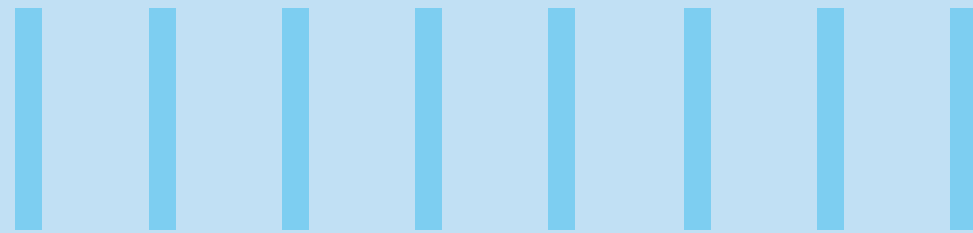




WHY SHOULD CAPITAL MARKET FIRMS ADOPT API TECHNOLOGIES?



Abstract

API technologies are increasingly popular for data-sharing across platforms and fields. They let companies access third-party assets without merging ecosystems. This led to the 'API economy,' where businesses use other applications' functionalities (e.g., user authentication, payment processing, and social media sharing) to enhance their offerings and improve bottom lines. API utilization in capital market technology is in its infancy. Stock trading APIs are gaining popularity with brokers, traders, and market establishments. Can API adoption benefit capital market firms and foster equitable trading culture? This article discusses the impact of API technology on capital markets and factors for choosing the right API.



Digital transformation depends on an organisation's ability to transform its information system into business and service layers. Most businesses already have the necessary data and functionalities to succeed. However, they are siloed and entrenched in legacy software systems that resist movement and interconnectivity. To capitalise on the available data and realise its full potential, businesses must

find ways to break across silos, establish connectivity and interoperability with valuable assets from third parties, and leverage the information repeatedly in various contexts.

This is possible through Application Programming Interfaces (APIs). APIs are the connectors that enable interoperability between diverse platforms or systems and facilitate the shift from legacy software to

microservice-based applications.^[1]

Studies indicate that over 90% of executives regard APIs as critical to business growth. Over 50% of retailers believe that APIs enable innovation at scale, and 36% agree that they are a strategic asset for value creation. Recently, companies that adopted API technologies saw a 12% increase in market capitalisation over companies that did not adopt APIs.

API technologies in modern businesses

API technologies are perhaps one of the most disruptive trends in digital economies. They are like virtual middlemen who enable data-sharing across multiple interfaces.

Since API technologies bring functionalities such as maps, login authentication, payment information, user preferences, and social media sharing, businesses are increasingly using them to transform into

more connected ecosystems that bring seamless digital experiences to their consumers.

The key benefits of leveraging API technologies are:

- Increased data access
- Integration with different devices, companies, and third parties
- Operational efficiency and standardisation

- Integration with new-age technologies such as chatbots and IoT

Industries such as healthcare, banking, retail, and entertainment are already leveraging API technology to decentralise their services while developing a wider reach. One industry that is slow on the uptake but can benefit immensely from web APIs is the capital market.

Why APIs are necessary for capital markets

Leveraging new-age technology in capital markets is critical due to the abundance of data on the internet and the challenges in processing it manually. Trying to understand or predict market movements through traditional capital market technology is overwhelming for all

participants, including capital market firms, traders, investors, and intermediaries.

For one thing, the 'market' is not a monolithic construct but an assemblage of multiple players that rarely move in tandem. For another, there are too many variables, such as geopolitical events,

GDP acceleration, inflation, and consumer sentiment. APIs simplify forecasting and decision-making by analysing historical data and streaming market information in real time.

How stock APIs work – and why use them ^{[2][3][4]}

Stock APIs – or trading APIs – get their data from various brokers and exchanges, parse it, encapsulate it in a readable format such as JSON or CSV, and make it available for transaction processing among participants.

They enable algorithmic trading by building predictive stock performance models based on current and historical data. At present, algo trading accounts for only 50-60% of the total trade volume in India and is used mostly by established capital market firms and brokerage houses.

However, API technologies are steadily becoming popular among smaller capital market firms, private equity firms, traders, and retail investors because they simplify

complex market data and enable high-speed transactions with minimal risk.

Without stock APIs, capital market firms and traders have to source their data from multiple sources, such as stock exchanges, newswires, and indices and transact from a different platform. Stock APIs streamline the process through customised features such as –

- The ready availability of historical and current stock data
- A dashboard displaying the exact stock elements that the end user needs
- An automated programme for providing actionable insights from financial data

- Tools to customise trading algorithms and automate trading when certain conditions are met

Capital market firms can use APIs for –

- Gathering information about their investors' current and historical holdings
- Retrieving data on realised investments
- Reaching out to traders and retail investors
- Getting information about competitor firms and their holdings

Bridging the current capability gap

The primary advantage of stock APIs is their ability to enable fast and accurate decision-making. Some other key features and benefits are:

• Ease of integration

APIs are plug-and-play models that integrate seamlessly with most software platforms. Capital firms can easily incorporate API technology into their existing systems.

