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Intellectual Property—Part II

Strategies for integrating a strong Intellectual Property review into New Product Development processes

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Even well-implemented New Product Development (NPD) processes can fail if Intellectual Property (IP) risks and opportunities are not assessed. By delaying this review, a company may run into unanticipated risks, forfeited IP protection, and other failures that are painful to accept after an otherwise successful NPD process. In the second article in this Visions series, the author explains how such failures can be avoided and presents strategies for integrating IP review into NPD processes so that innovative companies can seize IP opportunities and manage IP risks.

Some companies are “Intellectual Property savvy.” These companies aspire to develop products that will be superior to existing products, that will not infringe on the Intellectual Property (IP) rights of others, and that will enjoy the valuable competitive advantages brought by IP protection. But just how do IP savvy companies accomplish this? And how can other companies ensure that this result is a natural byproduct of their New Product Development (NPD) processes?

There is an emerging model for doing this, which weaves the review of IP risks and opportunities into NPD processes. But while IP is widely recognized as a critical aspect of effective product development, many companies struggle with the implementation of integrated IP review.

Dangers of delayed IP review

To fully appreciate the role of proactive IP review, let’s look at some of the problems that may result from delay.

Unanticipated IP risks

Delayed IP review deprives the NPD team of the opportunity to manage the IP risks that arise from the patent, trade dress, trademark, and copyright rights of others. Failure to identify those risks makes it impossible for the NPD team to avoid them proactively. The late identification of intolerable IP risks can put a halt to the development effort, and unanticipated infringement risks can be very difficult to explain to management.

Forfeited IP rights

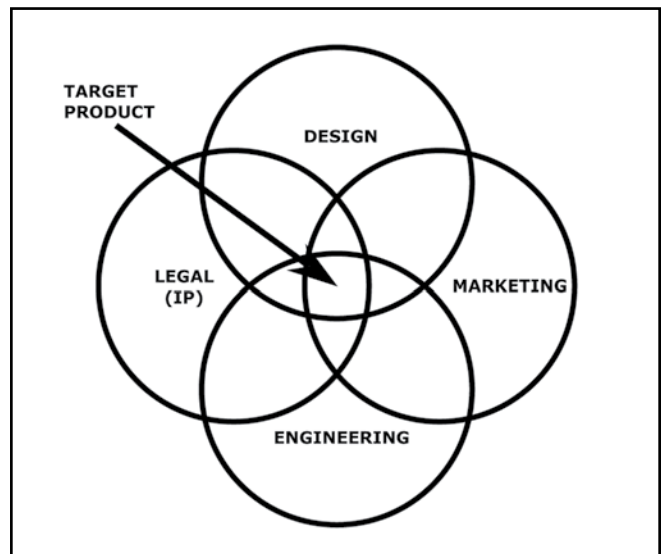
Delay also deprives the NPD team of the opportunity to develop a thoughtful strategy for comprehensive IP protection. Without proactive IP review, the NPD team will have little chance to develop and execute a plan that utilizes all available modes of IP protection. And because steps must be taken to secure patent rights before certain events that can bar protection, delay can forfeit valuable IP rights.

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Process inefficiencies

Addressing IP-related matters only as an afterthought—perhaps on the eve of product launch—disrupts the NPD process. Late IP review often leads to a hurried patent search and analysis. All too often, the late

Exhibit 1: Emerging Model for Integrated NPD



SOURCE: Joshua Cohen

Criteria of the design, engineering, marketing, and legal (IP) disciplines overlap in cross-functional teams to identify target products.

discovery of infringement risks results in eleventh-hour design changes and a general atmosphere of uncertainty.

Though most companies now recognize the harms of delay and the corresponding benefits of proactive IP review, the challenge facing management lies in identifying the best way to integrate IP review into their NPD processes. This requires an identification of the actions that need to be taken for a proper IP review; and, perhaps most importantly, the appropriate timing of these IP-related actions.

How IP review is best integrated

The trick to integrated IP review is just that—integration. And the best way to begin is by establishing cross-functional NPD teams and integrating IP counsel into those teams.

Forming cross-functional teams

Every NPD process defines a social system in which design and development work is carried out.¹ In interdisciplinary NPD processes, that social system includes cross-functional teams formed of individuals from key disciplines who

IP Case Study: Lessons Learned

Development of a Surgical Instrument

The benefits of integrating an Intellectual Property review into NPD processes are perhaps best illustrated by example, and the following hypothetical contrasts the inefficiencies of delayed IP review with the advantages of a proactive approach. Though this example involves patent risks and opportunities, the illustrated principles apply to other forms of IP as well.

