LOBBYING THE COURTS:
AN INTRODUCTION AND DATASET OF U.S. SUPREME COURT PATENT CASES

Elie Sung
HEC Paris

Yasir Dewan
HEC Paris

September 2024 – Please consult the authors before sharing
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INTRODUCTION

In a rapidly evolving knowledge-based economy, innovations continuously bring into question the need for new public policies (for example, social networking sides or autonomous vehicles). As a result, innovative firms often rely on political strategies to shape the public policies that govern innovation and technologies. While corporate lobbying in legislative and executive branches has received substantial attention, firms' efforts to influence judicial decisions remain underexplored. This oversight is particularly significant in the context of U.S. patent policy, where the judiciary, and notably the Supreme Court, has become a key actor in shaping innovation-related rules (Holbrook 2007, 2013). Between 2000 and 2015, the Court issued 31 landmark rulings that substantially changed patent law, outpacing legislative actions like the America Invents Act of 2011. These rulings, which addressed issues ranging from the patentability of software to the enforcement of gene-based technologies, highlight the judiciary's role as a policymaker in the innovation domain. By introducing a novel data set of lobbying activities directed at courts through

amicus briefs, this paper seeks to fill a critical gap in our understanding of how innovative firms shape their competitive environment through judicial channels.

Lobbying is the provision of information between interest groups and policymakers (Bombardini & Trebbi 2020; De Figueiredo & Richter, 2014; Hillman and Hitt, 1999). Lobbying is an important corporate political activity that firms use to obtain access to the policymakers, influence their policy decisions, and secure favorable treatment (Bertrand, Bombardini, & Trebbi, 2014; De Figueiredo & Silverman, 2006). Recognizing the importance of lobbying, an extensive body of research has sought to understand the various aspects of lobbying and their consequences for firms (e.g., Barber & Diestre, 2019; Flammer & Luo 2017; Kim 2019; Kim, Eleazar, & Lee 2024). Although this research has used diverse perspectives to examine the antecedents, processes, and consequences of lobbying, this line of research shares a common focus on firms' lobbying activities directed at the legislative and executive branches of government. Conspicuously missing from this research is the focus on firms targeting their lobbying activities at the third branch of government, the judicial branch.

The lack of attention to firms' lobbying efforts targeting the judicial branch is less surprising given the common perception that the judiciary primarily functions as a legal institution, which adjudicates legal disputes through the interpretation of statutes enacted by the legislative and executive branches. This view confines the judiciary's role to that of an arbiter rather than a policymaker. However, since Dahl (1957), it has become widely accepted in legal and political science research that the judicial branch also shapes policy through its rulings (McCloskey, 1960; Rosenberg, 2008; Whittington, 2019; see also eBay Inc. v. MercExchange, L.L.C., 2006; Roe v. Wade, 1973). The judiciary acts as a policymaker, particularly when there is a legal void, which can be remedied by interpreting ambiguous, contested, or outdated statutes. Such situations

frequently arise in policy areas crucial to firms, such as intellectual property, taxation, antitrust, consumer protection, and employment discrimination, reinforcing the judiciary's status as a policymaker whose decisions have significant implications for firms.

Even when acknowledging the judicial branch as a policymaker, the stigma of corruption typically associated with lobbying (Borisov, Goldman, & Gupta, 2016; Kim et al., 2024) makes it difficult to conceive of lobbying taking place within the courts, which are expected to be impartial and independent from political or private interests. However, if lobbying is understood as the transmission of information to policymakers (e.g., De Figueiredo & Richter, 2014; Hillman and Hitt, 1999), the judicial system itself encourages such activities from third parties. Judicial systems worldwide recognize that judges and their clerks often lack the specialized technical expertise required to fully understand the complexities of many cases. As a result, courts seek additional information from amicus curiae—or "friends of the court"—through the submission of amicus briefs. Because the scope of court decisions often extends beyond the immediate parties involved, third parties that anticipate being affected by the outcome frequently submit amicus briefs to influence the court's decision in a way that aligns with their own interests. Specifically, these briefs are strategically framed to provide information that supports the specific interests of the submitting amicus curiae, with previous research showing that amicus briefs can significantly influence the court's final decisions (Abrams & Potts, 2024; Collins & Martinek, 2010; Hazelton, Hinkle, & Spriggs, 2019).

Simply put, interest groups including firms recognize the judicial branch as an important policymaker and seek to obtain favorable policy outcomes by extensively engaging in lobbying the courts through amicus briefs. This calls for an understanding of the dynamics of the lobbying

the judicial branch to give a full account of antecedents, mechanisms, and consequences of lobbying by the firms. To this end, we seek to accomplish three objectives in this paper.

