

## *Patent Litigation Dynamics: Key Value Drivers And Efficiency Implications*

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The system for litigating patents has long been recognized as having significant positive and negative effects on innovative activity in the United States. Consequently, understanding patent litigation dynamics is of paramount importance. We study how infringement awards and other case outcomes affect patent litigation, and we mine a comprehensive dataset we have assembled comprising over 1,300 final patent decisions in U.S. district courts between 1995 and 2008. Our previous work determined that patent infringement awards are highly predictable based on intrinsic features of the cases, litigants and patents at issue. Presently, we expand on that work with two parallel paths of inquiry. First, we dive deeper into our awards data to examine the specific drivers of award value, and we contrast our findings with conventional notions of “valuable patents.” Second, we examine the cases in which damages were not awarded, whether due to findings of non-infringement, invalidity, unenforceability or otherwise, and investigate patent litigation efficiency and expense across the system as a whole. This latter work is particularly timely in light of the skyrocketing costs of patent litigation and calls for systematic changes to improve efficiency.

To facilitate our study, we have compiled a dataset comprising over 1,300 final patent decisions in U.S. district courts between 1995 and 2008. Of the total, 340 cases were patentee-wins and awarded damages for infringement and approximately 900 cases were patentee-losses (on various grounds) and did not award damages. We build on a proprietary dataset from PricewaterhouseCoopers, supplementing it with 120 coded variables about the litigants, lawsuits, patents-at-issue and other factors.

In the first stage of our initial research, we performed distribution analysis and conducted a log-linear regression of award values. We found damages awards to be highly skewed, with the top eight awards accounting for nearly half of the dataset, and highly predictable, with our regression explaining nearly 74% of the variation in award amounts. Our findings were selected as a winner of the 2011 Samsung-Stanford Patent Prize, and we have also presented this data at a number of patent law and economics

conferences, including IP Scholars 2011 at DePaul University School of Law. Additionally, we have written about the implications of award predictability on patent reform, including the notable omission of damages reforms in the America Invents Act.

The first set of empirical questions to which we now turn involve selection into our initial set of 340 cases to examine specific correlations of our explanatory variables with infringement awards. This work aims to understand the drivers of award value. Even if a defendant prevails in court, lawsuits by patent holders with little or no economic value may constitute a drag on innovation. And, comprehensive analysis of infringement awards is key towards understanding settlement incentives and license value.

Our second line of study involves building empirical understanding of patent litigation dynamics at the system level. For example, we look at litigation efforts in patentee-win and patentee-loss cases to see if they follow predictable patterns and what factors drive them. This work has important policy implications regarding reducing inefficiency and managing expenses in the patent litigation system.

More specifically, in our present stage of research we plan to address the following:

- What specific factors lead to variances in infringement awards? What are the normative implications of such factors, and to what extent do leading policy proposals align with the empirical data?
- Do patents having characteristics typically associated with greater economic value tend to result in different litigation outcomes, such as more findings of validity and infringement or higher damage awards?
- Do patent litigation efforts follow predictable patterns?
- Can systematic influences of patent litigation dynamics be identified? What resulting policy prescriptions can be made to address recognized problems in the patent system and strains on innovation?

In sum, using our unique dataset, we aim to bring empirical clarity to the patent litigation process and contribute towards a more solid understanding of the private and social value, and attendant costs, of the intellectual property protection offered by patents.