

Decrypting crypto

Explaining the market and understanding the requirements for successful institutional participation

Interest in cryptocurrencies and other niche digital assets is gaining momentum among institutional investors. According to [Fidelity Digital Assets' 2021 Institutional Investor Digital Assets Study](#), 71% of institutional investors plan to buy digital assets in the future, and 90% of institutions interested in digital assets plan to have an allocation by 2026.

So as more and more institutions buy into the concept of cryptocurrencies as a new asset class worth pursuing, they are seeking to have a greater understanding of the key characteristics of this sector, such as the fundamental issues and technology challenges behind the adoption of crypto assets, the range of crypto derivative products available in the market, the major barriers to institutional participation, the tools and processes needed to successfully manage a crypto business, and, primarily, what is required to manage the risk and volatility associated with this complex and nuanced market sector.

In this Q&A, Jim Jockle, Executive Vice President and Numerix's Chief Marketing Officer, meets with Nick Alabaster, Director of Pre Sales for the EMEA region at Numerix and our inhouse expert on all things crypto, to discuss these issues and other aspects of the cryptocurrency phenomenon as it relates to the institutional segment.



Jim Jockle
Executive Vice
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Nick Alabaster
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KEY TAKEAWAYS

- ▶ A growing, vested interest in the crypto market is helping to make it more stable.
- ▶ Dominating the crypto conversation among potential new institutional participants are infrastructure requirements, operational support needs and risk management tools.
- ▶ The increasing range of crypto derivative products is attracting more capital to the sector.
- ▶ Cryptocurrencies remain uncertain investment tools, but other digital assets are emerging that are specifically intended for investment purposes.
- ▶ The infrastructure and technology requirements represent the most significant challenge to building and maintaining a crypto business.
- ▶ The wide volatility swings in crypto means a great deal of importance has to be placed on real-time, 24-7 actively monitored and managed businesses.

Jim Jockle: Widespread institutional adoption of cryptocurrencies is gaining traction globally. Drawing on your observations of operating in this market, can you shed any light on this phenomenon?

Nick Alabaster: As with most capital enterprises, where there is opportunity, there is potential to entice new participants. Up until recently, there were many established capital market players (e.g., existing fund managers, investment houses, prime brokers) that had long been active in the realm of traditional assets but were wary to participate in the digital asset world primarily because of its significant volatility—and they didn't want to expose

themselves or their clients to that volatility. What's happening now in crypto is that it is taking on a critical mass, and this provides "safety in numbers." What I mean here is there is a growing vested interest in this market and having a large number of participants makes it more stable and less likely to collapse. In my opinion, it has moved beyond cutting edge to the mainstream. Now, whether this market will actually stabilize over the long term is not certain, but the advantage with large scale support is there is now a vested interest to ensure it doesn't fail.

Jockle: When you speak to clients/prospects about crypto, what do they want to talk about?

Alabaster: For those who are considering participating in crypto trading activity, they want to know the general basics of how to add crypto to their trading and distribution platforms, whether doing so on the back of their FX business or if it would require a new unit spin off. Other institutions are those that are already trading and investing in the crypto market for themselves but are starting to think about enhancing their market participation by offering crypto services to their clients. They ask about infrastructure requirements, operational support needs and risk management processes. There is a lot of discussion around how exactly their crypto business can develop in an environment of rapid innovation and the challenges related to IT infrastructure and financial analytics.

[Bobsguide](#) reports that as of December 2021, cryptocurrencies have a global market capitalization above \$2 trillion.

Jockle: Crypto assets under management exploded in 2021. Do you see 2022 as a year when crypto could gain even more traction among institutions?

Alabaster: Yes, this should be a big year. I am comfortable with saying cryptocurrency and related new digital assets are the biggest growth opportunity of the decade. Retail investors and institutions alike have been able to generate multi millions of dollars investing in a digital business.

There are very few capital players without a plan to add crypto services. Their challenge is choosing which direction within the market to take. It is unlikely you are going to have an institution that believes all aspects will be worth the investment, or risk. Do they want to undertake proprietary investing? Do they want to engage in market making? Do they want to package up their own products to sell? Do they want to start lending? Do they want to acquire private money through tokenization? Regardless of the direction taken, it is important for any new player to know that there are heightened risks associated with each part of the market.

Jockle: Let's talk a little about the actual products. What are the types of crypto derivative products in the market today?

Alabaster: Derivatives are making a significant debut in crypto markets, and an increasing product range seems to be attracting more capital within the market. The crypto derivatives that are used today include futures, forwards, options, swaps, perpetuals (which are based on futures), as well as spot trades. There are also indices based on baskets of crypto currencies (known as stablecoins, which are designed to reduce volatility), index trackers, and other digital assets such as NFTs (non-fungible tokens, which are types of cryptographic tokens that can represent ownership of digitally scarce goods such as pieces of art or collectibles).