First, we clarify why the judicial branch serves as a critical policymaker for firms and outline how lobbying takes place in courts. Second, we introduce a new dataset that documents firms' efforts to lobby the Supreme Court to shape patent policy from 2000 to 2015. While court decisions carry significant policy implications for firms across various domains, the judiciary is particularly influential in the area of intellectual property, where it is a primary policymaking body. Specifically, as we will elaborate later in this article, over the past two decades, the Supreme Court has effectively acted as the principal policymaker in the domain of patent law (Chien, 2010; Gallini, 2002; Holbrook, 2013), affecting firms' R&D spendings, venture capital investments, productivity growth and small firms' ability to experiment and to license out their inventions (Aydin Ozden and Khashabi, 2023; Contigiani, 2023; Mezzanotti, 2021; Mezzanotti and Simcoe, 2019). Thus, our dataset captures the most relevant lobbying activity related to patents during this period. Beyond contributing data for understanding firms' lobbying efforts to influence patent policy, we also provide a detailed description of the data collection process, the challenges encountered, and the strategies employed to overcome them. This will enable other researchers to replicate our methodology and develop their own datasets on firms' court lobbying in various other policy domains. Finally, as an initial application, we present a preliminary correlational analysis examining the firm-level factors associated with successful lobbying efforts to influence patent policy and how these outcomes were perceived by investors, as reflected in cumulative abnormal returns around the announcement date of the relevant Supreme Court decision. We conclude by discussing additional potential applications of our dataset and the broader utility of creating court lobbying datasets for other policy areas.

LOBBYING THE COURTS AS A CORPORATE POLITICAL ACTIVITY

Strategic management research recognizes that firms are not passive recipients of their regulatory environments but actively employ corporate political activities to obtain favorable policy outcomes (Dorobantu, Kaul, & Zelner, 2017). Policy is defined as the "formal, codified rules, including laws, regulations, and court decisions" (Funk & Hirschman, 2017, p. 32). Policymaking occurs across the three branches of government: legislative, executive, and judiciary. The legislative branch enacts laws, and the executive branch develops and enforces specific regulations based on these laws. The importance of the legislature and the executive as policymakers are well understood and the corporate political activities aimed at influencing their policy decisions have been extensively studied (for recent reviews, see Katic & Hillman, 2023; Wei, Jia, & Bonardi, 2023). However, as De Figueiredo (2009, p. 3) notes, "courts have not traditionally been thought of as a policy-making branch of government," leading to a limited recognition of courts as policymakers and to the paucity of research on corporate political activities aimed at obtaining favorable policy outcomes from courts.

The policymaking function of courts is grounded in their authority to review challenges to the legality of existing policies and invalidate them. While invalidating policies is a powerful policymaking tool, courts are often reluctant to use it because it may be seen as judicial overreach. However, courts do act as policymakers in another important way. Specifically, the inherent incompleteness and ambiguity of legal statutes leaves them open to various interpretation. When private parties bring legal disputes to court, the court's interpretation of the relevant statutes not only affects the outcome of the case but also sets legal precedent, shaping how these statutes will be understood in the future. Unless lawmakers rewrite the statutes to address their incompleteness or ambiguity, the court's interpretation becomes the de facto policy. Lawmakers often cannot

revise statutes for long periods, either because they quickly become outdated (e.g., intellectual property) or are politically contested (e.g., civil rights, environmental protection). When statutes tend to become outdated, lawmakers are often too constrained by time and expertise to continuously update them. When statutes are politically contested, reaching consensus across partisan lines is a difficult and time-consuming process. Even when there is political consensus, competing legislative demands and procedural delays imply that it can be long before lawmakers can turn their attention to revising the focal statute. As such, it is well accepted that courts' interpretation of statutes can remain the de facto policy for long durations.

Courts and Lobbying

Given that court decisions can serve as de facto policy, courts frequently attract the attention of third parties who are not directly involved in a case but have a vested interest in its outcome due to potential policy implications. While these third parties cannot use tactics like monetary donations to influence court decisions, they can lobby the courts by providing relevant information. Prior research suggests that information is the currency of influence in courts. Specifically, courts derive their legitimacy from the perception of impartiality, which they maintain by grounding their decisions in sound legal reasoning. However, legal issues tend to be highly complex and often require the integration of numerous laws, regulations, and precedents. This places a substantial burden on judges who as boundedly rational individuals are constrained by limited time, expertise, and resources. And so, judges are open to information from third parties that clarifies how legal frameworks apply to the case and helps judges establish a robust legal foundation for their decisions. Additionally, judges may have their own policy preferences (Bonica and Woodruff, 2015; Gely and Spiller, 1990; Martin and Quinn, 2002, 2007), which can introduce bias in how they handle cases. Even when inclined toward a specific interpretation, judges must justify their

decisions with legal precedent. Information provided by third parties can either reinforce judges' preferred outcomes or lead them to reconsider their biases. For these reasons, lobbying the courts through the provision of information is an important tactic for obtaining favorable policy outcomes.

