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POINT OF VIEW

Product Companies Must Shift Patent Strategy as Inventions Go Digital

Companies looking to develop projects with digital differentiators need to shift to an IP strategy that includes both freedom-to-operate and freedom-of-action.

Paul Germeraad

OVERVIEW: As traditional product companies move to offer digital products and services, they need new patent strategies. A shift to include both freedom-to-operate and freedom-of-action IP strategies will enable them to cost-effectively create a competitively advantaged position for both their core hardware and new digital/software business lines.

KEYWORDS: Intellectual property, Freedom of action, Freedom to operate, Prior-art, Digital products

As traditional product companies offer "digital" interfaces and controls, they need new patent strategies. Manufacturing companies, specifically, should change their patent strategies to adjust to the intellectual property (IP) realities of digital technologies.

How Physical and Digital Products Differ from an IP Perspective

Companies making and selling physical products have traditionally relied on patents to block competitors from offering the same or very similar products (Rivette and Kline 2000). This strategy has, and continues to, work well for physical products for which there are few prior-art patents found by the R&D teams developing the new product. The time from R&D ideation to commercialization is typically measured in quarters or years, and the courts have ordered competitors with infringing products to stop making and selling the offending product. These patents provide strong competitive advantage.

High-tech software and IT-based companies operate in a patent prosecution and enforcement environment that is much different. These types of products and services rapidly evolve: R&D teams developing the new product may find hundreds to thousands of potential prior-art patents; the speed of new product and service introductions outpaces the time required to obtain and enforce patents; and instead of ordering defendants to stop making and selling an offending product, the courts have instead awarded damages and patent royalty fees, and allowed the offending company to stay in business. Blocking patents in this competitive and technological context is much less valuable.

Given these dramatically different operating contexts, companies that make physical products with digital innovations need to shift from a strategy of *freedom to operate* to one of *freedom of action* for their digital products. A patent strategy based on freedom to operate means that the company relies on a few strong, durable patents that bestow exclusivity in a business area. A patent strategy based on freedom of action means that the company seeks enough patents relevant to the product being developed to deter patent lawsuits. If the company has a sufficient patent portfolio, the company will have sufficient size and quality of patents to force cross-licensing negotiations on favorable terms if a competitor does sue. The competitor will consider a lawsuit an exercise in "mutually assured business harm," and if a court fight ensues, the rational business choice between the parties becomes a negotiated "cross-license" without financial penalties.

IP Processes Need to Support a Shift in Strategy

To position themselves to win (or at least break even) in the digital space, companies should shift two very important IP processes. First, they should ensure that project teams have a defensible process for *handling potential prior-art* (Davis and Harrison 2001) that senior management supports. When R&D teams have hundreds to thousands of potentially

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relevant patents to review—an exercise they cannot undertake practically or cost effectively—they should not be required to attempt to do so. This stance increases the speed of R&D efforts, decreases the cost of prior-art searching, and reduces the chance of any deliberate copying of other's work.

The second very important IP process is a process for *portfolio building*. In high-tech software and IT-based business environments, the R&D teams must focus on obtaining large numbers of patents covering a multitude of customer features. A large number of patents is needed because, in patent cases, courts often award damage amounts based on relative patent counts of relevant patents held by each party. The court sets the damages and patent royalty fees, and it requires the losing patent owner to license the technology at a fair and reasonable royalty (FRAND). Thus, the product team's goal is to create as many patents, of almost any quality, that can be used to increase the royalty and damage award. In the extreme, the sheer preponderance of patents can reduce the profitability of business competitors through cross-licenses to the point where they no longer choose to participate in the business (Harrison and Sullivan 2011).

Note how different these approaches are from the traditional product company strategy (Germeraad 2020). I provide additional distinctions between the two strategies (Table 1).

Challenges for Manufacturers

The two pivotal shifts in IP processes are complex for traditional companies engaged in digital initiatives. They need to build patent creation and management processes akin to those of software and IT-based companies while simultaneously maintaining their existing patent creation and management processes. They need to do the following:

1. Acquire IP employees with digital skills and abilities, capable of creating and managing patents in a digital environment.
2. Build patent committee teams that are skilled in the creation, acquisition, and management of patent portfolios in the digital space.
3. Use internal/external patent counsel experienced in obtaining "digital" patents.
4. Educate senior management about the differences in the way patents do and do not protect their digitalization initiatives.

Failure to properly build out parallel patent processes will increase the traditional companies' costs because they will end up spending money on early-stage patent analysis that will not generate a business benefit. In addition, friction between technology, business, and IP managers on the "right way" to be managing IP is likely without clarity about the differences. Finally, upon product launch of their digital products, the sustainable advantages of their digital offerings are likely to be compromised.

