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A Practical Approach to Innovation Mining: How Employee Contests Can Help Tech Companies Develop New Products and Services

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Overview

In today's fast-moving and competitive market, a technology company must be able to introduce a new product or service (an "Innovation") quickly to the market in order to stay ahead of its competitors. Traditionally, the steps for a company to outpace the market include assigning a research team with the task of conceiving the Innovation, determining whether the Innovation can be successful in the marketplace, transferring the technology to a development team to develop the Innovation, assigning a sales team to sell the Innovation to clients, and further transferring the Innovation to an implementation team to implement the Innovation at a client site.

This customary method for introducing new products or services requires long lead time and may have additional disadvantages. First, the involvement of several teams to bring an Innovation to market may be very time-consuming, thus delaying the launch date to introduce new products or services. Second, by relying on a research team for Innovations, the company may miss out on other resources available to it, such that the next great idea may not be coming from the research team but from employees working in other company functions. For example, an implementation team member may have deep understanding of customer needs and great insight on how to address these needs. However, since conceiving Innovations is not considered part of his or her job description, there might not be sufficient incentive for such employee to bring his or her idea to the company decision-makers. Not tapping all employees for ideas could result in lost opportunities for the company. Finally, the passing of responsibility from the research team to the development team, to the sales team, and to the implementation team does not create an environment of ownership for the Innovation. Once the

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research team hands off the Innovation to the development team, its job is done, and the team is moving onward toward the next Innovation. Likewise, after the development team finishes the final design, it moves on to the next project after handing off the final design to the sales and the implementation teams.

While technology companies still do need a traditional think-tank and research-group composition of highly innovative individuals, those companies should consider tapping all their employees for great ideas. As mentioned, company employees who are not hired to innovate for the company may have great ideas but may not have the incentive or the means to showcase their ideas to the company decision-makers. Several companies have patent programs in which employees can submit their ideas through an online portal or by sending a completed Innovation disclosure form to the patent department. These submitted ideas are typically reviewed by a patent committee, comprising patent attorneys and technical experts, to determine the patentability of the ideas. These traditional patent programs for Innovation mining are used by many companies, but it is sometimes difficult to motivate employees to submit their ideas, and the patent committee may not appreciate the market significance of the submitted ideas. The submission of an Innovation disclosure form is only recognized by the few people on the patent committee, and the idea is often acknowledged or publicized outside the patent department only after a patent has been granted. Furthermore, the patent committee may review a submitted idea only for the patentability of the idea, not necessarily for the marketability of the idea. Therefore, a great idea may not be recognized by the patent committee simply because it is not a patentable subject matter[1] or is not a significant technological advancement.[2] There needs to be a mechanism for all employees to submit their ideas, for the company to recognize all great ideas, and to provide an incentive for the employees to participate in the idea-submission program.

Rather than relying solely on a traditional research team to generate new ideas and/or submission of Innovation disclosure forms to a patent committee, we propose an additional method to mine Innovations from employees. We are writing this article to share some of the best practices and analyses we have formulated as the result of working together and individually on programs created to incentivize and implement employee-generated ideas and to provide our insights on how companies can successfully encourage Innovations and fully implement these ideas.

Internal Employee Contest

A great way to mine Innovations from all company employees is to hold periodic internal employee Innovation contests, for which employees can submit their ideas. These ideas can be reviewed and judged by key company decision-makers, not only for patentability of the Innovations, but also for market impact the Innovation can create for the company. Since all the ideas are collected and presented to the company decision-makers at the same time, the disruption for these decision-makers to participate in the review and judging process can be minimized.

Incentives for participating in contests are often monetary awards or other valuable prizes. However, monetary awards may not be the most effective award system for an employee Innovation contest, since often after the contest, the winner no longer has continued involvement in the Innovation. An alternative award system that should be considered is to grant the winner with project manager responsibilities for further development and implementation of the Innovation with sufficient seed money allocated to implement the Innovation. Such an award system allows the winner to have ownership of the Innovation throughout the entire process from conception to implementation. This ownership of the Innovation by the winning employee throughout the various implementation stages provides the employee with the satisfaction of managing the project all the way through its life cycle and the ability to demonstrate all facets of his or her abilities to his superiors and management. This also alleviates a main employee complaint, which is others taking credit for his or her work or ideas. This award system also provides great benefits to the company. There is not the need to transfer the Innovation from the inventor to the developer and then to the implementer, thus allowing the resulting product to be brought to market in a shorter time frame.

