



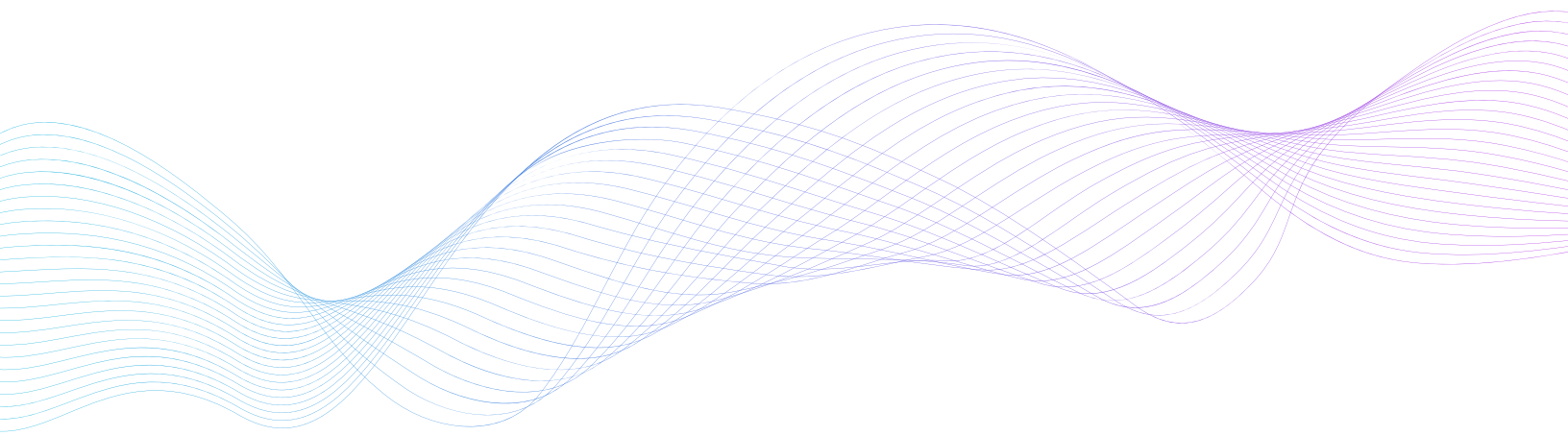
Nasdaq Marketplace Services Platform

For New Markets

The Nasdaq Marketplace Services Platform

End-to-end platform purpose-built to operate marketplaces, everywhere

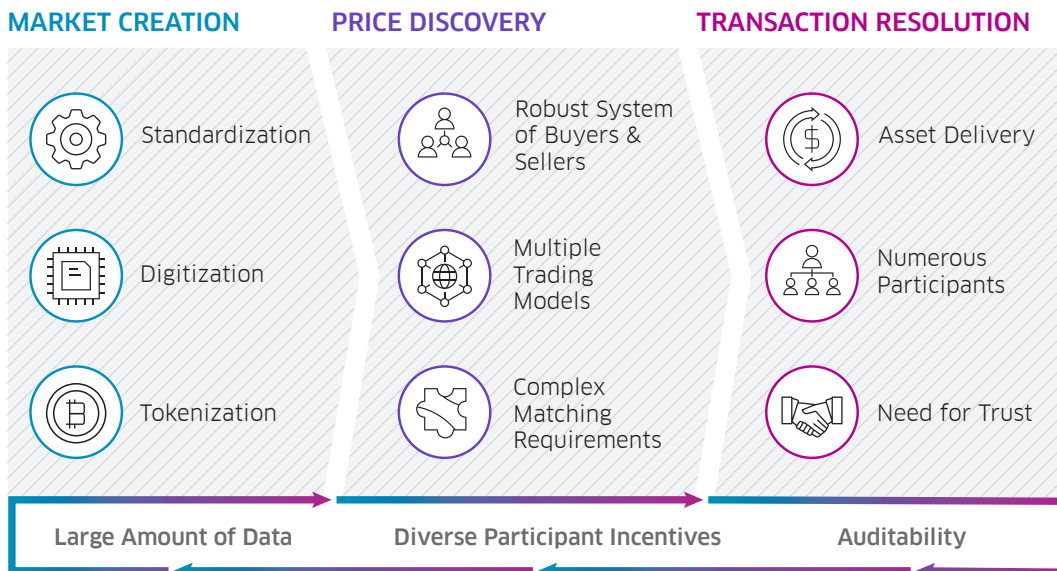
A robust foundation for both existing and new marketplaces—from insurance to real estate and tokenized assets—to optimize operations, reduce complexity and accelerate ability to get to market quickly, activating new revenue opportunities.



