

# Managing Intellectual Assets For Shareholder Value



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## A History of the Intellectual Asset Management (“IAM”) Movement

The evolving technology-based economy of the 1990s, characterized by shorter product cycles, rapid infiltration of e-commerce and an increase in patenting activity, brought forth a shift in strategic thinking for many companies. In 1982, only 32% of the average company’s asset base was comprised of intangible assets. Today, this figure is over 70% and growing.<sup>1</sup> Realizing this trend, and seeking competitive advantage during this time of change, firms began to focus on how to generate addi-

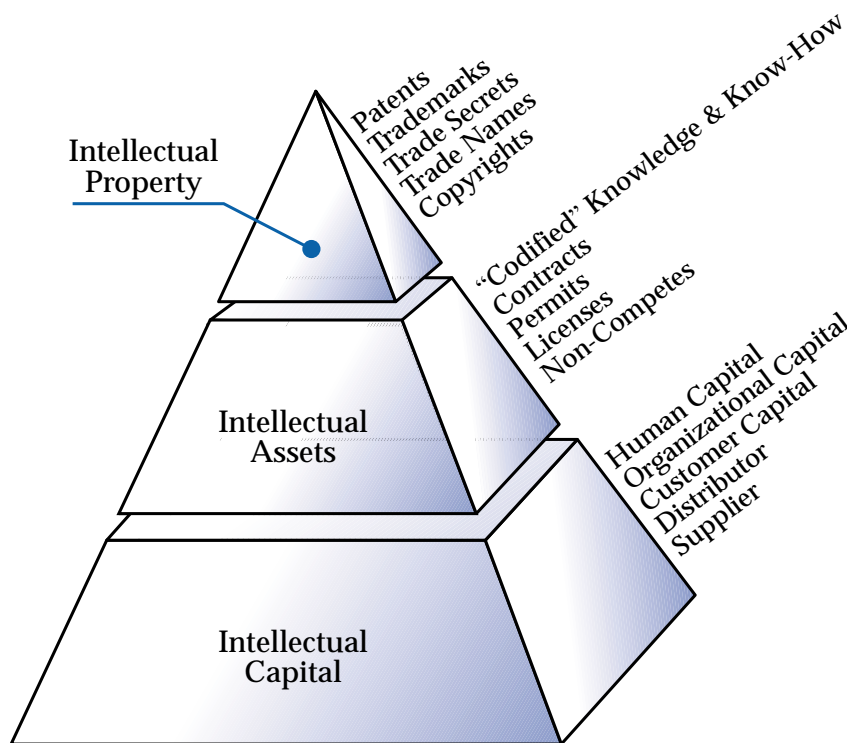
tional value from these intellectual assets. The focus of this article is to illustrate the short-term financial benefits and long term strategic and competitive advantages that a firm will realize from having an integrated and focused IAM program. It will provide the reader with a basic understanding of IAM and offer tools to begin company-wide implementation of an IAM program.

A company’s intellectual assets include not only its intellectual property (“IP”) patents, copyrights, trademarks and trade secrets – but also other codified or intangible knowledge such as know-how, contracts, processes and procedures, licenses and non-compete agreements. More broadly defined, intellectual assets include a company’s branding, human capital, such as a skilled workforce, and the

relationships it has with customers, suppliers and distributors, widely called intellectual capital.

The focus on intellectual assets evolved not only from a changing economy, but also from a changing legal environment. In 1982, the Court of Appeals for the Federal Circuit (“CAFC”) was created in the United States and had an immediate and positive impact on owners of intellectual property. Statistics show that prior to the CAFC’s creation, approximately 70% of patents challenged in the U.S. federal courts were overturned, compared to approximately 20% after its creation.<sup>2</sup> Further, in 1998, the CAFC ruled that business processes are patentable, a move that generated significant patenting activity within industries such as banking and financial services, which rely on proprietary methods and processes for competitive advantage. Coupled with the favorable legal environment for intellectual property owners was the exploding rate at which patents were being applied for and granted in the 1980s and 1990s.

