



# Making the Most of Your Corporate Intellectual Assets - Part 1: Understanding and Initiating Technology Licensing

**Leveraging intellectual assets as a business strategy is a relatively new concept for the corporate world, and companies that have mastered it have found that it is capable of generating substantial income for themselves and their investors. Nicholas DiMarino explains the concept and the opportunities it presents in Part 1 of this two-part series.**

Leveraging intellectual assets as a business strategy is a relatively new concept for the corporate world, and companies that have mastered it have found that it is capable of generating substantial income for themselves and their investors. For companies with a history of substantial investment in R & D, a five to ten percent boost in annual earnings is possible, but the concept of intellectual assets can be an elusive one. It is often difficult to identify these assets and determine their potential for direct earnings generation, and identifying your company's intellectual assets is just part of the process. You also need to develop a strategy to manage them and then a business plan to capitalize on them. It sounds like a daunting task, so how do you start? With the larger picture of intellectual capital-that intangible but important part of your company that gives it value beyond simple products and services.



Today, the New Economy runs on technology. Companies that learn to develop manage, and exchange technology will succeed in today's business environment. Those that mismanage it earn less than they should. Technology is considered part of a company's intellectual capital which is actually comprised of several components, including employee experience and knowledge, the ability to innovate, R&D capabilities and intellectual assets. It's the intellectual assets we want to leverage, the part of intellectual capital that includes know-how (the capability to create or produce a valuable product or service), patents, trademarks, and copyrights-the things that enable products or services to have and hold value in the marketplace. The focus should be on the technology, including patents and know-how. This forms the foundation of transferable intellectual properties and rights that enable your company to derive value directly from knowledge.

Whether your interest in Intellectual Asset Management (IAM) is for acquisition of technology to build

your business or to derive value by making your technology available for use by another company (technology externalization)-or both-you need to take two related steps:

- Determine potential for your company's IAM activity
- Develop an IAM strategy

### **A brief history of technology transfer**

Like the rapid rise of the Internet, technology transfer is having a profound affect on business in a remarkably short period of time. In the early 1980's, universities first started transferring technology out of their laboratories and into the hands of private business as a way to create jobs in society and bring more income into college coffers. Then in the mid-1980's technology transfer got a big boost with three key pieces of federal legislation, including the Bayh-Dole Act, which facilitated technology transfers from federal labs into the private sector to encourage economic growth and speed recovery from the recession. By the early 1990's, many large corporations had created offices of technology transfer to reap the benefits of research and development coming out of the universities and federal facilities. The concurrent rise of the Internet in the mid-90's provided private and public organizations alike a powerful tool to both disseminate information and research available technologies throughout the world. By the end of the decade, a thriving community of technology transfer Web sites and marketplaces had evolved, enabling a robust exchange of ideas among a wide variety of likely (and unlikely) potential partners.

### **DuPont Intellectual Assets Business**

DuPont is a company rich in chemical technology and has developed an active business unit specifically to identify, manage, and capitalize upon their diverse collection of technology. According to Robert Gruetzmacher, director of intellectual property and licensing, DuPont Intellectual Assets Business, his department handles both in-licensing and out-licensing activities. "DuPont looks for technologies that will complement our existing portfolio as well as licensing partners who can benefit from our technologies while providing us with an ongoing source of income."

Gruetzmacher states that DuPont's polyester (PET) supplies a steady source of income from the licensing of its manufacturing processes. Originally developed in 1937 and acquired by DuPont ten years later, polyester manufacturing has grown to be a \$2.5 billion a year market for DuPont. However, increased competition and geographic refocusing in the mid-1970's caused the company to change its strategy. Over the past two decades DuPont has exploited its patented technology both by being a producer/seller of polyester and a provider of technology to 26 percent of the world's 30 billion-pound industry.