• Data aggregation

Stock APIs can aggregate and parse market data from myriad sources, which is

impossible to accomplish manually.

• Automated trading sessions

Eliminating human emotions and errors from trading sessions is the prime benefit of stock APIs. The bot automatically executes a trade when the pre-set conditions are met. Automation also enables trading large volumes at reduced costs.

• Safety

Secure APIs have built-in safety features that maintain the confidentiality of transactions between firms and end users.

• High-speed trading

API algorithms accelerate order entry, facilitate high trade volumes within short time spans, and simplify order management. In time-sensitive transactions or volatile markets, where a difference of milliseconds can impact trade outcomes, API technologies can process data and execute the trade much faster than humans.

• Customisability

With the help of developers, traders and capital market firms can tailor their APIs

to best fit their purposes. Some important custom settings include

- Stop-loss programming
- Back-testing strategies

- Optimal risk-to-return ratio
- Maximising spreads and arbitrage

APIs enable traders and capital market firms to take full advantage of spread

trading and arbitrage opportunities through real-time data and automated trade execution.



Types of APIs for capital markets^[6]

Depending on their needs, firms can choose one of two main API types:

• REST API

Representational State Transfer (REST) API is an interface that uses HTTP for making requests. It best serves traders or capital market firms that require flexibility in their

order executions, adaptability to different web technologies, and scalability of trade volumes.

• WebSocket API

WebSocket APIs are best for high-frequency trading, as they facilitate real-time data streaming during live market

hours. WebSocket API technologies are more amenable to customisation.

Challenges in API adoption in capital markets^[7]

As discussed above, algo trading through APIs has definite advantages over traditional trading methods. The most important advantage is that it eliminates emotion from trade and ensures objectivity throughout the process.

However, there are a few roadblocks to fully deploying API technologies in capital markets, such as -

• Security risks

Poor API integration can cause data breaches and huge financial losses. 48% of fintech companies in a survey mentioned security as a top concern in API adoption.

• Power cuts and loss of connectivity

These are grassroots challenges in a developing economy. Algo trading depends on high-speed WiFi connections

for speed and effectiveness and cannot withstand frequent or sustained outages.

• Over-optimisation

Over-optimisation is a condition in which on-paper strategies turn ineffective in live trading. In such cases, since the execution is automated, traders cannot intervene to abandon the programme and control losses.

• Algorithm lifespan

Most algorithms have a short lifecycle since they function under pre-set conditions. Stock API users must continuously monitor

the formulation and reinvention of trade algorithms.

It is possible to overcome most of these challenges by partnering with the right

developers and technology providers and planning for proper API testing and protection.



How to select the right API?^{[3][5]}

The benefits of stock APIs for capital market firms far outweigh the initial challenges in API adoption. However, firms must find an API best suited to their needs. Below are a few factors to consider in choosing the right API:

• Data source

It is essential to select a stock API that derives its data from legal and trusted sources only. On the other hand, it should provide access to diverse platforms such as stock exchanges, commodities, news, and forex.

• Security

Security is paramount when the platform relays sensitive financial information.

Capital market firms must ensure that the developer provides secure servers, proper encryption, and maximum immunity from data breaches and cyberattacks.

• Latency

Latency refers to the delay in delivering live data. If trading speed is critical, the firm will need a low-latency API.

• Affordability

Low-latency APIs cost more than high-latency APIs. APIs that support real-time streaming, historical analyses, and higher customisation are typically more expensive. Choosing the right API entails balancing affordability with the firm's organisational requirements.

• Currency conversion

Capital market firms that operate across international markets must carefully consider the API's currency conversion methods and strategies.

• Scalability

Scalability determines the API's capacity to handle sudden spikes in the market. Scalable models are typically more efficient.

Conclusion

Digital technologies are fast changing how businesses and consumers access and utilise data. To capitalise on the value of data, it is crucial to break silos and establish connectivity and interoperability with external systems, platforms, and third-

party assets. APIs are the technology that enables this dialogue.

Capital market firms are yet to leverage the full potential of API technologies. However, stock APIs are beginning to change the investment landscape by

enabling algorithmic trading. Adopting API technologies in trade and investment can revolutionise capital markets by enhancing trade efficiency and creating equitable opportunities for all market participants.

* For organizations on the digital transformation journey, agility is key in responding to a rapidly changing technology and business landscape. Now more than ever, it is crucial to deliver and exceed on organizational expectations with a robust digital mindset backed by innovation. Enabling businesses to sense, learn, respond, and evolve like a living organism, will be imperative for business excellence going forward. A comprehensive, yet modular suite of services is doing exactly that. Equipping **organizations with intuitive decision-making** automatically at scale, actionable insights based on real-time solutions, anytime/anywhere experience, and in-depth data visibility across functions leading to hyper-productivity, [Live Enterprise](#) is building connected organizations that are innovating collaboratively for the future.

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