Additionally, there are investment methods for increasing yield, which can have appeal in a low interest environment. An example is staking, whereby you earn a passive income for holding certain crypto currencies—like an interest-bearing savings account. There is also activity around the structuring of option-based products as a strategy to limit downside, which can encourage investment from those who are more risk averse.

Jockle: Regrading crypto volatility, can you give us any insights into the sector's tendency toward extreme price swings?

Alabaster: One of the chief reasons for crypto's volatility is the struggle to establish its true worth. Bitcoin was never intended for speculative purposes, but only for reasons of achieving fast and secure transactions. Cryptocurrencies are still something that several established institutional investors consider as having no inherent worth at all as investment vehicles. The markets, however, think them wrong. Finite supply in cryptocurrencies means other investors have seen the potential for supply/demand pressures. But the lack of a universally agreed upon 'risk-neutral' pricing model (which drives every other asset class), the lack of a universal regulatory framework for cryptocurrencies thus far, as well as retail speculation and even comments or tweets by figures such as Elon Musk, are contributing to the large price swings. For now, any future price expectations on crypto assets should be taken with a grain of salt, but supply/demand speculation and inherent price swings are unlikely to be removed from the asset class. It should be noted, however, that while cryptocurrencies remain uncertain investment tools, other digital assets are emerging that are specifically intended for investment purposes.

The main point people need to know is that crypto is still inherently risky. The general population can get drawn into the hype and think, "Oh, I'm going to have massive gains all the time," but that's not the way things work. Because the market has historically shown huge gains, the risk savvy investor knows to expect sharp downturns. And we've seen that happen. Another point is that crypto has limited predictability. If we were to assess the crypto sector's reaction to both Covid and the conflict in Ukraine, no underlying theme or correlation can be drawn out for a longer term evaluation, for there was in neither a sustained flight to or from crypto, and yet in the traditional markets, the reaction was clear and predicible.

Jim Jockle: What are the biggest barriers to entry for institutions that want to enter this space?

Nick Alabaster: Primarily, the technology and infrastructure requirements. For one, there's the obvious requirement of having the tools you need to get on a distributed ledger network. A distributed ledger, such as blockchain, is a peer-to-peer network that doesn't have a central administrator or central database and is a method for recording data, distributing information to multiple parties, and protecting against data tampering. Those institutions that are starting from scratch in the crypto space typically will need to set up a whole new technology infrastructure for this. They will also have to share that technology with other institutions so that they can start openly transacting on the platform. All of the distributed computer network platforms have to be open and there are many of them. An institution will need to choose which platforms they want to communicate with, and they need to know that distributed ledger technology requires a significant IT commitment and new skillsets.

Then there is the need for real-time capabilities as well as the need for hands-off automation and 24x7 operational/risk management capabilities. These can also be a barrier for some entrants in terms of the IT investment. Without these requirements however, particularly the 24x7 operational component, their operations could quickly be exposed to the market's volatility. What I mean here is there is a "crypto never sleeps" element to the market. For example, if an institution's operations close over a weekend, and if the market sees a 50% drop in bitcoin over those same two days, the institution could suffer large losses because their risk management system failed to monitor the market.

So again, the wide volatility swings in crypto means a great deal of importance has to be placed on real-time, actively monitored and managed portfolios, as well as on other business lines, such as lending. Therefore, the technology used needs to be up to the task of generating, for example, real-time PnL and exposures, as well as collateral values. Also, a limit system monitoring metrics should be in place, and automated workflows within a 24x7 operation is required. Fortunately, the right technology exists through third-party vendors.

Jockle: If the requirements for building, maintaining and running a crypto risk platform are far more complex than those required to support established/traditional asset classes, does this mean that crypto requires its own separate risk system?

Alabaster: This is a challenging topic. Typically, crypto becomes an extension of FX, but as it's now seen as a distinctive investment vehicle (such as precious metals) and not just a currency tool, trading it on the back of an institution's system may fail to capture its true exposure to the market. Its volatility also puts it in a unique class of its own. As many systems will struggle to adapt with any form of true integration within an institution's more traditional forms of capital market operations, the resulting compromise could indeed be yet another data and system silo, with an inability to see the wider risk exposures across an organization—something that can be a threat to risk managers.

If your view of risk is limited, then you are limited in your ability to calculate and mitigate the full scope of risks facing your organization. Yet, measuring this new asset class in a consistent way with others is difficult to do, and that's why many firms look to the expertise and technology solutions offered by third-party vendors.

