

Blockchain Basics for FIX

A primer in the world of digital
assets and technology



May 2026

FIX TRADING
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Contents

Executive Summary & Purpose	4
Document Overview	4
Authors	5
Part 1: Foundation "What Is This Actually?"	6
Blockchain Demystified for Trading Professionals.....	6
Understanding the Organizational Gap.....	7
Core Concepts Translated	7
Types of Blockchains - Which Matters When?.....	12
Part 2: Digital Assets "What Am I Actually Trading?"	13
Asset Types and Their Uses.....	13
Digital Cash - The Payment Leg Challenge	15
Custody and Insurance - The Custodians' Problem	15
Part 3: The Finality Problem "When Is a Trade Really Done?"	16
Why Finality Matters.....	16
Blockchain's Finality Challenge (Probabilistic vs. Deterministic Finality)	16
Practical Implications for FIX Members	17
Part 4: Technical Integration "How Does This Connect to My Infrastructure?"	18
Understanding What FIX Actually Is (and isn't)	18
How FIX is Generally Used.....	23
The FIX Protocol's Scope (as of May 2026)	24
Ongoing Development.....	26
The FIX Protocol and Digital Assets	26
The Integration Challenge	26
The Scalability Reality Check	27
Architecture Patterns.....	28
Technical Requirements Checklist.....	28
Part 5: Workflows "What Changes in My Operations?"	30
Front-to-Back Workflow Impact Analysis.....	30
Process Changes by Function	31
The Opportunity: A Crypto Trading Standard	33
Part 6: Regulatory Landscape "What Are the Rules?"	34
Current State of Digital Asset Regulation (May 2026)	34
The Finality Requirement Deep Dive.....	34
Major Regulatory Frameworks	34

ISO 2022 and Standards Alignment 35

Key Questions Before Starting..... 35

Part 7: Getting Started "What Should I Do First?"36

 Readiness Assessment..... 36

 Entry Strategies..... 37

 Recommended First Steps (3-6 Month Plan)..... 38

 The Vendor Landscape - Who Can Help?..... 38

 Common Pitfalls to Avoid 39

Part 8: The Big Picture "Where Is This All Going?"40

 Market Trends..... 40

 The Opportunity for FIX 40

 The Urgency Question 41

Blockchain Basics

Executive Summary & Purpose

This document provides a concise, practical overview of blockchain technology and tokenisation, specifically tailored for members of the FIX Trading Community. Designed for professionals with substantial experience in traditional finance but limited exposure to blockchain, the guide demystifies key concepts by translating them into familiar FIX and TradFi terminology. The objective is to support FIX members in understanding how blockchain can integrate with existing trading infrastructure and workflows, enabling informed decision-making and effective adaptation to emerging technologies.

Document Overview

- **Part 1: Foundation “What Is This Actually?”** – Establishes the baseline concepts: what blockchain is (and is not) in TradFi terms, the organisational “silo” gap between FIX and digital-asset teams, key terminology, and when different blockchain types matter.
- **Part 2: Digital Assets “What Am I Actually Trading?”** – Describes major digital-asset categories (e.g., stablecoins, tokenised securities, native crypto), and highlights the operational implications around the payment leg, custody, and insurance that affect trading and post-trade workflows.
- **Part 3: The Finality Problem “When Is a Trade Really Done?”** – Frames why settlement finality is critical for regulated markets, contrasts probabilistic vs deterministic finality, and outlines practical questions and architectural considerations FIX members should apply when evaluating blockchain settlement.
- **Part 4: Technical Integration “How Does This Connect to My Infrastructure?”** – Explains what FIX is (and isn’t), how it is typically used, and what parts of FIX (application, session, encoding) matter for blockchain connectivity—then discusses integration challenges, scalability limits, common architecture patterns, and a technical requirements checklist.
- **Part 5: Workflows “What Changes in My Operations?”** – Compares today’s FIX-driven front-to-back workflow with a blockchain-enabled future state, then breaks down process impacts by function (trading, ops, risk, compliance) and highlights the opportunity for a more standardised approach to crypto trading.
- **Part 6: Regulatory Landscape “What Are the Rules?”** – Summarises how digital assets fit into existing regulatory regimes, focuses on finality expectations, and lays out key regulatory frameworks and standards-alignment considerations (including ISO 20022), plus questions firms should address before proceeding.
- **Part 7: Getting Started “What Should I Do First?”** – Provides a practical on-ramp: readiness assessment questions across technical/organisational/operational/regulatory dimensions, entry strategies, a suggested 3–6 month plan, guidance on vendors/partners, and common pitfalls to avoid.
- **Part 8: The Big Picture “Where Is This All Going?”** – Looks ahead at market trends and the strategic opportunity for FIX to bridge TradFi and digital assets, concluding with a call to action on timing, competitive dynamics, and engagement in standards development.

Authors



The FIX Trading Community is the non-profit, industry-driven standards body at the heart of global trading. Independent and neutral, the organisation addresses real business and regulatory issues across global, multi-asset markets through standardisation, improving efficiency, transparency, and reducing costs and risk for market participants.

Central to FIX Trading Community's work is the continuous development and promotion of the FIX family of standards, notably the **FIX Protocol** messaging language. This, used by over 10,000 firms handling billions of messages daily, has revolutionised the trading environment and successfully become the way the world trades.



QUBIC Labs is a nonprofit innovation hub based in Quincy, Massachusetts, focused on bridging traditional finance and emerging technology. Through its accelerator programs and institutional partnerships, QUBIC connects blockchain infrastructure startups with established financial institutions, helping both navigate the evolving digital asset landscape.

Part 1: Foundation

"What Is This Actually?"

Blockchain Demystified for Trading Professionals

A brief history

Blockchain became viable with Bitcoin in 2008, when Satoshi Nakamoto combined peer-to-peer networking, cryptography, and economic incentives into the first decentralized ledger. Bitcoin proved that value could be transferred without trusted intermediaries, introducing the blockchain as a tamper-resistant, shared record. Subsequent platforms—most notably Ethereum—generalised this idea, turning blockchains into programmable trust infrastructures capable of supporting smart contracts and tokenised assets. Over time, blockchain has evolved from a radical monetary experiment into a broader foundation for digital market infrastructure.

What blockchain is (in TradFi terms)

In simple terms, a distributed ledger is like having a shared, up-to-date master record that everyone can access. Instead of relying on a single, central database, information is checked and confirmed by a network of peers. Once a record is added, it can't be changed, which means there's a permanent, transparent audit trail. You can think of it as a clearinghouse that's spread across many participants, enabling real-time settlement and verification.

What blockchain is NOT

Blockchain isn't meant to replace every system already in use, and it's not limited to cryptocurrency or crypto trading. In institutional settings, it isn't an unregulated or anonymous technology. Rather, there are many different types of blockchain implementations, and it's important to note that blockchain solutions haven't yet been fully tested at the scale required by large financial institutions.

The "So What?" for FIX Members

Traditional financial institutions are starting to pay close attention to blockchain technology because it offers solutions to some of the challenges in their current workflows. Blockchain can help streamline processes, improve transparency, and create secure audit trails. However, it's important to recognize that blockchain can't solve every problem and shouldn't be expected to replace all existing systems. With the rise of blockchain, asset managers will soon face increased competition, pushing them to adapt quickly or risk falling behind. This shift is creating real pressure for organizations to understand and integrate these new technologies.

Understanding the Organizational Gap

The Silo Problem

In large financial institutions, there's often a disconnect between traditional trading teams and their counterparts involved in digital assets. This lack of communication can lead to duplicated work, missed chances to integrate new technologies, slower progress in adopting hybrid solutions, and gaps in knowledge on both sides. By bridging this divide, organizations can work more efficiently and make the most of their combined expertise.

Why This Matters:

In many major financial institutions, FIX expertise is typically found within trading teams, while blockchain knowledge is concentrated in separate teams focusing on digital assets. Unfortunately, these groups often lack an understanding of each other's challenges and strengths, leading to communication gaps and missed opportunities. This guide is designed to help close that internal divide, making it easier for both sides to work together and leverage their combined capabilities.

The Goal: Get the blockchain and FIX "ones and zeros" people speaking the same language.

Core Concepts Translated

Definitions of Common Terms

DeFi

Decentralised Finance (DeFi) refers to a set of financial applications and services built primarily on distributed ledger technology - most commonly public blockchains - that aim to provide financial functionality without relying on traditional intermediaries such as banks, exchanges, or clearing houses. DeFi uses smart contracts to automate activities like trading, lending, borrowing, asset issuance, and payments, with rules enforced by code rather than central institutions. These services are typically open, programmable, and accessible to anyone with a compatible digital wallet.

