Patent Issues in Open Innovation

By John R. Harris

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Many companies both large and small are embracing an "open innovation" approach to research and development (R&D), as well as marketing and supply chain. Forward-thinking management recognizes that not all good ideas are developed internally, and that hierarchical, bureaucratic internal R&D departments often cannot keep up with the frenetic pace of technology development. Companies that pursue open innovation (OI) strategies share some common traits:

- - They are willing and wish to source and use external knowledge, ideas, intellectual assets, and - technologies to complement their internal capabilities. -
- - They understand that such complements allow them to capitalize on opportunities, especially with the right intellectual property (IP) structure and strategy in place.
- - They wish to create new products, services, and processes.
- - They improve their processes.
- - They design new organizational systems and business models.[1]

The current notion of open innovation is widely attributed to Professor Henry Chesbrough, who has written extensively on the subject and is viewed as the guru of open innovation.[2] The premise of open innovation is, to some degree, that the ideas of many are often better than the ideas of a few. A company that wishes to have ideas for products, services, processes, and improvements flow to it must wrestle with the fundamental legal concept that inventors and authors *initially own the rights* to their creative endeavors. Ownership can be transferred, licenses can be issued, ownership can be abandoned—but these are legal events that affect relationships and have real costs. Just because innovation is deemed "open" does not mean that someone does not, at least initially, own rights in that innovation.

The laws and systems of intellectual property, particularly patents, are to some degree incompatible with open innovation. The subcultures of free and open source software (FOSS), copyright vs. copyleft, Creative Commons, and the open wireless movement are often mentioned in the same breath as open innovation. However, open innovation does not per se rule out the use of patents and other forms of intellectual property to protect the parties to an OI project. For example, there are literally hundreds of

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standards-setting organizations (SSOs) that deal with the complex interaction between a desire for openness and collaboration for certain key technologies and the fact that many players in certain industries have or are seeking patents on aspects of those technologies.[3]

This article discusses some primary IP issues affecting open innovation, and is intended to provide an overview of some key issues currently affecting the OI world.

Managing the OI Process

Does intellectual property help or hinder open innovation? The answer to this depends on how the legal issues are managed.[4]

The key to the successful integration of intellectual property and open innovation is therefore *management of the process*. It is important for a company that plans to embrace open innovation to understand the role of intellectual property and patents, work with counsel who understand the environment and goals, and put processes in place that enable, rather than disable, an OI environment.

Open innovation is a dynamic process—which can make it difficult to manage. Reasons for difficulty in management include the facts that (1) there are always multiple claim holders who have heterogeneous interests, (2) open innovation requires openness in the communication and exchange, which is not always forthcoming, and (3) joint ownership and management of IP lead to complications. The existence of multiple claim holders—contributors, investors, co-inventors, and collaborators—calls for a governance structure over how their claims can be prioritized. Contrary to some popular notions, IP law *does in fact* regulate the questions of who is a co-inventor, and what are the rights of joint owners (co-owners).

However, IP law does not by itself regulate how these rights may be coordinated or managed, or who has priority and decision-making authority. Although the determination of inventorship (or co-inventorship, in cases of joint invention) is a legal question, the fact that joint inventors are named on a patent does not mean that "all inventors are equal" and have an equal say. Absent an agreement to contrary, joint inventorship *does* result in an equal undivided share of a patent[5] and corresponding right to meddle in the prosecution[6]. Furthermore, joint ownership of IP rights, which often results by default when parties have not agreed to designate a party for IP management, is usually a less than optimal arrangement— who calls the shots? Who pays if complications arise?

To prevent disputes, a proactive and educated management of the OI process is required. There must be an open exchange in communication. There must be understanding as to confidentiality. (A staged information disclosure process, if feasible, has the potential to preserve both parties' freedom to operate.) There must be understanding as to innovation ownership—initially and ultimately. There should be a clear expectation of IP rights and management responsibility. There should be clear and certain rules on how information exchanges can lead to loss of rights. In other words, unless openness is managed, the communications that are crucial in open innovation will not occur.

Therefore, openness in innovation must be managed either *formally* (through formal governance such as contracts, explicit company policies, nondisclosure agreements (NDAs), progressive or staged disclosure protocols, and/or idea submission portals on corporate websites) or *informally* (through community norms, trust, and implicit corporate culture).[7] A workable OI process usually requires both, as the invocation of legal processes such as contracts, NDAs, etc., at early stages can be off-putting—there is almost always a necessity for a certain level of trust between the parties to an OI process. That trust should eventually lead to a formal memorialization of arrangements, expectations, and understandings.

