Isn’t it just software: Does my technology-based service or product trigger any regulatory obligations?

21 October 2021

Reminders

- The webinar will be recorded and posted to the FIA website within 24 hours of the live webinar.
- Please use the “question” function on your webinar control panel to ask a question to the moderator or speakers.

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Today's presentation was prepared by PERKINS COIE

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Software vs. incumbents

- Blockchain, Artificial Intelligence, Machine Learning, Biometrics and other technological innovations are supplanting many analog functions
  - COVID-19 accelerated this trend – consumer businesses have automated to reduce workplace density and meet demand*
  - McKinsey predicts 1 in 4 U.S. workers will lose their job to automation by 2030*

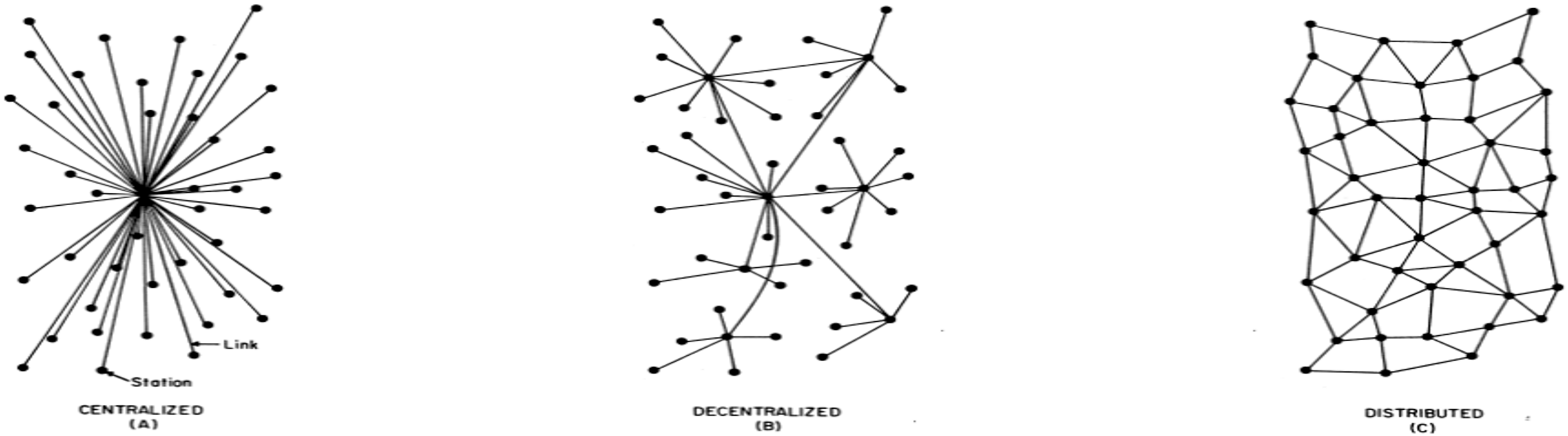
- Financial technologies (or "**fintech**"), such as cryptocurrencies, virtual banks and robo-advisors, are mainstream and use is trending upwards
  - Distinction between fintech and financial services is blurry
  - Robots manage hundreds of billions of dollars today
  - Market cap of all cryptocurrencies is over $2 trillion
  - Fintechs raised $30.8 billion in Q2 of 2021, beating Q1's funding record by 30%**

*The future of work after COVID-19, McKinsey Global Institute, Feb. 18., 2021 (link).

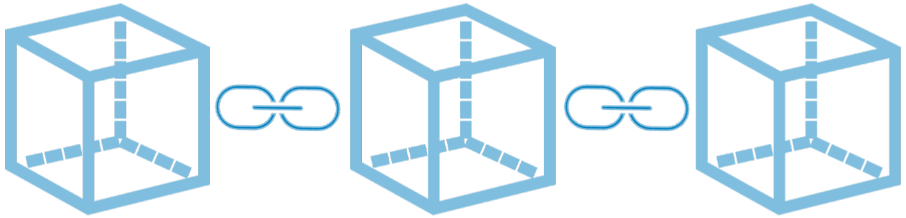
**State Of Fintech Q2'21 Report, CBInsights, July 22, 2021 (link).