With the focus on intellectual property in the legal and technical community, many companies such as Dow Chemical, Hewlett-Packard and IBM became pioneers in intellectual asset management with well-run and highly publicized pro-



1. *Harvard Business Review*, Jan-Feb 2000.

2. North Carolina State University Study, <http://www4.ncsu.edu/~baumerdl/504.01%20PPT%20Notes/504.01%20Ch.%208.ppt>.

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Patent Number	Granted	Elapsed Time
1,000,000	1911	122 years after first patent
2,000,000	1935	24 years after patent 1,000,000
5,000,000	1991	15 years after patent 4,000,000
6,000,000	1999	8 years after patent 5,000,000

grams. Each of these companies has experienced the benefits of IAM in terms of revenue, cost savings and strategic advantage. For example, IBM, with its immense patent portfolio and focus on out-licensing, has reportedly managed to generate annual revenues in excess of \$1.2 billion from licensing. Dow Chemical has integrated IAM into every facet of its business, using its intellectual assets not only to generate revenue and cost savings, but also to guide the company into strategic markets, protect its position in certain markets and generate more focused and efficient patenting. IAM can benefit not only large companies with well-established intellectual asset portfolios, but companies of any size, industry or stage of development.

An increase in companies' alliance activity throughout the 1990s has also created a demand for IAM. Intellectual assets have become the currency of choice in connection with strategic and joint venture alliances between companies within the same industry, or often within multiple industries. It is estimated that businesses conducted through alliances accounted for 3-5% of an average company's revenues in 1990. That figure stands at 20% in 2000 and is expected to reach 40% by 2010.<sup>3</sup> IAM is critical to maximizing a company's position within these increasingly important alliances, as well defined, protected and valuable intellectual property often forms the basis and business justification for such endeavors.

### Benefits of an Effective IAM

3. EIU Global Executive Survey.

### System

Intellectual assets shape every part of an organization. As illustrated below, each division or discipline within a company plays a key role in IAM, and as such, efforts to implement an IAM program must be coordinated on all fronts.

Whether used as a defensive or offensive tool, IAM provides significant benefits to a company in terms of revenue enhancement, cost reduction and strategic advantage. The benefits to be gained from IAM are not going unnoticed in the marketplace. Between now and 2005, more than 50% of companies in the

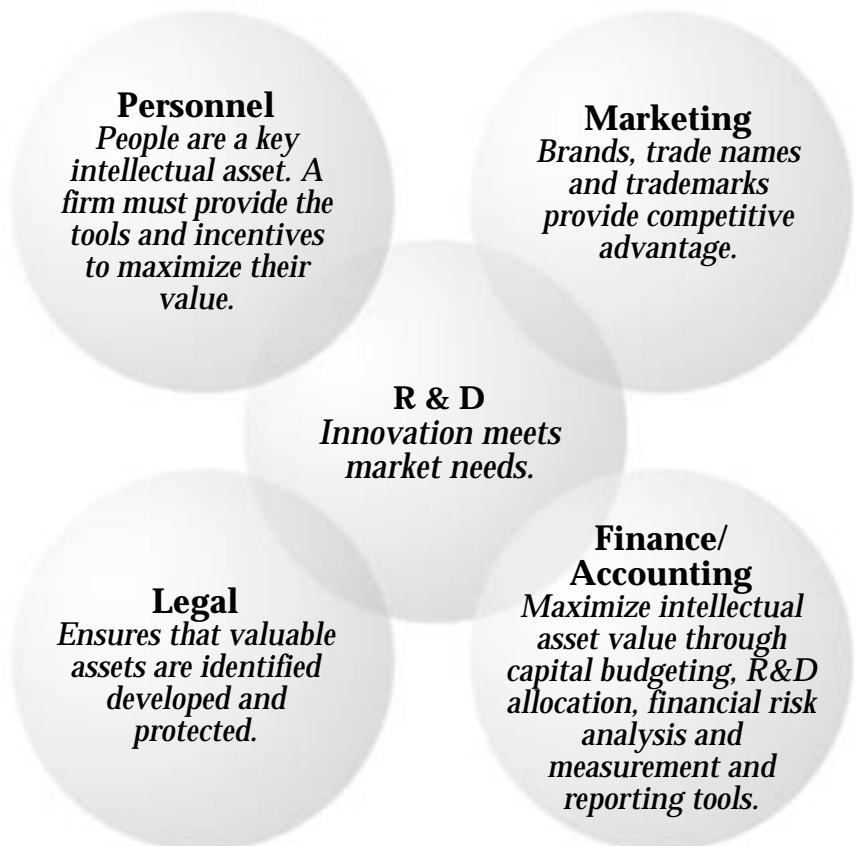
pharmaceutical, aerospace, information technology, consumer goods and biomedical sectors will implement systems to better manage their intellectual assets.<sup>4</sup>