The Nasdaq Marketplace Services Platform provides next-generation capabilities to facilitate the frictionless exchange of assets, services, and information in a variety of market ecosystems and machine-to-machine transaction. Via a single platform, you can access all of the services required to operate a marketplace—from issuance of tradeable assets to matching buyers and sellers at speed and scale, to monitoring transactions for manipulative behaviors to efficient settlement of transactions and digital transfer of ownership. Fueled by decades of expertise and technology knowhow, the platform is designed with the rigorous regulatory, reliability, and security standards proven in the financial industry, helping to provide your marketplace with added credibility and integrity as you come to market.

Nasdaq marketplace technology solutions are used by 120+ of the most innovative marketplaces on the planet—from traditional capital markets to football players, to loyalty points, cryptocurrency and real estate contracts.

END-TO-END TRANSACTION LIFECYCLE SUPPORT



The Marketplace Services Platform facilitates market creation on a single platform, powering the entire transaction lifecycle

Technology proven to power the world's marketplaces

Nasdaq Marketplace Services Platform supports

Tokenized and digital marketplaces

New marketplace expansion initiatives in Capital Markets or existing marketplaces looking to reduce capital expenditures

Marketplaces in shipping, logistics, sports, real estate, insurance and beyond

Create new assets

Ability to digitize and issue goods or services into a tradeable asset simplifies issuance and allows for diverse trading and ecosystem services.

Match buyers and sellers, instantly

Automated, real-time processing of transactions across a number of models (from bi-lateral to multi-party) enables you to match buyers and sellers at speed and scale, trading goods, assets or information with less risk of disruption.

Protect your marketplace

Comprehensive risk and compliance controls help ensure that the transactions taking place on your market are safer, more secure and within risk limits you've set, with proactive alerts for irregular transaction patterns and potentially manipulative activity.

Efficiently settle transactions, digitally transferring ownership

Leveraging proven DLT technology, you can instantly—and more safely—settle and transfer ownership of assets from your buyers to sellers with an immutable ledger that tracks each part of the transaction.

How can the Marketplace Services Platform benefit your business?



One service-based platform

- Covers the end-to-end transaction lifecycle, featuring an easy-to-activate, modular structure with built-in interoperability that enables individual service activation and easy turn on of other functionality or add-on services as needs evolve.
- Easily integrates with ISVs, partners and participants to manage the full range of your requirements (i.e. integrate payment system).



Purpose-built, SaaS platform

- Built by market operators for marketplace operators everywhere, the platform easily adapts to your needs.
- Understands the complex workflows happening across the transaction lifecycle, various market models and asset classes, roles of the key participants and the data that flows between them.



Reduced operational complexity

- Reduces the number of vendors, technology resources and physical infrastructure required to get you up and running.
- Accesses a range of services across the full transaction lifecycle, which reduces the integration complexity for your team and reliance on multiple siloed systems.
- Eases the technical burden on your operations resources, simplifying IT management and decreasing capital expenditures due to SaaS delivery model.



Frictionless on-boarding and maintenance

- Decreases time-to-market compared to on-prem delivery cycles, helping you to provision market infrastructure in weeks to months, versus much longer time horizons.
- Continuously enhances performance and functional depth through frequent release cycles that reduce the need for your team to manage patch cycles.



Best-in-class security protocols

- Leverages the established, proven infosec standards used by 120+ market operators in some the world's most demanding markets and geographies, as well as in Nasdaq's established SaaS offerings.
- Mutualizes investment in information security, meaning that you benefit from the knowledge and experience across platform participants to continually improve and enhance protections.
- Adds protection through the cloud providers' continuous enhancement against known vulnerabilities in a number of industries.



Future-forward infrastructure

- Manages shifts in strategy and scalability as your marketplace grows and expands with flexible pricing that scales as you do.
- Meets today's needs but designed for tomorrow's requirements with continuous investments made by Nasdaq on your behalf.
- Extends ecosystem technology investment helping you to integrate proprietary and third-party offerings as well as continuously add participants.

