No. 15-1145

In The
Supreme Court of the United States

VERSATA DEVELOPMENT GROUP, INC.,

Petitioner,

v.

SAP AMERICA, INC., *et al.*,

Respondents.

On Petition For A Writ Of Certiorari To The United States Court Of Appeals For The Federal Circuit

BRIEF OF AMICI CURIAE BGC PARTNERS, INC. AND CANTOR FITZGERALD, L.P. IN SUPPORT OF PETITIONER

MICHAEL S. POPOK
GLEN R. FARBANISH
CANTOR FITZGERALD, L.P.
110 East 59th Street
New York, NY 10022
(212) 610-2200

GARY A. ROSEN
Counsel of Record
LAW OFFICES OF
GARY A. ROSEN, P.C.
26 Summit Grove Avenue
Suite 217
Bryn Mawr, PA 19010
(610) 658-8790
grosen@logarpc.com

Attorneys for Amici Curiae
BGC Partners, Inc. & Cantor Fitzgerald, L.P.

COCKLE LEGAL BRIEFS (800) 225-6964
WWW.COCKLELEGALBRIEFS.COM

TABLE OF CONTENTS

TABLE OF AUTHORITIES

TABLE OF AUTHORITIES – Continued

Page

INTEREST OF THE AMICI CURIAE

BGC Partners, Inc. ("BGC") is a publicly-owned holding company of global brokerage businesses, primarily servicing wholesale financial and real estate markets. BGC is a creation of Cantor Fitzgerald, L.P. ("Cantor"), a preeminent capital markets investment bank and brokerage business founded in 1945.[1]

In the 1970s, Cantor pioneered the use of "screen brokerage" in the secondary (*i.e.*, post-auction) United States Treasury securities market, bringing a measure of transparency to the market by making price quotes and other market data widely available to traders, brokers, and (through the Telerate service) the public. Department of the Treasury, Securities & Exchange Commission, and Board of Governors of the Federal Reserve System, *Joint Staff Report on the Government Securities Market*, at 18 & 26 (Jan. 1992) ("1992 Treasury Report") (online at https://www.treasury.gov/resource-center/fin-mkts/Documents/gsr92rpt.pdf, as last visited April 8, 2016). In the 1990s, Cantor and BGC (then known as eSpeed, Inc.) created the first fully electronic trading platform for government

[1] BGC and Cantor file this brief pursuant to Supreme Court Rule 37.2, and it is accompanied by the written consent of Petitioner and Respondents, who were given 10 days notice. Pursuant to Sup. Ct. R. 37.6, no counsel for a party authored this brief in whole or in part, and no counsel or party made a monetary contribution intended to fund the preparation or submission of this brief. No person other than Amici made a monetary contribution to its preparation or submission.

fixed income instruments. The eSpeed platform, which in June 2013 was purchased by NASDAQ, Inc. in a transaction valued at over $1.2 billion, handles a significant portion of trading volume in the secondary market for U.S. Treasury securities. "NASDAQ Rounding Out in Fixed Income with eSpeed," *Wall Street Journal* (July 1, 2013) (online at http://blogs.wsj.com/moneybeat/2013/07/01/nasdaq-rounding-out-in-fixed-income-with-espeed/, as last visited April 8, 2016).

Today, the market for U.S. Treasury securities is the "deepest and most liquid government securities market in the world" and it plays "a critical and unique role in the global economy, serving as the primary means of financing the U.S. federal government, a significant investment instrument and hedging vehicle for global investors, a risk-free benchmark for other financial instruments, and an important market for the Federal Reserve's implementation of monetary policy." Department of the Treasury, Board of Governors of the Federal Reserve System, Federal Reserve Bank of New York, Securities & Exchange Commission, and Commodity Futures Trading Commission, *Joint Staff Report on the U.S. Treasuries Market on October 15, 2014*, at 2 (July 13, 2015) (online at https://www.treasury.gov/press-center/press-releases/Documents/Joint_Staff_Report_Treasury_10-15-2015.pdf, as last visited April 8, 2016). The technological contributions of Cantor and BGC have played a crucial role in building this robust market.

BGC, Cantor and their affiliated companies invest heavily in developing new technology and rely on their patent portfolios to protect those investments. Currently, five Petitions for Covered Business Method Patent review, relating to patents claiming graphical user interfaces for electronic trading systems owned by a BGC affiliate, Chart Trading Development, LLC, are awaiting institution decisions before the Patent Trial and Appeal Board ("PTAB").

