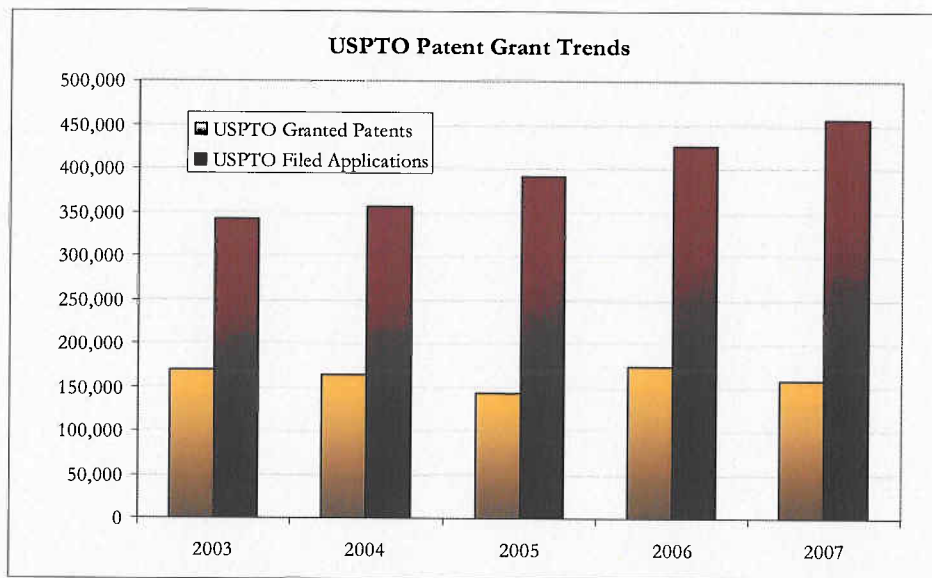


MEASURING PATENT VALUE: AN IMPERATIVE FOR CREATING LIQUIDITY IN THE INTELLECTUAL PROPERTY MARKETPLACE

By Jonathan Barney and Steve Lee

Why measuring patent value today is more important than ever

Patents have been important to industry participants for decades, and as we migrate from an industrial, manufacturing driven economy to an information intensive, knowledge based economy, the proper assessment of patent quality and value is critical to all participants. As patents provide legal rights and a proxy for innovation, participants from individual inventors, scientists, engineers, and patent attorneys, to corporations, investment firms, and government agencies are all interested in better understanding patents, their value and significance. The US Patent Office (USPTO) issued the first utility patent in 1836, establishing a legal institutional structure vital "...to promote the progress of science and the useful arts by securing for limited times to inventors the exclusive right to their respective discoveries."¹ Since 1836, the USPTO has issued a total of about 7.2 million patents to date. In 2007 alone, 183,059 patents were issued, and almost 470,000 applications were received, both all time records in the history of our patent system. At the end of 2007, the USPTO had over one million patent applications pending.



Source: USPTO

Since the patent system is really a government sanctioned "monopoly" with exclusive rights given to patent holders, it has many business implications to participants involved. In addition, it is an economic asset that can generate significant returns to the holder yet has a finite lifespan of 20 years.² With limited information about the value and quality of patents, the holder of that asset must exercise options on that asset during this time to extract returns on their investment, which includes research and development costs, patent maintenance fees, and patent prosecution.

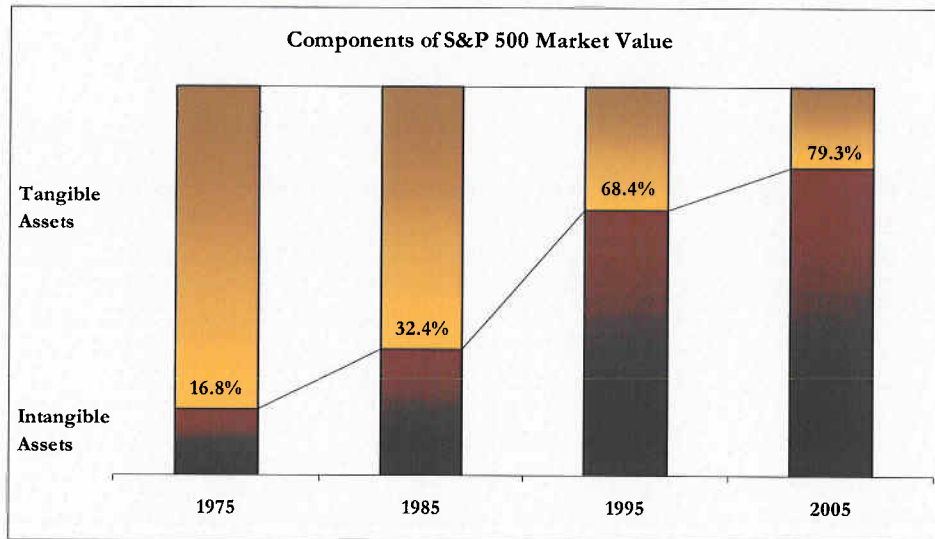
Given that today about 80%³ of all US patents are issued to corporate entities, the significance of patents to corporations and their investors is even more pronounced. Furthermore, as we migrate from the industrial economy of the past to the technology driven information age of today, intangible

¹ Article 1 Section 8 of the US Constitution.

