

UNDERSTANDING PATENT QUALITY MECHANISMS

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too much uncertainty, and that low patent quality plays a substantial role. It is the patent reformer's version of the Hippocratic Oath: first, consider uncertainty.¹⁵

2. Type I and Type II Errors¹⁶

By definition, a low quality patent system is characterized by large numbers of errors in the patent-granting process.

Figure 1: Patent Litigation Intensity, 1988-2005
[patent infringement suits filed per 1000 in-force patents]¹⁹

A low quality patent system means there are more patents

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of the words used to describe and claim the invention, a rational patentee will tailor the language accordingly. This manifests itself in two ways. First, almost certainly the dominant strategy for a patentee here is to seek substantial vagueness, allowing the flexibility to effectively alter the scope and description of the patent according to changing circumstances. Second, the less description the patentee can provide the better, because of legal rules which penalize detailed descriptions. Both of these—vagueness and a lack of description—have important costs to the patent system. At best, they make it much harder to evaluate the scope and validity of the patent, making it much more likely that mistakes will be made. In many cases, they allow patentees to exploit the dual-stage analysis process noted above to obtain a patent under one understanding of the language (e.g., a narrow understanding) and later assert that same patent in a way that broadens the scope of coverage. And in all cases, they yield patents that are substantially less likely to comport with the statutory standards of validity—low quality patents.

It is important to note that although there are patent rules that discourage the deferral of clarity, there are also several rules that support it. For example, although 35 USC § 112 requires clear and adequate disclosure, as well as clear and distinct claim language,³⁵ the USPTO rejects patent applications for §112 less than for prior art problems (§102 and §103), and virtually never provides a detailed analysis of claim language, meaning that serious §112 analysis is left for litigation.³⁶ Second, the statutory presumption of validity (wherein “clear and convincing”

evidence is necessary to find a granted patent invalid)³⁷ encourages patentees to pursue a flexible view their patent: narrow during prosecution, when the risk of rejection due to prior art is higher, and broader during litigation, where patent scope is of paramount importance. Third, the Federal Circuit's rules regarding claim construction—that claims are to be understood in context, in a holistic manner, without any established process or framework—encourage patentees to limit the disclosure of their invention (such disclosure will create 'context' used for fixing claim scope), and ensures that the final analysis of claim scope (and thus virtually all other validity and enforcement matters) will only occur after appeal to the Federal Circuit.³⁸

Deferring clarity, then offers a number of critical advantages to the patentee. It allows the patentee to capture some value for an invention at a very early stage, simply by receiving a grant.