The Scenario—A six-month development process is culminating in a next-generation surgical instrument. The instrument has a handle with an injection-molded housing, the operation of which is critical to the instrument's performance. The development project now nears completion, the product launch date has been broadcast to marketing, an inventory of instrument components is on order, and custom mold tooling is being completed.

The Problem—At this late stage, IP counsel is asked to review the proposed instrument to confirm that it is patentable and free from infringement risk. In an urgent study, IP counsel discovers that a rival competitor holds a patent that claims features of the instrument's handle. IP counsel also learns that the proposed instrument had been

disclosed to component suppliers and customers without nondisclosure agreements in place.

A Difficult Solution—Because of the significant infringement risk posed by the competitor's patent, the decision was made to redesign the instrument. But this required the development team to sacrifice the custom mold tooling, postpone the launch date, and repeat a significant portion of the development effort. Though better late than never, the late IP review left a significant risk undiscovered and cost the development team in terms of expense and time.

Lessons Learned—Though the risk of patent infringement was ultimately avoided, important lessons are learned. First, IP review should be integrated into the NPD process to ensure that IP-related tasks are completed and that those tasks are completed at the appropriate junctures. Second, infringement risks cannot be managed proactively unless they are identified early in the NPD process. Third, comprehensive IP protection cannot be secured (and the loss of IP rights cannot be prevented) unless strategic IP protection efforts are built into the NPD process.

collaborate throughout the development process. These teams typically include representatives from the design, engineering, and marketing disciplines.²

Such interdisciplinary NPD processes have been adopted widely in industry. In fact, almost 80 percent of best performing business units utilize cross-functional NPD teams.³ The pervasive use of interdisciplinary NPD processes is further reflected in academic programs, like the Integrated Product Development program at Lehigh University, which is structured to prepare students to succeed in cross-functional NPD teams.⁴

Integrating IP counsel

An emerging NPD model takes interdisciplinary NPD processes one step further. It formally integrates IP counsel into cross-functional teams and layers IP criteria with those set by the design, engineering, and marketing disciplines (see Exhibit 1 on page 12).

As a member of the NPD team, IP counsel ensures that defined steps are taken to identify and then manage IP risks, and to strategize and then secure comprehensive IP protection. Like other members of the NPD

team, IP counsel has predefined deliverables that must be completed before the project can progress.

The role of IP legal counsel

As an NPD team member, IP counsel makes a number of key contributions that are described here in more detail.

State-of-the-art patent search

A critical contribution of IP counsel is the early identification of patent literature (patents and published patent applications) that helps the NPD team to understand the state of the art of the relevant product category. Over seven million utility patents describe existing technical innovations, more than half a million design patents illustrate ornamental product configurations, and most pending utility patent applications are now published

eighteen months after they are filed. The result is a massive collection of public patent literature describing past and current innovations.

IP counsel conducts a “state-of-the-art” search for patent literature using the Patent Office’s detailed classification system, which assigns patents to searchable “classes” and “subclasses” based on technology for utility patents and ornamental features for design patents.⁵ Patent searches using this classification system are generally superior to searches conducted by keywords alone. Where a prolific inventor or prospective competitor is known, their patents are of particular interest to the NPD team. The search should also encompass a company’s own patent portfolio, which can provide an additional starting point when looking into new products or expanding into new business opportunities.⁶

The results of the state-of-the-art search are synthesized by IP counsel and presented to the NPD team well before the product is fully defined. This patent literature will help catalyze ideation and guide the team’s early concept development efforts. The patent literature will also identify general areas of infringement risk.

Screen out risky product concepts

When relevant patents are identified, it is critical to screen out risky product concepts that are in danger of infringing the patent rights of others. Functional features of certain product concepts may come too close to the exclusive rights claimed in a utility patent, and ornamental features of product concepts may resemble a design claimed in a design patent.

