

Patent Valuation: Is Fair Market Fair?

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ABSTRACT

In today's "Knowledge Economy," banks, investors, and insurers have come to acknowledge that patent rights have considerable influence on the value of enterprises and on the stability of patent-based business models. However, the ability to leverage this presumed value is impaired by regulatory and professional ambiguity on several points. With the United States, Europe, and Japan's patent systems facing unprecedented quality deficiencies, financiers appropriately subject the notion that patents can be business assets to considerable scrutiny. Due to a public lack of confidence, fueled by increasingly visible patent-related market perturbations, both policy and process reforms must precede the maturing of the patent-based financial markets. In this paper, policy and process are examined in the context of: 1) the role of the public sector in the oversight of quality patent issuance; 2) patent accountability in financial reporting; and, 3) practices that enable the use of patents in financial transactions. These topics are addressed in light of their collective impact on accepted valuation practices. [1]

Keywords: intellectual property valuation, patent accountability, public policy, innovation analysis, financial reporting.

1. INTRODUCTION

The United States patent system was established in 1790 as a basis for government sanctioned support for development in science and technology. This foundation enabled scientists, inventors, and entrepreneurs to secure property rights for their innovations. The United States Constitution, along with legislative acts in the late eighteenth and nineteenth centuries, helped to promote the necessary environment for scientists and inventors to protect and market their creations. A major result of the marketability of intellectual property was the development and growth of the American corporation, beginning in the mid-nineteenth century [2].

Article I, Section 8 authorizes Congress "[t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries." Interestingly, this is the only form of property right authorized by the Constitution. By convention, intellectual property exists in three forms:

- a. Patents – the right to exclude others from commercial exploitation of an invention for a period of 20 years from its public disclosure. A patent must be novel, non-obvious, and disclosed in sufficient detail so as to allow others to perform the claimed invention upon expiration of the monopoly right. A patent is granted to an applicant after a process called "examination" at the patent office where the application is filed when the proscribed conditions have been met.
- b. Trademarks – the right to exclude others from using a name or image associated with the delivery of a good or service for the life of its use. A trademark can be signified by the letters "TM" or "SM". For maximum protection, trademarks are registered and, when examined and allowed, are indicated by the symbol ®.
- c. Copyrights – In the U.S., the right to commercially control the use and distribution of a creative work or compilation until 70 years after the death of its author or creator. Copyright exists contemporaneous with the creation of a work and are enforceable immediately. Copyrights can be registered at the Library of Congress Copyright Office.

Historically, intellectual property has been viewed as the domain of the esoteric professional – attorneys, patent agents, courts, and the innovation intelligentsia. As such, the practice of obtaining patents has operated with minimal governmental or private sector scrutiny. Patent offices in the United States, Europe, Japan and the rest of the global economy member states, have incrementally transformed from the protectors of the public against inappropriate monopolies to the facilitators of patent

propagation. Not surprisingly, as most patent offices garner their revenue from application and maintenance fees paid by users of the system, the incentive to minimize the granting of patents, to ensure that only quality monopolies are granted, is contrary to the very economics that sustains the offices. Those who pay for patents – business management and the financial community – must confront the reality that most patents cannot be transferred into assets for use in financial transactions.

Inventors, or agents acting on their behalf, draft patent applications and then send them to a state-sanctioned patent office where the patent is examined for novelty and obviousness. The patent offices are chartered to consider whether the public is receiving, in the patent disclosure, a value commensurate with the value of the conveyance of a monopoly interest. While differing in actual practice, most countries subscribe to a basic expectation that a patent must contain something that has not been described in writing, or commercially distributed, prior to the application date. At present, there are approximately 45,000,000 patents and patent related documents in the world. To put that number in context, patents represent a fractional percentage of all written documents in the world. As a point of reference, a user of the Google™ search engine will note that the company indexes the contents of over 4 billion web pages – over 95 times the volume of *all* patents in the world. This observation says nothing of the billions of documents that exist in non-electronic form and in forms not considered “legitimate” written prior art by patent law.

2. PATENT QUALITY IN THE PUBLIC INTEREST

The United States Patent and Trademark Office (USPTO) processes approximately 300,000 patent applications per annum with patent application fees exceeding \$1.15 billion in 2001[3]. However, as evidenced by the USPTO’s 21st Century Strategic Plan issued in 2003, the very entity charged with the oversight of patent granting in the U.S. believes that the quality of patents is in a state of crisis. The public sector inefficiency in examination, due in large measure to the absence of effective analytic tools and examiner interrogation time and skills, has contributed to increasing the pendency period (the time it takes for a patent to issue once an application is submitted) from 20.8 months in 1996 to 26.6 months in FY2001 [4]. Contributing to the volume

of patent applications confronting patent offices is the growing practice of using patents as defensive business tools rather than disclosures of true innovation.

