

## Do Applicant Patent Citations Matter?<sup>1</sup>

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## Do Applicant Patent Citations Matter?

### *Abstract*

*Patent law both imposes a duty on patent applicants to submit relevant prior art to the PTO and assumes that examiners use this information to determine an application's patentability. In this paper, we examine the validity of these assumptions by studying the use made of applicant-submitted prior art by delving into the actual prosecution process in over a thousand different cases. We find that patent examiners rarely use applicant-submitted art in their rejections to narrow patents, relying almost exclusively on prior art they find themselves. Our findings have implications for a number of important legal and policy disputes, including initiatives to improve patent quality and the strong presumption of validity the law grants issued patents—a presumption that makes patents more difficult to challenge in court.*

### 1. INTRODUCTION

Patent law imposes a duty of candor on patent applicants. They must disclose any material prior inventions, uses, and publications (“prior art”) of which they are aware to the Patent and Trademark Office (PTO); failure to do so can render the resulting patent unenforceable. The idea is that applicants should help patent examiners decide whether an invention is patentable by submitting what is likely to be the most relevant information. And we trust that examiners will do so; when the patent issues we imbue it with a strong presumption of validity.

In this paper, we study the use made of those submitted prior art references by delving into the actual prosecution process in over a thousand different issued patents. We find, to our surprise, that patent examiners did not use applicant-submitted art in the rejections that narrowed

claims before these patents issued, relying almost exclusively on prior art they find themselves. This is not simply because the applicant has “drafted around” the art they submitted. Even late-submitted art is not commonly used by examiners in their rejections. Nor does the explanation appear to be that applicant art is uniformly weak. We also provide evidence suggesting examiners are less likely to use prior art discovered by foreign search authorities for the same invention, art that is presumably of better than average quality and relevance. Taken together, the evidence points towards myopia as a plausible explanation: examiners tend to focus on references that they themselves identify.

Subject to the caveats discussed below, our findings have implications for policy initiatives that aim to improve patent quality through bringing more “prior art” before examiners, under the theory that with better access to prior art they would be less likely to issue patents of questionable validity. These include proposals that encourage outsourcing of search to applicants, third party searchers, or worksharing with foreign patent offices. However, if examiners pay attention mainly to art they find for themselves, these proposals might generate prior art that will fall on deaf ears and go unused. Our results also have implications for patent law: it is far from clear that the law should presume a patent valid over applicant cited art if the examiner has not given much consideration to these references. The presumption of validity, which makes a patent harder to challenge in a patent infringement litigation, is based on the assumption that patent office thoroughly tested the patent’s claims for validity. Our findings bring this assumption into question. They therefore have implications for current policy debates that have occupied both the courts and Congress. Our findings also have implications for the legal doctrine of inequitable conduct, the willful failure to submit prior art to the PTO. Such conduct may be less of a problem than previously thought – not because applicants don’t try to

deceive the PTO, but because any effort to do so may be wasted.<sup>5</sup> Finally, our findings appear to challenge some of the assumptions underlying the use of citation data as indicators by scholars of research policy, joining a growing literature analyzing the economic and social meaning of citation-based indicators (e.g. Alcacer et al. 2009; Harhoff et al . 2003; Meyer 2000).

In Part 2 we provide background on the collection of information in the patenting process, and the presumption of validity that results. We present our data in Part 3. In Part 4 we discuss implications. In Part 5 we summarize and conclude.

## 2. PATENT EXAMINATION, PRIOR ART, AND THE PRESUMPTION OF VALIDITY

The Patent and Trademark Office (PTO) examines patent applications to decide whether the government should issue a patent. An applicant submits a description of the invention, along with what they propose to claim as their own. Applicants must also submit any “prior art” (relevant prior publications and inventions) of which they are aware, but have no obligation to search for prior art. (Cotropia 2009).

Applications are assigned to examiners skilled in the general field of the invention. Those examiners are tasked with reading the application, conducting their own prior art search, reading and evaluating that art, and evaluating the application in a back-and-forth written (and sometimes oral) colloquy with the applicant. Examiners have a significant caseload, and can devote on average only about 18 hours over three to five years to searching for, evaluating, and

<sup>5</sup> The doctrine of inequitable conduct may still be important when applied to non-prior-art information like false assertions of unexpected results to overcome obviousness or representations regarding whether a prior use by the applicant was experimental or not. Thus, our findings do not argue for elimination of the inequitable conduct doctrine entirely, but they do call into question the most common use of that doctrine.

applying the prior art to the application. (Lemley 2001). Applicants dissatisfied with the examiner's decision can (and often do) refile one of several forms of continuation application to try again. At the end of the day, applicants obtain patents in about 75% of all cases. (Lemley and Sampat 2009).

Issued patents enjoy a strong presumption of validity that can be overcome only by clear and convincing evidence. The theory underlying that presumption is that the PTO has vetted the patent and their expert opinion is entitled to deference. If a scientific expert has considered whether the patent should be granted, a court is reluctant to second-guess that judgment lightly.

In recent years the strong presumption of validity afforded patents has come in for substantial criticism. (Lemley, Lichtman and Sampat 2005; Lichtman and Lemley 2007). Critics point out that the PTO operates under substantial resource constraints (Lemley 2001), with skewed incentives (Lemley and Moore 2004), and without the benefit of third-party participation (Thomas 2001). Further, the PTO ultimately issues a patent to a large majority of the applicants who seek one. (Lemley and Sampat 2008). And nearly half of the patents that do issue and are later litigated turn out to be invalid. (Allison and Lemley 1998). The PTO seems positioned to narrow claims in patent applications, but generally not to reject applications (Lemley and Sampat 2012).

Some of those bad patents have costs. (Farrell and Merges 2004). At a minimum they impose substantial attorneys' fees on defendants, a median of \$5 million per case. (AIPLA Survey 2009). They may also lead small companies to drop products rather than defend their legality (Chien 2009; Graham and Sichelman 2008) and cause others to pay too much money to license the patent rather than face the risk of an injunction. (Lemley and Shapiro 2007). And in

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