Across judicial systems worldwide, courts are lobbied through the submission of amicus briefs. An amicus brief is a legal document filed by an individual or organization not directly involved in the case but with a strong interest in its outcome. In such briefs, the filing party discloses its interest in the case and presents legal arguments and references supporting its position. The filing party may align its position with either the plaintiff or the defendant, or it may take a neutral position. Regardless of whether the plaintiff or the defendant wins the case, the key aim of the filing party is that the court's final judgment aligns with its policy interests. As such, amicus briefs typically offer insights beyond those presented by the litigants. For example, Collins (2008) reports that between 1946 and 2001, over 70% of amicus briefs contained content not included in the litigants' briefs.

Prior research suggests that amicus briefs play an important role in courts' judgments. For example, Rule 37 of the U.S. Supreme Court acknowledges that "an amicus curiae brief that brings to the attention of the Court relevant matter not already brought to its attention by the parties may be of considerable help to the Court." In this regard, Toobin (2008) documents that judges and their clerks rely heavily on amicus briefs when drafting opinions. Hazelton and colleagues (2019) found that information shared across amicus and party briefs is frequently adopted in the majority opinion in U.S. Supreme Court cases between 1988 and 2005. Collins and colleagues (2015) also found a similar pattern using plagiarism detection software, up to a third of the language in judicial

opinions can be traced to amicus briefs, thereby highlighting the sizable role of amicus briefs in shaping courts' decisions.

Courts, Lobbying, and Firms

Despite court decisions serving as de facto policy and the prevalence of lobbying in influencing these decisions, little attention has been paid to lobbying the courts as a form of corporate political activity. This paucity of research is particularly puzzling given the substantial impact of court decisions on the firms' competitive landscape and their market and non-market strategies. For example, the European Court of Justice's invalidation of the Safe Harbor agreement governing transatlantic data transfers forced firms to substantially revise their data policies and practices (Aktipis & Katwan, 2012; Vidovic, 2015). In industries where data gathering is critical for competitive advantage or operational effectiveness, this court decision likely reshaped the competitive landscape. Similarly, the U.S. Supreme Court's decision in *Citizens United v. Federal Election Commission* (2010) lifted restrictions on independent political expenditures by firms, transforming the non-market strategies employed by firms to influence election outcomes (Werner, 2011; 2012; 2017; Dark Money AMR Jia, Werner). While these examples allude to how courts have long shaped the firms' regulatory environments, recent developments indicate courts are becoming even more influential as policymakers for firms.

First, the past two decades have witnessed a dramatic rise in political polarization. It is marked by a widening gap in policy positions among legislators, leading to significant legislative gridlock as legislators and an inability to reach consensus for lawmaking. Polarization makes it more likely that politically contentious issues will remain unresolved, leading to deliberate procedural delays and intentional blockages by opposing partisans. Polarization leads to a similar predicament even when there is broad agreement on the need for legislation, as seen in Congress's

to-date inability to fix an error in the 2017 tax law that mistakenly allowed a loophole for companies to reap hundreds of millions in tax savings (Rubin 2024). In this environment, courts can step into the policymaking void left by gridlocked legislatures, further increasing their role as influential policymakers.

Second, courts have traditionally practiced judicial restraint by deferring to administrative agencies on regulatory interpretations, as outlined in the Chevron doctrine from *Chevron U.S.A., Inc. v. Natural Resources Defense Council (1984).* Chevron doctrine held that courts should defer to reasonable agency interpretations of ambiguous laws, granting agencies significant power in regulatory matters (Lawson & Kam, 2013; Merrill, 2022). However, in Loper Bright Enterprises v. Raimondo (2024), the Supreme Court overturned Chevron, shifting power from agencies to the courts. This change is critical in areas like climate change, consumer protection, and labor rights, where firms often challenge regulatory overreach by agencies such as the Environmental Protection Agency (EPA) and the Occupational Safety and Health Administration (OSHA). With courts no longer required to defer to agency interpretations, firms now have a greater chance of successfully challenging regulations, enhancing the judiciary's policymaking role.

Taken together, the increase in legislative gridlocks and the demise of the Chevron doctrine likely make courts a key player in determining the regulatory policy for firms. These developments make it important that we understand lobbying the courts as a corporate political activity and examine its meanings, origins, and consequences for firms, especially their likelihood of obtaining favorable policy outcomes. To initiate the research on lobbying the courts, we present a dataset that captures the lobbying efforts of firms and other interest groups to influence the US patent policy from 2000 through 2015. We complement this dataset with a detailed description of the data collection process that can help researchers to construct lobbying the courts datasets for patent

policy beyond the years covered in our dataset as well as construct similar datasets for other policy areas. Although theoretical developments and empirical studies have traditionally played a key role in launching new research areas, we hope that clear data on firms' lobbying efforts will help spark research on how firms lobby the courts.

