What, Exactly, is Novel?

Encouraging and protecting innovation investments.

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According to the Oxford English dictionary, Innovation is defined as follows:[a]

Noun
- the action or process of innovating.
- a new method, idea, product, etc.

From a business perspective innovation can be described as: *The process of translating an idea or invention into a good or service that creates value, or for which customers will pay.*

Throughout the various segments of industry there are companies that create something truly unique, companies that innovate by adapting from these unique ideas but still creating something which is novel in its own right, and companies that simply copy these novel concepts or make obvious variations—the flavor and fragrance industry is no exception. These different approaches to what once was called "new product development," each have their merits, their risks and their rewards. However, without real and true innovation, markets and products die.

The companies and organizations within the flavor and fragrance market that really innovate invest heavily in the belief that their investment will yield greater returns in the future. The question is, "As an industry, how do we encourage and protect innovation?"

The Difficulties of Innovation Protections

One way which the industry has looked to protect its investment in innovation is through legal protection. Patenting a product or process should, in most cases, prevent others from directly copying an invention as a patent allows protection to novel discovery. In order to do this successfully, however, the patent must be sufficiently strong to allow it to be defended. This is often a gray area, with many companies filing patents that are weak, but obscured by clouds of rhetoric. This essentially stifles rather than encourages innovation.

This is particularly applicable in the flavor and fragrance industry when a molecule—or, more often, a combination of molecules—is formulated to perform a specific function. There is a great deal of skill involved in formulating a number of products to reach an end point, but is the formulation which is created novel enough to warrant a patent?

These patents are often written in such a way as to deliberately not show what the exact invention is as there is often the opinion that should they directly indicate the exact invention, and only the exact invention, then the competition will adapt the idea and come up with their own variant, and any competitive advantage gained from the innovation process is lost. These vague patents are often self-defeating in that the patent does not offer sufficiently broad protection, as it is often easily replicated and adapted, or so incremental in its thinking that it offers nothing truly novel—one often wonders why a company or inventor bothered to patent the invention in the first place.

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Determining What Should Be Protected

The difficulty here seems to be in a genuine understanding of what, exactly, is novel? If a company creates something slightly different, can that really be described as novel? As far as the use of a material—or combination of materials—in an application is concerned, then *novel* is very difficult to protect, so would the inventor company be better off keeping its technology secret? However, when it comes to finding a new molecule that exhibits novel properties, or coming up with a new synthetic pathway to an old or new molecule, a different situation presents itself.

There are many examples over the last 20–50 years of a chemical being synthesized that creates something truly novel. For example, trademarked materials like Helvetolide and Furaneol from Firmenich, or Ambrocenide and Globanone from Symrise,

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Innovation protection is a critical issue facing the flavor and fragrance industry. How should protections be defended, while ensuring legitimate innovations continue to benefit the market? Join the conversation in the *Perfumer & Flavorist* (*P&F*) Magazine group on *www.linkedin.com.*

[a]*www.oed.com*

which were not known to perfumers or flavorists prior to their introduction into the market, have offered a unique note or created a novel solution that has benefitted the industry as a whole. Patenting these wonderful creations affords protection to the companies that, no doubt, synthesized hundreds if not thousands of molecules, making incremental changes to a chemical structure, before coming across that one molecule that stands out and meets the criteria that a perfumer or flavorist is looking for.

Unfortunately, there are few "eureka" moments in research, and success comes from a combination of perspiration and persistence, with a small amount of inspiration thrown in. The same is true from a process innovation perspective. While there are many ways to make a molecule, often by making incremental changes to a process, or by adapting a reaction that is known to work well under one set of physical and chemical conditions and then optimizing by even more incremental changes, innovators often end up at something that is unique and seems far away from the initial idea. For example, imagine that a company patents a unique method to synthesize a common molecule such as L-carvone, rose oxide or sulfurol. While that molecule may not be novel, the method used in its synthesis is completely different from the traditional, previously reported methods and offers advantages not only to the producer but also to the customer. Are these inventions any less valuable than creating a completely new molecule? Not in my opinion.

Should these inventions be legally protected? Sometimes this decision comes down to the ability to enforce legal protection. If a new molecule is invented, a composition of matter patent can be filed, which is relatively cut-and-dry in terms of ability to enforce: if another company sells or uses the molecule, it is fairly easy to identify this and defend the patent. If what is invented is a process for making a molecule, then the ease of defending the patent and making the patent enforceable comes down to the ability to trace a particular impurity or other chemical signature of the process, but again this can be identified and therefore defended.

How Can Innovation Be Protected?

So it seems that novel molecules, applications and processes should be protected and can be. The question is how and where the industry can protect them. The patent laws in various countries and regions are not uniform, and so the level of protection being offered differs. For example, it is often difficult to defend patents granted in developing economies, which lack decades of patent case law involving competing rights of domestic and foreign companies. There is a tendency in those economies to allow miniscule incrementalism, or even blatant copying of a product or process, if it favors the domestic company based in one of these countries. Should the original inventor therefore only protect their invention in the regions in which the legal system defends innovation? To do this may involve a legal challenge, not against the manufacturer but against the distribution channel into the country, or the user of the material, who is often also a customer of the original innovator, rather than a direct competitor. This, then, causes a potential public relations problem, as by causing disruption in the market the litigating company, which is only looking to defend its invention and investment, could be perceived as being negative and preventing competition. This may prevent the innovating company from attempting to defend its patent, and ultimately from financing future innovation.

Another important consideration is how a western company determines if it is potentially infringing a patent by purchasing from a supplier, or its affiliate, that is copying protected technology? It is common practice for raw material suppliers to buy and sell from and to one other. How do companies know if there is an agreement to supply material? Only by communicating to the market the area of innovation, and that this is protected, can ethical companies make the decision to focus their supply chain only with those companies that are truly innovating and protecting their innovation, and not with those companies that are simply copying protected technology.

The Risk of Doing Nothing

This is where I believe the industry must be more holistic in its view and have a longer term approach. Allowing companies to copy the products and processes of those that have invested heavily in innovation may give a short term advantage by allowing cheaper materials to be accessible, but the overall effect will be simply to stifle innovation in the long term, which benefits no one. The users of materials must take a more moral stance as a whole, and protect those companies that take risks and innovate by showing loyalty to those companies that invest and not defecting to the cheaper alternative that has been developed by blatantly copying a process or product.

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