Distributed Ledger Technology (DLT)

DLT is a method of recording, sharing, and synchronising data across multiple independent participants, where each participant maintains a copy of a common ledger and updates are validated through agreed consensus mechanisms rather than a central authority. Once recorded, entries are typically time-stamped and resistant to alteration, creating a shared and trusted record of transactions or events

Tokenisation

This refers to the digital representation of real-world or financial assets—such as securities, funds, real estate, or commodities—as **digital tokens** on a ledger or platform, typically using distributed ledger technology. These tokens embody defined rights and obligations (for example, ownership or entitlement to cash flows) while remaining linked to the underlying asset. Tokenisation can enable fractional ownership, programmability, faster settlement, and improved transparency across the asset lifecycle. Importantly, it does **not** create a new asset class by itself; rather, it is a new way of issuing, recording, and transferring existing financial instruments.

Tokens may be **natively issued** on a blockchain (where the blockchain is the authoritative record of ownership) or may represent **wrapped** or **mirrored** versions of assets whose primary record remains in traditional systems. This distinction affects legal structure, settlement finality, and interoperability between platforms. It is also worth noting that tokens from different issuance platforms are generally not fungible with each other or with traditional issuance unless there's an explicit bridging mechanism or they share a common settlement layer.

While the underlying technology is similar, tokenisation is applied in several distinct ways depending on what the token represents and how it is used:

- One major category is asset or security tokenisation, sometimes referred to as real-world asset (RWA) tokenisation. Here, tokens represent legal or economic rights to traditional assets such as equities, bonds, fund units, loans, commodities, or real estate. These tokens are used to modernise issuance, trading, settlement, and servicing by enabling features such as fractional ownership, programmable corporate actions, near-real-time settlement, and improved transparency. Importantly, the underlying rights typically remain unchanged—the token is a new digital representation of an existing financial instrument and is generally subject to the same legal and regulatory frameworks.
- A second category is tokenised money and cash-equivalents, which includes stablecoins, tokenised deposits, and settlement tokens. In this case, tokens represent claims on fiat currency or short-term liquid assets and are primarily used as means of payment or settlement within digital asset ecosystems. These tokens are often used to facilitate atomic settlement, enable 24/7 markets, or act as on-chain collateral, rather than as investment assets in their own right. Their design focuses on price stability, convertibility, and integration with existing monetary and payment systems.
- Finally, there are utility and non-financial tokens, which do not represent ownership of, or claims on, an underlying asset. Instead, they provide access to a service, confer usage rights, or support governance within a digital platform (for example, paying transaction fees, accessing network services, or voting on protocol changes). These tokens are central to many blockchain-based applications but are generally distinct from financial tokenisation, as they are not primarily used to represent traditional assets or investment rights.

Together, these forms of tokenisation illustrate that “tokenisation” is not a single use case, but a spectrum of approaches, ranging from digitising existing financial instruments, to creating new forms of money and digital functionality.

Smart Contracts

A **smart contract** is a set of rules written into a digital asset or blockchain system that automatically carries out agreed actions when predefined conditions are met. In practice, this means processes such as transferring ownership, making a payment, or applying restrictions can happen automatically, without manual intervention, once the conditions of the agreement are satisfied. In digital asset markets, smart contracts are commonly used to embed business logic—such as issuance rules, transfer restrictions or settlement instructions—directly into the asset itself, helping reduce operational complexity and reliance on intermediaries.

Oracle

In the context of blockchain, an **oracle** is a service or mechanism that acts as a bridge between a blockchain network and the outside world, allowing smart contracts to access real-world data that doesn't natively exist on chain. Since blockchains are closed, deterministic systems that can only access data already stored within them, smart contracts have no inherent way to know things like asset prices, interest rates, weather conditions, or the outcome of events. Oracles fetch, verify, and deliver external data onto the blockchain in a trustworthy way, enabling smart contracts to execute based on real-world conditions. For example, a derivatives smart contract might rely on an oracle to provide the current price of a security in order to trigger settlement.

Node

A **node** is an individual participant—typically a computer or server—that is connected to the network and plays a role in maintaining and operating the shared ledger. Each node holds a copy (full or partial) of the ledger and participates in processing transactions according to the network's rules. Depending on the DLT design, a node may validate transactions, take part in the consensus mechanism, propose or order new ledger entries, and store and synchronise ledger data with other nodes. Nodes work collectively to ensure the ledger remains consistent, resilient, and tamper-resistant without relying on a single central authority.

Consensus

Consensus is the process by which a network of independent participants agrees on the current and correct state of the shared ledger—such as which transactions are valid and in what order they are recorded. **Consensus mechanisms** are the rules and algorithms that enable this agreement without relying on a central authority, even when participants may not fully trust one another. They define how transactions are proposed, validated, and finalised, balancing factors such as security, fault tolerance, performance, and governance.

Gas Fee

A **gas fee** is a transaction fee paid by a user to compensate the network for the computing resources required to process and record a transaction or execute a smart contract. Gas fees are most commonly associated with smart-contract platforms and serve two purposes: they incentivise validators or operators to process transactions, and they prevent network abuse by making excessive or inefficient use of resources costly.

Keys

Public and private keys are a pair of cryptographic credentials used to identify participants and securely authorize transactions. The **public key** is openly shared and functions like an address or identifier on the network—it allows others to send assets or verify who a transaction is associated with. The **private key** is kept secret and is used to digitally sign transactions, proving that the holder has the authority to transfer assets or exercise rights linked to the corresponding public key. Together, they enable secure ownership, authentication, and non-repudiation without relying on a central intermediary.

Wallet

A **wallet** is a software or hardware component that allows a user to hold and manage cryptographic credentials—primarily private keys—that prove control over digital assets or rights recorded on a ledger. A wallet does not usually store the assets themselves; instead, it enables the user to securely sign transactions, view balances, and interact with DLT-based systems such as token transfers or smart contracts. Depending on the design, wallets may be custodial or non-custodial, user-facing or system-based, and can represent individuals, institutions, or automated processes within the network.

Finality

Finality, in a blockchain context, is the point at which a trade-related transaction is settled with certainty, i.e., it is economically and operationally irreversible, so positions, cash movements, and downstream risk/compliance processes can proceed without having to model a potential rollback. Some networks provide probabilistic finality (confidence increases with confirmations, but reorg risk never fully disappears), while others provide deterministic finality (a defined consensus point after which reversal is not expected under normal operation).

Atomic Settlement

Atomic settlement is a settlement model where the asset leg and the payment leg complete as a single, indivisible action: either both transfer or neither does. For trading and operations teams, it is the on-chain equivalent of DVP, designed to eliminate principal risk and reduce the need for interim credit exposure and reconciliation between separate systems.

Summary

Blockchain Term	What It Means for Your System	FIX/TradFi Equivalent
DLT (Distributed Ledger Tech)	Blockchain and similar technologies	Shared record keeping system
Tokenisation	Securities that can move across networks	Digital representation of securities
Smart Contract	Business logic embedded in the asset itself	Programmable settlement instruction
Oracle	Brings external, real-world facts (prices, rates, event outcomes, timestamps) onto a blockchain so smart contracts can act on them	External data source/feed (e.g., market or reference data)
Node	Entity that maintains a copy of the ledger	FIX Session participant
Consensus	How participants agree on transaction validity	Clearing and settlement agreement
Gas Fee	Cost to execute on-chain operations	Transaction processing fee
Public/Private Key	Authentication mechanism	Digital signature credentials
Wallet	Where digital assets are held	Custody account
Atomic Settlement	Simultaneous and indivisible exchange of asset and payment	DVP (Delivery vs Payment)
Finality	When a transaction is irreversible	Trade confirmation/settlement

Types of Blockchains - Which Matters When?

Public Blockchains (Ethereum, Bitcoin, Solana)

Public blockchains, such as Ethereum and Solana, are open networks that anyone can join. They're often used to connect to decentralized finance (DeFi) markets and to access public stablecoins. However, using these networks involves certain trade-offs, including balancing transparency with privacy and speed with decentralization. When it comes to scalability, Ethereum (at the time of writing) can handle about 15 to 30 transactions per second, while Solana's theoretical capacity is around 400 transactions per second.

Private/Permissioned Blockchains (Canton, Corda, Hyperledger)

Private or permissioned blockchains are managed networks where all participants are known and verified. These systems are well-suited for FIX-based institution-to-institution settlements and help enforce compliance controls. While they offer greater control, they may sacrifice some interoperability compared to public chains. However, private blockchains generally provide higher transaction throughput, making them more efficient for large-scale operations.

Layer 2 Solutions (Arbitrum, Optimism)

Layer 2 solutions are secondary networks that sit atop main blockchains, designed to increase speed and reduce transaction costs. They're particularly useful for applications that require higher throughput, such as those using the FIX Protocol. However, despite improvements, current Layer 2 platforms' transaction throughput are not yet able to meet the demands of traditional financial markets. In fact, none of these technologies have been tested at a true institutional scale yet.