Centralized vs. distributed

- Financial Technology products can be grouped into two general categories: centralized platforms and distributed systems
  - A **centralized platform** is operated by an identifiable central authority who has control over the platform
  - A **distributed system** has no central authority and every node is responsible for maintaining the system



Blockchain



A **blockchain** consists of a distributed group of **connected computers** that programmatically **reach agreement** with respect to the status of, or changes to, certain **shared data**, often reflected on a shared ledger.

Blockchain Systems Involve:

- A P2P Network (**Connected Computers**)
- A Consensus Mechanism (a programmatic way for users of the network to **Reach Agreement**, using cryptography)
- Certain **Shared Data** (often embodied in a "smart contract" or "token" associated with a shared ledger)

Digital assets

Digital assets (or "cryptoassets") are a blockchain-based digital representation of currencies, rights to goods or services, commodities, securities, or other assets, which can be used to fractionalize or digitize asset ownership, increase liquidity, track provenance, and improve transaction speed among token holders

Currency Tokens
Payment tokens, similar to traditional fiat currencies (e.g., Bitcoin, Ether)

Utility Tokens
Rights to goods or services like data storage, or ownership and licensing rights

Commodity-Backed Tokens
Rights to the value of an underlying commodity like gold, oil or coffee

Security Tokens
Digital representation of a security in a company or an investment contracting with entitlement to profits or rise in company value

Non-fungible tokens

- Unique blockchain-based digital assets that are not interchangeable
- Each non-fungible token (or "**NFT**") has its own unique token identifier (and often, associated reference metadata)
- Often includes a license to use a piece of artwork, videogame item or property, music or video
    - Some NFTs have an associated creative work file embedded within the NFT's code, which is represented on the blockchain
    - Alternatively, the NFT may include a pointer that references a file that is uploaded elsewhere (e.g., AWS)

Smart contracts

- Smart contracts enable peers on a distributed ledger network to exchange value without counterparty risk
- A **smart contract** is: (i) a computer protocol—an algorithm, (ii) that can self-execute, self-enforce, self-verify and self-constrain the performance of its instructions
- It is: (i) an event-driven program, (ii) with state, (iii) which runs on a replicated, shared ledger and (iv) which can take custody over assets on that ledger
- In short, smart contracts facilitate transaction automation and eliminate the need for intermediaries

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Artificial intelligence and machine learning

- Artificial Intelligence (or "**AI**") is the simulation of human intelligence in machines
- Machine Learning (or "**ML**") is a subset of AI involving a system that learns from data without rules-based programming
- Machine Learning vs. Traditional Software
    - Traditional software requires hand-coding with specific instructions to complete a task
    - An ML system learns to recognize patterns and make predictions using large amounts of data

Decentralized finance (DeFi)

Types of decentralized finance protocols

Decentralized Exchange

Decentralized Lending and Borrowing

Decentralized Derivatives

Decentralized Asset Management

Decentralized Prediction Markets

Decentralized Insurance

Decentralized Entities and Organizations

Decentralized exchange

- A decentralized exchange (or "**DEX**") is a non-custodial exchange where the user maintains their digital assets in their own digital wallet but utilizes the exchange to execute peer-to-peer transactions
- DEX protocols use smart contracts deployed on a blockchain to facilitate the disintermediated exchange of digital assets amongst peers
- Third parties can build exchanges with user interfaces and decentralized applications (or "**dApps**") that facilitate order matching and the transmission of transactions to the DEX protocol smart contract
- Order book hosts, dApps, and peers on a distributed ledger can interconnect through a single DEX protocol smart contract that enables the exchange of digital assets

Compare to: Centralized digital asset exchanges, which are typically regulated as money services businesses and money transmitters, but may also qualify as broker-dealers or derivatives exchanges, subject to compliance with federal and state money transmitter laws, securities laws, and commodities laws

Decentralized lending and borrowing

- Using smart contracts, decentralized lending and borrowing protocols allow users to borrow directly from lenders peer-to-peer or "peer-to-contract"
- Most decentralized lending platforms use "collateralized borrowing," which requires the borrower to lock up collateral of greater value than the amount they are being loaned
- These platforms also often use algorithms to determine collateral requirements and interest rates

