



How Superior Tech Turned Bloomberg, BlackRock, and Citadel into Finance Juggernauts — and Redefined Wall Street Success



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The invincible Bloomberg Terminal, BlackRock's vaunted Aladdin cash cow, and Citadel's elite engineering culture have staked their respective firms to dominant positions on Wall Street even in the face of market ructions that have long bedeviled rivals.

That advantage has allowed them to largely eschew dealmaking and interact with other industry participants and the media on their own terms — a template other firms are striving to follow as the industry forges ever deeper into its tech pivot.

Terminal Velocity

Three decades of data dominance have cemented the place of the [invincible Bloomberg Terminal](#) at the head of Wall Street's platform pantheon.

Bloomberg has held the data-provider throne for decades, commanding a more or less static one-third share of the market despite the eye-popping \$25k price tag that makes the Terminal the linchpin of a gaudy annual revenue haul that climbed to \$11.6B in 2021.

Its 5.2% growth last year is proof of Bloomberg's staying power, coming as it did against the backdrop of a pandemic-era remote-working shift that theoretically posed an existential threat to the Terminal's clunky in-office hardware setup. The Terminal boasts more than 300,000 users.

Like the Terminal's POSH marketplace for luxe offerings from designer watches to yachts, though, that setup has instead become a status symbol among Wall Street's elite.

Learning the Terminal's quirky vernacular of keystroke shortcuts and proprietary functions has become a rite of passage for junior financiers. In 2010, Matthew Kraeger,



now BlackRock's lead mortgage PM, commissioned his [wedding cake](#) in the shape of a Bloomberg Terminal.

Prescient diversification has likewise helped Bloomberg preserve its dominance. As remote work became the norm, it focused on helping users manage their screen real estate more efficiently and improving its mobile apps. More broadly, non-Terminal business has grown from 15% of revenues 15 years ago to 35% today.

Remarkably, Bloomberg has established and maintained its dominance with no outside funding since 1982 and little marketing or M&A of note around its flagship Terminal product save for its landmark 2015 deal for Barclays' fixed-income indices. Forty-one years on from Bloomberg's establishment, co-founder Michael Bloomberg retains a dominant 88% stake in the firm.

While those levers are key drivers of most firms' rise to prominence, their absence from Bloomberg's blueprint for success has arguably helped the firm stay laser-focused on what it does best: using an army of support specialists to train clients while continually soliciting their feedback on how to improve the product.

That commitment to excellence has helped Bloomberg marshal a contingent of "the [best C++ engineers](#) in the industry" — nearly 7,000 of them in total — according to eFinancialCareers. It offers courses to teach engineers C++ and keep them abreast of its evolution. And it lets engineers switch between teams according to their interests, keeping more of them in the fold for the long term.

Bloomberg's commitment to continual improvement has also been instrumental in holding rivals at bay. Despite a wealth of funding and backing from prominent industry firms, Symphony has managed to make only limited inroads into Bloomberg's dominance in chat, highlighting the stickiness of the chat app.

A slew of other billion-dollar data behemoths including Refinitiv, S&P Global, Moody's, and FactSet have similarly failed to dent Bloomberg's market share despite trying for decades.

OpenBB, an open-source alternative to the Terminal, [launched in March](#) behind \$8.5M in funding from investors including early Google backer Ram Shriram. The platform uses newfangled technologies like AI that gauges the impact of news stories on company share prices. But it also lacks a graphical user interface — something the firm is racing to rectify.

Whether an open-source competitor will manage to unseat the Terminal remains to be seen. The rising popularity of real-time alt-data sources could herald the dawn of a new era in market data that privileges open-source platforms' extensibility and flexibility in pulling in data from a wealth of disparate sources.



Then again, Bloomberg may just adapt to a shift in the industry's data paradigm faster and better than everyone else, as it's done for generations. Not to mention it already has all the clients — an often-decisive incumbent advantage.

Genie Out of the Bottle

BlackRock's Aladdin technology platform has meanwhile become the secret weapon of the world's largest asset manager in the protracted struggle for industry primacy.

Aladdin revenues [reached \\$1.3B](#) in 2021, growing 11% YoY in Q1 even as AUM dipped amid deteriorating market conditions. The conflicting trends highlight Aladdin's importance to BlackRock as a counterweight to volatile fee-based revenues. Already by 2020, Aladdin had grown so large and influential that a think-tank advised President Biden it [should be spun off](#).

Unlike Bloomberg, BlackRock relied on a key deal to help cement Aladdin's dominance. Its 2019 purchase of eFront opened the way to a ["whole portfolio view"](#) that captured in-depth risk analytics for private as well as public assets. That enhancement could serve BlackRock well in the years to come as investors pivot away from scuffling public markets in search of alternative investments with more attractive risk-reward profiles.

The importance of Aladdin to BlackRock is evident in CEO Larry Fink's comparison of the firm to a [tech startup](#) despite its reaching a world-leading \$10T in AUM last year. BlackRock even boasts a ["five-year plan"](#) for Aladdin akin to those published by the Chinese Communist Party for charting the country's future course.

A key factor in Aladdin's success has been BlackRock's ability to speed product development by [deploying the platform internally](#) for everything from gathering requirements for new features to ironing out bugs.