DATASET: LOBBYING THE COURTS FOR PATENT POLICY

Our dataset comprises amicus briefs submitted in intellectual property (IP) cases before the U.S. Supreme Court between 2000 and 2015. In the U.S., patents grant the right to exclude others from making, using, or selling an invention for 20 years from the application date, in exchange for disclosing the invention. While Article I, Section 8 of the U.S. Constitution gives Congress the authority to grant intellectual property rights, the fast pace of innovation makes it difficult for Congress to keep up and update legal statutes. This need for the patent system to accommodate new technologies has led the judicial branch to become an increasingly important source of policy change in the innovation domain (Merrill et al., 2004).

Specifically, the Supreme Court (hereafter also referred to as "the Court") assumed a central role as a policymaker in the innovation domain from the early 2000s (Holbrook 2007, 2013). To better appreciate the Court's role in this domain, consider that Congress passed only one major piece of legislation affecting the patent system between 2000 and 2015—the America Invents Act in 2011. In contrast, the Court issued 31 rulings that altered patent law during the same period. These rulings shaped various aspects of how patents are utilized and enforced, addressing issues such as the patentability of novel types of inventions (e.g., software and gene-based technologies) and the penalties for patent infringement. Importantly, these decisions have had considerable implications for firms. For example, in March 2006, Research In Motion agreed to a $625.5 million settlement with the patent-holding company NTP, which had the power to shut

down the email services Research In Motion provided to 3 million users (Kelley 2006). Just three months later, the Supreme Court's decision in the patent case eBay v. MercExchange overhauled the legal standard that had given NTP its advantage over Research In Motion. This example is particularly instructive in showing that courts are a central policymaker in the innovation domain and their decisions have strong implications for firms' innovation outcomes. And so, it is imperative to consider firms' lobbying efforts in the courts if one seeks to understand how firms influence policy in the innovation domain.

We are particularly interested in constructing a dataset that captures the flow of information from interest groups to the policymaker—in this case, the courts. This dataset incorporates two key elements. First, what information do interest groups provide to the court? Second, what information provided by interest groups is reflected in the court's judgment? Together, these data will help construct a measure of lobbying success. Before discussing our dataset, we review the existing measures of lobbying success in the courts.

Previous research in law and political science on amicus briefs has employed various methods to capture their influence on court rulings. Spriggs and Wahlbeck (1997) used section headers as markers for specific arguments in both amicus briefs and Court opinions. A strength of this measure is that it provides a straightforward way to trace the presence of key arguments across texts. However, a fundamental issue is that it relies heavily on structural similarities, which may overlook more nuanced or implicit influences on the Court's reasoning. To address this limitation, Collins, Corley, and Hammer (2015) employed text similarity measures, particularly plagiarism detection software like WCopyfind, to assess whether language from amicus briefs appears in majority opinions. Similarly, Natural Language Processing (NLP) techniques, such as TF-IDF, have emerged as valuable tools in lobbying research and various subfields of strategic management

(Catalini, Lacetera, and Oettl, 2015; Furman and Teodoridis, 2020; Bertrand et al., 2021). This method measures semantic similarities between texts by quantifying the relative importance of words within a document and across a corpus, giving greater weight to terms that appear in fewer documents (Aizawa, 2003).

While these methodological developments are important for measuring the success of lobbying in courts, they have significant limitations. For example, relying on repeated phrases makes it difficult to detect instances where the Court adopts the substantive arguments of an amicus brief but expresses them in different language. It is challenging to distinguish whether the Court has incorporated the brief's language into the central argument of the opinion or merely in less significant sections of the decision. Additionally, these methods cannot assess whether the Court's treatment of the amicus briefs was positive or negative. In other words, higher text similarity between amicus briefs and Supreme Court decisions does not necessarily indicate alignment in positions on an issue. To address this limitation, recent research on lobbying in regulatory agencies has combined both text similarity scores and sentiment analysis (Bertrand et al., 2021, pp. 18–19). While this method is useful for analyzing short texts with a limited number of arguments, such as public comments in regulatory rulemaking processes, it is not well-suited for examining individual arguments in complex and lengthy court documents.

We build on prior research that advocates for using legal arguments within amicus briefs as the unit of analysis, rather than using the briefs themselves, to measure the success of lobbying in courts. As Spriggs and Wahlbeck (1997, p. 383) note, "an analysis that uses each argument in briefs as the unit of analysis could more effectively test the role of legally relevant factors on Supreme Court decision making." Specifically, we propose a novel measure that uses legal precedent citations as a proxy for tracking specific arguments made in amicus briefs and assessing

the degree to which these citations are also referenced by judges in their rulings. Citations are widely recognized as a standard measure of information flow in studies of innovation and scientific output produced by organizations or individuals (Griliches, 1990; Sorenson and Fleming, 2004; Alnuaimi and George, 2016; Wang and Liu, 2020), and legal scholars have recently begun adopting this approach as well (Tippett et al., 2022). Using legal citations not only allows for more precise tracking of arguments compared to previous methods, but also addresses a key shortcoming in the lobbying literature. Since information is the fundamental currency in policy design and lobbying, understanding the extent to which information provided by interest groups is used by policymakers is critical for evaluating lobbying success. In this regard, our measure captures the flow of information between policymakers and interest groups and helps determining what the lobbying entity communicated to the decision-maker and whether the policymaker chose to utilize the information provided.