Since the winner is not only the person who conceived the Innovation, but also the one who is expected to manage the Innovation all the way to implementation, the contest submission should include a technical writeup of the Innovation, as well as a plan for bringing the Innovation to market. It is understandable that the inventor may not have the expertise in all facets of the implementation process (for example, the inventor may not have expertise in marketing a product or working with a vendor), so assistance from others in the company may be needed while still allowing the inventor to have ownership of the project.

In preparing the terms and conditions for the employee Innovation contest, there are a few issues to consider.

Ownership of the Submitted Ideas

Since employees often do not consider participation in company Innovation contest to be part of their normal work duties, some employees believe that they should be able to retain at least some ownership to the submitted ideas, such as joint ownership of the intellectual property (IP), or only grant an IP license to the company. While such an arrangement may increase employee participation, joint ownership or an IP license from the employee is not advisable. Allowing another party, in this case the employee, to have rights to the Innovation may diminish the company's market position. Joint ownership of a patent allows each co-owner to have an "undivided equal partial interest in the invention as a whole."[3] This would allow the employee to create a competitor or to license the patent(s) covering the Innovation to a competitor, thus diminishing the company's market advantage. Joint ownership also poses the need for all co-owners of the patent to join as plaintiffs[4] and a duty to account profits for any licensed copyrighted materials,[5] such as software. These duties impose additional obligations for the company should they not be specifically disclaimed. A license from the employee could create similar problems. The employee may license the IP rights to a competitor. Furthermore, without an exclusive license, the company may not have the standing to enforce patent rights against a competitor.[6] To commercialize the winning Innovation and bring it to market, the company may invest a considerable amount of money and time. The risk of an employee or former employee allowing a competitor to enter the market and not having the ability to enforce IP rights is not worth the additional participation obtained by allowing the participants to retain some ownership to the submitted ideas.

Furthermore, the resulting product or service may be ideal for divestiture or joint development activities with another company. The company, not having sole ownership of the intellectual property, will likely raise some red flags during the buyer's due diligence. The buyer may insist that the company acquire full ownership of the intellectual property as a condition for closing. It will be much more difficult and expensive to have the employees or former employees assign their IP right to the company at the divestiture due diligence stage than when the employees participate in the Innovation contest.

Another request an employee may make is to change the intellectual property assignment clause to the employee's promise to assign the intellectual property to the company only if the idea is a winning Innovation. The employee may argue that if the company does not deem the idea to be worthy of the winning Innovation, the employee should be able to keep the idea and use it or further develop the idea as he or she sees fit. While such a condition may initially seem reasonable, we advise against a clause in which the participant promises to assign the intellectual property to the company only if the idea is a winning Innovation. First, the participant's promise to assign IP if the idea is the winning Innovation may not give the company legal title to the IP.[7] The company will still need the participant to actually assign the IP to the company once the idea has been declared the winner.[8] More importantly, the company will be exposed to the idea as part of the review process regardless of whether the idea is or is not the winning Innovation. If the company does not have IP rights to this idea and is developing or later develops a product or service similar to the submitted idea, the participant may assert that the company misappropriated his or her trade secrets[9] or "stole" his or her idea under some other legal principle. A less risky approach is to require each participant to assign his or her IP to the company as a condition for participating in the contest, with the company agreeing to reassign the IP back to the employee, upon request, if the idea is not the winning Innovation and the idea is not relevant to company business. Such an approach ensures that company has obtained legal title to the IP and protects the company from the employee later asserting that the company stole his or her idea.

A potential issue to consider regarding intellectual property ownership is whether there are written agreements for assigning IP to the company for all employees. Some companies may include IP assignment clauses only in employment agreements for employees expected to innovate new ideas or only in certain countries. There may be some employees hired prior to the inclusion of an IP assignment clause in the employment agreement or brought on board from an acquisition or a merger in which the former company did not have an IP assignment clause in its employment agreement. Since the intent of the contest is to consider ideas from all employees regardless of the role they are hired to play, it is important to check whether an IP assignment clause is included in all the employment agreements executed by employees. If there are any doubts as to whether all employees have assigned their IP rights to the company, the terms and conditions of the contest rules should include an IP assignment clause. A company cannot merely rely on the default IP ownership law and expect to have ownership of IP created by its employees. The law in many countries, including the United States, provides that the employer will own an invention only if it was created by the employee as part of his or her normal work duties.[10] An employee Innovation contest is set up to encourage employees to submit ideas that may not be part of their normal work duties. The participants may be able to successfully argue that the ideas in their contest submissions were not created as part of their normal duties and are not automatically assigned to the employer absent an agreement.