Jockle: What are the capabilities/requirements for having an appropriate risk management platform for trading cryptocurrency derivatives?

Alabaster: The following list is a good representation of the requirements across different firms and business models depending on what direction in crypto they take. Some will be related to trading and internal investing, some regarding the products and a market making business, and some due to new counterparty arrangements resulting from lending activities. Each one of these will test an existing system's capabilities, both from a real-time, 24x7 operational perspective to having the right checks and balances regarding counterparty/client exposure, as well as having risk measurement techniques that truly capture the market exposures across this evolving asset class.

- Real-time trading and position management
- Be able to calculate real-time market risk (e.g., Greeks, VaR)
- Be able to meet innovative risk and valuation modelling requirements
- Be able to manage different structures and payments
- Be able to assess and manage volatility
- Be able to manage existing and emergent risk exposures
- Conduct pre-trade credit checks
- Post trade: Margin management and collateral calls
- Tracking and managing the loans and loan payments (future and due)

Jockle: Can you give an example of an actual existing business model currently operating in the crypto assets world?

Alabaster: An example of an emergent business model and infrastructure build-up are the Swiss banks that have been granted digital licenses to operate in this new world of tokenized digital securities. While offering traditional services, such as trading (direct assets and their derivatives), lending, custody, risk-return profiling through product structuring and so on, taking on the additional risk involved in such a volatile and fast-moving market places greater demand on protecting and future proofing any investment in the crypto space. Because this is a new business, these banks have the advantage of being able to start with a blank canvas. Among the first capabilities and technologies they adopted are the following:

- Cloud native real-time technology with multi-regional high availability
- Streaming connectivity to market data and real-time trading platforms
- Monitoring direct and indirect exposures (own and client books)
- Automatic measures in the face of disruption
- Flexible analytics and compute logic to adapt to market changes
- Robust and adaptive risk-limit system with risk-mitigation processes such as automatic in-line pre-trade credit checks and close-outs to reduce exposure to within limits based on market moves
- Client credit status monitoring and collateral management
- Stress-testing to determine capital and margin requirements

Given the importance of first mover advantage, the need to establish this business model quickly alongside an ever-changing market environment, while also offering new products, services, and investment vehicles, these Swiss banks needed to partner with vendors that were already market prepared and yet had the flexibility to accommodate changing and expanding needs.

One of the banks that was working with such a vendor saw its market share grow exponentially and it created an early foothold in what could eventually be a crowded market where late entrants lose out.



Nicholas Alabaster, Director, Pre-sales, EMEA

Mr. Alabaster brings extensive global capital markets experience, with particular expertise across buy-side and sell-side business functions. He is dedicated to ensuring the right problem-solving and solution-selling processes are implemented to make certain the right software is leveraged in the best way for each market participant.

Mr. Alabaster has devoted most of his career to pre-sales and business development, and has acquired an impressive skill set in the areas of software and product development, risk analytics, stress-testing, and client relationship management. He holds a 2.1 Honours Degree in Electronic and Computer Engineering from The University of Birmingham.



James Jockle, Executive Vice President, Chief Marketing Officer, Global Marketing & Corporate Communications

As Executive Vice President and Chief Marketing Officer of Global Marketing & Corporate Communications, Mr. Jockle leads the company's global marketing and corporate communications efforts, spanning a diverse set of solutions and audiences. He oversees integrated marketing communications to clients in the largest global financial markets and to the Numerix partner network through the company's branding, electronic marketing, research, events, public relations, advertising and relationship marketing.

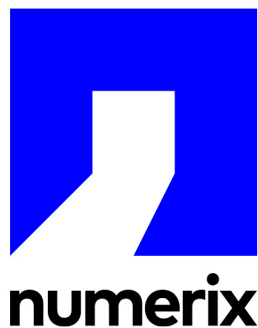
Since joining Numerix in 2008, Mr. Jockle has launched the organization's award-winning thought leadership program, bringing to light challenges and insights from Numerix market experts. Mr. Jockle also hosts the Numerix Video Blog to tackle the challenges pressing the derivatives markets—from regulatory issues to trading strategies.

Prior to joining Numerix, he served as Managing Director of Global Marketing and Communications for Fitch Ratings. During his tenure at Fitch, Mr. Jockle built the firm's public relations program, oversaw investor relations and led marketing and communications plans for several acquisitions. Prior to Fitch, Mr. Jockle was a member of the communications team at Moody's Investors Service.

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More than 550 clients and 90 partners across 52 countries rely on Numerix analytics. Headquartered in the financial capital of the world, with offices around the globe, Numerix brings together unparalleled expertise combined with local market understanding.



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