We collect all the legal precedents cited in court briefs and in Supreme Court rulings. Using these legal precedents, we are able to construct two important measures. First, one measure is the count of unique legal precedent cited by each court brief, capturing the arguments made by firms and other entities that lobbied the Court through amicus briefs. The second measure is the number of legal precedent citations in each court brief that overlap with the citations in the Supreme Court ruling, capturing the outcome of these lobbying activities. For companies and other entities, amicus briefs provide a means to influence patent policy, much like other forms of lobbying in other branches of government (Simard, 2008). In patent cases, the Supreme Court reviews arguments from third parties via these amicus briefs before delivering its ruling, with Justices and clerks often relying on them (Larsen, 2014; Toobin, 2008). These rulings set binding precedents that affect all patents, including the patents delivered before the ruling, and shape the competitive landscape

dynamics (Larsen, 2014; Spriggs and Wahlbeck, 1997). The goal of amicus brief submitters is to have their preferred arguments reflected in the Court's decisions (Collins, 2007). Studies show that up to a third of the language in Supreme Court rulings comes directly from amicus briefs, underscoring their influence (Collins, Corley, and Hamner, 2015; Hazelton, Hinkle, and Spriggs, 2019). By providing strong arguments, amicus briefs help secure the Court's decisions, reducing the chances of reversal or modification by other branches (Spriggs & Wahlbeck, 1997 Epstein and Knight, 1998; Fallon, 2005; Wells, 2007). Thus, the overlap in arguments between the amicus briefs and Court rulings is used as an indicator of success in shaping legal rules that impact their operations.

Data Collection Process

Having describe our measures, we now turn to the process through which we collected the data to construct our measure. Although our focus is on lobbying the Supreme Court for patent cases, our description of data collection process will help researchers interested in other policy areas to construct datasets of lobbying the courts.

We collected U.S. Supreme Court opinions, parties' briefs, and amicus briefs from the Westlaw database, a resource extensively used by legal scholars, political scientists, and practitioners. To identify relevant cases, we used the keyword "patent" and downloaded all the Supreme Court opinions, the parties' briefs and the amicus briefs. We collected documents for Supreme Court cases from the year 2000, coinciding with the period when the Supreme Court began to play a prominent role in shaping patent policy. Our endpoint is year 2015, which aligns with the DISCERN database (Arora, Belenzon, and Sheer, 2019), a comprehensive resource for studying innovative firms. DISCERN includes all publicly traded U.S. firms from Compustat with innovative activities, defined by having at least one patent or R&D investments during the period

1980-2015. This dataset provides a "risk set" of firms, enabling us to examine which firms engage in lobbying. Although not all innovations are patented or patentable, changes in patent policy can influence a firm's decision to seek patent protection. For example, firms that previously opted not to patent may choose to lobby for a change in the law if it makes the patent system more favorable.

Amicus briefs generally follow a standardized structure. They begin with a header identifying the case, the parties, and the position of the brief (see Figure 1, panel a). Next is a table of contents and a table of authorities, which lists all cited legal precedents and other sources (Figure 1, panel b). The "Interest of the Amici" section (Figure 2) outlines the firm's involvement, often highlighting the number of patents held or detailing R&D activities. The subsequent sections present the amici's legal arguments (Figure 3).

*** Figure 1 and Figure 2 ***

We scrape the number identifying the Supreme Court case, the number identifying the party or amicus brief, the name of the party or the amici, as well as their position (for the respondent, for the petitioner, or neither) from PDF documents. Some briefs were filed by multiple amici, in which case, each amicus had to be recorded as a separate entry in the dataset (Table 1).

*** Table 1 ***

To extract legal precedent citations, which serve as a proxy for arguments, we developed regular expressions to identify federal case citations. We scrape these citations from PDFs of the briefs and opinions (the script is available upon request). This process is largely automated.

However, it is worth noting that U.S. Supreme Court cases can be referred to in two formats. For example, the Alice Corp. v. CLS Bank International (2014) can be referred to as "573 U.S. 208" or as "134 S.Ct. 2347". These refer to two different legal reporters: United States Reports (U.S.), the official publication of Supreme Court decisions, and the Supreme Court Reporter (S. Ct.), an unofficial but widely used reporter published by West. We manually collected the two version of each legal case cited in any of the court documents of the 31 Supreme Court cases in our sample. While this extra step is time-intensive, it is necessary to be able to identify citations to the same legal precedent accurately.