Compare to: Loans issued by banks, credit unions, and mortgage brokers as well as centralized peer-to-peer lending platforms, which are typically subject to federal and state securities laws, lending laws and consumer protection laws

Decentralized derivatives/synthetic assets

- The protocols issue derivative and synthetic digital assets for a variety of underlying assets and allow for trading without an intermediary
- Terms of a derivatives contract can be programmed into the smart contracts and settlement takes place automatically on-chain when the terms of the contract are fulfilled
- Similar to DEX and decentralized lending protocols, decentralized derivates and synthetic assets platforms also have collateral requirements and interest rates determined algorithmically based on market forces

Compare to: Designated contract markets, derivatives clearing organizations and swap execution facilities subject to compliance with federal commodities/derivatives laws

Decentralized asset management

- Protocols where users pool their investments in a fund with a pre-defined investment strategy
- These protocols eliminate the reliance on asset managers to hold funds or to easily alter investment strategies
- Given that many of these protocols allow for governance rights, individuals have a role in determining the investment strategy for the pooled funds. For example, users have the ability to propose and vote on issues like liquidity provider rewards

Compare to: Investment advisers, investment companies, commodity pool operators, commodity trading advisors regulated by the SEC, FINRA, CFTC, and NFA

Decentralized prediction market

- Allows users to make predictions about the occurrence of a future event or future value of an asset via conditional smart contracts
- Users typically stake some amount of digital assets as collateral into a smart contract associated with the particular prediction that pools the funds of all participants taking a position in the prediction and the smart contract pays out the winners with funds from the pool in an automated fashion
- Smart contract relies on an **oracle**, or a data feed that receives off-chain or on-chain information (e.g., the score of the Eagles/Panthers game) from nodes associated with the oracle, confirms there is consensus amongst nodes, and transmits the information to the protocol

Compare to: binary options platforms regulated as designated contract markets and derivatives clearing organizations and subject to federal commodity laws and CFTC regulations; casinos and gambling subject to the Bank Secrecy Act and compliance with state laws

Decentralized autonomous organization

- A decentralized autonomous organization (or "**DAO**") is an organization that uses smart contracts to codify the organizations' rules and decision-making apparatus
- DAOs issue a governance token that grants holders voting rights and the ability to propose governance proposals
- Many DAOs have organized for the purpose of pooling investor funds to purchase NFTs for consumptive and investment purposes
- In 2021, Wyoming's Governor signed Bill 38 into law, which allows DAOs to register as DAO LLCs in Wyoming. As a DAO LLC, a DAO has the rights of a legal person in court and is protected from being sued as a general partnership

Compare to: Centralized business entities subject to state corporate laws

Regulatory touchstones

Product

- A threshold question under the federal and state commodity laws, securities laws and money transmitter laws is whether the given product involved constitutes a regulated product
- If a given product does not fit within the relevant product definition, the product is out of scope of the legal framework applicable to such regulated products irrespective of whether the business is performing a similar function

Product	Potentially Regulated As
Cryptocurrency, Token	Convertible Virtual Currency, Commodity, Security, Swap
Non-Fungible Token	Convertible Virtual Currency, Commodity, Security, Swap
Prediction Market	Swap, Security
Liquidity Pool	Swap, Security, Investment Company
Lending Pool	Swap, Security, Investment Company*

* Lending pools may trigger state registration requirements.