The Amici believe that the instant Petition for Writ of Certiorari raises several issues worthy of this Court's review. Of particular concern to these Amici, however, is the second question presented: "Whether the Federal Circuit's standard for identifying patents falling within the 'technological inventions' exception departs from statutory text by looking to whether the patent is valid, as opposed to whether it is 'technological.'"

SUMMARY OF ARGUMENT

Under Section 18 of the America Invents Act ("AIA"), Pub. L. No. 112-29, 125 Stat. 284 (2011), "covered business method patent" is defined as "a patent that claims a method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of a financial product or service, *except that the term does not include patents for technological inventions*." (Emphasis added.) In making its

determinations whether to institute Covered Business Method Patent review proceedings, the PTAB applies a seriously flawed definition which the United States Patent & Trademark Office ("USPTO") has given to "technological inventions," *i.e.*, a "technological invention" is one in which "the claimed subject matter as a whole recites a technological feature that is novel and unobvious over the prior art; and solves a technical problem using a technical solution." 37 C.F.R. § 42.301(b). In particular, the PTAB's exceedingly narrow understanding of what constitutes "technical problems" and "technical solutions" excludes nearly any software-based invention that enhances the performance of machines used in financial services, thereby virtually eviscerating the Covered Business Method Patent review program's statutory exception for technological inventions. This Court should grant the instant Petition for Writ of Certiorari to rein in the PTAB's jurisdictional overreach.

ARGUMENT

I. The Automation of Financial Markets is a Technological Undertaking that has Entailed Vast Technological Innovation.

As recently as 25 years ago, most trading of securities and commodities on world financial markets was still carried out by "open outcry," in which market makers and brokers seeking to execute the buy and sell orders of their principals gaggled on trading floors, or in "pits," and attempted to execute

trades by indicating their interest via shouting and hand gestures. Markets, even the most active and liquid ones, were largely opaque, with market participants and the public having to rely upon after-the-fact reporting of executed trades to gauge the state of the market, rather than having access to real-time, live quotes which could be immediately acted upon. The lack of transparency made such markets a ripe target for unfair practices and prone to error and manipulation by unscrupulous individuals. *See generally* L. Harris, *Trading & Exchanges: Market Microstructure for Practitioners* 543-53 (2003) ("[A]ll oral auction markets have suffered from well-documented trading scandals. . . . Physically large traders have some advantage over smaller traders because they can control the 'real estate'. . . . Traders with loud voices have some advantage over less audible traders because they can more easily attract attention when yelling. . . . In an oral auction, traders must manually record the price, size, counterpart, and instrument traded for each trade.").

In the secondary market for U.S. Treasury securities, for example, where daily trading volumes in dollar terms have typically dwarfed the trading volume of equity markets such as the New York Stock Exchange, brokers acting on behalf of banks and other institutions conducted oral auctions in the trading rooms of Cantor and other "inter-dealer brokers." Such trading rooms, each devoted to a single instrument such as 2-year bills or 30-year bonds, could be extremely chaotic, especially when

events such as Federal Reserve Bank policy changes or Department of Labor employment reports roiled the interest rate markets.

In the wake of a well-publicized Treasury securities trading scandal in the early 1990s, in which the Salomon Brothers firm submitted improper bids in the auctions of new issues and then created a "short squeeze" in the secondary market, 1992 Treasury Report, at B-1 – B-3, a number of companies and joint ventures began intense, multi-year technology development efforts to create a fully automated marketplace for U.S. Treasury securities. In 1999, Cantor rolled out the first successful one, the eSpeed platform. eSpeed largely superseded the open outcry trading floors (and, indeed, eliminated the need for intervention by human brokers in large segments of the market) by permitting participants in the secondary Treasury securities market to enter and act upon orders directly from computers situated on their own trading floors.

Unlike the open outcry system, fully automated systems do not depend upon the skill and honesty of individual brokers to ensure operational fairness and accuracy, do not afford any advantages based on physical attributes, create a virtually flawless audit trail, reduce the transaction costs associated with voice brokerage, permit traders to monitor and participate remotely in markets for multiple instruments simultaneously, and provide increased transparency in the form of real-time market depth information. Multiple raucous and chaotic trading floors are

replaced with a single two-dimensional computer screen to which all participants have equal access.