Sources of Ideas That Must Be Managed

Organizations pursuing an OI policy naturally must consider the various sources of ideas. These can take many different forms, depending upon the industry. There is the classic "lone wolf," garage inventor. Medical doctors are often creative people, especially as regards healthcare innovation. Consumers of products often have ideas for product improvements—or of new products. Traditionally, the source of new "technologies" has an academic origin—professors and researchers in a university setting. Small companies and startups often come up with ideas that would otherwise be rejected by larger, more bureaucratic R&D departments. Venture capital funds can be the source of new ideas, often through their portfolio companies. Suppliers in the supply chain will sometimes contribute ideas, as they often have access to a company's inner workings. Finally, there is the ubiquitous "suggestion box"—a company's employees are often the best source of new ideas, and these often come from outside the R&D department.

Each of these sources of ideas presents its own set of complications in managing the relationship and the entry point for an IP issue. It is useful to differentiate between strictly external sources and internal sources. *Internal* sources include employees, the suggestion box, R&D department personnel, and internal invention submission systems. In some cases, customers and suppliers might also be considered "internal," in the sense that these entities cannot be treated as strictly external and hands-off—they are a part of the family and must be given special treatment. The most problematic and largest sources of ideation are, of course, *external*—the casual individual consumer, a consultant who was hired for one purpose but has ideas in other areas, or strategic partners with whom the relationship is formal and wary. Each of these "ideation entry points" calls for different handling and management.

Another issue to be managed is the *nature* of the potential innovation. Some concepts are half-baked and poorly reasoned, yet find their way into the process and must be handled. Some are ready for market. An OI participant could receive potential innovations in some or all of these forms:

- Mere ideas;
- Comments and suggestions (yet unproductized);
- Recipes/consumer products/gadgets;
- Genuine product improvements;
- Prototypes (crude or sophisticated);
- Unsolicited submissions;

- Process improvements;
- Branding/marketing ideas;
- Finished product ideas: new markets;
- Science projects/sci-fi/way out there; or
- Platforms/system technologies/infrastructure/business models.

These different types of ideas, inventions, and innovations cannot be treated the same. Mere ideas and suggestions are often the most problematic, especially when received from an outside source. The issues with mere ideas, suggestions, and unsolicited submissions often arise when information disclosure is not controlled or staged—people often have expectations that even their mere ideas and suggestions are legally protected. They are mistaken. Under U.S. patent laws, an idea cannot be patented.[8] Until an idea has been moved from mere conception and reduced to practice, either actually or constructively by filing a patent application, that idea is not properly the subject of patenting. It is not an "invention." Yet, many patent applications are filed for so-called inventions that are merely ideas. The fact that an idea is not patentable does not mean that a patent application cannot be filed—a patent application *can be filed* on an idea. A patent might never issue, but the fact that a patent was filed has a legal effect and presents the possibility and risk that a patent *might* issue. So, OI management must consider whether any ideation source is coming in with a patent or a patent application already in process. If so, the handling must be different than for a simple, abstract idea.

Shell's OI Environment

A good example of the various forms of ideation and the IP issues they create can be found in the "Idea Factory" at Royal Dutch Shell plc.[9] Shell's Idea Factory recognizes four key pillars of innovation sources that constitute its OI framework:

1. - GameChanger—works at the early stage, welcoming ideas from individuals and startups, and aims to produce proof of concept;
2. - Shell Technology Ventures—venture capital (VC) arm;
3. - Shell TechWorks—looks for technology developed in other industries; and
4. - University research relationships.

Each of these primary pillars presents somewhat different IP issues. University research relationships are a fairly well-settled and traditional external source for innovation. Dealings with research universities are well known to be somewhat rigid and formalized. Research universities are used to commercialized research for industry partners and have complex agreements for licensing. Sometimes the IP issues in these agreements are not readily negotiable.

The more problematic areas are the more nontraditional external sources such as early stage companies and VC. Shell Technology Ventures is Shell's own VC arm, which provides it the flexibility to seek out and screen technologies that it chooses to support from a strategic perspective. VC investments are one way to condition the flow of funds to an R&D project on classical protection methods, because VCs typically require a patent budget and patent reporting as a way to ensure protection of the investment.