Intermediation

- Intermediaries serve as a point of connection between end-users and transactions involving regulated products
- Federal and state commodities, securities and money transmitter laws are premised upon the regulation of intermediaries (including robots and smart contracts)
- These doctrines of law generally prohibit persons from operating certain types of intermediation services as a business without registering with the relevant agency (unless an exemption is available) and complying with applicable laws

Function	Registration Category
Brokers, Dealers	Broker-Dealer, Futures Commission Merchant, Introducing Broker, Swap Dealer
Exchanges, Clearinghouses	National Securities Exchange, Designated Contract Market, Derivatives Clearing Org
Custodians	Money Services Business, Trust Company, Money Transmitter, Bank
Transfer Services	Transfer Agent, Broker-Dealer, Money Services Business, Money Transmitter
Advisors, Pool Operators	Investment Adviser, Commodity Trading Advisor, Commodity Pool Operator

Jurisdiction

- In order for a regulator to assert authority over a product, transaction, or intermediary, the regulator must have jurisdiction
- Transactions and intermediation that occur outside of the U.S. or a particular state might be outside of a given regulator's mandate
- However, regulators broadly interpret the scope of their extraterritorial authority and will regulate offshore activity that has a U.S. nexus
    - In *Bitfinex*, the NY AG argued Bitfinex maintained "substantial ties" to New York by allowing customers located in New York to transact on their platform and opening accounts and utilizing the services of New York-based banks.
    - In *Telegram*, the SEC had jurisdiction over Telegram Group Inc. and TON Issuer Inc. even though both were British Virgin Islands companies. Additionally, neither had a principal place of business in the United States. The co-founders of the companies were both non-United States citizens, and the TON Foundation was incorporated as a Cayman Islands LLC.

Federal commodities/derivatives law

Indicia of regulated activity

- When software performs a function involving commodity derivatives that satisfies the definition of a registrant category, the developer or operator is subject to registration
- Persons cannot offer software that engages in a function that requires registration based on the premise that it is not subject to registration because it is not a 'person'
- In determining what is within scope of its mandate, the CFTC has historically considered:
  - Whether the software vendor has trading privileges on an exchange platform or the software functions as an exchange or clearinghouse itself;
  - Whether the software provides express "buy" or "sell" signals;
  - Whether users of the software have preexisting relationships with brokers and will negotiate any and all fees for executing trades between themselves and the broker;
  - Whether the vendor will solicit orders for, or recommend, propose, or encourage customers to use, a particular broker; and
  - Whether the vendor will be compensated by fees paid directly by the customer related to the fees charged by the broker for the placement of customer orders

See CFTC Letter No. 08-07 (Apr. 4, 2008); CFTC Letter 06-29 (Oct. 24, 2006).

Developer Regulation

- In a previous speech, former CFTC Commissioner Brian Quintenz distinguished between four categories of stakeholders in the DeFi ecosystem:
  - **Core Developers**: persons who write the foundational open-source software underlying the public blockchain
  - **Developers of DeFi protocols**: persons who develop smart contracts and decentralized applications that function on the public blockchain
  - **Validators**: persons who operate a validator node and support the network's operation
  - **Users**: persons who own cryptocurrency and use the blockchain to transact
- Commissioner Quintenz posited that the developers of the DeFi protocols are required to register with the CFTC and subject to liability, but core developers, validators and users are not.
- "I think the appropriate question is whether these code developers could reasonably foresee, at the time they created the code, that it would likely be used by U.S. persons in a manner violative of CFTC regulations."

https://www.cftc.gov/PressRoom/SpeechesTestimony/opaquintenz16

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Developer regulation (cont.)

- Former Commissioner Berkovitz has similarly expressed the view that smart contracts and decentralized applications are not out of the scope of CFTC registration and compliance requirements:
  - “We have a system in which intermediaries are legally accountable for protecting customer funds. . . . In a pure “peer-to-peer” DeFi system, none of these benefits or protections exist."
  - “The CEA requires futures contracts to be traded on a designated contract market (DCM) licensed and regulated by the CFTC. The CEA also provides that it is unlawful for any person other than an eligible contract participant to enter into a swap unless the swap is entered into on, or subject to, the rules of a DCM. The CEA requires any facility that provides for the trading or processing of swaps to be registered as a DCM or a swap execution facility (SEF). DeFi markets, platforms, or websites are not registered as DCMs or SEFs. The CEA does not contain any exception from registration for digital currencies, blockchains, or “smart contracts.”
- CFTC Commissioner Stump has raised the question of whether there is any regulatorily compliant path for DeFi or cryptocurrency margin trading platforms to register with the CFTC and offer their products and services in a compliant way

https://www.cftc.gov/PressRoom/SpeechesTestimony/opaberkovitz7
https://www.cftc.gov/PressRoom/SpeechesTestimony/stumpstatement101521