In the space of several hours (approximately 20 hours in the U.S.) a patent examiner at a patent office must determine that the patent application complies with the laws governing patentable subject matter, and, review “all relevant” documents covering the material disclosed in the invention. Further, an examination should also include a review of commercial use – a review that relies on the awareness of the individual examiner of *all* products in a market. This process is entirely subjective and is performed without any auditable standard.

The United States Patent and Trademark Office (USPTO) Manual of Patent Examining Procedure (MPEP) §904.01(c) stipulates that an examiner must search not only in art units where the claim is classified but also in all analogous arts. This presents a workflow challenge for an examiner seeking to perform a “complete” search as, under the definition in MPEP §719.05(1)(a-c), this requires a review of all the patents in the class or subclass. Constraint of the breadth called for in the §904.01(c) guidance is applied in the §904.02 section where a searcher is encouraged to make a “reasonability” test to the breadth of a search. Given that §904.01(c) is derived from the statute, the subjective modification called for in §904.02 could be a fruitful place to apply oversight and scrutiny to establish whether the discretion exercised by the examiner has unnecessarily avoided potentially relevant art. The statutory breadth is reapplied under cases of interference proceedings and reexamination [5].

In March 2000, the USPTO instituted a “second pair of eyes” examination pilot test during which patents covering certain business methods were subjected to dual examiner consideration [4]. In less than two years, application allowance was reduced from the patent office average of over 85% in FY2000 to a reported 17% for the business method, or 705, patents [6]. Despite its experience, the USPTO has determined that this second opinion diligence is economically unfeasible to deploy across all patent classifications. It is informative to note that, in spite of the four-fold disallowance shift, the USPTO never elected to apply this same standard retrospectively to those patents granted in this classification section prior to the pilot test. In short, this exercise highlighted that a mere second opinion drastically

reduced the allowance of a patent. In fact, in those few patents – as few as 0.1% of all patents – that are the subject of judicial resolution in litigation, over half are found to be unenforceable or invalid, in part or in whole.

In his analysis of the degradation of patent examination quality in the USPTO, Mark Lemley observes that over 95% of all patents are of no appreciable business value and therefore, the incremental cost associated with marginally improving patent examination would not be justified by any concomitant reduction in litigation expense [7]. Ironically, he muses that very few (less than 1%) of patents are actually litigated or licensed, and, by extension, most are either ignored or used for “noncontroversial purposes like financing.” While Lemley may find financing “noncontroversial,” it is likely that buyers, licensees, together with equity and lien holders, may not share that perspective. Attitudes which convey a cavalier disregard for the implications of patent quality in the representations and warranties made in financial transactions – both banking and equity – contribute to the growing barriers facing those who seek to build efficient financial markets around patents and patent-dependent businesses. For financial professionals and those seeking to deploy patents in the financial context, these quality issues raise a variety of alarming realities.

The growing use of patents as litigation avoidance instruments, rather than their constitutional and statutory basis as an enhancement to the public good, is evidence of the abandonment of the foundations of an effective patent system. Budgets for patent enforcement or defense litigation, not patents themselves, are the modern determinant of monopoly interest. While a select group of domain experts benefit from the ambiguity surrounding patents, corporations, financial institutions, the investing public, and governments are beginning to realize that the long suspected degradation in the quality of the governmental oversight required to regulate the granting of monopolies has actually become an impediment, not an enablement, of business. The United States Federal Trade Commission acknowledges that the current system is incapable of meeting the constitutionally mandated charter, for which the USPTO was developed, without significant reform [8]. Until these reforms are enacted, financial interests must include public sector risk and litigation probability and expense in any valuation exercise.

On the whole, it is evident that financial interests must accept the reality that not all patents are created equal and that the vast majority provide little basis for use as financial instrument constituents.

3. ACCOUNTABILITY AND REPORTING

A recent study conducted by the University of Virginia’s School of Systems Engineering showed that a company’s risk of being involved in patent-related litigation increases ten-fold when it owns a patent that is impaired by commercial validity or commercial utility undisclosed dependencies [9]. As patent litigation costs rise, detecting these impediments has become a necessity. Clearly, when considering patents for collateral or securitization, a financial interest would be advised to consider the actuarial stability of the patents and whether the property is a toxic waste repository or a goldmine. These expressions are not merely used as metaphor. Examples of environmental remediation risk are informative to understand the potential value consequence to ill-awarded property.