"Our research showed that polyester continues to be the fastest growing synthetic fiber, with growth rates of 6-10 percent forecast through 2005 and particularly high demand in China and India," states Gruetzmacher. "We saw that it was not practical to attempt reaching all markets with finished goods, determining that it would make more sense to license the know-how to build plants, along with the

manufacturing process. Our polyester portfolio includes proprietary technologies for continuous polymerization, PET resins, staple fiber and filament yarns, Fiberfill® products and purified terephthalic acid used to make polyesters. Together, these cover virtually all aspects of producing polyester, including raw materials, processes and finished goods."

Polyester out-licensing has enabled DuPont to grow that segment to a 36-employee, \$50 million a year business with over 56 completed projects worldwide.

Another of DuPont's major success stories involves the development of an environmentally safe refrigerant to replace Freon®, an ozone-depleting chlorofluorocarbon (CFC) commonly used until recently in virtually all refrigerators and air-conditioning systems. According to Dr. Randall J. Guschl, director of DuPont's Center for Collaborative Research and Education, the company had only five years under federal environmental law to identify, develop and begin manufacturing an environmentally safe replacement for the dangerous coolant. "It was quite a challenge," states Guschl. "We had to identify molecules, test them, and then build plants to manufacture the new compounds in just a couple of years."

To accomplish this, DuPont initiated a broad, \$400 million collaborative effort to commercialize new refrigerant products, aggressively identifying universities, suppliers, customers and government agencies with various complementary skills and resources that could be brought to bear on the project. "DuPont recognized the need to license in technology to make this happen in the narrow time frame available, so we specifically targeted potential partners who had something to offer in every phase of the project, from initial R&D, to performance testing, to manufacturing," comments Guschl.

DuPont created a network of ten universities, thirteen national laboratories, and a number of private companies, with almost two-thirds of the technology eventually coming from external research and development. Among the schools, CCNY and the universities of Houston and Stuttgart, Germany handled reaction engineering; Georgia Tech looked at refrigerant properties and materials capabilities; and the University of Illinois researched refrigerant applications. From the private sector, Cabot, Casicat, and Engelhard handled catalyst development; Metallwerk Plansee GMBH researched materials; and Whirlpool coordinated refrigerant and appliance performance.

"The end result was a new, safer refrigerant called Suva®, available to the market in just four years instead of five. The EPA was stunned at the speed with which we were able to bring an entirely new product to market; in fact, they actually asked us to delay the introduction while they finished coordinating the removal of Freon® refrigerants," Guschl added. The broad partnership not only developed a new product, but a new manufacturing process as well, enabling all participants to reap licensing and income benefits from the project.

DuPont also takes advantage of pure licensing opportunities that do not involve manufacturing. "One of our scientists happened to find out that the University of North Carolina was working on a novel way to produce olefin polymers with a new catalyst," says Gruetzmacher. "We thought this was pretty

exciting, so we came onboard to help develop it into what eventually became our Versipol™ catalyst. We then took a hard look at how to bring it to market-should we produce it ourselves or license it out? After doing our own assessment, we hired a consultant for an outside opinion and determined that there was a potential multi-million dollar market here, perfect for licensing out without incurring the cost of production facilities. Today, Versipol is a pure licensing product with no manufacturing by DuPont involved."

### **Eastman Global Technology Ventures**

Eastman is another major international company with an active intellectual property portfolio. Recently the company conducted two successful tech transfer deals in India, one involving the manufacturing process for enteric coatings for the pharmaceutical industry. Eastman manufactures products for this market and has determined that licensing the manufacturing technology overseas was a good way to derive additional value from its intellectual assets. William Heise, director, licensing for Eastman Global Technology Ventures, warns that any company looking to be similarly successful must be willing to commit the resources. "We did our homework and found that India has great potential for licensing due to technical competencies, current import/export regulations, the population in general and the improving economic climate."