"Which blockchain will win?"

Instead of expecting one blockchain to dominate, it's likely that several will coexist, much like how messaging protocols and databases do today. This means that making sure different blockchains can work together—interoperability—is more important than choosing one "winner." The best approach is to use multiple blockchains connected by translation layers. This opens the door for the FIX Protocol to become a standard that unifies communication across these different chains.

Part 2: Digital Assets

"What Am I Actually Trading?"

Asset Types and Their Uses

Stablecoins - The New Plumbing

What are they?

A stablecoin is a digital version of traditional fiat currency. When people talk about stablecoins replacing the existing "plumbing" of payment systems, they mean that these assets offer a payment method that works around the clock, allowing transactions to settle instantly. This could enable payments to go directly between parties, potentially avoiding the need for conventional payment networks, and could significantly change the way cash moves during trading activities.

What does stablecoin mean to my system?

To integrate stablecoins into your trading system, you would need to include a payment instruction for the stablecoin within your FIX message. This requires establishing a technical connection with either the stablecoin issuer or an appropriate payment network. It is also important to consider whether stablecoin networks can accommodate the large transaction volumes typical of institutional trading. Finally, you should assess which stablecoins are suitable for different use cases, as not all stablecoins may meet your operational or regulatory requirements.

Types and Considerations

Type	Examples	Regulatory Status	Suitability
Fiat-backed	USDC, USDT	Varies by issuer	Most common for institutional
Bank deposits	JPM Coin, Fidelity	Bank-regulated	High institutional suitability
Central Bank Digital Currency (CBDCs)	Digital Dollar (proposed)	Central bank issued	Highest regulatory clarity

When considering stablecoins for your needs, it's important to identify which ones are suitable for your intended use cases and to understand the guarantees behind their redemption. You should also think about how your system would respond if a stablecoin loses its value relative to its peg, as well as consider how custody arrangements will be managed to ensure security and compliance.

Tokenized Securities

What are they?

Tokenised securities are traditional assets like shares and bonds that are represented on a blockchain. For your system, this means you could have securities that settle instantly or within the same day, with ownership directly recorded on the blockchain instead of just at a custodian. Integrating these assets would involve connecting your existing FIX order system so that blockchain settlement confirmations are received and would also require linking to a tokenisation platform and ensuring digital custody arrangements.

Examples & Usage

Examples of tokenised securities include tokenised government bonds, money market funds, private credit funds, and real estate funds. Tokenised equity instruments, such as xStocks, or tokenized ETFs are also nascent but growing use cases for tokenisation. These assets are subject to both current securities regulations and new rules for digital assets. Key benefits and use cases include easier access to private markets, the ability to own fractions of assets, operational efficiency of post-trade workflows and round-the-clock trading.

Types and Considerations

Type	Examples	Regulatory Status	Notes
Fixed Income	Government bonds, Treasuries, repo	Generally within existing securities frameworks	Most mature tokenised asset class; T+0 capable with high liquidity on major instruments
Funds	MMFs, mutual funds, ETFs	Securities regulated; fund-specific rules apply	Mature and growing; typically T+0 to T+1, liquidity depends on fund structure
Equity	Tokenised shares, xStocks	Securities regulated; exchange rules vary by jurisdiction	Nascent but accelerating; T+0 capable but secondary market liquidity still developing
Real Assets	Real estate, commodities, infrastructure	Fragmented; asset-class specific regulation	Early stage; illiquid with valuation and exit mechanisms still a friction point
Private Markets	Private credit, private equity	Largely unregulated at asset level; access rules apply	Emerging; illiquid with lock-up periods - fractionalisation expands access but does not solve liquidity

Native Digital Assets (Cryptocurrencies)

What are they?

Native digital assets, such as Bitcoin and Ethereum, are types of assets that exist solely on the blockchain and have no physical form. At present, there is a gap in the market because most of the cryptocurrency industry does not rely on the standard FIX protocol for trading. Instead, Ethereum developers and others often create their own ways to communicate and trade, as there is currently no universal protocol for crypto trading—highlighting a significant opportunity for innovation in this area.

Implications

Introducing native digital assets such as cryptocurrencies opens up a new asset class that financial firms may offer to clients. These assets come with distinct custody and settlement processes compared to traditional securities. To integrate them into existing systems, firms will need to adapt your FIX messaging to connect with crypto trading venues. Additionally, firms will require a reliable crypto custody partner and access to market data feeds to ensure secure handling and accurate information.

Digital Cash - The Payment Leg Challenge

The challenge: Moving cash on chain to match tokenized securities

There are several ways to move cash on-chain, including government-issued Central Bank Digital Currencies (CBDCs), tokenised bank deposits, stablecoins from the private sector, and traditional settlement methods that use a mix of on- and off-chain approaches. Each option affects your FIX implementation differently: the type of cash will change how payment instructions are handled, when settlement is considered final, and what regulatory reports are required. Additionally, the level of risk with your counterparty will vary depending on which cash type you use.

Custody and Insurance - The Custodians' Problem

The Challenge: Traditional custodians face significant hurdles in digital asset custody:

Traditional custodians face several challenges when it comes to digital asset custody. Insurance cover for these assets is often limited or unavailable, and there is ongoing uncertainty about regulatory requirements. Managing cryptographic keys can be technically complex, raising tough questions about liability if assets are lost or stolen. As a result, major custodians experience insurance gaps and may need to use specialist digital custody providers. Hybrid models that combine traditional and digital custody are starting to emerge, making thorough due diligence on custody arrangements more important than ever.

Questions for Your Custodian:

- What insurance coverage exists for digital assets?
- What are the key management procedures?
- What happens if keys are lost or compromised?
- How is segregation of assets maintained?
- What regulatory frameworks apply?

Part 3: The Finality Problem

"When Is a Trade Really Done?"

Why Finality Matters

The Traditional Finance Model

In traditional finance, a trade goes through three main steps: execution, clearing, and settlement, usually within one or two business days (T+1 or T+2). At each stage, there are well-defined points where the transaction is considered final. Organizations like the DTCC (Depository Trust & Clearing Corporation) guarantee that trades will settle as promised, and trades that have been cleared rarely ever fail.

The Regulatory Requirement

To demonstrate finality to regulators, blockchain providers need to supply clear documentation that shows when and how transactions are considered fully settled. This documentation should address how the system handles unusual situations, such as failed transactions or network congestion, and explain the process for managing chain reorganizations—which can impact transaction certainty. Regulators typically require detailed records proving that transactions cannot be reversed after a set point, as well as policies for dealing with exceptions to ensure compliance with settlement and transparency standards. In addition, regulators require a clear and definite outcome for every transaction. This means you must be able to confirm exactly what was bought or sold, know the precise moment the transaction becomes irreversible, and ensure that the trade cannot be undone unless everyone involved agrees to it.

Regulations like SEC Rule 15c6-1, which sets requirements for the settlement cycle, CFTC rules on trade certainty, and the clearing requirements under Dodd-Frank all aim to make sure trades are settled quickly and with complete certainty. A key question is how these rules interact with blockchain-based settlement systems. Understanding this relationship is important because blockchain technology can offer both advantages and challenges when it comes to meeting these strict regulatory standards for trade finality and transparency.

Blockchain's Finality Challenge (Probabilistic vs. Deterministic Finality)

Probabilistic Finality (Most Public Blockchains):

With most public blockchains, a transaction is considered "probably" final after a certain number of confirmations. For example, Bitcoin typically requires about six confirmations—which takes around an hour—for users to feel confident that their transaction won't be reversed. Ethereum usually reaches practical finality in 12 to 15 minutes. However, there remains a small chance that a transaction could be undone due to a chain reorganization. This uncertainty is a major issue for institutional trading, where even a 1% chance of failure is unacceptable.

Deterministic Finality (Some Private/Newer Chains):

When a transaction reaches confirmation on certain blockchain networks, it becomes completely final and cannot be reversed under any circumstances. This level of certainty is seen in systems like Tendermint¹-based blockchains and some permissioned networks, and it aligns perfectly with regulatory expectations for absolute finality.

Chain Reorganisation

This is where a blockchain replaces a previously accepted tip of the chain with a different competing chain, causing some recent blocks to be dropped and their transactions to be moved back into “unconfirmed” state (or possibly never re-included). This can happen when two or more blocks are produced at the same time, creating a temporary fork in the chain. The network later converges on one branch based on its consensus mechanism.

This matters because a transaction that looked confirmed can become “unconfirmed”, which is the core reason probabilistic finality exists on many public chains. Operationally, systems need a policy that defines finality (e.g., “treat as final only after N confirmations”) and defines what to do if a reorganization changes the state of previously confirmed transactions.