Why Manufacturing/Product Companies May Resist Patent Strategies to Adjust to the IP Realities of Digital Technologies

There are four primary arguments against changing patent strategies:

1. R&D teams may miss an opportunity to license fundamental work because they didn't look at all the prior-art.
2. Such a change will confuse employees used to having only one easily understood IP process in the company that everyone follows.
3. The approach will increase the corporation's cost of filing and maintaining incremental patents.
4. The corporation will have to spend more money to manage and maintain patent counsel skilled in both freedom to operate and freedom of action processes.

Each of these arguments has merit from the perspective of cost. But the costs of improperly protected IP dwarf these concerns.

The biggest concern is that inventors may miss the opportunity to patent fundamental work. But full-feature IP software that maps patents onto landscapes and creates ranked lists of key patents enables R&D teams to hone in on patterns of technology evolution and easily focus their prior-art reading on just a few key patents, and to consider these as licensing targets. Doing so dramatically reduces the chance that an R&D team would miss an opportunity to license fundamental work.

TABLE 1. Summary of the distinctions between the two types of patent management environments

Distinctive Elements in the IP Process	Product R&D Team Environment	Digital/Software R&D Team Environment
Typical jargon associated with the environment	"Freedom to Operate" "Ability to Exclude"	"Freedom of Action" "Freedom to Participate in the Market"
Business goal	Product/market exclusivity	Market share for your product
Product development posture	Each product often seeks a technical breakthrough position.	Each product often seeks a technical "next generation/incremental" position.
Typical executive viewpoint on what IP protection offers the new product	We can "own and control" this product/market.	We can threaten "mutually assured destruction" if sued by competition.
When is a patent search and IP clearance of prior-art done?	Throughout R&D process, linked to Stage-Gates/Agile sprints; ideally continues post-launch	Generally not done, possibly done reactively to a specific demand letter by competitor.
What is the scope of the patent search and IP prior-art clearance?	Specific patent search done, ideally worldwide, usually easier to search because of the small number of relevant prior-art patents	No specific patent search, but general competitor IP portfolio volume/scale/tech areas are studied and understood.
Typical IP landscape found by the R&D project team patent search	Few patents in product area	Many thousands of patents per product area
Effect of patents known by the R&D project team	Patents may make-or-break product development team's efforts.	Patents rarely define product development team's efforts.
IP licensing involvement	Seek out specific licenses, where needed, to secure complete freedom to offer product.	Broadly cross-license within industry to secure a "mutually assured business harm" capability.
If it comes to litigation, the goals are:	Litigate to exclude. Often you can get complete exclusivity and injunctions against others to stop them making or selling their products.	Litigate for market share. Litigation rarely excludes; often broad portfolio cross-licenses occur in industry arising from a negotiated settlement
Litigation outcomes	Competitor excluded from marketplace (injunction)	Competitor typically pays FRAND royalty rates and some damages.

It is also true that employees that are used to having one easily understood IP process may be confused by the need for two processes, but the logic of parallel processes is compelling. The differences in context overwhelm the convenience of a single process. Education about the reality of patents in the digital world can address this concern. Education can be combined with modification of employee on-boarding materials related to IP and annual IP training updates.

The cost of filing a larger number of next-generation and incremental patents is a real concern. This cost can be largely offset, however, by disciplined patent prosecution. The use of service provider analytics can highlight whether prosecuting attorneys are spending inappropriate amounts of time filing simple improvements. The use of patent pools and business agreements that limit patent risk among major competitors can also keep patent maintenance costs in line.

Hiring IP staff well-versed in digital patents can also be a real challenge. Outsourcing of patent counsel to either freedom-to-operate or freedom-of-action methodologies allows the best use of each counsel's skills. Overseeing the outsourced patent counsel work can be the responsibility of the internal patent committee chairperson, or it can be delegated to an external IP strategy service provider skilled in both freedom-to-operate and freedom-of-action strategies and management.

Conclusion

A shift in strategy to include both freedom-to-operate and freedom-of-action IP strategies is imperative for companies seeking to develop products with significant digital differentiators. This will allow traditional companies engaged in digital initiatives to cost-effectively create a competitively advantaged position for both their core hardware and new digital/software business lines and to ensure that it is sustainable. Clearly communicating the strategies and educating the R&D, manufacturing, sales, and marketing leadership in how each strategy works will allow each functional role to do its part in protecting the company's IP assets against competitors.

References

Davis, J. L., and Harrison, S. S. 2001. *Edison in the Boardroom*. New York: John Wiley.

Germeraad, P. 2020. IP strategies vary by business segment (R&D and IP game types). Business Innovation Management. https://businessinnovationmanagement.com/2020/01/08/ip-strategies-vary-by-business-segment-rd-and-ip-game-types/

Harrison, S. S., and Sullivan, P. H. 2011. *Edison in the Boardroom Revisited: How Leading Companies Realize Value from Their Intellectual Property*. New York: John Wiley.

Rivette, K. G., and Kline, D. 2000. *Rembrandts in the Attic*. Brighton, MA: Harvard Business School Press.

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