"I cannot stress the importance of resource allocation," states Heise. "It's easy to underestimate what is required for efficient technology transfer, including the cost. All this must be carefully considered as the terms of the technology deal are being negotiated." Heise added that Eastman assigned a specific technical liaison that coordinated a visit to the United States for key Indian personnel and was responsible for handling all questions and related documentation. The liaison also assisted with the start-up of the new manufacturing facility in India.

### **Proctor & Gamble External Business Development & Global Licensing**

With over 27,000 worldwide patents to its name, Procter & Gamble takes an aggressive stance toward developing its IA potential. P&G's Wally Murray, manager, External Ventures and Global Licensing believes it's important for companies to pursue licensing and tech transfer opportunities when technologies are brand new, not when they have peaked and the owners are looking to breathe new life into them by exploiting new applications and markets. Murray believes that too many companies ignore their patents, using them merely as defensive legal tools instead of as assets that should be exploited and mined for profit. As a result, P&G internally commercializes only about 10 percent of its technical innovations, the rest are managed largely for externalization-either sold, licensed or donated.

"New technologies are exciting," states Murray. "People are motivated to offer them and others are excited to acquire them because they're new and have enormous potential. People are less likely to want old stuff because it's old and out of date. Technology is a depreciating asset, exploit it while it's young."

The key, states Murray, is to find good partners and let everyone make money. "It has to be a win-win

situation for all parties involved," adds Murray. "Often companies have the wrong people selling technology. You need someone skilled at negotiating, who can recognize the value of the technology, make the deal, and then move on to the next one. People who are too close to the development of the technology often have difficulty viewing it objectively."

Murray added that companies that make engineered materials need to examine what they have to offer and decide whether to sell it as a raw material and make less or spend more, develop it further, sell closer to the end user, and make more. A case in point involves a new plastic developed by P&G.

According to Dennis Grubbs, P&G's Associate Director, External Business Development and Global Licensing, P&G acquired a chemical from a university for use in plastic manufacturing. Called a single site catalyst, this chemical causes a chain reaction to make flexible polypropylene plastic. The new technology enabled the material to be temperature resistant, more flexible and three times less expensive to manufacture. "We initially acquired this technology for our baby care division," says Grubbs. "However, we saw it might have applications in other industries, such as packaging, roofing, and adhesives. We're in the consumer goods business, so we decided to look at externalizing its development."

According to Grubbs, P&G subjected the new technology to the same basic, rigorous scrutiny it uses with all its products. "We use the same valuation techniques and screening tools all our business units use. They may vary a little from unit to unit, but the process is basically the same—we examine every technology and separate them into three groups: suitable for internal commercialization, external commercialization, or for abandonment because it's not worth the cost of maintaining a patent."

In this case, P&G decided to seek outside partners to develop the technology further. Both Grubbs and Murray agree that by taking on external partners the company can share the risk and rewards, keeping development costs down while still making a profit. "Yes, you share your profit, but you also share the costs and financial risks, and you can shorten the development cycle by bringing in partners with targeted expertise," comments Murray. Currently P&G are in discussions with potential partners regarding the development of its single site catalyst.

In the past, companies have shared their intellectual property by networking with their competitors or partners in the same industry. Unfortunately, this hit-or-miss process is slow and inefficient. Moreover, it does not lend itself to cross industry or international communication. It simply is not efficient enough for today's fast-paced economy. The answer lies on the Internet.

Technology transfer through online marketplaces like yet2.com is only beginning to enter the mainstream of the petroleum community. As intellectual property markets have emerged that provide easy and secure access anywhere at anytime, corporations have begun to realize that the potential for profit outweighs concerns about safeguarding intellectual property.

With the Internet effectively removing geographic and market barriers, companies are communicating with other companies worldwide in a variety of industries to license their intellectual property.

Technology transfer is breathing new life into corporate development and helping companies take advantage of their innovative technologies.

**This is the first of a two-part feature. Part 2 deals with how to accomplish the objectives described in Part 1.**

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