

Building for 24/7:

The operational challenge reshaping institutional digital asset trading

By Vivek Shankar.



Vivek Shankar

When Goldman Sachs announced its cryptocurrency trading team in May 2021, followed by JPMorgan opening crypto fund access to wealth clients, the institutional narrative was simple: get exposure to digital assets, fast.

But as more firms have moved beyond pilot programs into full-scale operations, a more complex reality has emerged. How can institutions build sustainable, compliant, and competitive digital asset operations that align with institutional-grade standards?

The early rush to launch crypto desks through whatever means available has given way to strategic deliberation. The stakes are higher, the regulatory environment more complex, and the operational requirements far more sophisticated than many initially anticipated. "For many firms, adapting internal operations to meet these

standards can quickly become a distraction from their core business," observes Nathan Heaney, Institutional Sales at MAS Digital. "And in many cases, simply isn't viable."

This reality has created a new set of strategic decisions that didn't exist in traditional asset classes. Should firms build proprietary infrastructure, partner with crypto-native providers, or adopt white-label solutions? How do you evaluate liquidity in fragmented markets? What does institutional-grade custody mean in practice?

The answers are reshaping how the world's largest financial institutions approach digital assets. They also reveal just how different this market is from everything that came before.

WHEN TRADITIONAL SYSTEMS HIT THEIR LIMITS

Most institutional trading firms assume digital assets are just another instrument to plug into existing order management systems, risk engines, and settlement workflows. The reality is far more complex.

"Trying to re-purpose an existing trading system (e.g., FX) for crypto often does not work, due to technical details such as the decimal precision required in digital asset markets," explains Samar Sen, Head of APAC at Talos. "The data structure primitives

need to be purpose-built from the ground up for digital assets."

This isn't a minor configuration issue. Traditional trading systems are built around the standardized tick sizes, settlement cycles, and precision requirements of established asset classes. Digital assets operate with different mathematical foundations. Bitcoin trades to eight decimal places, Ethereum to 18. Risk calculations, position sizing, and P&L attribution systems that work perfectly for FX or equities often break when confronted with these parameters.

The technical challenges extend beyond mathematics into fundamental system architecture. "Integrating digital assets into institutional workflows means addressing a new layer of complexity around performance, latency and interoperability," notes Jarrod Yuster, Founder and CEO of Pico. "Are your systems ready to handle 24/7 trading? Are you connected to the right exchanges and trading venues?"

Sen's team at Talos has experienced these integration challenges. "Crypto exchanges use disparate protocols (e.g., REST, WebSocket, and sometimes FIX) requiring custom integrations for each connection," he explains. "Variability in price feeds, order book formats, and settlement practices complicate centralized data handling."

"Unlike traditional finance, where connectivity is standardised through FIX, the digital asset space is fragmented,"



Nathan Heaney

Where traditional markets benefit from decades of standardization, digital assets remain fragmented at the most basic level, forcing institutions to rebuild rather than adapt.

This fragmentation runs deeper than individual technical challenges. "Unlike traditional finance, where connectivity is standardised through FIX, the digital asset space is fragmented," observes Heaney.

"Different venues and providers use different APIs, WebSockets, or

proprietary protocols. This lack of uniformity makes integration more complex."

The absence of industry-wide standards means each exchange, OTC desk, and custody provider operates as its technical ecosystem. Where a traditional trading firm might connect to dozens of venues through a single FIX gateway, digital asset operations require custom integration work for each relationship. The result is what Sen describes as "API complexity" that compounds exponentially as firms seek to diversify their liquidity sources.

The operational burden extends beyond connectivity to the fundamental rhythm of markets themselves. Traditional trading infrastructure assumes business hours, settlement cycles, and planned maintenance windows. Digital assets operate continuously.

"Capital efficiency and margin requirements are also a big consideration when entering digital assets, especially if you're trading across asset classes," Yuster explains.

"Spot crypto tends to require higher capital requirements, so you want the right systems in place to ensure you're able to maximize opportunities while minimizing capital costs."

The 24/7 nature of crypto markets means longer trading hours, operational systems, risk management, and human oversight that must function at institutional standards around the clock. Many firms discover

their existing infrastructure, built for markets that close, cannot handle the demands of markets that never stop.

THE END OF ONE-STOP SHOPPING

The infrastructure complexities outlined previously have contributed to a fundamental shift in how institutions approach digital asset partnerships. Rather than attempting to force-fit existing systems or build everything in-house, firms are increasingly turning to specialized provider ecosystems.

The institutional approach has evolved considerably from early adoption patterns. Where speed of market entry once mattered above all else, institutions today apply rigorous selection criteria that mirror traditional asset management standards.

"When selecting a digital asset provider, institutions are ultimately looking for the same fundamentals they expect in traditional markets: trust, performance, and efficiency," explains Sameer Shalaby, Co-Founder and CEO of VersiFi. The shift reflects a market that has moved beyond the experimental phase into operational reality.