Unless it has been verified that the law of the countries for which the company has employees grants IP rights to the employer regardless of whether the invention was created as part of the employees' normal duties, an IP assignment clause in an existing agreement or in the contest terms and conditions would be necessary.

Mitigating Improper Use of Third-Party IP Rights

When making, using, or selling any products or services, a company must be careful not to misappropriate another party's trade secret or infringe a third party's patent or copyrighted material. For products or services purchased or licensed from a vendor, an indemnity clause for intellectual property infringement is typically included in the purchase agreement to protect the company from infringement caused by the vendor's products or services. Many contests likewise require intellectual property indemnity from the participants, similar to the ones required from commercial vendors. However, there may be issues with the inclusion of an intellectual property indemnity clause in the employee Innovation contest terms and conditions.

One issue is the enforcement of an intellectual property indemnity clause against an employee. An employee is unlikely to have sufficient funds to cover the expenses and damages that results from IP litigation. More importantly, trying to enforce intellectual property indemnity against an employee could create a public relations nightmare for the company. Employees and others may view the company as greedy and taking advantage of its employees. Even if the employees agree to provide the company with IP indemnity, this clause will be very difficult to enforce. A practical reason to include an indemnity clause in the contest terms and conditions is not necessarily an expectation for the participants to reimburse the company for any liability that may result from an infringement; rather, the indemnity clause acts as a deterrent for the participants not to misappropriate any third-party trade secrets (including trade secrets from their prior employers), not to copy any third-party copyrighted materials, and not to ignore potentially problematic patents that the employee may be aware of.

Moreover, employees who understand the implications of providing an indemnity may be scared off by an indemnity clause. These employees may find providing an indemnity, in particular a patent indemnity, to be unreasonable. A patent can be infringed without knowledge of the patent and without intent.[11] It is possible to perform a patent search to identify potentially infringed patents. However, such a search is very time-consuming and expensive and may not identify all potentially infringed patents. Furthermore, even if such a search is performed and identifies all potentially infringed patents, legal opinions[12] would still need to be formulated as to claim construction,[13] infringement analyses under literal infringement[14] and the doctrine of equivalence,[15] and invalidity analyses. It would not be reasonable to expect an employee to perform such a patent search and obtain the necessary legal opinions. Therefore, asking an employee to provide a patent indemnity would essentially be asking the employee to provide an insurance policy for the submitted idea not infringing any patents. A vendor charges its customers a fee for its products or services and is able to build into its fee an incremental amount to offset the liability for providing a patent indemnity. However, an employee does not charge the company for the idea submitted in an Innovation contest; therefore, the employee does not have any means to offset the patent indemnity liability.

Rather than a clause asking the participants to provide an intellectual property indemnity, an alternative is to include a clause asking the contest participants to provide a knowledge-based warranty, similar to a knowledge qualifier in a stock purchase agreement. Such a knowledge-based warranty would give the company some assurance that the Innovation does not infringe IP rights requiring knowledge and intent, such as misappropriation of trade secret.[16] Furthermore, a knowledge-based warranty may be phrased to require the participants to disclose any relevant patents that they may be aware of. A heads-up on these relevant patents may provide the company an opportunity to perform an infringement and invalidity review before spending the money and time to further develop and implement the Innovation. As previously discussed, the resulting product or service may be ideal for divestiture or joint development activities with another company. A knowledge-based warranty from the contest winner could provide additional assurance for the company officers when they need to provide their own knowledge-based warranty of non-infringement in an agreement.

While enforcing a knowledge-based warranty against an employee has the same potential problems as enforcing an indemnity (the employee not having the funds to cover litigation expenses and damages and the associated public-relations nightmare), a knowledge-based warranty can be just as effective as an indemnity in deterring the participants from misappropriating third-party trade secrets, copying third-party copyrighted materials, and ignoring potentially problematic patents. A knowledge-based warranty is able to provide the practical goals of an indemnity clause with the advantage of it being more palatable to the participants, since they are providing a warranty only for actions under their control.

Complying with Company Policies

One potential oversight that may arise by utilizing the contest winner as the project manager for implementation of the winning Innovation is that, since the content winner may not be in his or her normal role, he or she may not be aware of all company policies that need to be met. For a technology company, these policies may include regulatory, corporate security, intellectual property, marketing, contract compliance, and other policies. While having the contest winner act as the project manager reduces the need to transfer responsibilities from one team to another, the project still needs to meet key company policies to adequately protect the company. Prior to implementing the winning Innovation, those responsible for managing company policies need to develop a set of policies, preferably in the form of a checklist, with which the Innovation must comply, including the timing for fulfilling each policy and those responsible for approving such policies. This list of policies needs to be communicated to the project manager prior to implementation in order to mitigate any surprises that may arise during implementation of the Innovation.

