

Consider a variety of patent strategies to protect inventions

Using the biotechnology industry as a business model, patent practitioners and investors predict the strength of nanotechnology inventions' patent protection will make or break the success of emerging nanotechnology companies. Investors predict strong and reliable patent protection will be a sign of the companies' profitability. Moreover, companies need to identify with reasonable certainty competitors' patents that can block the companies' product development.

Much like biotechnology patenting strategies in the past, nanotechnology patent strategies initially are expected to be a moving target. Practitioners expect a new body of rules and case law to develop as patent applications move through the US. Patent and Trademark Office (PTO), PTO decisions are appealed, or patent holders sue infringers and cases are decided on appeal.

PTO examiners lacking cross-disciplinary training or training in this new field will influence the resulting patent pool, causing wide variability in the quality or breadth of nanotechnology patents. In addition, patent examiners may find it difficult to identify relevant references because inventors use different terms to define the same nanoproduct. If relevant references are not vetted, the patents will be more vulnerable to a later invalidity attack.

The PTO now applies existing law to new nanotechnology inventions. For example, mere scaling down or miniaturization does not make an invention patentable. Such inventions must

have a specific, substantial and credible utility. Nanomaterials, nanosystems or nanodevices (nanoproducts) are not patentable without a requisite utility, such as nanoparticles for a self-cleaning fabric coating or a nanodevice for a cochlear hearing implant.

Often, the requisite utility of a nanoproduct lies in applications. For example, a gram of nanotubes has no intrinsic value, and thus the applications provide the real value, whether within existing industries or within a newly created industry.

Assuming the nanoproduct has at least one requisite utility and the nanoproduct is novel, an inventor should not ignore patenting the nanoproduct itself, in addition to its applications. The patentee can prevent others from using the nanoproduct without a license from the patentee. Later, if a different inventor finds a new use for the same nanoproduct, that inventor may receive a patent on the method of using the nanoproduct, but the inventor still must license the patented nanoproduct from the patentee. When evaluating a nanotechnology company's patent portfolio, the most valuable patents likely will encompass the nanoproduct. As the field gets more crowded and the number of nanotechnology patents grows, an increasing number of narrower and overlapping patents will result. Some of the companies holding such patents may be required to cross-license.

Another beneficial patent strategy relates to defining the invention in the patent claims broadly, narrowly and somewhere in between. If an opponent attacks the broadest claim as

invalid, the claims of intermediate and narrow scope will provide a fallback position. A very narrow claim to the commercial product can provide narrow, but valuable, patent protection.

New patent strategies have also emerged. Some inventors have the misconception that a nanomaterial, for example, is unpatentable because it consists of an element found in nature or has a chemical formula that is identical to a known compound, for example. Nanomaterials, however, exhibit certain novel properties due to their size that distinguish them from conventional elements or compounds. Patent claims directed to the nanomaterial should be pursued.

One problem encountered in obtaining a patent for a nanoproduct is that many known publications cited against the patentee refer to dimensions of "less than x." Such dimensions include zero and nanoscale dimensions. To avoid this problem, one patent strategy defines the nanomaterial in terms of its novel properties such as having a particular particle size distribution and/or having particular properties that make the nanoproduct unique.

Also, the prods of making the nanoproduct will often differ from methods of making their macro-sized cousins using traditional processing techniques. A patent application should include claims directed to the method of manufacturing the nanoproduct.

Like biotechnology in years past, investment and interest in nanotechnology is reaching a feverish pitch. Much the same way as in the biotechnology revolution, strong patent prosecution will dictate the future winners and loser; as incoming dollars from

investors or customers will rely on the company's ability to protect its inventions. Companies recognizing the importance of patent protection and seeking the best protection will have a leg up in the race.