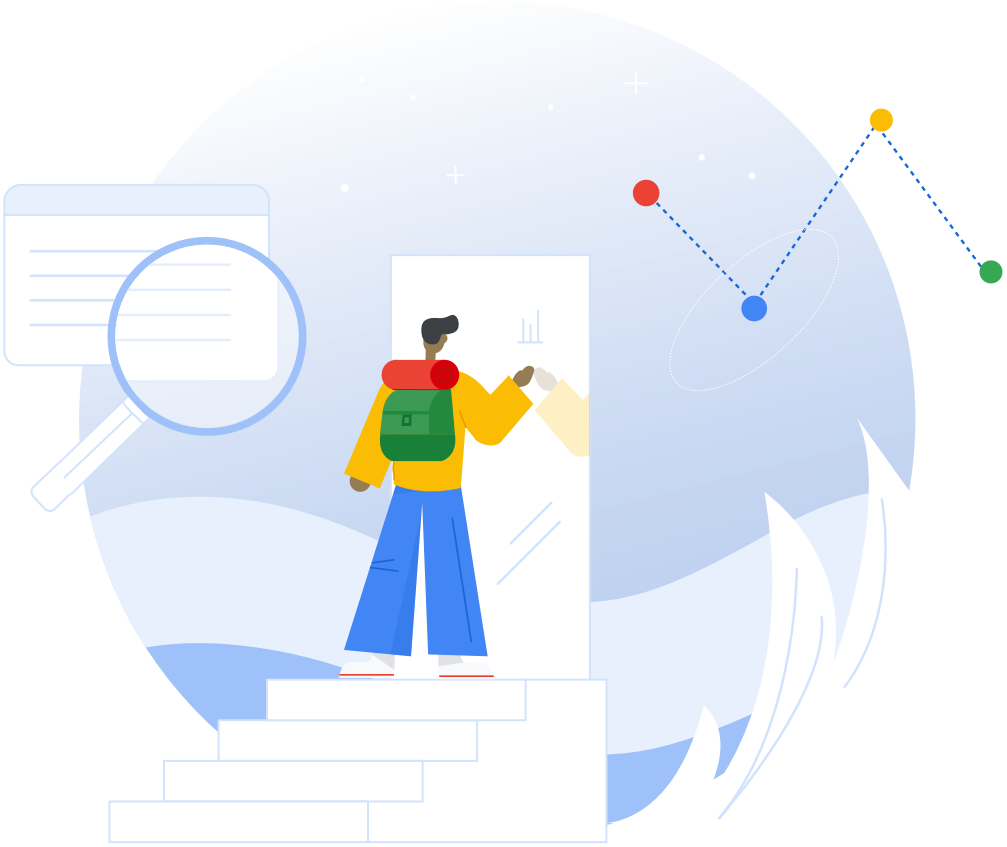
Google Cloud

Faster, Smarter Insights from Market Data in the Cloud

Foundations for the post-proximity world



A new business model for data publishers and consumers

From the earliest days of organized trading and exchanges, timely access to high-quality data has proven to be a key differentiator. This has proven true across a variety of communication protocols — carrier pigeon, semaphore, telegraph and User Datagram Protocol (UDP) multicast.

Over the past decade, worldwide data growth has prompted financial institutions to meet the "new data world," in the cloud,[1] where:

- Data can be reliably and securely accessed by anyone at any time.
- The tools to manipulate and analyze data are readily available on a metered basis.
- Massive computing resources can be provisioned on demand.
- Storage capacity is abundant and demands less operational overhead.

Today, financial institutions are looking to public cloud to provide not just accessible data and tooling but also a "post-proximity" business model[2] that doesn't require expensive upkeep or expose the enterprise to unpredictable, localized risks.

> "Public cloud adoption is having a transformative effect on financial institutions, acting as a catalyst for leaps forward in artificial intelligence and machine learning technologies."[3]
>
> **Marion Leslie**
> Managing Director, *Refinitiv*

1 https://openmarkets.cmegroup.com/15234/were-in-a-new-era-of-market-data-sharing

2 https://www.businessinsider.com/how-wall-street-traders-are-working-remotely-amid-coronavirus-2020-4

3 https://www.refinitiv.com/content/dam/marketing/en_us/documents/reports/public-cloud-investment-barometer-report.pdf

Two types of proximity dependencies

Historically, the market data ecosystem has exhibited two salient dependencies on proximity. Let's explore each one.