Winning Innovation to Monetization

As noted above, innovating employees will need to see some genuine upside for contributions outside of their defined job scopes. A one-time cash award is nice but limited in its ability to incentivize further development of the Innovation. Additionally, what amount is sufficient to ensure that there is a clean, defensible assignment of the Innovation in the event that such Innovation takes off and makes the employer millions, if not billions, of dollars? In the real world, a rank-and-file employee versus a "big, bad corporation" will result in a multi-million-dollar out-of-court settlement, at the very least.

In larger companies with hard and fast, salary-tier structures and established bonus parameters, providing commensurate, longer-term compensation for innovators can be difficult, if not impossible. For example, any "B-3" level employee, regardless of his or her burst of brilliance, will be limited compensation-wise to a salary or bonus range that will be under scrutiny by financial management and other divisions of the company competing for budgetary resources.

Failing an appropriate reward, innovators will leave for related-market start-ups offering more upside for their Innovation(s), and more than likely, they will end up bestowing industry knowledge gained while in the company's employ. Sure, the company will have nondisclosure, noncompetition, and assignment-of-inventions agreements in place, but, again, pragmatically, does the company want the public relations shade of suing a start-up or an individual former employee?

The Case for Innovation-Specific Entities

To be marketable, an Innovation will require a distinct product or service trade name, a sales channel, and, most importantly, a clear delineation of IP rights as among employee-innovators, the company, and potential customers, users, and licensees. Booking costs and revenues, let alone "parking" liabilities and reserves, for any Innovation are nearly impossible in a commingled business environment. The following are reasons to consider creating a new, company-owned (or majority-controlled) Innovation-specific entity (ISE) for worthwhile Innovations.

An ISE will allow employee-innovators to be engaged separately (which will likely require adjustments to their standing company employment arrangements, such as to allow for the agreed "moonlighting" and to set limits on the compen-

There are many good reasons to consider a new, company-owned or majority-controlled "Innovation-specific entity" for worthwhile Innovations.

sation available under each) via consulting or secondment arrangements directly with the ISE that can operate (provided, that the company has given ISE management specific authority on matters of compensation expense) outside of existing company payroll strictures. In bifurcating each employee-innovator's compensation along such lines, the employee-innovator has a continuing stake in the Innovation in which he or she truly believes, and the company's exposure is managed and predictable even in the event of a "home run."

Likewise, an ISE will have ability to issue warrants, options, and other equity incentives to employee-innovators that do not impact overall company capitalization (assuming, of course, that new-entity expenditures/liabilities are properly noted and reserved-against in the company's financials). Generally speaking, the larger the corporation, the more restrained it is in creating new classes of equity or other incentive vehicles outside of board of directors– and annual meeting–approved pools.

Perhaps, most important to the company's interests, an ISE will also have, with proper IP assignments running to it, clear title to Innovations developed by employee-innovators, as well as licenses from the company (with rights to sublicense) for the requisite company technologies involved in an Innovation's rollout to third-party customers. Consider, for example, the case of an employee-innovator tasked with developing a product or service that he or she has the company's full authority to create, market, and sell, in "partnership" (the corporate lawyer's worst nightmare when thrown around loosely by sales and marketing teams) with third parties, on the company's behalf. At what point does the company's technology and other IP become commingled with that product or service, such that there are no limits on the rights to which the "channel partner" or other cooperating third parties may lay claim? A clear, finite licensing agreement between two distinct business entities—the company and the ISE—places a decisive fence around the scope of IP dedicated to the Innovation.

Having a separate ISE will allow the company to more easily acquire, dispose of, and partner with third parties on Innovations without going through many of the corporate formalities of the larger company organization. As any M&A or transactional attorney knows, going through the process of determining exactly what is and is not "directly and substantially related to" the assets or businesses being sought by an acquisitive client is a tedious and, often, to the client, off-putting exercise. When it comes to the vagaries of pulling apart IP rights to determine ownership, an Innovation left within the larger-company mix will often be rendered unattractive or completely unmarketable.