"We're big believers that we have to eat our own cooking," global head of the Aladdin business Sudhir Nair told Insider . "[BlackRock] is a great sandbox environment as we build new capabilities to try them out in."

As with the Bloomberg Terminal, the notion of a tight feedback loop has been integral to a decades-long run of dominance. First launched in 1988, Aladdin — short for Asset Liability and Debt and Derivative Investment Network — now serves more than 900 clients across 65 countries. Its Aladdin Studio toolset even lets engineers customize the platform, providing a level of extensibility that's helped it stave off challenges from rivals.

And there have been many of those. In a six-month span in 2019, a slew of competitors including asset-management archrival [Vanguard](#), banking behemoth [JPMorgan](#), quant hedge fund [Two Sigma](#), and fixed-income asset-management specialist [PIMCO](#) all announced or launched portfolio analytics platforms to compete with Aladdin.



In addition, Aladdin competitor State Street teamed up with MSCI over that span to [bolster](#) its risk analytics platform by integrating MSCI's portfolio and risk analytics.

But those rival offerings have failed to dent Aladdin's revenue growth. Last week, Mr. Fink told CNBC's Jim Cramer that BlackRock's "[secret sauce](#)" is its unified approach to Aladdin, which contrasts starkly with rivals' "spaghetti of systems."

A Tech Citadel

Ken Griffin's Citadel businesses — hedge fund Citadel LLC and market maker Citadel Securities — have built their own financial-services technology dynasty.

Citadel Securities began raising its profile this year, closing its first-ever fundraising round of \$1.15B, granting interviews with executives other than its high-profile billionaire founder for the first time, and even teasing a potential future IPO. The moves followed scrutiny from regulators, lawmakers, and the investing public over its role in the GameStop affair and retail investing more generally.

Citadel Securities' openness represents a marked departure from a historically secretive corporate culture at both firms. That reserve, combined with the firms' success and reputation for technical prowess, have lent the businesses a mystique that's fueled a virtuous cycle of top-flight recruitment and top-knotch infrastructure creation.

Behind that winning formula lies, above all, the indomitable will of Ken Griffin, who sports an industry reputation as equal parts driven and highly technical. When Mr. Griffin solicited current Citadel Securities CEO Peng Zhao's help to build mortgage models in Mr. Zhao's second year at the firm in 2007, Mr. Griffin moved into Mr. Zhao's office for three months.

That drive has percolated through Mr. Griffin's firms like an intravenous espresso drip. The result is a deeply technical culture in which projects are often owned by just one or two developers who interface directly with traders to understand the business cases their work addresses.

That allows them to approach development iteratively, testing and soliciting user feedback frequently so they never stray far down the wrong path.

In addition, Citadel Securities' global, cross-asset-class tech platform has encouraged its developers to build modular components that lend themselves to reuse in various contexts.

The two privately-held firms' low profile has also limited distractions for developers, sharpening their focus. Senior engineers spend less time conducting media interviews, planning deal integrations, and explaining the platforms' technical underpinnings to



prospective investors and more time plotting elegant solutions to technical challenges that meet clients' needs.

Those elements form the basis of a problem-solving approach to development at Citadel and Citadel Securities that underpin the firms' engineering culture. That culture, in turn, makes the firms desirable destinations for developers to not only pad their reputations and bank accounts as part of highly profitable enterprises but also hone their craft — benefits that facilitate recruitment of some of the industry's most talented technical minds.

As at Bloomberg, continuing education is central to the Citadel businesses' culture — and, by extension, to recruiting top talent. Citadel offers programs in data analysis, data sciences, cloud computing, and Python and other languages to help its engineers keep growing and refining their approaches.

That process of ongoing improvement is a two-way street. Citadel encourages its engineers to question the firm's methods and culture, even formalizing the process through an [early-career engineering program](#) called NXT.

The program upskills engineers and improves their business acumen so they can help the firm refine its methods. NXT's members also get first dibs on Citadel's highest-impact projects. NXT has helped Citadel recruit top talent from rivals as well as be a sponge in absorbing the industry's latest and greatest programming best practices.

Those approaches have helped Citadel and Citadel Securities establish an engineering culture that has proven foundational to the firms' success.

"They have won so profoundly," Alphacution Research Conservatory director of research Paul Rowady told Bloomberg News. "Banks and smaller rivals have not been able to compete at the cutting edge of technology and attracting talent — that train has already left the station."

Universal Blueprint?

Bloomberg, BlackRock, and the Citadel businesses share some common characteristics that have staked them to success: a narrow tech focus with few distractions; an iterative approach to development that includes a strong feedback loop; and a penchant for bridging the paradox that is an extensible platform built from modular components.

Collectively, their decades-long preeminence has redefined success in financial services in increasingly tech-centric terms. The shift has pushed firms to up their tech spend to "astonishing" levels like JPMorgan's [\\$12B cost outlay](#) this year.



But Wall Street's tech powerhouses also forged distinct paths to dominance that show there's no universal blueprint for tech success. Instead, each firm must become adept at solving the problems unique to its mission and circumstances. And as in investing, past success is no guarantee of future results.

For the bevy of firms racing to make their mark on a finance industry embracing technology with ever-greater gusto, that thought could be at once reassuring and deeply troubling.