As the basis of corporate value shifted from balance sheet to off-balance sheet, accounting and tax practices failed to correctly address the treatment of most forms of innovation. As patents enjoy the unique position of granting an adverse right that may or may not be adequately examined at issuance, (you have the right to block others from doing your invention but are not necessarily granted rights to do what is in your invention) an accounting predicament exists. Are they assets or liabilities? The off-hand answer is that they are assets. However, consider the following. An inventor must pay for a patent application (and, in most cases, pay someone to prepare the application). Then they must pay to have the patent recognized in the appropriate national jurisdictions where they seek coverage. Then they must pay maintenance fees to keep the patent enforced. So far, these are all balance sheet liabilities. Recent studies have shown that no more than 5% of all patents ever enable a business or serve as the basis for licensing revenue. While they may have “value” as litigation deterrents – an unsubstantiated and opportunistic assumption propagated by those who derive their existence from the filing and enforcement of the same – they all enjoy the status of a cost center (the liability side of the balance sheet). Accounting and tax authorities, and the professionals who try to navigate the complexity of the same, have failed to address this anomaly. However, this oversight exposes

companies and individuals to significant operational dangers.

The U. S. Financial Accounting Standards Board (FASB) promulgated Statement 142 in 2001 which stipulates that acquired intangible properties, if held on the balance sheet, must be valued and amortized. Further, the properties must be tested for impairment over the life of their amortization and, if found to be impaired, must be written down or off. Accounting firms and corporations have failed to provide investors with evidence that they have considered the public sector quality concerns identified above or that they have taken into account the liability intrinsic to patents. The International Accounting Standards Board (IASB) is exploring the treatment of intangible properties and, to date has not published any comment evidencing their awareness of the natural impairment and liability associated with patents – a construct absent from IAS-36 and IAS-38. While the term “asset” is liberally used by regulatory agencies and accounting professionals, this moniker does not obviate the need to quantify the impairment to title and the cost of maintaining title – both of which are unquestionable financial liabilities. As such, valuation for accounting purposes may be quite different between both jurisdiction and business contextual use and the informed financial professional should be aware of these differences.

Increasingly, companies and their accounting firms are designing tax strategies to creatively manage intangible properties. Donating patents to non-profit organizations for tax deductions, the use of in-process research tax credits, transferring properties to off-shore holding interests in tax havens, and the recognition of business or capital assets resulting from corporate transactions (including M&A) are among the ways intangible property tax treatment can inadvertently expose businesses to intellectual property risks. Given the heightened scrutiny by the IRS on these practices, certain proposed financial instrument strategies – sale-lease back arrangements and the like – may be less desirable than originally contemplated.

The investor or banker evaluating intellectual property valuation must necessarily consider the context and assumptions driving the valuation reported in the event that the process is undertaken at all. This process would inevitably be time consuming and lack precision. The challenges facing businesses and investors are in understanding how, if at all, to value patents given that value for securities

reporting and value for tax deductions are not necessarily correlated. These challenges also demonstrate the importance of understanding the assumptions used by professionals engaged in such valuation exercises. The associations responsible for accrediting valuation professionals do not presently have any empirical standard requiring the fundamental due diligence questions detailed above. To the contrary, they base their valuations on the assumption that the patents belong to Lemley’s 1% that may have transactional value without performing any test of that assumption.

Does patent valuation matter? When does patent valuation matter? The obvious cases are in M&A, licensing negotiations and infringement damage awards or settlements. Growing interest in patent, licensing, and whole company securitizations, the use of sale and lease back special purpose corporations along with a variety of alternative financing vehicles require companies, the investing public and regulators to expand their view on where intellectual property issues may surface. Those attempting to quantify and manage intellectual property financial and operational risk must realize that the same property can be valued differently based on the context for which the valuation is being performed.

4. RECOMMENDATIONS FOR FINANCIAL INTERESTS

Patent valuation in 2004 is subjective and contextual. Therefore, the consumer of patent valuation in the financial context must carefully consider whether essential fundamental elements are included in the examination of patent value.

A uniform prerequisite that must be contemplated prior to any valuation is a review of the public sector quality performance risks discussed earlier in this paper. If a patent is either functionally redundant to numerous other properties; if its examination process is inadequate; or, if it is merely the product of a defensive, litigation avoidance procurement, the likelihood that it can convey value as a transferable financial instrument enabler is extremely low. Regrettably, no recognized appraisal society in the United States or the industrialized world even comments on the public sector quality deficiency in patent granting when treating the subject of patent valuation. To the contrary, formal texts and appraisal examinations commend appraisers to apply market, income, or cost approaches – all of which are predicated on a real or hypothetical business interest

[10]. None of these take into account the unquestioned reality that fewer than 1% of patents are ever associated with licensing or litigation and as many as 95% of patents have no appreciable value to their holders' businesses beyond the potential avoidance of third party assertion risk.