² The average of 17.9 effective useful life is due to the patent application and approval cycle.

³ *The NBER Patent-Citations Data File: Lessons, Insights, and Methodological Tools*, Bronwyn H. Hall et. al.

assets account for a significant portion of a firm value. Over the past thirty years, the contribution of intangible assets, such as patents, trademarks, and know how to firm value has increased from 17% to 80%.



Source: Ned Davis Research, 2006

In addition, millions of dollars of valuable cash flow and shareholder value can be lost, or transferred, in patent infringement cases. When you look at the recent patent litigation awards, it also points to the significance of patents and the potential impact on the company's bottom line. We all know that this is only the beginning of a trend that is likely to continue to rise as more firms rely on their IP and as they globalize. Note that many of the companies in the chart below are not based in the US. Patents are increasingly becoming strategically important for offensive and defensive purposes for all participants of the global economy.



Source: Portfolio Media IPLaw 360

The market for patent has been highly inefficient

The patent market has been historically characterized by high uncertainty and low liquidity. From our experiences in economic market history of the past century, two conditions need to be met to achieve market efficiency: 1) Many buyers and sellers participate in a transaction; and 2) All parties must have equal access to relevant information on products or services being traded. In the patent

space, both conditions were missing until recently, but with improved access to information and computing power, participants are increasingly demanding objective measures.

Before we look into measuring patent value, let's look into two areas where we made significant strides in achieving market efficiency, the business and individual lending markets. In both markets, credit scores and corporate debt rating models exist to further improve the understanding of risk in financial transactions and therefore reduce uncertainties by enhancing transparency.

In the consumer credit and lending market, personal credit worthiness is measured by Fair Isaac Scoring system, FICO, developed in the 1980s. With scores ranging from 300 to 850, FICO was developed by applying statistical algorithms on a person's purchase and payment history to approximate the likelihood of default on future credit obligations. Banks, mortgage, and credit card issuers use this score to determine who qualifies, at what interest rate, and under which terms. The models underlying these scores are now regulated by the Federal Reserve Board's Regulation B, which monitors the implementation of the equal credit opportunity act and models must be empirically derived.

In the business lending market, Moody's rating services currently rates 96,000 structured finance obligations and provides corporate bond ratings to 12,000 corporations and 29,000⁴ public finance issuers today. Their success is in part due to the statistically driven system rooted in fundamental economic transaction records, refined over many years of rating credit risks of a firm. Moody's credit rating model is a statistical model that estimates the probability of default for publicly traded firms. Moody's rating system is widely used by traders and investors and is believed to have captured over 40% of ratings in this market globally, as evidenced by its substantial market size⁵ for a ratings company.

Is there potential for similar models to analyze patent quality, value and risk?

Given that patents have not been actively transacted in the past, and if they were, typically transacted privately, market multiples or market transaction based methods have been historically unreliable and inconsistent. Nevertheless, due to increasing business significance and recent regulatory changes (e.g., FASB Statement 142⁶), measuring patent value is critical to corporate planners, attorneys, and investors. However, current measures employed are either simplistic, in the case of patent count, or subjective, in the case of value by market potential or GDP share. Simplistic measures, such as raw counts of patents, citations (patent to patent references), or academic journal references provide some metrics but no clear guidance of patent value. Many methodologies exist for trained individuals or experts to value a patent, but they all rely on subjective knowledge and value judgments making it nearly impossible to objectively measure asset quality or value.

However, in the absence of credible market based transaction data, an alternative approach is possible if one applies a statistical modeling approach to assess patent value. The entire patent system is predicated on the premise that government will grant near monopoly status to a patent holder and, in exchange, the inventor must publicly disclose his or her invention. When a patent is filed and issued, the documents include detailed information on the innovation itself, the nature of the uniqueness, the technological area of the invention (as defined by the USPTO designated technology class), the inventors, law firms that processed it, organization (e.g. Assignees), geographical location, claims (breadth of coverage), number of claims, examiners, references to citations to previous patents, and the scientific literature to demonstrate novelty of the patent by identifying prior art. Patents have long been recognized as a very rich and potentially powerful source of competitive advantage for firms that can provide data for the study of innovation and technological shifts for academics and policymakers. Several academics and data providers have dissected, stored this rich set of patent information, and conducted analysis to predict the value of patents, companies owning these patents, and other impacts the patent system has had on innovation.

⁴ Moody's company 10K – 2006

⁵ \$18.3 billion market capitalization (NYSE:MCO) as of May 3, 2007

⁶ Financial Standards Accounting Board Statement 142 requires disclosure of intangible assets acquired or disposed.