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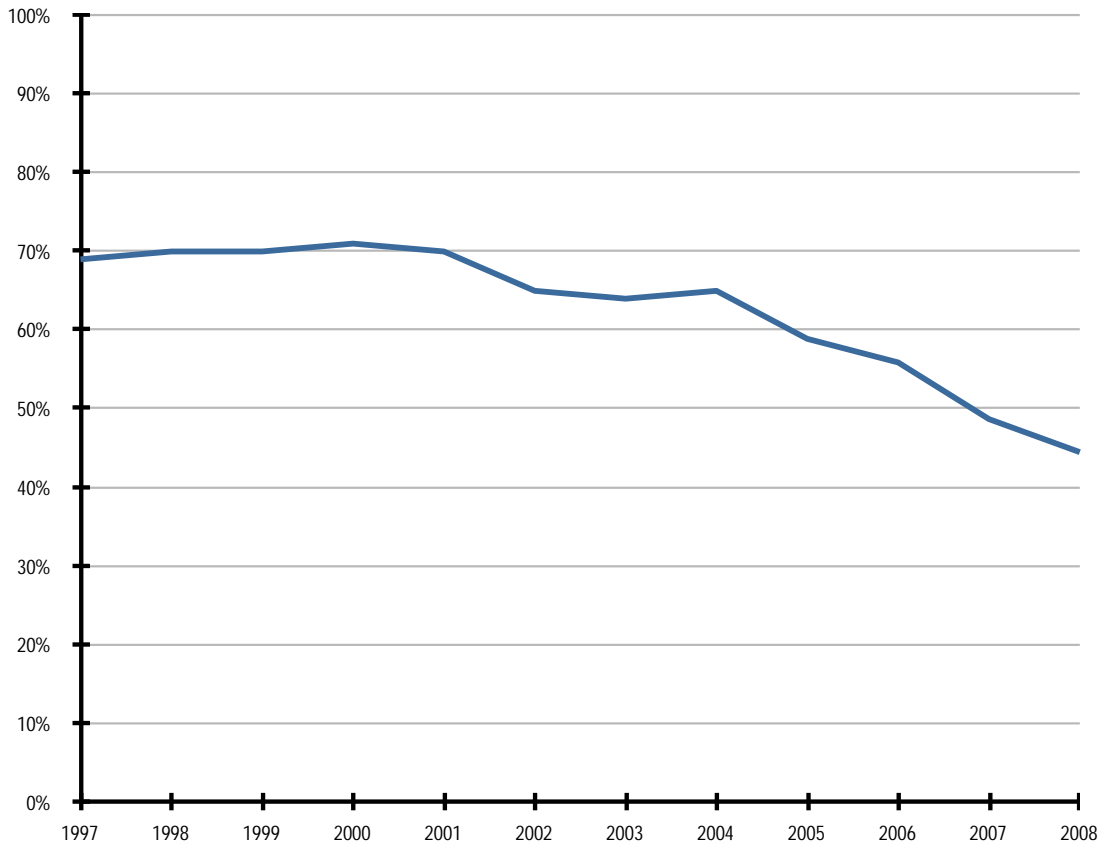


Figure 3: Allowance Rate for US Patent Applications - 1997-2008

Second, there are inherent institutional biases that may serve to favor weaker, lower-value patents. Patent law is a specialized field, with many repeat players; in this context, there are always concerns that the views of the insiders (here, large patentees) will have more weight than the public-at-large. And although this does not necessarily mean that the institutional biases will favor lower quality patents, if the insiders' interests tend towards lower quality patents, then the institutions may well reflect those views. Even beyond the inherent institutional biases, it is widely known that there are internal bureaucratic incentives at the USPTO in favor of granting patents, as a component of an examiner's performance evaluation depends on "production counts," which are most easily and quickly obtained by allowing patent applications.

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Further, as we suggest in *Patent Portfolios*, that others in the

decision makers alter their assessments of probabiliti

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Figure 4: Patent Examiners Per 1000 Applications Filed (US & Japan), 1996-2007⁵⁰

Importantly, a comparative look at the ratio of other national patent offices suggests that there may be only limited gains in quality from increasing examiner headcount. See Figure 4. For example, in Japan, the JPO has about one third or less the examiners per application as the PTO, yet the widespread perception is that patent quality in Japan is at least equal, if not better, than in the United States. Further, given the scale of the rises we've seen recently in filings and pendency, and assuming roughly continuing trends, even keeping the application/examiner ratio steady will consume enormous resources over the next several years; it seems implausible that

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D. The Weaknesses of These Approaches

Each of these three distinct approaches—improve the administrative organization, alter the prosecution process, and abandon the prosecution process—have significant value. Many of the ideas are uncontroversial: improving the measurement and analysis of patent quality is clearly a good thing (though very difficult in practice); improving search tools is obviously helpful; using an outsourcing approach for aspects of patent prosecution is likely to improve efficiency; and likewise, harnessing the private information of patent applicants should allow resources to be better allocated.

Given the findings of Section III above, however, I am skeptical that any of these proposals will make a substantial improvement in patent quality. (I set aside the patent registration approach for now, since that approach does not directly seek to improve patent quality.)

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incentives that encourage patentee to file too many patent applications with too little attention to quality—are both remarkably durable and exist prior to (and largely independent of) the prosecution process. Any truly effective responses, then, will have to both directly address the incentive structure, as well as be rather forceful in order to overcome the range of strong incentives that now operate on patentees.