Technology proximity

Technology proximity, in the traditional sense, can be defined as proprietary infrastructure. Institutions own and maintain their own data centers; users locate, or plug in, near headquarters to ensure best access and use of assets.

However, recent work-from-home experiences have shown that this model could be more flexible.[4]

The need to be close to privately networked infrastructure and applications has subsequently been upended, making the case for a cloud-based market data model to support next-generation electronic trading and performance.

Tribal knowledge proximity

Tribal knowledge proximity requires particular skill sets to be located near particular technology to operate critical business processes.

The need for highly-specialized employees to be located near a firm's physical point-of-presence can have adverse business continuity implications. Most crises strike with localized effects, and a local catastrophe can shut down operations indefinitely.

Adoption of fully managed cloud services, on the other hand, can reduce the dependency on skill sets that do not differentiate the business, yet are required for critical business operations. Thus, the traditional, risky coupling of proximity to tribal knowledge is less necessary in a post-proximity world.

> "All things as-a-service are being offered externally, and each existing company-as-a-data-factory can use them at intersecting AI and cloud links into their data-driven digital asset decision supply chains."[5]
>
> **Marty Ellingsworth**
> Research & Advisory - Data and Advanced Analytics, Celent

4 https://on.ft.com/2ZkIA7D

5 https://www.celent.com/insights/840320857

Defining the post-proximity business model

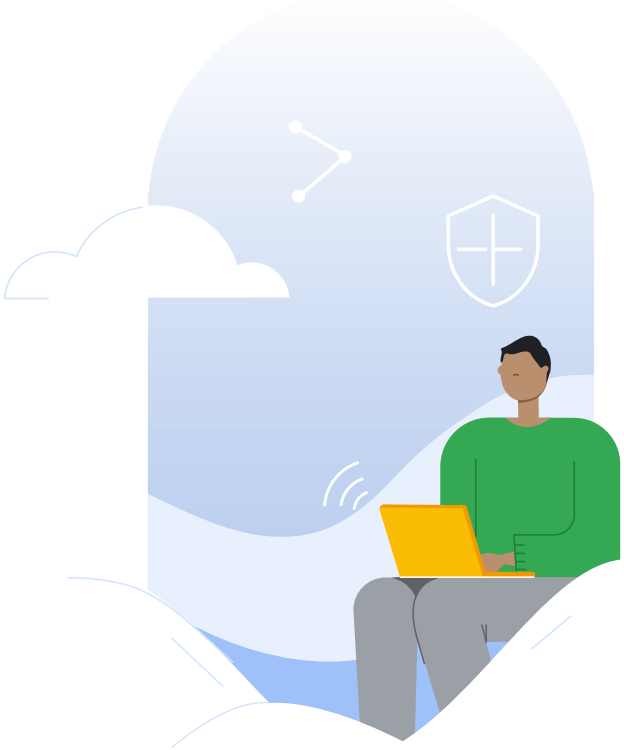
As the financial services industry enters an era of market data on the cloud, a new, "post-proximity" business model may help ensure stability, resilience and responsiveness. A post-proximity model could include:

- **Global, democratized and secure access to data**, as data from proprietary data centers makes its way into the public cloud.
- **Operational methodologies** that deemphasize localized physical assets and minimize bespoke processes for common functions.
- **Tools and technologies available "as-a-service,"** leveling silos and synchronizing an anytime, anywhere workforce.

Yet for all its upside, adopting this model presents its own set of challenges:

- **Data formats can be specialized** and the data itself received in various ways across sources.
- **Ingesting, normalizing and analyzing data** is time-consuming.
- Legacy infrastructure management **limits time spent** on product innovation.

So, the question remains, how to best prepare for a post-proximity reality?