Table 2 presents key variables we obtained through this process. At the case-level, we find significant variation in the number of amicus briefs and legal precedents cited (Table 2 Panel A). We complement our data with case-specific information such as whether the decisions were unanimous, but also which Justices were on the bench, using Supreme Court archives provided by the Cornell Legal Information Institute.[1] The number of amici per brief and the number of legal precent citations per brief also varies widely (Table 2 Panel B). Finally, we find that for a unique legal citation cited by a party or an amicus in the context of the Supreme Court case, the mean likelihood of being cited is about 6% (Table 2 Panel C).

*** Table 2 ***

Figure 5 presents the correlation between the number of legal citations in amicus briefs and how many of those legal citations are in common with the Supreme Court opinion, for each type

[1] Source: Oyez.org

of amici in the data set. These graphs are computed based on the 6,421 legal precedent cited by Supreme Court case.

*** Figure 5 ***

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ALICE CORPORATION PTY., LTD., Petitioner,
v.
CLS BANK INTERNATIONAL and CLS SERVICES LTD., Respondents.

No. 13-298.
February 27, 2014.

On Writ of Certiorari to the United States Court of Appeals for the Federal Circuit

Brief of Microsoft Corporation, Adobe Systems Inc., and Hewlett-Packard Company as Amici Curiae in Support of Affirmance

Horacio E. Gutiérrez
Jule L. Sigall
David W. Jones
Microsoft Corporation
One Microsoft Way
Redmond, WA 98052
(425) 882-8080
Counsel for Microsoft Corporation

Jeffrey A. Lamken
Counsel of Record
Michael G. Pattillo, Jr.
MoloLamken LLP
The Watergate, Suite 660
600 New Hampshire Ave., NW
Washington, D.C. 20037
(202) 556-2000
jlamken@mololamken.com

John M. Whealan
4613 Merivale Road
Chevy Chase, MD 20815
(202) 994-2195
Counsel for Amici Curiae

Anthony Baca
Cynthia Bright
Curtis Rose
Robert Wasson
Hewlett-Packard Company
Office of the General Counsel
3000 Hanover Street
Palo Alto, CA 94304

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(650) 857-1501
Counsel for Hewlett-Packard Company

Dana S. Rao
Adobe Systems Inc.
345 Park Avenue
San Jose, CA 95110
(408) 536-3298
Counsel for Adobe Systems Inc.

***ii** QUESTION PRESENTED

Whether the courts below correctly concluded that none of the asserted claims are patent eligible under 35 U.S.C.§ 101.

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Figure 1: Example of Amicus Brief

***1 INTEREST OF *AMICI CURIAE*[1]**

Microsoft Corporation is a leader in the technology industry and an active and longstanding player in the patent system. Since its founding in 1975, it has developed ***2** and marketed a wide range of software, services, and hardware products, including the flagship Windows operating system, the Office suite of productivity applications, the Surface tablet computer, and the Xbox gaming system.

Adobe Systems Inc. is devoted to changing the world through digital experiences. With its over 30-year history in the software and services fields, and flagship products like Photoshop, Acrobat, Flash, and Adobe Marketing Cloud, Adobe provides the tools the world uses to create groundbreaking digital content, deploy it across all screens, measure and optimize it over time, and achieve greater business success.

Hewlett-Packard Company is the world's largest information technology company. It offers personal computers, enterprise storage and servers, networking devices, IT management software, IT services, and imaging- and printing-related products.

The question presented in this case purports to concern the patent eligibility of computer-implemented inventions. The patents at issue, however, do not claim true computer-implemented inventions, but instead claim business methods for mitigating risk in financial transactions. *Amici* have a profound interest in ensuring that courts understand the differences between the two. As leading technology companies, *amici* currently spend $14 billion annually on research and development and hold nearly 63,000 U.S. patents, most of which relate to computer-implemented inventions. *Amici* are also frequently sued for allegedly infringing business-method patents, some of which, like the claims in this case, masquerade as computer-implemented inventions. *Amici* thus have unique and balanced insights on, and experience with, the issues presented by this case.

Figure 2: Section of an amicus brief: interest of the amici

ARGUMENT

I. Software-Implemented Technological Innovations Are Patent Eligible Under § 101

A. Software Makes Computing Technology Work

It is natural to envision innovation in computing technology in terms of hardware, as each generation of smartphones, tablets, and laptops is faster, more powerful, and more feature-rich than predecessors. And advances in computer hardware - exemplified by increases in processing power pursuant to Moore's law[2] - abound. Ultimately, however, software underlies the varied functionality and practical utility that computers provide. Without software, computers can do nothing useful. As a result, software is an indispensable aspect of innovation in every technological field and sector of the economy.