To achieve these clear advantages over open outcry trading, numerous and varied technical challenges had to be solved, including challenges related to security, scalability, latency (*i.e.*, the delays inherent in any remote communications system), and problems related to the weak link in any automated system – the human-machine interaction. *See* Commodities Futures Trading Commission, *Concept Release on Risk Controls and System Safeguards for Automated Trading Environments*, at 1-2 (2013) ("Automated trading environments have conferred a number of benefits upon market participants, including an expanded range of potential trading strategies, and a surge in the speed, precision and tools available to execute such strategies. In addition to these benefits, however, automated trading environments have also presented challenges unique to their speed, interconnectedness and reliance on algorithmic systems.") (online at http://www.cftc.gov/idc/groups/public/@newsroom/documents/file/federalregister090913.pdf, as last visited April 8, 2016).

This transformation did not entail simply implementing traditional business methods on a computer, but rather entailed the design and development of robust technical infrastructures that solved multiple technical challenges which bedeviled and doomed many earlier attempts to create electronic marketplaces. Among the technological challenges faced by the developers of the eSpeed system, for example,

were those associated with the human-computer interface. With millions of dollars trading in matters of seconds, fast and accurate methods of order entry were essential. Early versions of the system relied on custom keyboards, such as the one depicted in the Appendix hereto, which were designed to minimize errors while maximizing speed in order entry.

As electronic trading became more widespread, however, with traders monitoring and participating in multiple markets simultaneously, many users demanded the elimination of extraneous, dedicated hardware such as these custom keyboards in favor of interactive graphical user interfaces ("GUIs") that could share valuable "real estate" on their desktops with numerous other computer applications. Specialized GUIs are another technological approach to these same problems addressed by keyboards or other physical order entry devices. They are technological inventions that address technical challenges entailed by the automation of securities markets. The PTAB's failure to recognize these as "technological inventions" is but one example that shows that it has effectively gutted the statutory exception to Covered Business Method Patent review.

II. The PTAB's Approach to the "Technological Invention" Exception Virtually Eviscerates It.

The USPTO defines a "technological invention" as one in which "the claimed subject matter as a

whole recites a technological feature that is novel and unobvious over the prior art; and solves a technical problem using a technical solution." 37 C.F.R. § 42.301(b). The Court of Appeals noted in its decision below that this definition is not helpful. The first part of the definition merely anticipates "what will be one of the ultimate questions if review is granted." Thus,

> we are left with a definition of a "technological invention" as essentially one having a "technological" feature that solves a "technical" problem using a "technical" solution. Defining a term in terms of itself does not seem to offer much help. In short, neither the statute's punt to the USPTO nor the agency's lateral of the ball offer anything very useful in understanding the meaning of the term "technological invention."

Versata Development Group, Inc. v. SAP America, Inc., 793 F.3d 1306, 1326 (Fed. Cir. 2015).

In defining the term "financial" as used in § 18 of the AIA, the PTAB cites dictionary definitions and gives the term the *broadest* imaginable construction: "relating to monetary matters." *Versata*, 793 F.3d at 1324. As shown in detail by Petitioner, this construction has led to an alarming expansion of the scope of Covered Business Method Patent ("CBM") review. (Pet. 17-19) But in giving "technological" the *narrowest* imaginable construction, further expanding the scope of CBM review, the USPTO pays no heed at all to dictionary definitions of the term, such as "the application of science, especially to industrial or commercial

objectives" *American Heritage Dictionary* 1843 (3d ed. 1992), or "the application of scientific knowledge for practical purposes." *New Oxford American Dictionary* 1742 (2001).

The PTAB's application of the USPTO definition of "technological invention," in a recent institution decision involving a specialized GUI for automated trading, shows that it is utterly circular. Indeed, in the case of inventions that meet the "used in the practice, administration, or management of a financial product or service" requirement as construed by the USPTO, this definition *ipso facto* results in the conclusion that the invention is not technological, thereby eviscerating the exception. *See Tradestation Group Inc. v. Trading Technologies Int'l Inc.*, CBM2015-00161 (PTAB Jan. 27, 2016). According to the PTAB, "the problem disclosed in the [patent under review in *Tradestation*] is the placing of trader orders on a market or exchange that is rapidly changing, so as to make a profit. . . . this is a financial issue or a business problem, not a technical problem." *Id.*, at 16. In fact, one of the problems that electronic trading GUI patents such as the one in *Tradestation* directly address is not rapid changes in the underlying market itself, but rather rapid changes in the *computer's display of the market*, and therefore the

problem and its solution are necessarily rooted in computer technology, not in a business practice.[2]

The problem with the PTAB's logic, however, runs even deeper, as can be illustrated by a few hypotheticals:

A cash register is a machine that can serve a business function, recording cash transactions for which there is no other paper trail. However, if certain mechanical keys become jammed, clerks may enter inaccurate cash amounts in order to open the drawer, resulting in a register tape that does not jibe with cash actually received. That is indeed a business problem. Nonetheless, replacing mechanical buttons on the cash register with a touch screen would be a technical solution to a technical problem with a business machine. Perhaps the problem could be addressed by non-technical solutions, such as having the clerks record cash transactions manually, but that would defeat the purpose of using the business machine in the first instance.