Practical Implications for FIX Members

Questions to Ask Blockchain Providers

- What is your finality model (probabilistic or deterministic)?
- What is the time to finality?
- What is the failure/reversal rate?
- How do you handle chain reorganizations?
- What documentation do you provide for regulatory purposes?

Architecture Considerations

Before updating FIX systems, it is important to wait for the required number of blockchain confirmations to ensure a transaction is truly complete. Organizations should establish clear guidelines that define when a blockchain transaction is considered “settled.” Additionally, there must be procedures in place for dealing with transactions that fail or are reversed. Finally, reconciliation processes should be designed to reflect the specific timing of transaction finality on the blockchain.

¹ Tendermint is a blockchain consensus engine that lets a distributed network of computers agree on transactions quickly, securely, and with immediate finality, even if some participants are faulty or malicious.

Part 4: Technical Integration

"How Does This Connect to My Infrastructure?"

Understanding What FIX Actually Is (and isn't)

The **FIX Protocol** (Financial Information eXchange) is the most widely used standard language for electronic trading in traditional capital markets. It defines a common set of message types and data fields that firms use to communicate things like *orders*, *quotes*, *executions*, *allocations*, and *settlement instructions*—so that a buy-side OMS, a sell-side EMS, an exchange, or a vendor platform can all “speak the same language” without bespoke point-to-point formats.

For traders, FIX is part of the market’s plumbing: it’s how instructions and status updates move reliably between counterparties and venues at speed and scale. For technologists, it is a machine-interface business protocol with well-defined semantics and lifecycle states (e.g., how an order progresses from new, to partially filled, to filled or cancelled).

Over time, FIX has expanded beyond equities into multi-asset and post-trade workflows, while also separating **what** a message means (the application layer) from **how** it is transported and encoded (session and wire formats). That separation is particularly useful when connecting to newer infrastructures—such as blockchains—because it allows firms to preserve familiar trading semantics while adapting the technical “on-the-wire” details to fit different platforms.

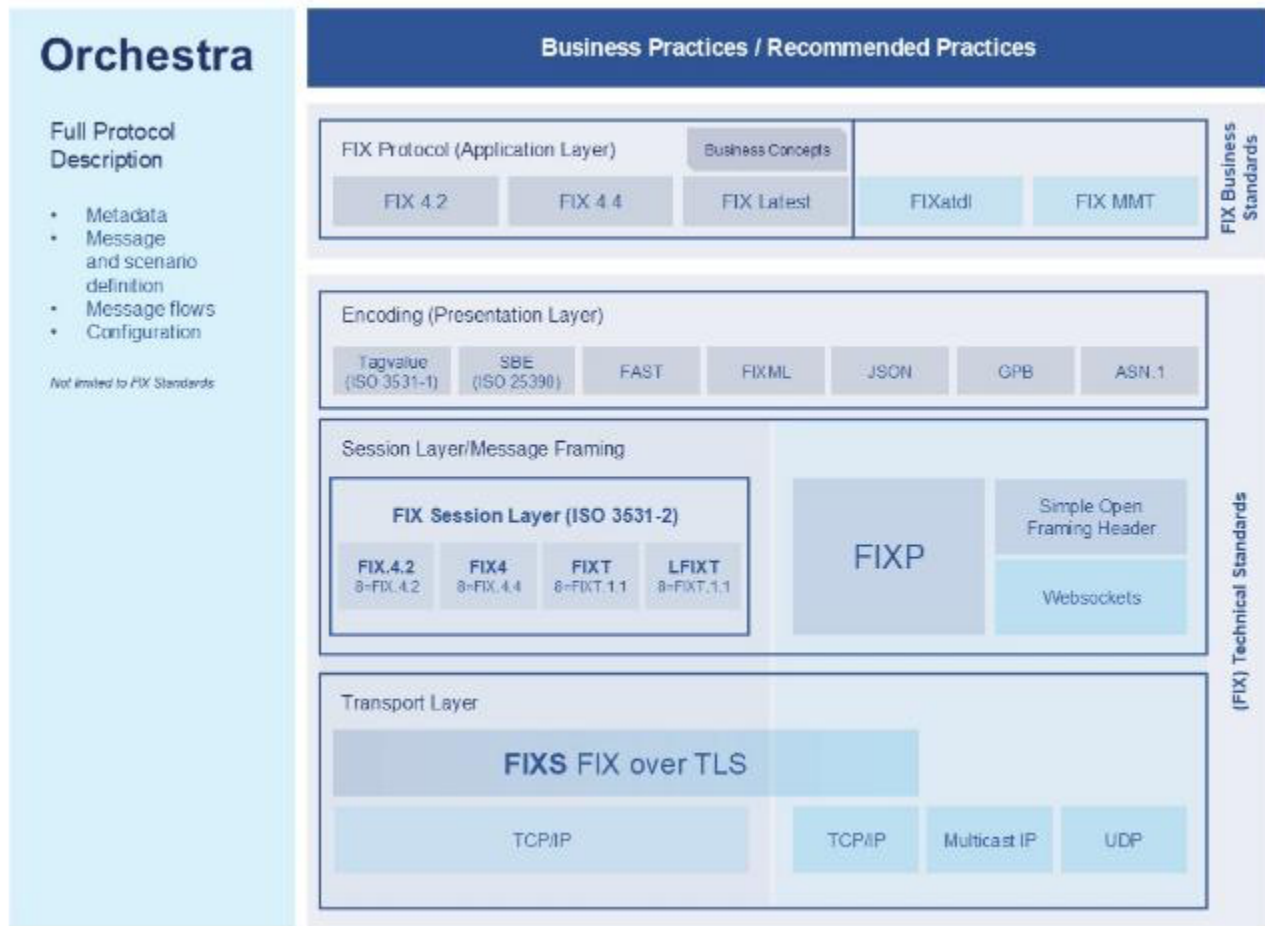
Critical Clarification: The FIX Protocol is a language, not a network.

The FIX Protocol does not use a specific network, and the FIX Trading Community does not operate any networks or provide any type of communication or certification service. There are plenty of firms that do this independently of the FIX Trading Community.

Furthermore, people often conflate three things when they mention “FIX”:

- the **application layer**,
- the **session layer**, and
- the **encodings**.

The following describes these terms and how they are used in practice:



FIX Application Layer (aka the FIX Protocol²) – What the message means

Purpose The FIX *application layer* defines the **business semantics**: *what* is being communicated.

What it specifies

- Business message types (e.g. New Order Single, Execution Report, Market Data Snapshot)
- Fields and their meanings (e.g. Price, OrderQty, Side)
- Business workflows and state models (order lifecycle, trade reporting, allocations)
- *Scenario-specific usage (e.g., by asset class) is covered in Recommended Practices documents. These are not part of the FIX Protocol but contain supplementary guidance on how to use it for specific use cases.*

Key points

- This layer is **transport- and encoding-agnostic**
- An order is an order regardless of how it is encoded or transported

² The documentation for the earliest versions of the FIX Protocol (e.g., up to version 4.4) included the application layer, tag-value encoding and the FIX session. These were formally separated on the release of FIX version 5.0 in 2007. These days the 'FIX Protocol' is taken to mean just the application layer.

- Usage of the same application layer but with different encodings does require software to translate the encodings; however the business meaning of the data, message sequencing and workflows are consistent

Examples

- FIX Protocol application messages

Analogy

The *sentence you want to say*, not how you say it or how the phone line works.

FIX Session Layer – How messages are exchanged reliably

Purpose The FIX *session layer* defines **how two parties maintain a reliable conversation**.

What it handles

- Session establishment and termination (Logon / Logout)
- Heartbeats and liveness
- Sequence numbers and ordering
- Gap detection and message recovery
- Session state and identity

What it does not define

- Business meaning of messages
- Field semantics
- Workflows

Major session standards

- **Classic FIX Session Layer**
- **FIXP** – high-performance, low-overhead session layer for binary/low-latency use cases
- Non-FIX sessions (e.g., AMQP, WebSockets)

Key architectural point

- Since FIX 5.0, the **session layer is formally separated from the application layer**
- FIXP goes further by removing application-level session fields entirely

Analogy

The *rules of the phone call*: who speaks, in what order, and how you recover if the line drops.

FIX Encodings – How the message is represented on the wire

Purpose

Encodings define **how FIX messages are serialized** for transmission.