Despite the countless types of computing devices, they all operate using the same simple physical activity: the routing and re-routing of electrical signals by means of on-off switches, typically transistors on silicon chips. See generally David A. Patterson & John L. Hennessy, *Computer Organization and Design* (4th ed. 2009); Ron White, *How Computers Work* (9th ed. 2008). While difficult ***7** to visualize, the complex functions that computers perform come down to the rapid manipulation of millions of transistors in particular configurations.

Software defines the operations of those transistors. Software developers conceive of the functionality they want a computer to perform, and then write instruction code using a "programming language" that allows operations to be defined through syntax and semantics that humans can readily understand. But the functions developed in programming language must then be reduced to "machine language," which provides instructions at the rudimentary level of turning the computer's transistors on and off in the desired sequences. See Patterson & Hennessy, *supra*, at 11-13, 20-21, 76-80.

Different software programs enable a general-purpose computer to perform new and different tasks. "Such programming creates a new machine, because a general purpose computer in effect becomes a special purpose computer once it is programmed to perform particular functions pursuant to instructions from program software." *In re Alappat,* 33 F.3d 1526, 1545 (Fed. Cir. 1994) (en banc). Simply put, it is software that transforms the single set of circuits in a general-purpose computer into a word processor, camera, telephone, video player, or gaming device. Where formerly inventors had to build new devices, software can endow a single computing device with new features, capabilities, and advances in performance by reconfiguring the device's existing transistors.

B. Software-Enabled Inventions Are the Modern-Day Heirs to Mechanical Inventions

Software innovations are the modern-day heirs to unquestionably patent-eligible mechanical inventions - they are precisely the sort of "new and useful advances in ***8** technology" that the patent system was designed to encourage and protect. *Pfaff v. Wells Elecs., Inc.,* 525 U.S. 55, 63 (1998). The fact that technological advances may take the form of software reconfiguring a computer's transistors, rather than an improvement in the mechanical structure of a machine, does not make them any less patent eligible.