Fair Market Valuation (FMV) is "the price, expressed in terms of cash equivalents, at which property would change hands between a hypothetical willing and able buyer and a hypothetical willing and able seller, acting at arms length in an open and unrestricted market, when neither is under compulsion to buy or sell and when both have reasonable knowledge of the relevant facts" [11]. Remarkable about this definition, when applied to patents, are the following nuances.

The first is the presumption that patents exchange hands between a hypothetical buyer and seller acting in an unrestricted market. To achieve value, a patent not only must be obtained but also enforced. The definition calls into question valuation methodologies such as relief from royalty as the fundamental premise of "relief" is the restriction of a market. While appropriate when calculating infringement damages, relief from royalty, if applied, conflicts with the statistical assumptions underpinning FMV. Its application, therefore, should comment on commercial alternatives so that restriction can be shown to be absent in the transaction.

The second is the requirement of the hypothetical transaction in the absence of duress. Anyone familiar with patent transactions is familiar with the reality that, "economists have increasingly recognized that a patent does not confer upon its owner the right to exclude but rather the right to try to exclude by asserting the patent in court" [12]. Lemley and Shapiro go on to observe that, "most patents represent highly uncertain property rights. By this we mean that patents are a mixture of a property right and a lottery" [12]. Financial interests should carefully consider this conundrum. On the one hand, patents may embody critical business enablements, however, even in these instances, it is not merely the existence but the enforcement of the patent that conveys value to its beneficial interest holder. Therefore, viewing patents in the context of financial vehicles without actuarially considering their enforcement or the possibility that they could be inadequate to cover a business proposition is reckless and may lead to rather interesting financial risk exposures including contributory damages in adverse

infringement rulings [13]. Given these rather complex requirements of having to entertain the prospect of adversity to realize value and, informed by the lottery nature of patent enforcement in the activation of such efforts, one has to carefully consider whether any patent transaction offered in lieu of litigation could be considered a market comparable for an FMV assessment. Further, it is reasonable to conclude that valuation should include the notion of a performance bond, as this would more accurately reflect the means through which value extraction could theoretically be achieved.

Finally, FMV requires the transacting parties to be reasonably knowledgeable of relevant facts. Herein lies a direct contradiction with the law covering the procurement of a patent and conventional interpretations thereof. Under Rule 56, a patent applicant is under no duty to disclose material regarding the assertion of patentability. As a practical matter, the patent examiner is constrained by throughput mandates, from adequately and fully examining "all relevant art" as required under the MPEP. However, for FMV, a reasonable knowledge standard is placed as a burden on both parties. In typical due diligence carried out by banks, investors, or insurers, the presumption of patent validity (correct as a matter of law) is presumed to extend to the presumption of the conveyance of the faith and confidence of the patent office. However this presumption must be scrutinized in light of the fact that, in the best of all patents that are litigated, most are either amended or overturned. Further, as stated above, most patents are "probabilistic" and therefore have no direct consequence on a financial reality [12].

In summary, patent valuation requires careful re-examination by both policy makers and practitioners. Before financial institutions can adequately characterize patent value in capital procurement, M&A, licensing, or *pro forma* revenue forecasting, more vigorous property review is mandatory. When selecting valuation methodologies for intellectual property, accounting for the risk of patent office quality concerns as well as the cost of enforcement to extract value should be used to attenuate enthusiastic future value predictions. Further, appraisers and those they serve, must acknowledge that all patents are not suitable for valuation and criteria for making a valuation decision necessarily requires tests of fitness.

For use in lending collateral, securities, and alternative risk transfer financial vehicles, all patent valuation must consider the following critical variables:

- a. Title – does the patent actually convey the entirety of the enabling monopoly interest or does it rely on additional properties held by the owner or a third party?
- b. Depreciation – does the property contemplate claims that can adapt to market migration during the life of the patent thereby ameliorating the risk posed by commercial variants and antinquation?
- c. Transferability – does the property’s context (defensive or offensive procurement) transfer to third party business requirements?
- d. Alternative use – can the property be used to enable diversified business opportunities in the event of adverse market conditions in the field for which the invention was conceived?

These four elements need to be evaluated prior to conducting any patent valuation and need to form the analytic framework in which the financial institution can confidently collateralize the intangible assets of the modern economy.

FMV is rooted in an economic reality focused on tangible property, originating at least as early as Napoleon Bonaparte in the “Swamp Decree” of 1807 [14]. A patent is predicated on the subjective grant of a publicly chartered administrative body, whose error – through possibly no fault and, potentially without the knowledge of, the property holder – can obviate not only the value, but also the very existence, of the property. FMV and its derivative appraisal guidance have failed to embrace this reality. As a result, fewer than 5% of all patents are likely candidates for current valuation techniques. We must either accept this reality or embrace a clarion call for policy and methodology reform.

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