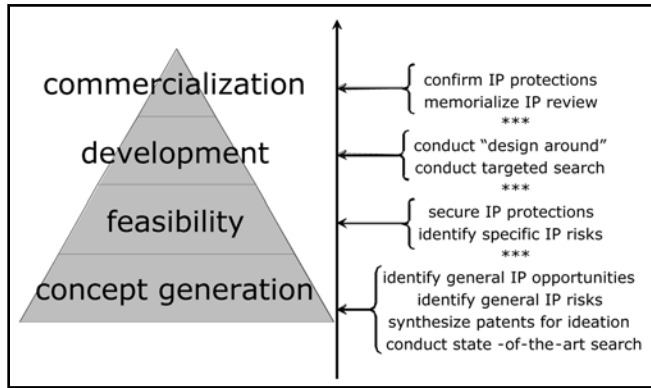
Proactive elimination of risky product concepts streamlines the NPD process. Such early filtration of product concepts moves the NPD team away from concepts that should not be pursued, allowing the NPD team to focus its valuable resources on surviving product concepts.

Targeted patent search

In contrast to the state-of-the-art search, a “targeted” search of the patent literature is conducted by IP counsel to identify patents specifically relevant to the product concept ultimately selected by the NPD team for development. Once the features of a selected product concept are nearly “frozen,” those features can be searched to identify any specific patent infringement risks that they may bring.

“Delayed IP review deprives the NPD team of the opportunity to manage the IP risks.”

Exhibit 2: The Integrated NPD Process



SOURCE: Joshua Cohen

NPD processes typically involve four sequential phases—concept generation, feasibility study, product development, and commercialization—and such processes are most effective when IP-related tasks are scheduled at each of these phases.

Using the Patent Office’s classification system and other search strategies, this search targets unexpired patents and published patent applications that claim exclusive rights to features of the product under consideration. The patent documents identified by this search are then reviewed by IP counsel to identify those of particular relevance to the proposed product design.

Design around rights of others

Armed with the information gained by the patent searches, IP counsel leads a “design around” effort for any aspects of a product concept at risk of infringing the patent rights of others. To do so, IP counsel evaluates the scope of protection provided by a relevant patent and helps the NPD team to navigate around that scope by adjusting the product concept.

The “design around” process therefore identifies design modifications to reduce or eliminate infringement risks proactively. Though this process is driven by defensive motivations in the context of risk management, it very often leads to new innovations and opportunities to protect those innovations.

Secure comprehensive IP rights

IP counsel sets strategies to secure comprehensive IP rights, utilizing all available modes of IP protection. For example, because the commercial successes of consumer products depend not only on how they function but also on their aesthetic appeal, IP counsel can protect functional product features with utility patents and use the exclusive rights afforded by a design patent to help secure the brand identity needed for trade dress protection.⁷

IP protection is sought by IP counsel not only for the preferred concept selected by the NPD team but also for the alternative concepts generated

by the NPD team, concepts that may later be preferred by the company or that may present viable alternatives for competitors. By obtaining exclusive rights to all of the best solutions to the product development challenge, commercial advantages over competitors are broadened.

IP counsel ensures that IP protections are in place prior to product launch, including foreign patent protection where a product will be sold or made overseas or if value can be derived from licensing the product innovation to foreign companies. IP counsel will also ensure that steps have been taken to secure other IP rights, including trademark, trade secret,

and copyright protections, as appropriate. And upon product launch, IP counsel initiates procedures for monitoring the activities of competitors and policing the IP rights generated by the NPD team.

Memorialize IP risk assessments

It is prudent for IP counsel to memorialize the reasons why a proposed product does not infringe on any identified patents of particular relevance. This may require the preparation of a written legal opinion with a detailed legal analysis of the patent and its history at the Patent Office.

Documentation of a good faith belief that the product does not infringe on the IP rights of others can help shield the company from any later accusations of bad faith and willful infringement. Such a shield is especially valuable in the event that the product is actually found to infringe upon patent rights. In litigation, damages are assessed for that infringement; otherwise, increased damage awards may be levied.

When IP-related tasks are best performed

While identifying the IP-related tasks that need to be completed is a strong start, the question of when those tasks are handled is of equal importance. Delaying these tasks introduces inefficiencies, unanticipated risks, and compromised IP protection; but IP-related tasks can also be handled too early. For example, completing a targeted patent search well before a product design is “frozen” means that later-added features will not be searched and could introduce new and unanticipated risks.

It is therefore critical to perform IP-related tasks at appropriate junctures in the NPD process. Additionally, IP counsel should be expected to complete specific deliverables at each NPD process stage to ensure that IP tasks are completed before the NPD process progresses.