Cloud-scale where it matters most

Cloud-scaling offers a smart way to achieve post-proximity operations through an integrated, hybrid approach that enables innovation, yet respects existing mission-critical investments.

As a first-rung initiative, let's start with that lifeblood of modern markets: data.

Cloud has liberated access, distribution and consumption of data on a global scale. Additionally, the global data landscape is rapidly evolving, with alternative sources of data for signal generation, including social media, meteorological, satellite imagery and other data. This evolution is prompting exchanges and market data providers to consider new datasets to competitively enrich products.

Exchanges and market data providers are subsequently turning to cloud-based models to help manage their continually evolving customer demands for easy, flexible and efficient ways to interact with market data.

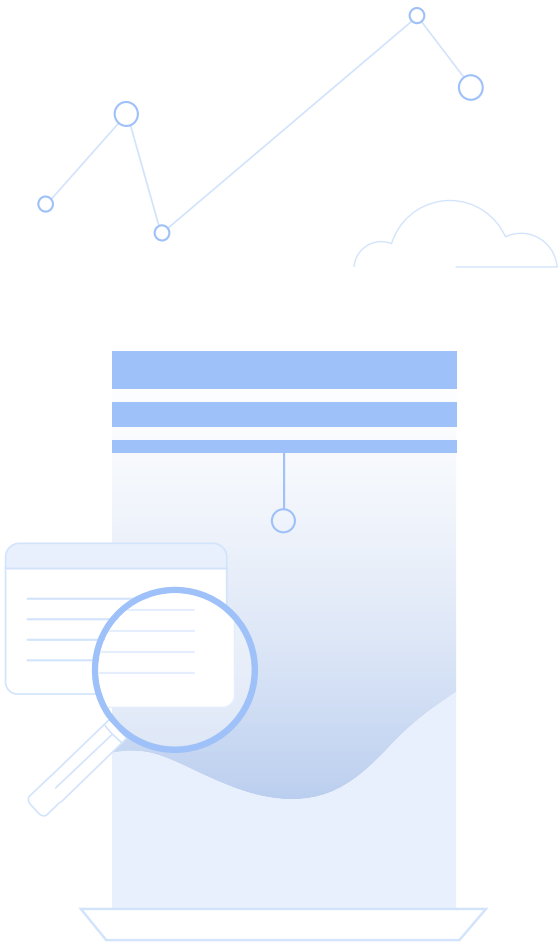
According to Greenwich Associates' 2020 Market Data Study, 93% of market data professionals interviewed say they plan to use the cloud to manage their market data, with 57% claiming very high probability and 35% claiming high probability.[6]

6 https://www.risklibrary.net/node/30151

As the volume and complexity of market data expands, firms face mounting pressure to modernize and control spend. For batch-delivered assets, many consumers still fetch data stored in individual files on-premise or on remote systems operated by publishers, creating bit-identical copies of the same data. A reliance upon inelastic infrastructure for data distribution and access control requires considerable upkeep. These traditional data sharing methods slow down product innovation and distract data consumers from their ultimate goal: revenue-generating analytics.

With market data in the cloud, data publishers, aggregators and consumers can exchange market data securely and easily. Data ingestion, entitlement and runtime delivery can work together or separately, offering flexible implementation. Organizations can still control entitlements and licensing, while allowing cloud providers to manage the infrastructure and delivery platform.

Financial services customers want to easily discover third-party datasets, models and other components that can improve the way they do business. Many of these solutions exist in the cloud marketplace today. As such, the industry may benefit from centralized marketplaces where these components can be accessed easily from anywhere on a metered basis, giving analysts a clear on-ramp for quantitative and statistical capabilities.



Google Cloud as a short-ramp to post-proximity operations

Google Cloud provides an immediate solution for market data providers and consumers seeking a post-proximity business model.

Datashare, an open source toolkit, helps organize third-party data, making it accessible and useful to market data publishers and consumers. With market data in the cloud, the entire capital markets ecosystem—data publishers, aggregators and consumers—can come together to exchange data at scale. With our solution, market data publishers can on-board their licensed and entitled datasets to Google Cloud securely, quickly and easily, while consumers can consume that data as a service in tools of their preference, such as BigQuery.