### Revenue Enhancement

IAM facilitates revenue enhancement through licensing income, focused and maximized research and development ("R&D") expenditures and strategic alliances/joint ventures, among others. Worldwide patent licensing grew to well over \$100 billion in 1998 and is expected to reach half a trillion dollars annually by 2005 as companies search for new revenue streams by expanding licensing programs.<sup>5</sup> Companies such as IBM and Rambus have turned their patent portfolios into profit centers through strategic licensing of their intellectual prop-

4. Gartner Group.

5. "The Basics of Financing Intellectual Property Royalties, Part III: What is the Market?" by Licent Capital, July 2, 2001 at [http://www.cafezine.com/index\\_article.asp?deptId=3&id=412](http://www.cafezine.com/index_article.asp?deptId=3&id=412).



erty, both within their core industry and outside of it. Licensing is highly profitable, with net profit margins generally over 90% on licensing revenues.

Understanding, organizing and effectively managing the company's portfolio of intellectual assets will increase the return on R&D dollars, facilitate spending of precious R&D dollars on high-value projects and identify and eliminate unwarranted R&D expenditures. A thorough review and clustering of a company's intellectual assets will reveal 1) which products and technologies are strategic and core to the business versus those which are non-core; 2) those which are used to generate revenue versus those that are only defensive; and 3) establish a technology roadmap to help guide product development and funnel resources to high value projects. Companies that are nimble enough to make wise resource allocation decisions for innovative products in key markets will bring technology to market faster than their rivals, increasing market share and enhancing long-term shareholder value.

Mining a portfolio for unused or underutilized assets that may contribute to the development of new products or services is an important tool for generating incremental revenue. For example, a well-known chemical company traditionally focused on consumer products but with a compound applicable in the medical industry (but no process or manufacturing capability to exploit it), entered into a joint venture with a company who possessed the complementary capabilities to commercialize a product within the medical industry. It was a low-risk, high value project that ended up generating substantial, unplanned and highly profitable revenue for both entities.

### Cost Reduction

Over the life of a patent, a company will spend between \$250,000 and \$1 million per patent on prosecution and maintenance expenses, depending on the number of coun-

tries in which the patent is prosecuted. In a company with thousands of patents filed in many countries of the world, this expense can represent a significant portion of a company's R&D budget. Cost savings are achieved by continually evaluating the patent portfolio and identifying and pruning patents that are non-core to the business, not protecting a market or technology area and are not viable for out-licensing, as well as controlling what is patented in the future. Companies that are able to determine effectively which inventions are not worth patenting (no business purpose) or are better kept as know-how or trade secrets (such as processes or formulas) will be better positioned to focus their R&D and patenting efforts on the most profitable markets and products. For example, Dow Chemical found that by pruning its portfolio and reducing its patenting activity through a focus on strategic patenting, it not only reduced costs, but also secured a stronger, more manageable portfolio of assets. Simply by eliminating the patents that had little business value, Dow estimates that it saved more than \$40 million in maintenance costs (filing fees, taxes, etc.) over a five-year period.<sup>6</sup>