Figure 3: Argument section of an amicus brief

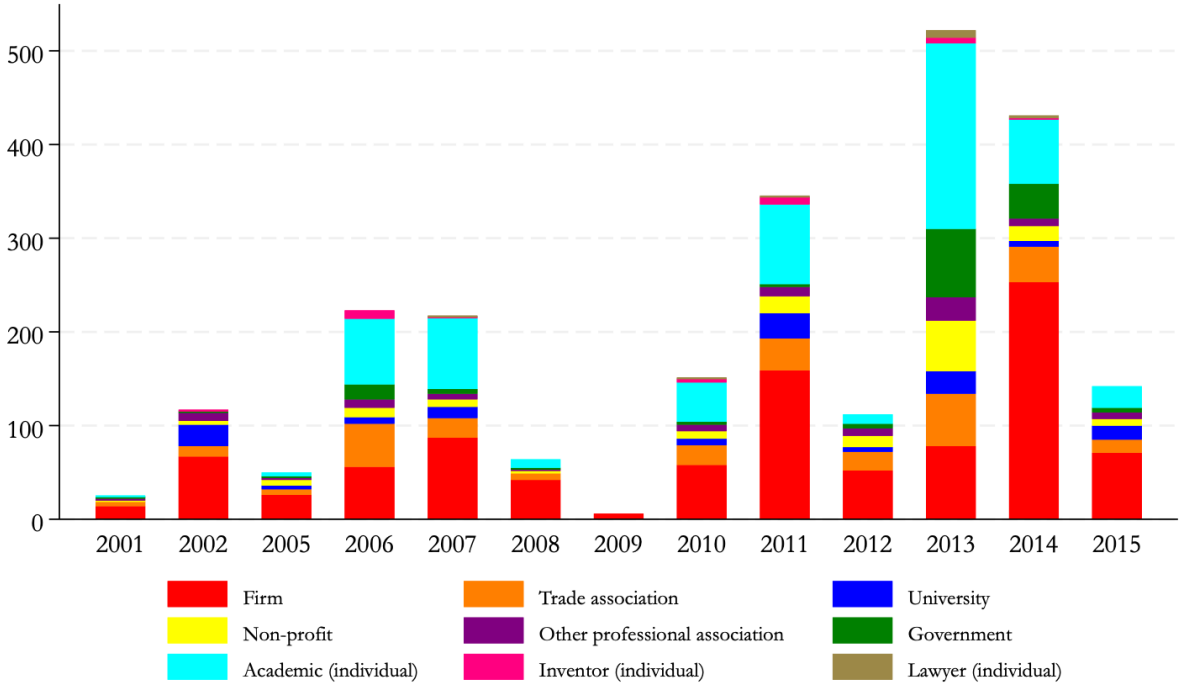


Figure 4: Number and type of amicus curiae by year

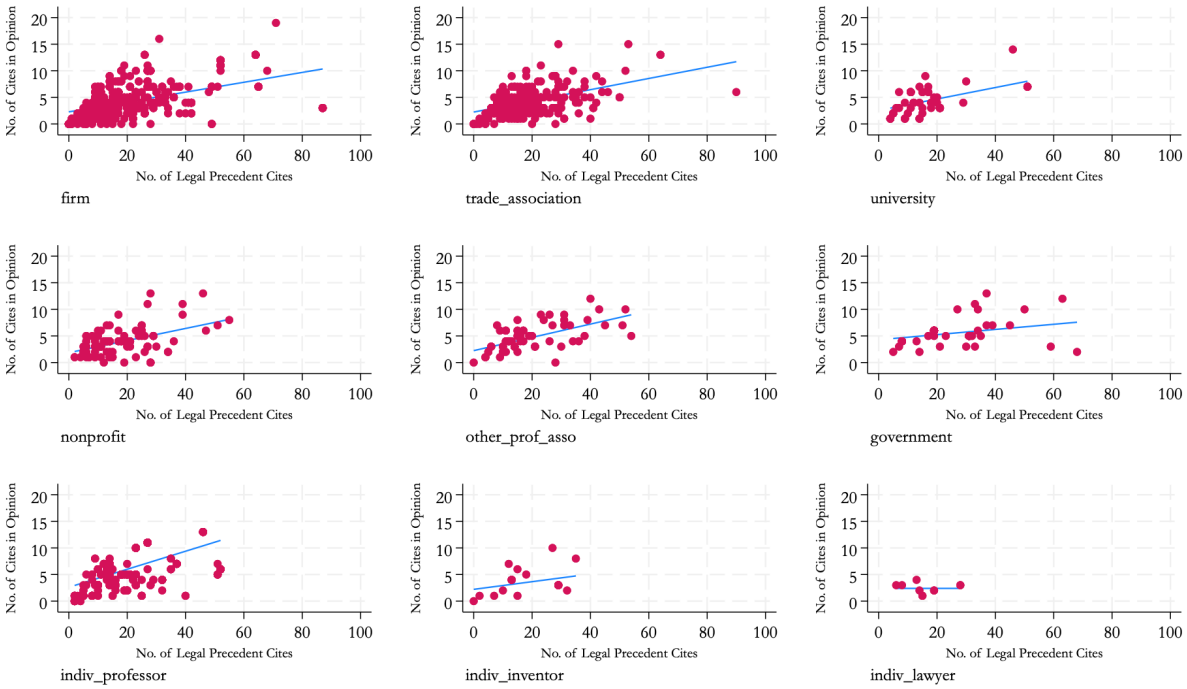


Figure 5: Number legal citations in common with the Supreme Court opinion by type of amici

Tables

Table 1: Sample of amicus briefs

Case no.	Brief no.	Amici name	Amici type	Phase	Side
13-298	2014 WL 828036	Microsoft Corp	Firm	Merits	Respondent
13-298	2014 WL 828036	Adobe Systems Inc.	Firm	Merits	Respondent
13-298	2014 WL 828036	Hewlett-Packard Company	Firm	Merits	Respondent
13-298	2014 WL 880952	Bronwyn H. Hall	Individual academic	Merits	Respondent
13-298	2014 WL 880952	Eric von Hippel	Individual academic	Merits	Respondent
13-298	2014 WL 880952	Wesley M. Cohen	Individual academic	Merits	Respondent
13-298	2014 WL 880952	James E. Bessen	Individual academic	Merits	Respondent
13-298	2014 WL 491244	Advanced Biological Laboratories SA	Firm	Merits	Petitioner
13-298	2013 WL 5532728	Electronic Frontier Foundation	Non-profit	Certiorari	Petitioner
13-298	2013 WL 5555086	New York Intellectual Property Law Association	Professional association	Certiorari	Petitioner

Notes: This sample is a subset of the amicus briefs that were submitted during the Alice Corporation *v.* Bank International case (2014)

Table 2: Descriptive statistics

	Panel A: Case level information (N = 31)			
Variable	Mean	S.D.	Min	Max
Unanimous decision (0/1)	0.710	0.461	0	1
No. legal cites in case opinion	19.193	10.815	4	47
No. amicus briefs	23.226	15.806	2	70
No. amici curiae	66.516	57.175	3	219
No. unique legal cites from briefs	261.806	132.218	90	685
	Panel B: Brief level information (N = 720)			
No. amici curiae	97.151	60.217	3	219
No. legal cites per brief	21.386	16.919	0	133
No. legal cites in shared with the opinion	4.480	3.343	0	21
	Panel C: Citation-by-case level information (N = 6,421)			
In opinion (0/1)	0.058	0.234	0	1

Notes: We consider amicus briefs only in the merits phase