What they control

- Wire format (text vs binary)
- Field representation and compression
- Parsing efficiency and latency characteristics

Common FIX encodings

- **Tag=Value** (classic FIX)
- **FIXML** (XML-based)
- **SBE (Simple Binary Encoding)**
- **FAST** (market-data-oriented compression)

Important separation

- The *same application message* can be encoded in multiple ways
- Encodings do **not change business meaning**
- Session layer and encoding are orthogonal
- Non-FIX encodings (e.g., JSON, ASN.1, Google Protocol Buffers) can be used

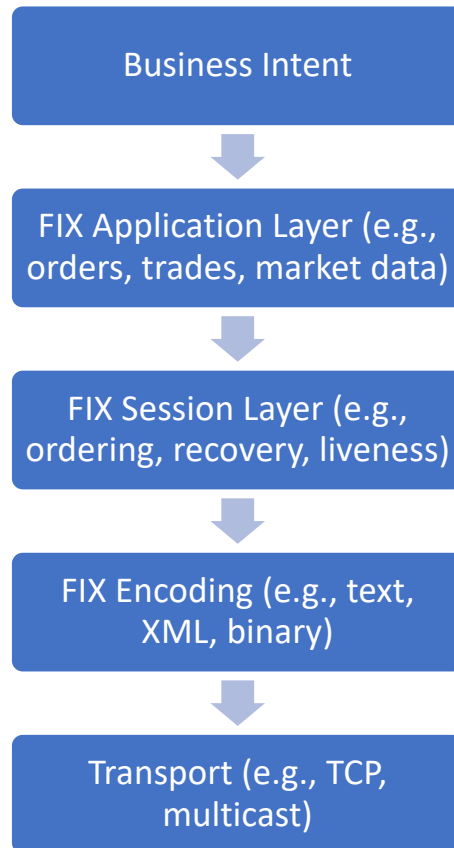
Analogy

Whether you speak English, Morse code, or binary—*the sentence is the same*.

Putting it together...

Layer	Question is answers	Examples
Application	What does this mean?	New Order Single, Execution Report
Session	How do we talk reliably?	Logon, sequence numbers, recovery
Encoding	How is it written on the wire?	Tag=Value, SBE, FIXML

Or visually:



This separation is one of FIX’s most under-appreciated design strengths and has particular relevance when considering interactions with blockchains, none of which natively support the “classic” FIX encoding (tag=value) or session. A FIX message can use any encoding (not just those listed above), is not tied to any one type of session, and can run over any network. The caveat is that the majority of FIX usage today uses tag=value encoding and the standard FIX session³, these being what FIX engines are designed to support. Moving to alternative encodings or sessions does require the use of different software. However, the real prize is maintaining a consistent application layer as this allows a consistent set of business data elements, messages and workflows to be presented to internal systems. This is the true value of the FIX Protocol.

³ Sizeable exceptions exist for listed derivatives clearing (FIXML commonly used), and exchange interfaces (at least three very large exchange groups use the FIX Protocol with Simple Binary Encoding).

How FIX is Generally Used

The original use case – buy-side-sellside connectivity

The buy side and sell side firms have their respective FIX engines. Prior to using the connection, the two firms will have exchanged their 'rules of engagement' (documents that lay out what each firm supports and any firm-specific usage features or customisations that the other firm may need to be aware of) and will have performed some testing. Once live, the two firms' FIX engines will communicate with each other using the FIX Protocol. If the connection between them is disrupted, the FIX session provides methods to restore and recover communications. FIX can operate over the internet or on private networks, such as Transaction Network Services. Importantly, members of the FIX community have the ability to contribute to and influence how the protocol develops over time.

Implications for blockchain connectivity

When it comes to integrating blockchain technology, FIX users don't have to establish a direct network connection to the blockchain itself. Instead, the focus is on enabling FIX to effectively communicate with blockchain systems by translating messages between them. This is made easier by FIX's network-agnostic design, which allows it to operate smoothly in environments with multiple blockchains, making it well-suited for a world where different chains need to interact. The fact that the FIX Protocol is independent of encoding or session creates opportunities for FIX to be used in a more 'blockchain-native' manner. Whether or not a single encoding/session combination will emerge across all blockchains is yet to be seen, but having a consistent application layer significantly reduces the effort involved in connecting to multiple chains.

The FIX Protocol's Scope (as of May 2026)

Pre-trade Messages

General communications

FIX's general communication messages are used for free-format informational communication between parties. They include both public and private messaging, allowing firms, venues, and counterparties to distribute news, announcements, and event-driven information. These messages support urgency flags and subject tagging, enabling recipients to prioritise and organise communications that are not directly tied to order or trade workflows.

Pre-trade

These messages support market data distribution, reference data dissemination, entitlement management, and risk configuration prior to order submission. They enable subscription-based market data delivery, incremental and full refreshes, statistical reporting, stream assignment, and detailed reference data for markets, securities, trading sessions, parties, entitlements, and risk limits. This category underpins market transparency and ensures participants have up-to-date structural and pricing information before trading.

Reference data

Reference data messages provide static and semi-static information about markets, securities, trading sessions, parties, entitlements, and risk limits. They support initial snapshots, incremental updates, and request/response models that allow firms to maintain consistent internal reference data aligned with venues and counterparties. These messages are critical for defining market structure, security characteristics, party relationships, and permissions used across trading and post-trade processes.

Trading Messages

Trading

Trading messages cover the full lifecycle of order handling, execution, quoting, and negotiation. They include single and multi-leg orders, cross orders, mass order actions, program trading lists, RFQs, quotes, executions, cancels, replaces, acknowledgements, and error handling. Together, these messages enable flexible trading models across continuous, negotiated, and program trading environments, while supporting high-performance, high-volume execution workflows.

Risk management

Risk management messages are used to control party participation and exposure in trading activities. They support actions such as suspending or reinstating parties, requesting approval of risk or credit limits for transactions, and reporting the outcome of those requests. These messages enable real-time enforcement of risk controls and provide auditability for manual or automated risk interventions.

Testing

These support the certification and validation of trading algorithms and systems. Messages enable the definition of test suites, execution of test actions, reporting of test results, and issuance of algorithm testing certificates. Acknowledgement and status messages ensure that testing requests and results are formally tracked, supporting regulatory and venue requirements for algorithm testing and certification.

Post-trade Messages

Collateral & margin

These messages are used to request, assign, inquire about, and report on collateral and margin positions between counterparties, clearing houses, and intermediaries. The messages support both bilateral and tri-party models and enable participants to manage collateral assignments, respond to collateral requests, inquire about collateral status, and acknowledge or reject reported information. They also support margin requirement inquiries and reporting at both summary and detailed levels, including excess or deficit calculations and net position reporting, forming the core messaging set for collateral and margin lifecycle management.

Middle office

FIX's middle office messages support post-trade processing activities such as allocation, confirmation, settlement instructions, application-level sequencing, and message recovery. They enable the breakdown of block trades into individual accounts, acknowledgements of allocations and confirmations, retrieval of standing settlement instructions, and reporting of settlement obligations. The category also includes application control messages used to manage sequencing, retransmission, and completion of message flows across defined application identifiers.

Position management

These focus on the reporting and maintenance of positions held at clearing houses or other position holders. Messages support position inquiries, end-of-day and standing position reporting, position adjustments arising from corporate actions, assignments, transfers between clearing firms, and the acknowledgement of position maintenance requests. Collectively, these messages allow position owners and holders to keep positions accurate, reconciled, and aligned throughout the post-trade lifecycle.

Post-trade

FIX's post-trade messages provide reporting and management of account-level financial obligations following trade execution. This includes daily account summaries, margin and collateral balances, settlement and pay/collect information, payment requests and responses, and settlement status reporting. These messages allow clearing members and counterparties to monitor financial exposures, upcoming payments, settlement progress, and disputes or acknowledgements related to post-trade obligations.

Ongoing Development

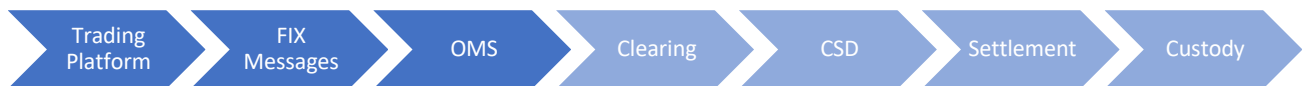
The FIX Protocol is maintained by a team within the FIX Trading Community’s staff who operate a collection of working groups and manage the change management and release process. The working groups are where the design work happens and are ‘staffed’ by volunteers from FIX member firms (with FIX Trading Community staff providing secretariat support). Enhancements to the FIX Protocol are therefore driven entirely by FIX’s member firms. The FIX Protocol ceased its original version-numbered releases many years ago, now being referred to as ‘FIX Latest’ with enhancements being applied through extension packs. A new extension pack is released roughly every 6-7 weeks and, with over 20 active working groups working on further extensions, this rate of releases is expected to continue for the foreseeable future.