Companies can also reduce tax liability through focused management of intellectual assets. For example, creating an entity focused primarily on managing a company's intellectual property and then licensing the intellectual property back to the users of the assets can be advantageous from a management efficiency and tax perspective. Further IP may be donated, which can result in tax credits for the donor. DuPont's 1999 donation of \$64 million worth of intellectual property to three universities (University of Iowa, Virginia Polytechnic and Penn State) was one of the largest to date, prompting other companies to consider the benefits of intellec-

6. 2001 Conference on Intellectual Asset Management; June 26, 2001 speech by Rick Gross, Dow Chemical Company at the Drake Hotel, Chicago.

tual asset donation.

### Strategic Advantage

IAM has many strategic benefits that depend largely on the goals and vision of the company. For innovators, patents and other intellectual property can be used to protect and to defend existing markets and to secure key future markets. Early recognition of emerging markets or technology needs may allow a firm to gain competitive advantage by patenting or exclusively licensing cornerstone technologies (building a "patent wall") or by erecting barriers to entry in strategic technology areas. For example, a medical device company recently recognized the value of innovative technology applicable within its industry several years before the market was ready for the technology and acquired rights to the technology through a license agreement. This company took the up-front financial risk that the need would materialize and the strategy was advantageous in that it realized an increased market share and the ability to exclude potential competitors.

The strategy of market penetration is often accomplished through widespread out-licensing in emerging industries and establishing standards to achieve "network effects" for technology. Microsoft used this strategy to set a de-facto standard for its Windows operating system. For strategies that include "skimming" markets and establishing a pricing premium, intellectual assets can be used to increase brand value and awareness and customer loyalty. Still other strategies, including cost leadership and operating excellence, can be achieved by developing or in-licensing processes and manufacturing know-how which can be used to increase productivity and to provide a competitive cost advantage.

### Other Benefits

In certain cases, intellectual property and royalty streams may be used to secure funding. For example, one start-up software company recently used its proprietary technology and patent portfolio to

secure \$10 million in financing. Well-known IP financing transactions include that of Calvin Klein, which used its IP to back a \$58 million bond. Similarly, David Bowie's copyrights were used to secure \$55 million in financing.<sup>7</sup> Monetizing intellectual assets is an emerging practice that is well suited to both start-ups and established companies alike.

Litigation issues uncovered as a result of the IAM process can have a substantial financial impact (some positive and some negative) on a company. Almost 50% of attorneys polled in a recent survey believe that intellectual property litigation will be the hottest legal practice area in the next 10 years.<sup>8</sup> As such, a company must guard against infringement and also ensure that it is not infringing on its competitors' technology. During the IAM process, a company may uncover a patent that can be asserted against a competitor. On the contrary, it may discover products that it assumed were covered by patents, but on second glance may be questionable and at risk for a lawsuit by a competitor.

### Implementing an IAM System Management Buy-In

The ultimate goal of a firm focused on its intangible assets is to integrate IAM into every facet of the business and to use it not only to produce immediate financial gain, but also as a strategic guide to generate long-term value for the company. This is not accomplished overnight and the system must be built from the ground up. Companies such as Dow Chemical and HP, who implemented IAM programs many years ago, are still working to achieve full integration of intellectual asset management into all aspects of their respective businesses.

As a first step, firms considering implementing an IAM system must have support and buy-in from upper management and each of the business units, otherwise the IAM process will stall and implementation throughout the organization will be problematic. We have found that an immediate showing of financial success can facilitate such buy in. Many companies experience short-term success by mining for patents that are easily marketable and quickly licensed to generate royalty income. Other companies identify intellectual property that are candidates for donation or build a spin-off business around intellectual property. Still others conduct royalty audits of previous licensees to generate revenue. These types of activities generate a fast return, and while just the tip of the iceberg, demonstrate the financial impact of IP to the company, thereby facilitating management buy in.