This evolution in expectations has changed how institutions structure their digital asset operations. Rather than seeking comprehensive solutions from single providers, firms now think strategically about ecosystem construction.

"There's a shift toward specialised, independent providers that deliver deeper expertise in specific areas, whether it's custody, liquidity, or reporting," notes Heaney. He contrasts this with earlier approaches: "In the early days, it was a one-stop-shop. Firms often relied on single providers for everything - custody, execution, and market insight."



Samar Sen

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Jarrod Yuster

The multi-provider approach reflects both institutional sophistication and market maturation. Institutions now understand that digital asset operations require the same level of operational discipline they apply elsewhere, but with specialized expertise that rarely exists under one roof.

Sen at Talos observes this shift toward what he describes as “modular orchestration-layer” thinking, where institutions “gain direct access to multiple liquidity venues, segregated custody, and sophisticated execution tools” through coordinated partnerships rather than single vendor relationships.

This transition from “get exposure fast” to “build sustainable operations” has

created new complexity. Institutions must now evaluate not just individual providers, but how those providers integrate into broader operational frameworks.

The selection criteria driving these decisions reveal how institutional priorities have matured beyond basic market access. Regulatory compliance has become foundational. “The provider must operate under a well-regarded regulatory framework, such as ADGM, FCA, or NYDFS, and be able to offer clear legal opinions on asset segregation, client ownership, and insolvency protection,” Shalaby explains.

But regulatory standing alone isn’t sufficient. Institutions now scrutinize operational resilience with the same rigor they apply to traditional asset managers. “Security infrastructure, regulatory alignment, technology maturity, service quality, and product breadth” have become standard evaluation criteria, according to Sen.

The human element, often overlooked in technology-focused discussions, remains critical. “Ask yourself who would be good to work with, particularly in a crisis? Who will pick up the phone to help you when

you need it?” Shalaby asks. “This human element still matters in digital assets as much as in TradFi.”

These evolved criteria have produced distinct partnership philosophies among providers, each reflecting different approaches to institutional needs. The strategic choice institutions face isn’t just which provider to select, but which fundamental model best suits their operational requirements and risk tolerance.

MAS Digital represents the partnership-facilitated approach. “Partnering with a crypto-native firm like MAS Digital gives businesses access to a wide range of crypto products and operate through a regulatory framework, allowing them to better serve their existing client base whilst reducing risk,” Heaney explains.

In contrast, EDX Markets advocates for direct venue connectivity. Tony Acuña-Rohter, CEO of EDX Markets, emphasizes the importance of “a neutral and non-conflicted business model” where “an exchange that is not the broker and not the market maker” can provide cleaner execution.

Talos offers a third path: the orchestration platform model. Rather than providing services directly or connecting to single venues, Sen’s team has built what they describe as technology that “connects institutions to key providers in the digital asset ecosystem—exchanges, OTC desks, prime brokers, lenders, custodians, and more—through a single interface.”

These philosophical differences reflect strategic choices institutions must make. But selecting the right partnership model is only the beginning. Maintaining institutional-grade operations requires ongoing oversight that goes beyond traditional vendor management.

“To ensure long term success, we need



THE 24/7 CRYPTO MARKETS MEANS LONGER TRADING HOURS AND OPERATIONAL SYSTEMS, RISK MANAGEMENT, AND HUMAN OVERSIGHT THAT MUST FUNCTION AT INSTITUTIONAL STANDARDS AROUND THE CLOCK.

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Sameer Shalaby

around digital assets," he explains. Institutions must track not just current compliance but anticipate regulatory shifts that could affect provider relationships.

"As trading volumes grow or new asset classes emerge, the infrastructure of our providers must be able to handle increased load without compromising speed or stability," Heaney notes, adding that "testing of this is achieved via our stress tests."

cited liquidity indicator, tell only part of the story. "Liquidity is a challenge in digital assets, and it isn't just about volume. It's about consistency, resiliency and access," notes Pico's Yuster. "Institutions need confidence that execution quality will hold up under pressure."

This distinction between apparent and actual liquidity has become critical for institutional operations. Where retail traders might focus on daily volume numbers, institutional traders must evaluate what Sen describes as "order book depth, fill ratios, settlement speed, and counterparty transparency" across multiple venues.

to continuously assess these 4 key areas: security, regulatory compliance, scalability and performance," explains Heaney. The evaluation framework institutions apply post-implementation mirrors the rigor of their initial selection process, but with operational data replacing promises.

"The threat landscape is always evolving. We must monitor for resolutions of any vulnerabilities, how quickly the issues are resolved and the implementation of robust identity and access controls," he adds. "3rd party penetration testing and regular audits provides us with comfort that our requirements are met."

Sen emphasizes that this oversight must be systematic: "Post-implementation, institutions must maintain rigorous oversight of security posture through regular audits, penetration testing, and adherence to best practices." The continuous nature of digital asset markets means security lapses can have immediate operational consequences.