A further benefit to an ISE is the greater degree of remoteness for the company against taking technology risks. For example, a global leader in Internet protocol telephony may hesitate in taking up an opportunity to "partner" with Internet-based home-security upstarts, for fear of presenting deep pockets should some E-9-1-1 or other regulatory violation ensue from that "partnership." Properly capitalized and with sufficiently independent management, an ISE can properly mitigate, if not eliminate, the downside of such risk-taking. Additionally, the structural remoteness of an ISE can greatly assist the company in raising non-recourse or other off-balance-sheet capital from VCs and other fund sources who may be willing to take a "start-up" view on the ISE and its Innovation.

Larger entities, especially publicly traded ones, may wish to further extenuate company ties by creating an entire, independently managed venture/strategic-investment arm under which *all* Innovations and other technology investments (both actively operated and passively held) are maintained.

Conclusion

To stay ahead of their competitors, technology companies can no longer rely solely on their research team for Innovations. Companies need to tap into all their employees for great Innovations. A promising way to mine technological development is to hold periodic employee Innovation contests. Innovation contests allow all company employees to present their ideas to the key company decision-makers for consideration, not only as to the patentability of any Innovations, but also on the market impact those Innovations can create for the company. Awards for contest winners can be monetary or involve granting the winner project-manager responsibilities for further development and implementation of the Innovation. Granting project-manager responsibilities engages contest winners, thus preventing bright employees from leaving the company for related-market start-ups offering more upside for their Innovation(s). Having the contest winner as the project manager also benefits the company by bringing the Innovation to market in a shorter time frame. When preparing the contest terms and conditions, the company should insist on full ownership of the intellectual property, include an IP assignment clause if not in an existing agreement, and consider having the participants provide a knowledge-based IP infringement warranty. Furthermore, care should be taken to ensure that that the project complies with key company policies.

The company may want to consider setting up an Innovation-specific entity for the project. A separate ISE will allow the company to more easily acquire, dispose of, and partner with third parties on Innovations without going through many of the corporate formalities of the larger company organization. An ISE also provides the greater degree of remoteness for the company against taking technology risks and assist the company in raising nonrecourse or other off-balance-sheet capital from VCs and other fund sources who may be willing to take a "start-up" view on the ISE and its Innovation.

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NOTES

1. 35 U.S.C. § 101.
2. *Id*. §§ 102, 103.
3. Ethicon v. U.S. Surgical Corp., 135 F.3d 1456, 1465–66 (Fed. Cir. 1998) (Neman, J., dissenting); *see also* 35 U.S.C. § 116 (2008).
4. *Ethicon*, 135 F.3d at 1467.
5. 17 U.S.C. § 106; Erickson v. Trinity Theatre, Inc., 13 F.3d 1061, 1068 (7th Cir. 1994); *see also* Goodman v. Lee, 78 F.3d 1007, 1012 (5th Cir. 1996).
6. WiAV Sols. LLC v. Motorola, Inc., 631 F.3d 1275 (Fed. Cir. 2010).
7. Advanced Video Techs. LLC v. HTC Corp., 879 F.3d 1314, 1317–18 (Fed. Cir. 2018).
8. *Id*. at 1318.
9. Unif. Trade Secrets Act § 1.2.
10. Daniel Orifice Fitting Co. v. Whalen, 18 Cal. Rptr. 659, 198 Cal. App. 2d 791, 797 (Ct. App. 1962) ("Where a person is employed to design improvements to the product of his employer, or to design new products for his employer, and he does so, he may not use the results of such work for his own use and benefit, and particularly not to the detriment of his employer.").
11. Jurgens v. CBK, Ltd., 80 F.3d 1566, 1570 n.2 (Fed. Cir. 1996) (citing Hilton Davis Chem. Co. v. Warner Jenkinson Co., 62 F.3d 1512, 1527 (Fed. Cir. 1995) (en banc), *rev'd on other grounds*, 520 U.S. 17 (1997)).
12. Read Corp. v. Portec, Inc., 970 F.2d 816, 829 (Fed. Cir. 1992).
13. Markman v. Westview Instruments, Inc., 517 U.S. 370 (1996).
14. Tate Access Floors Inc. v. Interface Architectural Res., Inc., 279 F.3d 1357, 1365 (Fed. Cir. 2002).
15. Graver Tank & Mfg. Co. v. Linde Air Prods. Co., 339 U.S. 605 (1950).
16. Cal. Civ. Code § 3426.1 ("Misappropriation of trade secrets: (1) Acquisition of a trade secret of another by a person who knows or has reason to know that the trade secret was acquired by improper means"); *see also* Va. Code § 59.1-336, Mich. Comp. Laws § 445-1902.