### Organize

Once management has agreed to commit resources to an IAM program, the first step is to take inventory and understand the universe of intellectual assets owned by the company. Not surprisingly, many of the companies for which we have consulted have only a cursory understanding of their intellectual assets and often valuable patents and know-how sit unexploited within the firm. Typically this gathering process begins with in-house counsel, who should have an understanding of the company's issued patents, patent applications, license agreements, trademarks, copyrights, trade secrets and invention disclosures, or at least know who to approach to obtain such information. In many cases it is also necessary to speak with the inventors themselves to understand in-process R&D that may have potential value, but that has not yet been codified in the form of a patent or patent application (e.g., know-how, blueprints, processes and procedures, etc.). Even abandoned R&D projects may be candidates for screening and organization. And this concept can be extended to even

non-high tech companies, such as computer/video game software developers and abandoned artwork. Once the universe of information has been identified and assembled, it needs to be carefully organized and clustered for evaluation.

At this stage, a basic electronic IAM database should be implemented. There are several companies that sell software for managing patents and other intellectual assets, such as First to File and Dennemeyer and Company, but at this stage, simply capturing the information in a database, such as Microsoft Access, should be sufficient. The company may wish to transition to a more sophisticated management system once the framework for the IAM process has been established and the process is up and running. In addition to an electronic database, the company must also maintain well-organized paper files documenting all the information related to the intellectual assets, including invention disclosures, market and technology feasibility studies, prior art searches, PTO applications and correspondence, etc. The fields and information contained within this system will depend largely on the next step in the IAM process, portfolio screening.

### Develop Team and Screen

Once the company has identified the intellectual assets it owns or has rights to and the basic information related to the assets assembled in a central database (e.g., asset description/patent #, title, abstract, file/record date, issue date, inventor, etc.), a cross-functional team comprised of in-house (or external) legal counsel, technical/engineering and business unit level managers (marketing and executive) must be assembled to screen, categorize and assess the intellectual assets. Having these diverse perspectives is crucial to understanding the legal protection and enforcement issues related the intellectual asset, and the technical feasibility issues and business level knowledge of markets, customers and competitors. Acquiring the long-term dedication and time commitment from this team is

7. "The Basics of Financing Intellectual Property Royalties, Part III: What is the Market" by Licent Capital, July 2, 2001 at [http://www.cafazine.com/index\\_article.asp?deptId=3&id=412](http://www.cafazine.com/index_article.asp?deptId=3&id=412).

8. PR Newswire; June 15, 2000.

also essential, as they will likely be responsible for maintaining the system, reporting and disseminating results, appointing “special teams” to carry out directives and coordinating across business units and functions. The majority of companies that have been highly successful at IAM have either hired dedicated resources or carved out job responsibilities for existing employees, with the support of management, for execution of the IAM initiative.

Prior to screening, the team must establish well thought-out and useful criteria for categorizing the patents. There is no standard rule-of-thumb and criteria selection will differ depending on the type of organization and the industry. For example, a semiconductor company may screen its patents based on the following criteria:

- Industry code (IPC code as categorized by the U.S. Patent & Trademark Office)
- Technology family or business unit
- Core/non-core
- Defensive/“in-use”
- Licensed out<sup>9</sup>
- Products which use or rely on the patents
- Potential value of patent at high level review (low, medium, high)
- Age of patent
- Strength of patent

As new patents, invention disclosures and know-how are added to a company’s base of intellectual assets over time, they must be subjected to the screening process. This process will result in centralization and a high-level ranking/prioritization of IAM efforts to facilitate the next task in the IAM process, assessment.