Regulatory compliance monitoring presents unique challenges, adds Heaney. "Things move fast. Jurisdictions are rapidly updating their frameworks

Sen adds that institutions must evaluate "business sustainability: many of these technology providers are startups, and so it's important to assess who their backers are and how much runway they have to withstand market downturns." This reflects a sobering reality about the digital asset ecosystem's relative youth.

EVALUATING LIQUIDITY IN FRAGMENTED MARKETS

The different partnership strategies institutions now employ ultimately hinge on a fundamental question: where can they access reliable liquidity? This challenge is more complex in digital assets than in traditional markets, where decades of infrastructure development have created standardized liquidity assessment frameworks.

"Liquidity is one of the most critical components of the digital asset ecosystem," explains Heaney. "It directly impacts execution quality, slippage, cost, and the ability to move size efficiently - all essential for institutional trading." Yet evaluating that liquidity requires looking beyond the surface metrics that dominate industry marketing. Volume figures, the most commonly

The consistency challenge extends beyond individual trades to operational reliability. Institutions require liquidity that performs predictably across market conditions, time zones, and volatility cycles.

"We help clients assess venue performance using data captured at the infrastructure level, looking at quote stability, fill and reject rates, latency patterns and uptime across multiple exchanges," Yuster explains.

This deeper analysis reveals significant variations in liquidity quality that aren't visible in headline statistics. What appears as robust volume during normal market conditions may evaporate during stress periods, leaving institutions unable to execute at scale when they most need to trade.

The fragmented nature of digital asset markets compounds these assessment challenges. Unlike traditional markets with centralized liquidity pools, crypto markets spread liquidity across multiple exchanges, OTC desks, and emerging venues, each with different characteristics and access requirements.

"At MAS Digital, we've spent

"EDX connects the world's best market makers quoting on our exchange in the most capital-efficient way possible,"



Tony Acuña-Rohter

significant time evaluating liquidity across various venues, identifying which providers offer real depth and consistency versus those that rely on recycled liquidity or artificial pricing," Heaney explains. This venue-by-venue analysis has become essential as institutions seek to understand not just where liquidity exists, but how to access it effectively.

Sen emphasizes the importance of diversification in liquidity sourcing: "Institutions should diversify liquidity sources and use technology to aggregate across venues, reducing counterparty risk and optimizing execution." This aggregation approach reflects lessons learned from traditional markets, where single-source dependency creates operational vulnerabilities.

The technical infrastructure discussed earlier becomes crucial in managing this fragmentation. As Sen notes, "Different venues and providers use different APIs, WebSockets, or proprietary protocols," making it challenging for institutions to efficiently tap multiple liquidity sources without specialized technology solutions. Given these complexities, institutions

have developed varied approaches to liquidity management that reflect their specific operational requirements and risk tolerances. Some prioritize direct relationships with a small number of high-quality venues, while others pursue broad market access through aggregation technologies.

EDX Markets represents the focused approach. "EDX achieves this by having best-in-class technology connecting the world's best market makers quoting on our exchange in the most capital-efficient way possible," explains Acuña-Rohter. The strategy emphasizes depth over breadth, concentrating liquidity in a controlled environment.

Talos advocates for the aggregation model. "Purpose-built platforms like Talos help overcome these integration hurdles, providing harmonized access to fragmented crypto markets," Sen explains. This approach gives institutions access to multiple liquidity sources while managing technical complexity through a single interface.

The choice between these approaches often depends on trading patterns and operational priorities. Institutions focused on large block trades may prefer concentrated liquidity pools, while those executing frequent smaller transactions might benefit from broader market access and smart order routing capabilities.

THE NEW INSTITUTIONAL REALITY

A clear divide is emerging among institutional players in digital assets—not between early adopters and late entrants, but between those building sustainable operational capabilities and those still treating digital assets as a

peripheral activity.

The institutions succeeding in this space have recognized that digital asset operations require fundamentally different approaches to infrastructure, partnerships, and risk management. They've invested in specialized teams, rebuilt connectivity frameworks, and developed evaluation criteria that account for 24/7 operations and fragmented liquidity pools.

In contrast, firms attempting to retrofit existing systems or delegate digital asset operations to traditional asset management teams are discovering significant limitations. "Many organizations are not ready for this new paradigm," Sen notes, referring to the operational demands of continuous trading and instant settlement.

This bifurcation has competitive implications that extend beyond digital assets themselves. The institutions developing sophisticated operational capabilities are building expertise in areas—distributed infrastructure, real-time risk management, and multi-venue liquidity aggregation—that will likely prove valuable across evolving capital markets.

"The firms that succeed in scaling their operations will be the ones that build the right network of trusted, specialised partners," Heaney observes. But those networks represent more than vendor relationships; they're operational ecosystems that provide institutional advantages in navigating complex, technology-driven markets.

The institutions that master these operational challenges first aren't just gaining digital asset exposure. They're developing next-generation market infrastructure capabilities that may prove difficult for competitors to replicate.