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NFTs

- Products that are non-fungible generally cannot be commodities able to be delivered under a futures contract because such non-fungible products are not interchangeable making a standardized contract impossible
- The more fungible in nature that a series of NFTs is, the more likely it is to constitute a commodity (e.g., 1 of 100,000 issuances)
- Some similarity to environmental commodities, such as RECs, with unique serial numbers that convey certain rights to the owner – each NFT has its own serial number and contains a license to use associated source materials
- NFTs that entitle the creator or another NFT holder to a share of secondary sale royalties upon the NFT's resale may qualify as a swap or a security

Securities law

The duck test

- SEC Chair Gary Gensler purports to evaluate new fintech products using a mental model derived from a James Whitcomb Riley poem: “[w]hen I see a bird that walks like a duck and swims like a duck and quacks like a duck, I call that bird a duck”
- Gensler has remarked:
  - “You can call it a coin but if it functions as a security, it is a security”
  - “[U]nlike other trading markets, where investors go through an intermediary like the New York Stock Exchange, people can trade on crypto trading platforms without a broker — 24 hours a day, 7 days a week, from around the globe. . . . Make no mistake: To the extent that there are securities on these trading platforms, under our laws they have to register with the Commission unless they meet an exemption.”

https://www.media.mit.edu/posts/remarks-at-blockchain-event/
https://www.sec.gov/news/public-statement/gensler-aspen-security-forum-2021-08-03

Lending and yield products

- Products currently on the market have been criticized by Congress, the SEC, and state securities regulators
- The SEC signaled it may institute enforcement proceedings to prevent launch of a widely-anticipated yield product
- A business that borrows virtual currency from its clients and then relends the same virtual currency to borrowers is likely an “issuer” subject to the Securities Act of 1933
- Generally, an issuer must either:
  - Register its securities offering with the SEC, or
  - Comply with an exemption from registration (e.g., Reg D, Reg S, Sec. 3(a)(2))
  - If software acts as agent for lenders or borrowers, then it would likely be acting as a broker and the software operator will likely need to register as such with SEC and FINRA

Decentralized exchanges

- The SEC does not distinguish between centralized and decentralized exchanges – both are equally subject to securities laws, including registration requirements
  - In November 2018, the SEC settled an enforcement action with a founder of DEX EtherDelta for operating an unregistered national securities exchange
  - EtherDelta enabled users to access their external unhosted digital wallet to transact peer-to-peer with other users (on-chain) through a central order book (off-chain)
- Under Exchange Act Rule 3b-16(a), a trading system meets the definition of an exchange if such system: such an organization, association, or group of persons:
  1. brings together the orders for securities of multiple buyers and sellers; and
  2. uses established, non-discretionary methods (whether by providing a trading facility or by setting rules) under which such orders interact with each other, and the buyers and sellers entering such orders agree to the terms of the trade

Order and execution management systems

- In June 2021, the SEC announced that Neovest Inc., a provider of an order and execution management system (“**OEMS**”) that facilitates trading, would be charged for operating as an unregistered broker-dealer
- Neovest is owned by JPMorgan Chase & Co. and, prior to acquisition, was a registered-broker dealer. After acquisition, Neovest withdrew its broker-dealer registration but continued to process payments
- The SEC argued that the OEMS platform allowed customers to directly route their orders to buy and sell equities and options to more than 360 broker-dealers; Neovest received fees for executed orders

Robo-advisers

- In February 2017, the SEC published information and guidance on automated advisers, commonly referred to as "robo-advisers" that use computer algorithms to provide investment advisory services online with often limited human interaction
- The guidance clarifies that robo-advisers – even if fully autonomous – are subject to compliance with the Advisers Act and the Investment Company Act and may be required to register with the SEC
- The SEC has brought several actions against robo-advisers. Most recently, the SEC has focused on fraud and disclosure failures. In 2021, for example, the SEC charged SoFi Wealth, LLC for breaching its fiduciary duties to clients in connection with an April 2019 investment of client assets into two new-exchange-traded funds sponsored by its parent company. The SEC found that SoFi Wealth failed to disclose its conflicts of interest associated with the transactions.