### Assets

Once the intellectual assets have been clustered, screened and ranked

(at a high level) and the firm has a sense of the relative value of the intellectual assets, a thorough assessment can be made. This assessment should begin with the same IAM team that was assembled to organize and to screen, but will likely require additional input from inventors/engineers, marketing personnel or even industry/technology experts outside of the company. While screening the portfolio for value opportunities, the team should ask the following types of questions:

**1. What patents or technology areas/know-how can be licensed?** When licensing, a company should consider whether the technology is core to the business or product lines and if it is being used to protect a certain market or product. There are reasons to license core technology, including licensing to establish a standard or licensing to a company better equipped to maximize the technology’s value (well known brand name, larger distribution system), but these types of decisions must be rigorously analyzed and valued. On the other hand, if the patent or technology is not strategic to the business, there may be an opportunity to license, sell or donate, either within the industry or outside.

Companies license for many reasons, including as a strategy to penetrate a market or establish a standard, using licensing purely to generate income or licensing to form a strategic alliance to penetrate new markets or geographic areas. One basic way to identify licensing opportunities for technology outside of a company’s core area is to look at the patent classes established by the PTO during the filing process. The PTO classification may provide a roadmap to look for potential licensing opportunities. Licensing of important technology outside of a core business was illustrated by the aerospace and defense industries in the 1990s, which have since realized that much of the technology they developed, for example GPS, is applicable to consumer products. In such a situation, licensing to non-competitors outside of the company’s core business is rela-

tively low-risk.

Another strategic reason to license, often to competitors within the same industry, is to establish cross-licenses for freedom to design. Especially common within the semiconductor and computer hardware industries, cross-licensing to a competitor may not only strengthen resources available to a company, but it can also be a defense against litigation.

Trademark licensing is a revenue-generating opportunity many companies overlook. For example, Calvin Klein, an apparel company with a strong and recognizable name in clothing, has parlayed that success into many areas including perfume, makeup, shoes and sunglasses, among others, generating substantial licensing income. Trademark licensing can be risky, however, since quality control may be difficult when using outside manufacturers and dilution of the value and prestige of the mark can occur.

**2. What can be commercialized?** The company should search for any overlooked “gems” in the portfolio that might be well-suited for a joint venture or strategic alliance. A company with potentially valuable intellectual assets, but lacking some of the complementary assets to exploit it, may be able to partner with another company to generate an entirely new business opportunity. Alternatively, there may be a viable invention that can be developed in house which fell through the cracks and will be discovered during the IAM process.

**3. Are my technology rights being enforced?** Multi-million dollar awards for patent infringement are common and companies who are not actively policing their intellectual property may be forgoing not only sizeable damages awards, but also market share and customers. Along the same lines, the company should explore whether any licenses or development agreements in force need to be audited for royalty compliance.

**4. Does the company have patents that are about to expire or deemed**

9. A company may want to create a separate, but linked, database to track licensing activity since it will require different information, including fields for tracking royalty payment due dates, milestones, payments received, and auditing procedures, among others.

**low-value and should be disposed of?** As discussed earlier in this article, patents are expensive to maintain. Patent pruning can save money, and if a patent is about to expire and/or it is not being used in a core product or market, it may be worthwhile to let it expire. Similarly, patents can be donated for substantial tax write-offs, not to mention the goodwill associated with a donation. This is often an area that can generate conflict within an organization at the business unit level and even between inventors themselves. Inventors and business unit leaders are, by nature, proud of the patents that they have produced, and care must be taken to ensure that pruning of patents and other intellectual assets deemed as low-value is carried out in a diplomatic and non-demoralizing fashion. Creating a criteria relied upon to decide whether patent abandonment should be explored is important to standardizing this process.

Consideration must be given to aligning employee incentives and goals with the strategic objectives of the company. For instance, a firm that is focused on patent pruning and patenting only strategic, core ideas, must be careful not to provide the wrong incentives (such as generous financial awards to inventors who file or issue a patent, regardless of its potential value), but instead structure incentives that are tied to the value or potential value of a patent or technology. On the other hand, companies like Hewlett-Packard and IBM are among the leaders in the industry for the number of new patents generated, and have generous rewards for inventors who file and issue patents, often regardless of the perceived value.