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[2] The design of computer-human interfaces is a recognized branch of computer science. B. Myers, "A Brief History of Human Computer Interaction Technology," *ACM interactions* 44, 45-48 (Mar. 1998) (online at http://www.cs.cmu.edu/~amulet/papers/uihistory.tr.html, as last visited April 8, 2016). Many universities offer technical degrees in human-computer interaction. *See, e.g.*, https://www.hcii.cmu.edu/academics/mhci, as last visited April 8, 2016 (Carnegie-Mellon University, Human-Computer Interface Institute). As noted in the text, the application of this science to practical problems, including problems in the financial services industry, is the very essence of "technology."

Likewise, a punch-in time clock is a machine that can serve a business function, tracking hours worked by employees. Unscrupulous employees may, however, defeat the purpose of the time clock by various means, such as having another employee punch-in and punch-out for them. That is also a business problem. Nonetheless, installing a biometric sensor on the time clock to digitally verify employees' fingerprints before punching their cards would be a technical solution to a technical problem with a business machine. There may be non-technical solutions to this problem as well, such as having a manager monitor the time clock, but this too would largely defeat the whole purpose of using the business machine.

Analogously, a desktop computer is a machine that can be used to serve a business function, such as trading commodities in an electronic marketplace that offers real-time quotes which traders can immediately accept to form binding trades. This, however, can result in costly errors if a trader keys in inaccurate information or mistakenly accepts an unfavorable quote. That is a potentially enormous business problem. Nonetheless, a specialized automated trading GUI, by making such order entry errors less likely, is a technical solution to a technical problem with a business machine. Perhaps the problem could have been avoided by sticking with open outcry trading, but once automated systems largely supplanted open outcry due to their overall advantages, problems related to the speed and accuracy of order entry became technical problems requiring technical

solutions. Custom GUIs for electronic trading actually improve upon the interactive, tactile features of the computer to make it an efficacious trading tool analogous to the custom keyboard depicted in the Appendix hereto.

It is a *non sequitur* to argue, as did the PTAB in the *Tradestation* case, that "if the market or exchange did not rapidly change, there would be no need for a trader to enter orders rapidly or for a GUI to accomplish such," *Tradestation Group*, *supra*, at 16, and therefore a GUI that does so is not a technical solution to a technical problem. It is equally true that if people did not stubbornly persist in using cash there would be no need for cash registers, but that does not entail the conclusion that the improved cash register envisioned above is not a technical solution to a technical problem.

Businesses often turn to technology to solve business problems, even where non-technological alternatives exist, and even where technology creates additional problems of its own. Once businesses go that route, it is unavailing to say the resulting inventions are not technological merely because they ultimately solve underlying business problems.

Far from the trivial computer implementations of traditional business methods that the CBM review program was intended to address, technologies developed to facilitate financial activity such as automated trading embody precisely the type of "progress of science and the useful arts," U.S. Const., Art. I, sec. 8,

that the patent system is designed to stimulate and reward. The PTAB's failure to recognize inventions of this nature as "technological" demonstrates that its approach to the "technological invention" exception to CBM review is fatally flawed.

CONCLUSION

For the foregoing reasons, amici BGC and Cantor support Petitioner in asking this Court to grant its Petition for Writ of Certiorari to rein in the PTAB's overreach of its jurisdiction under the Transitional Program for Covered Business Method Patents and to clarify the scope of the statutory exception for "technological inventions."

Respectfully submitted,

GARY A. ROSEN
LAW OFFICES OF GARY A. ROSEN, P.C.
26 Summit Grove Avenue, Suite 217
Bryn Mawr, PA 19010
(610) 658-8790
grosen@logarpc.com

MICHAEL S. POPOK
GLEN R. FARBANISH
CANTOR FITZGERALD, L.P.
110 East 59th Street
New York, NY 10022
(212) 610-2200

Attorneys for Amici Curiae
BGC Partners, Inc. &
Cantor Fitzgerald, L.P.

App. 1


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Customer Support: support@eSpeed.com
North America: +1 212-610-2300
eSpeed
Europe: +44 (0)20 7894 8600
Asia: +81 (0)3 3519-9138