The FIX Protocol and Digital Assets

FIX’s digital assets working group (the precursor to the current Digital Assets & Technology Committee) produced a FIX Protocol extension (EP 273) and associated recommended practices document⁴. EP 273 extended FIX to support digital-asset trading by enhancing currency and security identifiers to accommodate ISO 24165 digital token identifiers, enabling both FX-style and securities-style trading workflows using existing FIX messages.

The Integration Challenge

Current State



Blockchain-Integrated State



Key Integration Points

1. **Pre-Trade:** Market data from blockchain sources
2. **Trade:** FIX messages trigger blockchain transactions
3. **Post-Trade:** Blockchain confirmations update FIX systems
4. **Custody:** Digital wallets integrate with existing custody platforms

⁴ <https://www.fixtrading.org/packages/recommended-practices-for-digital-asset-trading/>
Blockchain Basics for FIX

The Scalability Reality Check

One of the main challenges is that FIX systems at major financial institutions handle millions of messages every day, whereas blockchain technology is currently much less capable in terms of throughput. So far, no blockchain solution has been tested at the true scale demanded by these institutions.

Throughput Comparison

System	Transactions/Second
Visa	~65,000
DTCC (peak)	~100,000+
Nasdaq (and similar)	~1,000,000+
Blockchains (aggregate)	Sub 5000 ⁵

It is important to recognise that completely replacing traditional financial infrastructure with blockchain technology is not yet practical. For the time being, hybrid solutions are essential, allowing both systems to work alongside each other. In particular, Layer 2 networks and private blockchains are likely better suited for handling large transaction volumes. We should manage our expectations and remain realistic about the current capabilities of blockchain, while keeping an eye on its future potential.

⁵ As of April 2026, source <https://chainspect.app/dashboard>
Blockchain Basics for FIX

Architecture Patterns

Pattern 1: FIX-to-Blockchain Adapter



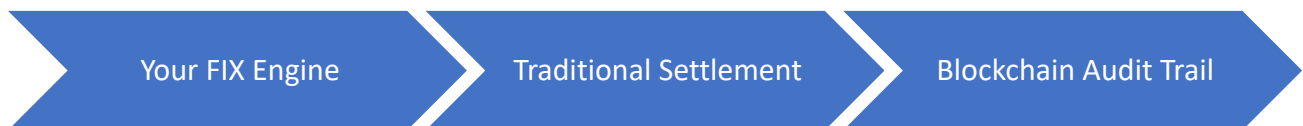
- **What it does:** Translates FIX messages into blockchain transactions
- **When to use:** Adding blockchain capabilities without changing core FIX infrastructure
- **Scalability:** Limited by blockchain throughput

Pattern 2: Hybrid Settlement



- **What it does:** Routes appropriate transactions to blockchain, others to traditional
- **When to use:** Gradual migration, volume management
- **Scalability:** Better - only subset of transactions go on-chain

Pattern 3: Blockchain Record Keeping



- **What it does:** Traditional settlement with blockchain for record keeping/transparency
- **When to use:** Compliance enhancement, audit requirements
- **Scalability:** Best - blockchain not in critical path

Technical Requirements Checklist

When implementing a digital assets trading strategy, it is essential to carefully assess the technical requirements that underpin the seamless integration and operation of both traditional and blockchain-based flows. This section outlines the critical infrastructure, data, and messaging components needed to ensure reliability, scalability, and compliance as firms transition towards more innovative settlement and record keeping solutions.

Infrastructure

- Blockchain node access (hosted or self-run)
- Digital custody solution (hot wallets, cold storage, MPC)
- API connectivity to tokenisation platforms
- Smart contract interaction capability
- Blockchain monitoring and alerting
- Capacity planning for expected transaction volumes

Data & Messaging

- FIX message extension for blockchain parameters
- Blockchain transaction ID tracking
- State synchronization logic
- Reconciliation between FIX and blockchain records
- Real-time blockchain event processing
- Finality confirmation handling

Security

- Private key management system
- Multi-signature authorization workflows
- Hardware security modules (HSMs) or MPC wallets
- Transaction signing and validation
- Disaster recovery for digital assets

Operational

- 24/7 monitoring capability (blockchain never sleeps)
- Incident response for failed transactions
- Gas fee management and optimization
- Network congestion handling
- Blockchain explorer access for troubleshooting
- Chain reorganization response procedures

Part 5: Workflows

"What Changes in My Operations?"

Front-to-Back Workflow Impact Analysis

How FIX Drives the Workflow Today

A typical order processing workflow using FIX is as follows:

1. Trade initiated
2. FIX message sent (time, counterparty, size, limits)
3. FIX engine distributes to execution venues
4. Execution confirmed via FIX
5. Post-trade: allocation by buy side asset managers
6. Fulfilment tracking via FIX
7. Clearing and settlement

The essential point to remember is that FIX oversees the handling of messages and record keeping at every stage of the workflow. Whether it is processing orders, confirming executions, tracking fulfilment, or managing settlements, FIX ensures that all relevant information is accurately communicated and logged throughout the entire process.

What Changes with Blockchain

A typical future-state workflow might look like this:

1. Trade initiated
2. FIX message sent with applicable "blockchain parameters" (any new fields or values required in the FIX Protocol to support blockchain-native functionality⁶)
3. FIX engine routes to blockchain adapter
4. Smart contract executes trade
5. On-chain settlement (potentially instant)
6. FIX system updated with blockchain confirmation
7. Digital custody reflects new positions

With blockchain integration, settlement can occur instantly rather than being delayed by one or two business days. Post-trade FIX messaging may no longer need to route through traditional clearinghouses such as DTCC for trades settled on the blockchain. Allocation and fulfilment tracking could also take place directly on-chain, offering greater transparency. In addition, new exception handling processes are required to address potential failures unique to blockchain technology.

⁶ The requirement for any such fields, values, or even message workflows, will depend on the use case and would typically be evaluated within FIX's working group structure, as would be the case for any asset class.

Blockchain Basics for FIX

Process Changes by Function

Trading Desk

What Changes

Trading can now take place at any time, as there are no restrictions based on market hours. Transactions can be executed instantly, with immediate confirmation of settlement. Traders also gain direct access to tokenised liquidity pools, allowing them to interact with a broader range of assets. Additionally, new types of orders become available, powered by smart contracts.

What Stays the Same

FIX order entry and management processes remain in place, ensuring that trades are initiated and tracked efficiently. The requirement for best execution obligations continues to uphold standards for achieving optimal trading outcomes for clients. Pre-trade risk checks are still essential to safeguard against potential issues before transactions are executed. Additionally, established models for client interaction persist, providing familiar and reliable channels for communication and engagement throughout the trading process.

New Considerations

When trading on the blockchain, it is important to understand how transaction finality works, meaning when a transaction is truly complete and cannot be reversed. Managing gas fees is another key consideration, as these are the costs required to process on-chain orders and can vary depending on network activity. Traders should also be prepared to handle failed blockchain transactions, which may occur if smart contracts do not execute as expected. Additionally, cross-chain order routing enables orders to be placed and settled across different blockchains, broadening access to various assets and liquidity pools.

Operations/Back Office

What Changes

Settlement now occurs instantly, removing the delays that were common with traditional processes. Reconciliation is automated, as the blockchain serves as the definitive record, simplifying the task of matching transactions. New challenges arise, such as handling exceptions when smart contracts fail to execute as planned. Digital custody practices are also evolving to support these changes. In some cases, settlement can take place without relying on the DTCC, streamlining certain transaction flows.

What Stays the Same

Client onboarding and Know Your Customer (KYC) procedures remain essential for ensuring proper identification and verification of clients. Regulatory reporting continues, although the formats may evolve to suit new technologies and requirements. Clients will still receive statements and confirmations to keep them informed about their transactions. Audit and compliance oversight remains a key element, helping to maintain transparency and trust throughout the trading process.

New Considerations

With blockchain-based trading, firms must be prepared to operate around the clock, ensuring continuous monitoring and timely alerts to spot any issues. Effective management and security of private keys are essential to safeguard digital assets. Additionally, processes for reconciling transactions that occur across multiple blockchains need to be in place, along with clear procedures to confirm when transactions are truly final.

Risk Management

What Changes

On the blockchain, firms can monitor their exposure to risks in real time, which enhances transparency and control. The process of instant settlement significantly lowers counterparty risk, as trades are finalised without delay. However, new operational risks emerge, such as the possibility of bugs in smart contracts or the potential loss of private keys. Additionally, liquidity in tokenised markets operates differently compared to traditional financial markets, requiring participants to adapt their strategies and expectations accordingly.

What Stays the Same

Firms must continue to assess market risk and monitor credit risk for positions that have not yet been settled. It remains important to carry out regular stress tests to evaluate how systems and portfolios might perform under extreme conditions. In addition, keeping a close watch on risk limits ensures that exposures stay within acceptable boundaries, helping to maintain financial stability and protect against unexpected losses.