**5. What are my competitors doing?** An underlying factor in the assessment process is the ability to understand not only your own company and its intellectual assets, product and market strategy and value enhancing opportunities, but also to understand those of your competitors. Monitoring the activi-

ties of the competition can be a valuable piece of the IAM process and will identify market trends, product ideas, partners or joint venture opportunities, and potential licensing opportunities (either out or in-licensing). One important way to gain insight into what the competition is doing is to monitor and analyze patenting activity and trends in the industry. Monitoring the competition's patenting activity gives substantial clues as to where the market is headed and, if monitored, can help a company to secure rights in certain areas and to "head the competition off at the pass". Another revealing analysis used to identify competitors or potential competitors is to look for companies whose patents cite the same prior art as your company's patents - they are likely in a similar market space or developing competencies that may compete in your market niche and should be watched. These companies may also be potential licensees for your company's technology, or even potential partners. Other sources of competitive intelligence include publications, press releases, conferences, hiring activity, joint ventures and licensing arrangements, contracts and trade associations.

During this process a firm will likely uncover many opportunities to generate value from its intellectual property. However, focusing on a handful of key prospects to begin with is important. A firm should start with these "fast track" opportunities initially, to solidify management buy-in and increase the chance of success.

#### Extract Value

Once the IAM team has identified the "fast track" opportunities related to its intellectual assets, it should embark on several tasks. First, a company must develop a realistic timeline for completing the identified opportunities. Second, the group must establish a due diligence and negotiation team for any potential targets it has identified for licensing. This team must be prepared to discuss issues such as exclusivity, scope of license (both

geographic and product coverage), terms and enforcement. Third, the group needs to establish a team to search for potential joint venture or strategic alliance partners for intellectual assets identified as suitable for partnership. Fourth, the company should perform a valuation of each opportunity to come up with a realistic idea of what each option is worth, especially if there are several revenue generating opportunities for one group of intellectual assets.

#### Maintenance and Reporting

The IAM process does not end here. In fact, it is by its very nature, evolutionary. Monitoring and extracting value are continual processes that must be maintained and tracked as the company, its technology and the marketplace evolve. Any licensing arrangements entered into by the company should be monitored through royalty audits to ensure compliance. Joint ventures or commercialization efforts must be tracked and the company must make certain (through various non-disclosure agreements), that its intellectual property is protected - especially when dealing with outside parties. IAM requires both discipline and creativity to ensure that maximum value is being derived from the company's intellectual assets.

As with any business within a company, results of the IAM program must be measured and disseminated to demonstrate its value to management. The IAM team that has been responsible for implementing the IAM process should also establish quantitative and qualitative criteria by which to measure results. Measurement tools are typically unique to the organization and must be easily understandable by management (visual tools, including charts and graphics, are often helpful to easily disseminate information). Some common measurement tools include:

- Intangible value as a percent of market value
- Patents issued compared to peers and industry

- R&D expenditures and return on assets
- Licensing income
- Human capital (headcount)
- Customer base
- Product base
- Frequency of new product introductions/time to market analysis
- Strength and age of the patent portfolio
- Patents issued compared to sales growth rate (are the patents translating into revenue?)

## Conclusion

A company that understands not only its own intellectual asset position but also the position and focus of others in the market, and uses this information to gain strategic advantage and long-term growth, has achieved the goals of a successful IAM program. The benefits of IAM will permeate a company - from revenue enhancement and cost savings to motivating researchers and inventors and attracting talented people- all of which generate shareholder value in the long run. Using the tools outlined above, a company can begin to develop a systematic approach to managing its intellectual assets within the firm to generate immediate short-term financial gain, and also to maximize its competitive position for long-term future growth. Over time, a well planned and supported IAM program will become embedded in the company's culture, day-to-day operations and procedures and employees will begin to think strategically with regard to intellectual assets throughout all facets of the organization.