The problem, of course, is that devising a strategy that seems likely to be effective in actually improving patent quality—that is, one that directly alters the incentives structure and is robust enough to change behavior—raises other concerns. Such schemes are likely to have their own costs, raising the question of where patent quality ranks on the scale of problems to be addresses. For example, as I note below, a straightforward way to incentivize higher patent quality is to makes patents much harder and more costly to obtain. But of course this has other significant effects, including a disincentive for inventors to obtain patents altogether. The key question, then, is whether there are relatively modest reforms that can be made—ones that address the incentives structure, but have relatively small spillover effects.

One potentially fruitful area of experimentation would be to require the USPTO to conduct much more thorough claim construction analyses, perhaps even drafting an administrative opinion on claim scope, defining key terms according to public reference works. Professor Petherbridge has made the case for such a system in earlier work.⁶¹ Note that this additional inquiry into claim scope may not much improve the patent office's ability to evaluate validity. But that is not the intent—at least in this context. The goal would be to, as much as possible, fix the meaning of patents at as early a stage as possible. In tandem with the increased attention paid by the USPTO would be a diminishment of the role of the courts in claim construction; ideally, the courts could largely defer to the administrative opinion on claim scope. In terms of the incentive structures discussed above, what this change would do is to shift the locus of detailed scope analysis earlier in time, thus diminishing both the ability for patentees to defer clarity, as well as the benefits of doing so.

Admittedly, the primary advantage of such a change is also its biggest weakness: shifting patent scope analysis earlier in time has important costs, and won't resolve all ambiguity surrounding a patent by any means. For the same reasons that deferring clarity is advantageous for the patents, shifting scope analysis earlier places significantly more risk on the patentee, requiring earlier decisions, made with less information about future technology, markets, and competitor behavior. On the one hand, this is the point—deferring clarity allows patentees to externalize these risks—but the net effect will be to make patents a less

estoppel—which eliminates or substantially limits the application of the doctrine of equivalents (and thus patent scope) when patentees amend their claims during prosecution—provides important incentives for patentees to draft clear, coherent, and appropriate claims.⁶² By imposing a penalty when patent scope is altered, the law can

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approaches—we could limit patenting to 100,000 filings per year, for example, and raise direct costs ten-fold—that would plainly have some impact. But they would also have serious (and probably negative) effects on the basic incentive structure of the patent system, effect large enough to probably swamp any losses from low quality patents. Under these circumstances, the best option seems to be to try to muddle through, using relatively modest reforms to try to adjust some of the incentives that lead to poor patent quality, while recognizing the limits of what can be accomplished. In particular, I think the proposals to address the incentives to defer clarity (fixing patent scope early) are the directly targeted, and seem likely to have the best likelihood of success without serious side effects.⁷¹

CONCLUSION

There is perhaps no patent issue with a higher profile than the question of patent quality—or one with more widespread agreement that patent quality should be improved. Yet little attention is paid to carefully teasing out the mechanisms that have led us to the point where there is near-universal agreement about the problem of poor patent quality.

This analysis above has attempted to begin to fill this gap, explaining that the problem of low patent quality is not one of poor administrative performance on the part of the USPTO and its colleagues worldwide, but rather one of incentives. That is, the reason we have low patent quality is because the incentives to file low quality patents are too high, and the incentives to file high quality patents are too low. That is, patent quality is low primarily because of decisions made by patentees, choosing a to trade volume for quality in patenting, or seeking to maximize return from their patents, or simply seeking to save costs. By outlining the various incentive structures at work, a much more complete picture of the problem of low patent quality comes into focus.

Unfortunately, the picture that emerges suggests rather strongly that patent quality is far from an easy problem to fix—

should not expect reforms that focus on enhancing the quality of the patent prosecution process to bear much fruit: patent quality is a matter in the hand of patentees, and as long as the incentives operate to encourage low quality, we should not expect anything different, no matter how much more effective the USPTO becomes. And, although I suggest that some rather modest reforms might serve to alter patenting behavior, ultimately, I conclude that there is no easy answer, no simple fix. But at least if we understand the problem fully—here, the mechanisms that underlie low quality patents—we can both begin to address it, and, more importantly, avoid making changes that will only make matters worse.

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