New Considerations

When trading on the blockchain, several new risks must be considered. Firms need to assess the reliability of smart contracts, as errors or bugs could lead to unexpected losses. There are also risks associated with the underlying blockchain network, such as congestion, forks, or reorganisations, which may disrupt transaction processing. Safeguarding digital assets is crucial, and effective digital custody practices are essential to prevent loss or theft. Using cross-chain bridges to transfer assets between blockchains introduces additional risks, as these connections can be vulnerable to technical failures or attacks. Settlement on the blockchain is often probabilistic, meaning transactions may not be truly final straight away, and this can impact certainty. Finally, blockchains may face scalability limits during periods of high activity, which can affect performance and reliability.

Compliance

What Changes

Firms trading digital assets on the blockchain must actively monitor transactions in real time, ensuring they comply with regulatory requirements. New rules require firms to report digital asset activity in updated formats, while also conducting anti-money laundering (AML) checks on blockchain addresses. Additionally,

businesses need to implement compliance controls tailored to each specific token, helping them meet legal obligations and maintain secure, transparent operations.

What Stays the Same

Firms trading digital assets on the blockchain must continue to fulfil key responsibilities such as verifying client identities and preventing money laundering through KYC and AML checks. They are also required to ensure best execution, meaning they must secure the most favourable terms for their clients. Protecting clients remains essential, and companies must maintain comprehensive records to provide a clear audit trail of all transactions. These ongoing duties help safeguard market integrity and maintain trust within the financial sector.

New Considerations

When trading digital assets on the blockchain, firms must pay close attention to how tokens are classified by regulators, especially as rules can differ across countries. Managing cross-border transfers of digital assets brings its own challenges, including compliance with international laws and the need to demonstrate transaction finality to regulatory authorities. It's also essential to ensure that smart contracts follow any restrictions on asset transfers. Finally, businesses must consider the requirements of multiple jurisdictions to ensure their operations remain compliant everywhere they trade.

The Opportunity: A Crypto Trading Standard

Current State

Unlike traditional financial markets, the crypto industry has yet to adopt a standard communication protocol like FIX. Most exchanges and platforms currently rely on their own proprietary APIs, which results in a lack of consistency in how trades are executed and communicated. As a consequence, developers working with Ethereum and other blockchains often need to create custom solutions to facilitate trading, further adding to the complexity of the ecosystem.

The Opportunity

FIX, which became the standard for trading in traditional financial markets, could also serve as the benchmark for crypto trading. Achieving FIX certification for blockchain would help bring a higher level of professionalism and discipline to the crypto industry. This would act as a bridge, connecting established trading desks with digital asset experts, making the transition between traditional and crypto markets smoother and more reliable.

What This Would Mean

If crypto exchanges begin using FIX connectivity, it would introduce standardised order types for trading digital assets. This move would also establish consistent message formats for blockchain transactions, making communication clearer across platforms. Additionally, a certification programme for blockchain-FIX integration would help ensure that exchanges and platforms meet a recognised standard, simplifying trading and improving reliability throughout the digital asset ecosystem.

Part 6: Regulatory Landscape

"What Are the Rules?"

Current State of Digital Asset Regulation (May 2026)

Essentially, most tokenised securities are still treated as traditional securities, meaning they are subject to the same regulations for registration, custody, and reporting. However, there are now extra requirements being introduced to address the unique aspects of digital assets. It is also important to note that how a digital asset is classified—whether as a security token, utility token, or cryptocurrency—plays a significant role in determining which rules apply.

The Finality Requirement Deep Dive

Both the SEC and the CFTC require that trades in regulated markets achieve deterministic finality. This means that every trade must be completed and provable, with no room for uncertainty or probabilistic settlement when it comes to core trading functions.

Some important questions arise in this area. For instance, it is crucial to identify exactly where the rules around deterministic finality are outlined within SEC and CFTC regulations. Another key consideration is whether current blockchain systems can meet these finality requirements, or if they fall short. Additionally, knowing what documentation is needed to prove that a trade is final, and understanding how laws such as the Clarity Act might address finality, are important aspects to explore.

For compliance, it is essential to thoroughly understand the finality model of any blockchain platform you intend to use. You should clearly document the process that achieves and proves finality on the blockchain. It is also wise to put procedures in place for handling edge cases where finality could be questioned. Finally, maintaining open communication with regulators about how your approach fits with their interpretation of the requirements will help ensure your strategy remains compliant.

Major Regulatory Frameworks

United States

- SEC: Securities laws apply to tokenized securities
- CFTC: Jurisdiction over digital commodity derivatives
- FinCEN: AML/CTF requirements for digital assets
- OCC: Bank involvement in digital assets
- State regulators: Money transmission laws, trust company charters

European Union

- MiCA (Markets in Crypto-Assets Regulation): Comprehensive framework
- MiFID II: Traditional securities rules apply where relevant
- EMIR: Clearing and settlement requirements

Other Jurisdictions:

- UK, Singapore, Hong Kong, Japan, Switzerland, UAE
- Each with varying approaches and timelines

ISO 20022 and Standards Alignment

ISO 20022 is an international standard for financial messaging that is rapidly being implemented worldwide, particularly for payments. It offers a structured data format, ensuring information is shared consistently across systems. This standard is increasingly relevant to technologies like FIX and blockchain, as aligning these messaging protocols could help enable smooth interoperability between different financial platforms. Standards organisations are now working together more closely to coordinate these efforts, supporting better integration across the industry.

Key Questions Before Starting

This section highlights the critical regulatory considerations that financial firms should address when adopting digital assets. Addressing these points is essential for mitigating risk and building a solid foundation for digital asset operations within the current regulatory landscape.

- What is the regulatory classification of the tokens you're trading?
- Do you need a specific license for digital asset activities?
- Are your custody arrangements adequate for digital assets?
- Can your AML systems monitor blockchain transactions?
- What are the cross-border implications?
- How will you report digital asset activity to regulators?
- Can you demonstrate deterministic finality?
- What insurance coverage exists for digital asset custody?

Part 7: Getting Started

"What Should I Do First?"

Readiness Assessment

The first step is to undertake a structured evaluation to determine whether the firm's trading infrastructure is equipped to handle digital assets. This involves reviewing existing systems, processes, and controls to identify gaps or areas requiring enhancement before engaging in digital asset activities. By systematically considering technical, operational, and regulatory factors, firms can ensure they are prepared to meet the unique challenges posed by blockchain technology and digital asset trading.

The following lists the types of questions considered suitable when undertaking such an assessment:

Technical Readiness

- Do we have API integration capabilities?
- Can we support 24/7 operations if needed?
- Do we have development resources familiar with blockchain?
- Is our infrastructure secure enough for digital assets?
- Can we handle real-time settlement?
- Do we understand our volume requirements vs blockchain capacity?

Organizational Readiness

- Are trading teams and their digital assets counterparts communicating?
- Do both sides understand each other's constraints?
- Is there a cross-functional working group?
- Do we have blockchain + FIX expertise in the same room?

Operational Readiness

- Do we understand the workflows for tokenized assets?
- Have we identified process changes needed?
- Do we have exception handling processes?
- Can we reconcile blockchain transactions?
- Do we have 24/7 monitoring if required?
- Do we have finality confirmation procedures?

Regulatory Readiness

- Have we engaged with relevant regulators?
- Do we understand licensing requirements?
- Are our AML/KYC controls adequate?
- Can we meet custody requirements?
- Can we demonstrate finality compliance?
- Have we assessed cross-border implications?