Where the API Economy Meets the Marketplace Economy

Time-to-market is everything when you have an idea that is going to disrupt and change your industry, but technology complexity, scarce skilled resources and budgets can greatly impact your plans. Taking a platform approach, especially one that is purpose-built for marketplace operations, can quickly accelerate your marketplace journey. This is where the Marketplace Services Platform comes into its own.

With an open platform and API model, you are empowered with greater choice and flexibility, easily integrating other providers and ISVs with improved interoperability for your entire ecosystem.



Purpose-built platform



Modern, open REST APIs



API economy



Facilitate interoperability



Optimize use of resources



Enhance innovation

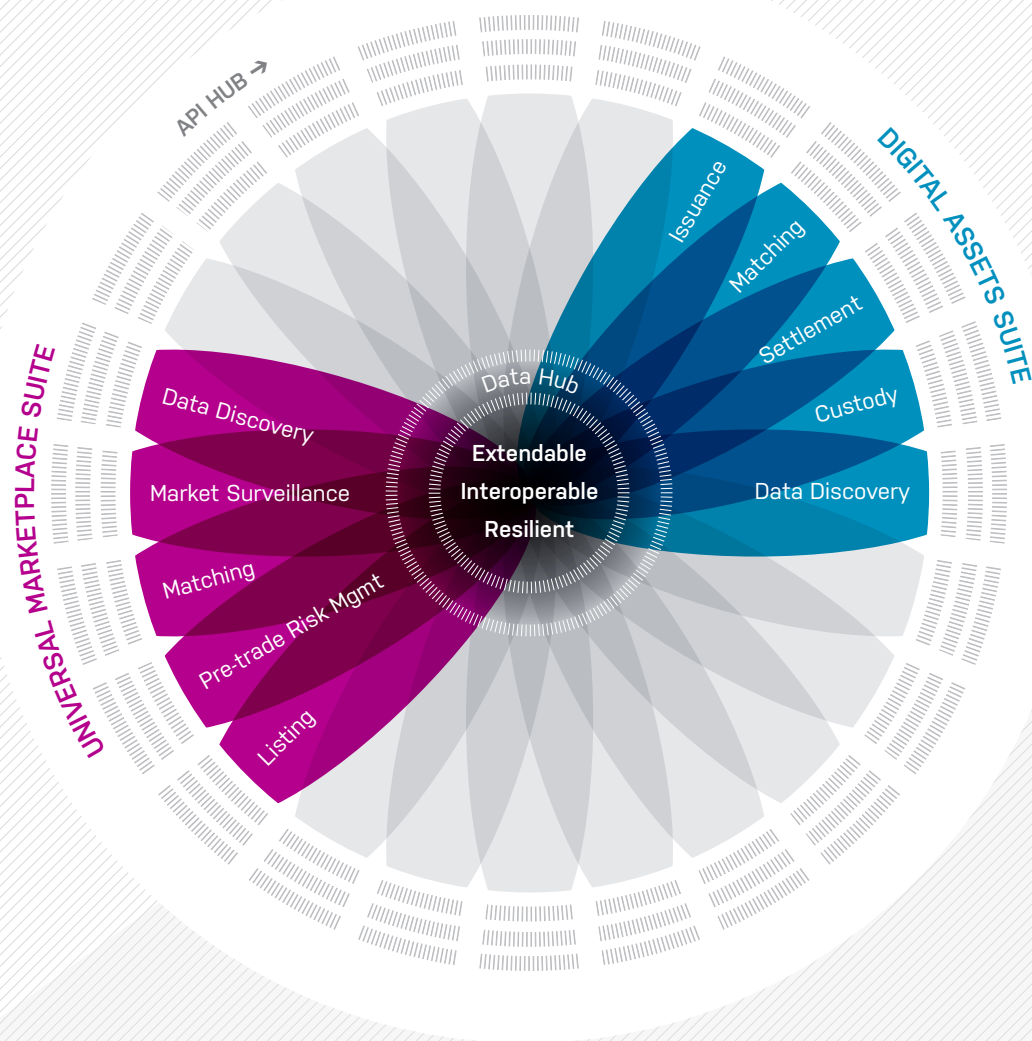


Accelerate marketplace creation



Unlock revenue opportunities

Platform Architecture



High-performance technology foundation features high-speed messaging, consistent availability and ability to orchestrate complex data management