https://www.sec.gov/investment/im-guidance-2017-02.pdf

NFTs

- The SEC has not yet settled any enforcement action involving NFTs, but, as a transferable digital asset, the SEC and courts would likely apply the *Howey* test to analyze whether the products are securities on a case-by-case basis
- *Gary Plastic*, *Glen-Arden Commodities* and other precedent suggests that non-fungible tokens, which, like other digital assets might not ordinarily constitute securities may qualify as such when packaged with features that create reasonable expectation of profits based on the efforts of others in the purchaser, such as:
    - Right to secondary sale royalties
    - Ability to redeem for or "forge" a rare physical product
    - Entitlement to receive other digital assets
    - Voting rights
- SEC Chair Gensler, prior to taking office, said "SEC Chairman Clayton stated in February that 'I believe every ICO I've seen is a security…' I agree with the Chairman, except if one were to consider CryptoKitties an ICO."

Money transmission

Hosted vs. unhosted digital wallets

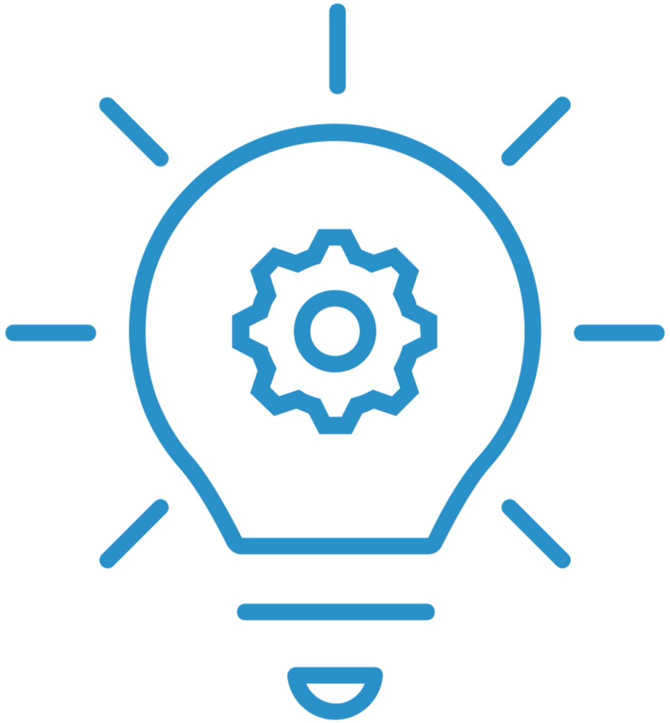
- FinCEN requires that persons who accept “convertible virtual currency” (“**CVC**”) from a person for the purpose of transmitting it to another person or location to register as money services businesses (“**MSB**”), unless an exemption applies
- Types of digital wallets:
  - A “hosted digital wallet” is a wallet “where user funds are controlled by third parties”
  - An “unhosted digital wallet” is a wallet where users control the funds (i.e., maintain their own private keys)
- FinCEN views unhosted wallet providers as software providers rather than money transmitters because users control their CVC and transmit it peer-to-peer using the provider’s software
- In contrast, FinCEN views hosted wallet providers as money transmitters because they receive, store, and transmit CVCs on behalf of their users

Decentralized apps and exchanges

- One exemption from MSB registration is the network access exemption for persons that provide the delivery, communication, or network access services used by a money transmitter to support money transmission services
- Many non-custodial DEXs can rely on the network access exemption from the registration requirement
- FinCEN guidance explains that

  ". . . if a CVC trading platform only provides a forum where buyers and sellers of CVC post their bids and offers (with or without automatic matching of counterparties), and the parties themselves settle any matched transactions through an outside venue (either through individual wallets or other wallets not hosted by the trading platform), the trading platform does not qualify as a money transmitter under FinCEN regulations."

Final thoughts



Technological innovation moves faster than regulation. When regulation eventually comes, it is often developed without a full understanding of the relevant technology.

Questions?

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