Business Readiness

- Is there client demand for digital assets?
- Have we identified revenue model?
- Do we understand the competitive landscape?
- Have we assessed business risks?
- Is leadership committed to this initiative?
- Do we understand the urgency? (Asset managers may soon be scrambling)

Entry Strategies

Strategy	Research	Learn by Observing	Bridge Internal Silos First	Pilot with Partners	Client-Driven Implementation
What	Get up to speed on relevant news and experience of similar firms	Connect to blockchain networks as observer, don't transact yet	Get digital asset experts and trading teams collaborating	Partner with blockchain platform or custody provider for small pilot	Respond to specific client demand for tokenised asset access
How	Industry associations (e.g., GDF, GBBC, FIX), events, consultancy papers	Run nodes, monitor activity, understand data	Joint working groups, shared education, pilot planning together	Limited use case (e.g., tokenised money market fund), controlled environment	Partner with vendors to connect client to tokenised platform
Risk Level	Low	Low	Low	Medium	Medium-High
Time to Value	Months (educational only)	Months (educational only)	Immediate organisational benefit	3-6 months	6-12 months
Good For	Building internal knowledge before committing	Building internal knowledge before committing	Necessary foundation for any integration	Testing workflows with real transactions, low stakes	Revenue-focused approach, client retention

Recommended First Steps (3-6 Month Plan)

Month 1: Foundation	Month 2: Research & Planning	Month 3: Design	Month 4-6: Pilot Execution
<ul style="list-style-type: none"> Form internal working group (trading, ops, tech, compliance, risk) Include both digital assets AND traditional trading teams Educate key stakeholders (use this guide!) Define objectives (why are we doing this?) Assess current state (where are we today?) 	<ul style="list-style-type: none"> Survey client interest (is there demand?) Develop business case (what's the ROI?) Research vendor landscape (who can help us?) Identify pilot use case (what should we try first?) Engage regulators (what do we need permission for?) Assess scalability requirements for pilot 	<ul style="list-style-type: none"> Design target architecture (how will this work technically?) Document workflow changes (what changes operationally?) Assess risk and controls (what could go wrong?) Define finality requirements and procedures 	<ul style="list-style-type: none"> Select vendor/partner (who will we work with?) Implement technical integration (build the connectivity) Test with small transactions (does it work?) Refine processes (what needs adjustment?) Document lessons learned (what did we learn?) Validate scalability and finality

The Vendor Landscape - Who Can Help?

Category	What They Do	Examples	Key Question
Blockchain Infrastructure Providers	Provide nodes, APIs, blockchain connectivity	Alchemy, Infura, Blockdaemon, Fireblocks	What throughput can they support?
Tokenisation Platforms	Create and manage tokenised securities	Securitize, Tokeny, Polymath, Archax	What finality model do they use?
Digital Custody Providers	Secure storage of digital assets (private keys)	Anchorage, Fireblocks, Copper, Paxos	What insurance coverage exists?
Interoperability/Integration	Connect multiple blockchains and traditional systems	Ownera (FinP2P), Axelar, LayerZero	How do they handle cross-chain finality?
Compliance & Monitoring	AML screening, transaction monitoring for blockchain	Chainalysis, Elliptic, TRM Labs	Can they prove transaction finality?

Common Pitfalls to Avoid

Pitfall	Solution
1. Ignoring the silo problem: Digital assets and trading teams must collaborate	Mandate cross-functional working groups from day one
2. Overestimating blockchain scalability: Current throughput is limited	Be realistic about volumes, use hybrid approaches
3. Underestimating finality requirements: Regulators require certainty	Understand finality model before committing
4. Ignoring custody/insurance gaps: Coverage may not exist	Due diligence on custody arrangements
5. Boiling the ocean: Starting with too broad a scope	Pick one narrow use case for pilot
6. Technology-first thinking: Focusing on blockchain before understanding the problem	Start with business problem, then evaluate if blockchain helps
7. Pilot purgatory: Running perpetual pilots without production plan	Set clear success criteria and timeline to production decision
8. Waiting too long: Traditional asset managers will soon be scrambling	Start now, even if just with education and planning

Part 8: The Big Picture

"Where Is This All Going?"

Market Trends

Short Term (1-2 years)	Medium Term (3-5 years)	Long Term (5-10 years)
<ul style="list-style-type: none"> Continued growth in tokenized money market funds and treasuries Major institutions launching digital asset offerings Regulatory clarity in major markets Pressure on traditional asset managers to respond Stablecoin infrastructure expanding 	<ul style="list-style-type: none"> Tokenisation of broader asset classes CBDCs potentially in production 24/7 settlement becoming norm for tokenized assets Traditional and digital asset infrastructure convergence Blockchain literacy as baseline expectation Scalability solutions mature 	<ul style="list-style-type: none"> Tokenisation as default for new issuance Traditional securities being migrated to blockchain Fully composable financial products Cross-border settlement in real-time FIX potentially becomes the unified trading standard across both worlds

The Opportunity for FIX

The Crypto Trading Standard Opportunity

At present, the crypto industry does not use FIX, and there is no established standard for communication in crypto trading. In contrast, FIX boasts over 25 years of development and is widely trusted within financial markets. Introducing FIX to cryptocurrency trading could offer the sector greater institutional discipline and reliability, helping to bring more structure and professionalism to crypto markets.

What Success Looks Like

FIX has the potential to serve as a vital link between traditional and digital asset trading, offering a unified approach to communication across different asset types and settlement methods. Achieving a "FIX certified for blockchain" status would represent a significant milestone, providing reassurance and credibility to market participants. By taking the lead in integrating FIX with blockchain technology, the FIX community can ensure it shapes the evolution of financial markets rather than being left behind or disrupted by technological change.

The Urgency Question

Why Act Now

Traditional asset managers are likely to find themselves under increasing pressure as the industry evolves. Early adopters are already putting new infrastructure in place, and client expectations are rapidly changing. This makes competitive positioning more important than ever. Additionally, regulatory frameworks are currently being shaped, so it is far better to actively participate in these developments rather than simply react to them as they unfold.

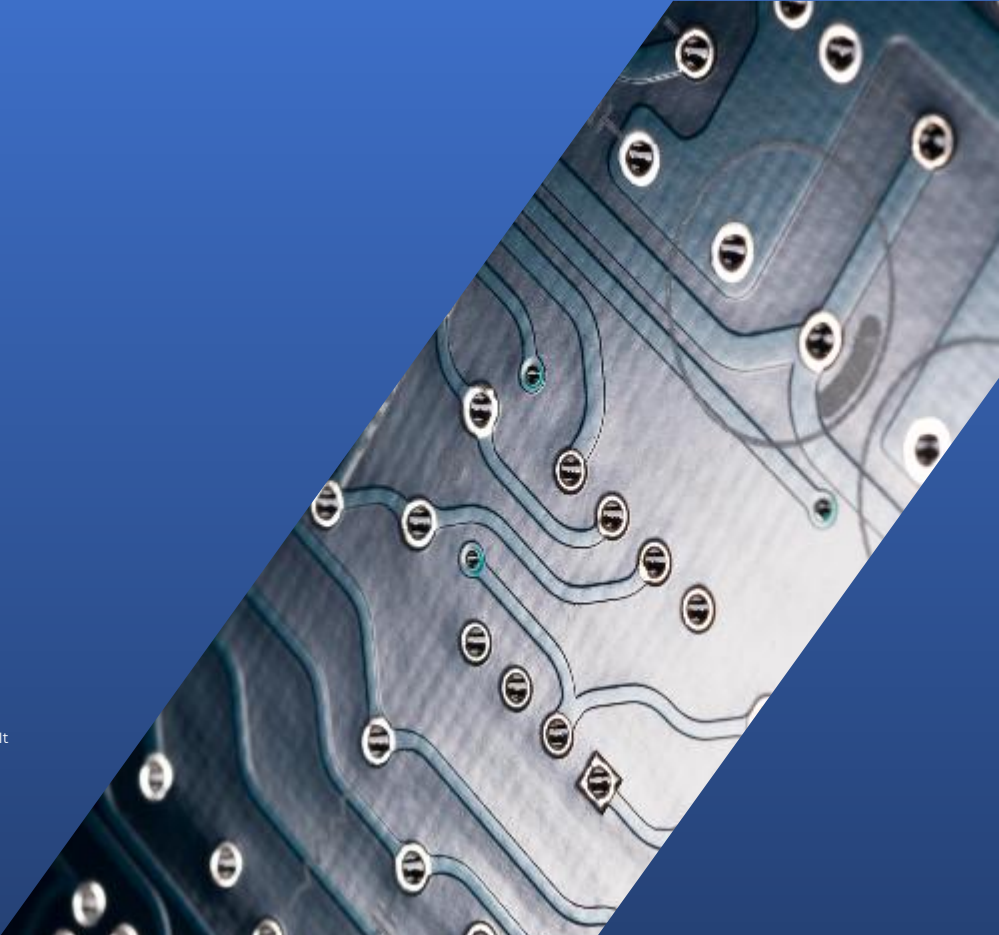
The Risk of Waiting

If organisations choose to wait, they risk losing clients to blockchain-native platforms and allowing competitors to gain the advantage by moving first. This delay may also make it harder to attract top talent, while existing technology debt could continue to grow. Furthermore, waiting means having less say in shaping the emerging industry standards, which could ultimately limit future opportunities and competitiveness.

The Balanced Approach

Now is the time to invest in education and experiment with new approaches, such as running controlled pilot projects that have clear criteria for measuring success. As the market develops, organisations should focus on building their capabilities, partnering with others when it makes sense, and pursuing strategic initiatives independently where needed. It's also important to stay actively involved in the development of FIX community standards, ensuring your voice is heard and your business remains competitive.

FIX TRADING
COMMUNITY™
INDUSTRY-DRIVEN • INDEPENDENT • NEUTRAL



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