Scalable plug-and-play service model to dynamically expand both capacity and overall portfolio

Open platform with robust, standardized APIs enable platform extension across the ecosystem

Deliverable in the cloud environment of your choosing

Product

Data Integrity

- Rules Engine
- Immutable Persistence Layer
- Verification/Audit Tools

Web Interfaces

- Configuration
- Administration
- Verification

API Interfaces

- Data Insert
- Data Extract

Onboarding

- Client Environment Setup
- Client Connectivity
- Technical Onboarding
- Functional Onboarding
- Client Configuration
- Handover Validation

Service Desk

- Production State Support
- Incident Management
- Service Monitoring
- Service Maintenance
- Issue Resolution
- Monthly Reports
- Release Management

The Marketplace Services Platform has pre-packaged suites of services available that are designed to meet specific use cases. If you are not ready to jump into a full-service marketplace, you can choose to take the platform with a single service and add functionality to support the broader transaction lifecycle as needs evolve. You can also integrate your own systems, like customer relationship management tools and billing systems. Available services on the platform include:

Universal Marketplace Suite

Helps create markets that facilitate price discovery, allow matching between buyers and sellers and support the integrity of the market.

Listing

Service that enables assets to be catalogued and made available for trading

Pre-trade Risk Management

Risk management service that provides guard rails preventing risk limits and tolerances from being breached in order to help ensure continuity and prevent disruption in the marketplace

Matching, Including Market Operations Support

Asset-agnostic matching capabilities that enable trading of many types of goods, services, and assets

Market Surveillance

Market monitoring service enabling identification of manipulative behavior to proactively protect market integrity

Data Discovery

Service that normalizes data and enables query and reporting across cross-silo data to gain insight into data patterns and trends

Digital Assets Suite

Manages the complete digital asset lifecycle from price discovery and matching through the issuance, settlement and custody of tokens on a distributed ledger.

Issuance

Creation of digital and tokenized assets on a distributed ledger

Matching

Order management and trade execution tightly integrated with the distributed ledger

Settlement (Delivery vs Payment)

Enables immediate settlement of trades and can ensure cryptographic assurance of Delivery vs Payment of tokens residing on the ledger

Custody

Record keeping of ownership (assets and funds) on a distributed ledger

Data Discovery

Service that normalizes data and enables query and reporting across cross-silo data to gain insights into data patterns and trends

Both Service Suites leverage the API Hub which provides a means to easily discover deployed APIs and learn how to interact and integrate to the services provided through the Marketplace Services Platform.

Why Nasdaq?



29

exchanges

50

countries

20+

years powering
infrastructure providers

Marketplaces are part of our DNA

No one knows marketplaces better than Nasdaq

We created the electronic market over 40 years ago and now operate 29 exchanges in the United States, Canada and Europe. In addition, we deliver mission-critical marketplace technology in over 50 countries.

Our technology is road-tested

In our experience powering infrastructure providers over the last 20+ years, we've encountered a number of volatile and unique situations that have afforded us the knowhow to manage eventualities, unprecedented volumes and a wide variety of market conditions. Our technology is designed to remain operational with a road-tested way to transact, trade and settle, even under extreme duress.

We know highly-regulated environments

Let us help you create a foundation for market integrity that will ultimately help you to meet regulatory demands while attracting new business.

We excel at complex data management

Our capabilities to normalize inputs across a variety of formats while optimizing workflows and silo-to-silo communication removes the heavy lifting integration work from your shoulders so that you can focus on your strategy.

Our heritage is disruptive and we never stop innovating

As one of the pioneers in cloud technology, DLT and machine learning adoption, you can rest assured that Nasdaq technology will keep pace. Our investments in R&D, partnerships through Nasdaq Ventures and university programming, as well as the relationships we maintain with our listed companies help us ensure that our offerings are always prepared to take on tomorrow's demands.

Let our marketplace services platform take your marketplace further.

Contact us: Tech@nasdaq.com

Visit us: www.nasdaq.com/solutions/marketplace-services-platform

