders, cease-and desist orders against main players in the industry
- NFTs and the metaverse
 - Popularizing the concept of digital ownership rights, placing digital assets in the mainstream space
 - Improvements in virtual reality technology and computing power will result in the actualization of the much-hyped metaverse concept, which may significantly increase the market size for some types of digital assets
- Consensus Mechanisms
 - Emergence of Proof-of-Stake (PoS) consensus mechanisms as an environment-friendlier alternative to Proof-of-Work
 - Bans on mining operations in some US states (e.g., New York)
- Corporate Adoption
 - ESG prompting firms to allocate some of their portfolio to PoS-based digital assets.
 - Greater understanding of digital assets among traditional financial institutions and clients
 - Longevity and continued popularity of digital assets such as Bitcoin and Ether, which legitimize these assets as investible
 - Fostering more comfort in allocating some of their portfolio towards digital assets (this trend has temporarily been paused due to recent market volatility)
- Product Innovation
 - New products, developments, and technologies in the digital asset space such as ETFs, structured products, derivatives

Emerging Risks

- Stablecoin Reserve Management
 - Increased scrutiny on stablecoins as a category and differential treatment across perceived soundness of the underlying reserves and transparency into the current state of reserves management practices initially due to distress of USDT and more recently due to catastrophic failure of the Terra blockchain in managing UST
 - Fiat currency backed stablecoins, asset backed stablecoins, and algorithmic stablecoins
 - Reserve management process for fiat currency and asset backed stablecoins
- Lending Platforms Implications
 - Centralized governance implications for centralized lending platforms
- Contagion Risk
 - The digital asset market is still considered within one segment in the overall market and correlation across different digital assets in the crypto space remains high