Datashare provides three key benefits:

Batch data delivery

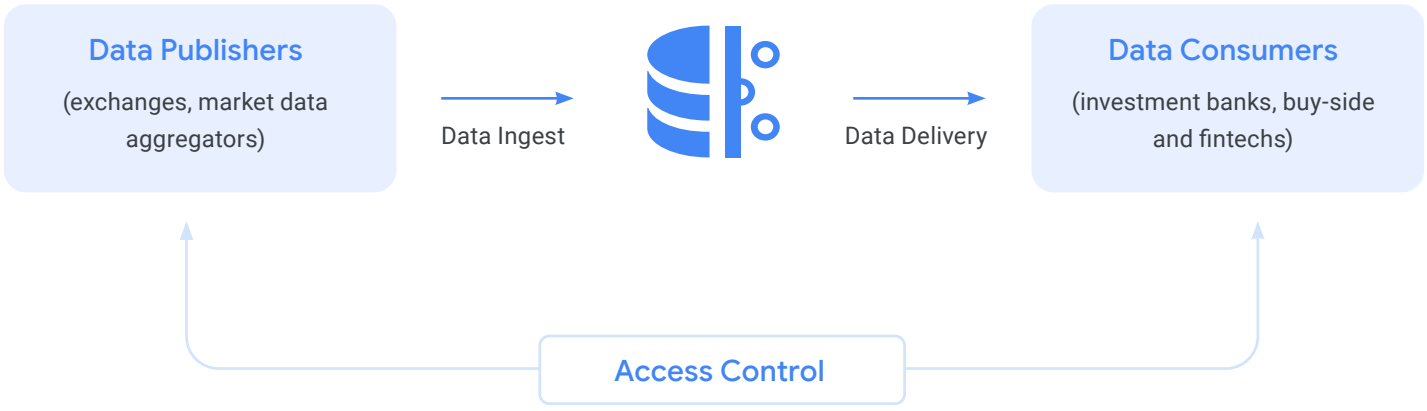
Datashare provides a batch data delivery mechanism for reference data, historical tick data, alternative market data sources and more. Delivery options include cloud-native delivery via BigQuery and on-demand delivery via signed URL.

Real-time data streaming

Real-time data streaming delivery for rapidly changing instrument prices, quotes, orders, news and others, via Pub/Sub.

Data monetization

Market data publishers can on-board their licensed and entitled datasets to Google Cloud by making them available on Marketplace.

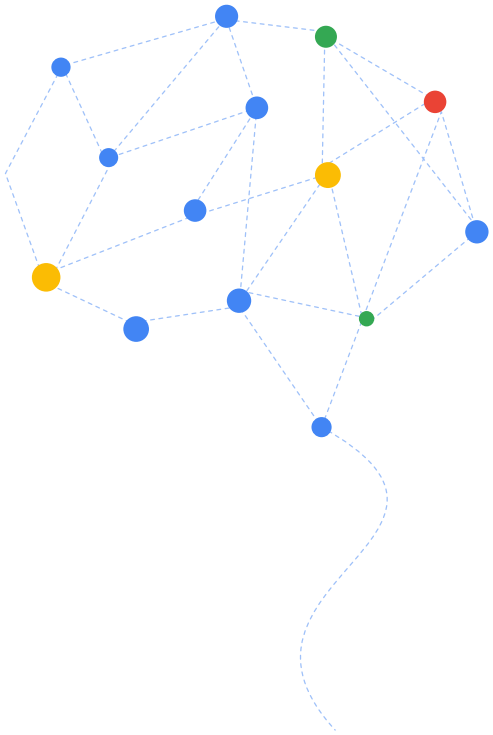


Take your market data to Google Cloud

Data has always been an essential ingredient in quality decision-making for financial services firms. Rapid access to clear data is a cornerstone of effective analytics.

Google Cloud provides a destination where you can obtain and use your data out of the box, without needing to be located near the source or depend on tools or specialists nearby or on-premises for support.

For more information on how to be in step with the post-proximity world enabled by the cloud, please contact your Google Cloud account manager or check our website.



Authors and contributors

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