Though New Product Development is aptly viewed by companies as the transformation of market opportunities into commercial products,⁸ every company approaches this transformation differently. Nevertheless, virtually all effective NPD processes are similar in that they progress through defined stages from the inception of the development effort to the launch of the resulting product.

Whether a product design effort is considered incremental (such as cost reductions or product improvements), platform (next-generation products), or breakthrough (products new to the company or the world), NPD processes are generally structured in sequenced stages. The well-known Stage-Gate® process exemplifies a five-stage, five-gate model.⁹

Each NPD process must be tailored specifically to the culture of the company using it, but NPD processes generally involve four sequential phases: concept generation, feasibility study, product development, and commercialization. NPD processes with integrated IP review are most effective when they schedule IP-related tasks during each of these phases. See Exhibit 2 on this page.

Concept generation

In this early phase, product concepts are generated and selected based on input from the NPD team. IP-related activities in this phase foster ideation and facilitate concept review.

The “state-of-the-art” patent search is conducted early in this phase by IP counsel to expose the NPD team to the prior efforts of others, thus catalyzing ideation. This is, in fact, a fundamental objective of our patent system, which encourages inventors to promptly and thoroughly reveal their innovations so that they can be improved upon by others.

The state-of-the-art search also reveals general areas of IP-related risk early in the NPD process, including prospective infringement risks, future competitors, and potentially blocking patents owned by others. IP counsel’s early identification of risk areas in the concept generation phase helps the NPD team to navigate IP minefields.

The state-of-the-art search can also reveal fruitful IP-related opportunities. Partners or merger targets may be identified, and the patent literature will help the NPD team to develop proactive strategies for acquiring IP

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rights from others (by license or assignment) and for identifying technologies that are already available for all to use.

Feasibility study

While marketing asks in the feasibility phase whether it is feasible to promote selected product concepts, engineers and designers consider whether it is feasible to develop the concepts within performance, aesthetics, and cost constraints. IP counsel answers the important question whether the product concepts (generated earlier in the concept generation

phase) are *legally* feasible.

In this phase, IP counsel helps the NPD team to screen out any risky concepts or to “design around” an identified infringement risk. These efforts are best made in this early feasibility phase to avoid late-stage product revisions.

IP counsel also leads the team’s efforts to protect selected product concepts. By taking proactive steps to file patent applications

in the feasibility stage, patent protection is sought before concepts are shown to prospective suppliers and customers. Predating such disclosures preserves foreign and domestic patent rights. If a design concept must be disclosed for Voice of the Customer (VoC) review or to communicate with vendors, for example, IP counsel prepares Non-Disclosure Agreements for use by the NPD team.

Product development

After IP counsel has helped the NPD team eliminate risky product concepts in the feasibility phase, a product concept acceptable to all members of the NPD team can be selected for development. Because the product is now well-defined, the targeted patent search is conducted by IP counsel to identify any patent claims of specific relevance to the features of the proposed product.

If an infringement risk is identified, IP counsel continues the “design around” function by suggesting design modifications that place the ultimate product outside the scope of the patent rights of others. This proactive identification and management of infringement risks reduces late-stage surprises.

Commercialization

In the commercialization phase, the now completed product design is readied for launch. IP counsel memorializes the assessments made in earlier phases and ensures that IP protection has been pursued.

Before product launch (and often before any significant capital expenditures are made to ready the product for launch), structured NPD processes require formal legal clearance and confirmation that any risks associated with the product launch are tolerable. This often requires the preparation of one or more written legal opinions.

Before launch, IP counsel also ensures that IP protections have been initiated and are adequate to protect the product comprehensively. Because designs inevitably evolve between the time they are conceived and the time they become frozen, it is important at this juncture to compare the final product design to the IP protections being pursued to confirm that they are on target. And upon product launch, IP counsel will initiate procedures for monitoring the activities of competitors for possible infringement of those IP protections.

Integrate Your IP review

NPD teams and the products they create benefit significantly from integrated IP review. A truly integrated process enables the NPD team to complete predefined IP-related tasks and to do so at the appropriate times, thus seizing IP opportunities and managing IP risks proactively.

Integrated NPD, therefore, facilitates the development of products that not only meet the criteria of the design, engineering, and manufacturing disciplines but that also meet the standards IP standards—thus ensuring more long-term success in the marketplace.

Joshua L. Cohen is an attorney and shareholder of RatnerPrestia, a law firm specializing in IP matters. He is also President Elect of the Greater Philadelphia Chapter of PDMA.

Endnotes

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