Shell TechWorks is unusual in that it represents an effort to seek out technologies from fields *other than* the traditional Shell lines of business. One particular IP problem here is that an innovation or technology may already be the subject of patents in other fields—and the patents might not be written with Shell's particular applications in mind. In other words, the collaborator's patents might not cover Shell's use of the technology. This situation strongly suggests that additional patents should be filed to ensure coverage in Shell's area of technology. In some cases, broadened patents may be impossible due to the passage of time and the patent "bar date."[10]

GameChanger is perhaps the biggest source of OI risk for Shell. By definition, Shell appears to be looking for early stage development, the "blue sky" phase. It purports to welcome ideas from across the globe, from individuals and startups aiming to produce a proof of concept. GameChanger provides an online portal for idea submission.[11] However, the terms and conditions for GameChanger required that the submission be nonconfidential.[12] Shell asserts that it has no duty to treat ideas or other material as confidential, and may pass on any ideas or other material submitted by you to its VC and other partners. Thus, it is apparent that Shell, like so many organizations attempting to embrace an OI attitude and perception, necessarily has to deal with the real possibility that any submitter may have already submitted a patent application, or may already have a patent.

The treatment of submissions as nonconfidential is widespread in many industries.[13] These are sometimes accompanied by statements suggesting that submitters must rely on their prior-obtained patent rights.[14] Many companies obviously believe that nonconfidentiality is the easiest way to address issues raised by unsolicited submissions. However, an OI approach that treats every new idea as nonconfidential creates barriers to openness and communication.

The use of online portals for idea and technology submission such as Shell's GameChanger should increase with improvements in online technologies and may proceed beyond strictly nonconfidential portals. Next generation submission portals that provide for staged and structured information disclosures are now commercially available, for example, from software providers such as e-Zassi LLC.[15] Managed or staged information disclosure has the potential to provide a path from a nonconfidential to a confidential relationship, and can increase trust and the sense of openness.

Shell's OI approach, which is well documented and public, is a good example of the IP issues affecting open innovation and underscores the need for a management process that takes patents into consideration and endeavors to move ideas through a process where legal agreements can be put in place. But even Shell seems to recognize that IP issues almost always must start from a trust relationship, and move to a formalized legal arrangement to avoid IP misunderstandings.

Why Patents in Open Innovation?

It is important for management of an OI-embracing company to understand the uses as well as the limitations of intellectual property. In technology-based OI programs, patents are the key form of intellectual property. Patents play a key role in a successful long-term strategy to create new products and services that have significant worldwide profit potential. Patents are still the best known way to establish:

- - Who *originated* the idea/concept/invention/technology (via established inventorship laws);
- - Who *owns* the idea/concept/invention/technology; and
- - The *force* (legal force) behind any agreements or understandings as to origination, ownership, and monetization.

The laws of patent inventorship are well established and provide clear legal mechanisms to determine who originated an idea (invention). Origination is a key concept—necessary but not sufficient—to the concept of ownership. Under U.S. patent law in particular, the identified inventor is initially the patent owner (although this can be changed).[16] Once a patent is filed and is ready for the process of examination, there is a legal document—the patent application—that can be used for the parties to examine who contributed what, which often drives the decision of ownership and decision-making authority.

Many people think of patents in the context of going to court and suing for patent infringement. A successful suit for patent infringement can result in an award of damages and/or an injunction against further infringement. This is the primary and highest use of a patent, and the ultimate goal for any patent—to be enforceable against those who would infringe.

The idea of ultimate and eventual patent enforcement drives the entire process of patent filing and prosecution. Unless a quality patent application is prepared, filed, and properly prosecuted to avoid the prior art and meet all the requirements of the patent laws, the legal force of the patent may not be worth the paper it's written on. But even with marginal or low quality patents, there are often benefits to be obtained, without the immediate prospect of going to court for patent infringement.

What else do patents do, other than provide a vehicle to go to court? Clearly, the primary purpose of a patent filing is to obtain a valid patent that can be enforced in court. But there are numerous other uses of patents, many of which are useful in the context of open innovation:

1. - 1. Ent*erprise value creation: Pa*tents reflect and memorialize the value of the technology, which - inures to the benefit of the company. It is well established that a patent portfolio contributes to a - higher overall valuation for a company.[17] -
2. - 2. Est*ablishing ownership of technology, inventions, etc.: Th*e legal process of preparing and filing a patent application results in an initial determination of ownership. A patent application provides a legal vehicle for the filing party's initial position.
3. - 3. Rev*enue generation/licensing/monetization of IP: On*e eventual result of a strong patent is the ability to license the patent, or sell the patent, and thus monetize the technology separately from direct product revenues.
4. - 4. Com*bining efforts with strategic partners for joint development and business: A* patent application provides an R&D roadmap for multiple parties to bring their intellectual property to the table, combine it with others, and keep track of their respective contributions.
5. - 5. Est*ablish basis for SSOs: So*me technologies need to standardized to encourage widespread adoption; patents provide a vehicle for standards setting. The lack of patents to contribute to a patent pool can result in a competitive disadvantage.

6. - 6. Glo*bal IP/assert position globally: Th*e marketplace is global; all significant commercial countries have patent systems and recognize patent filings from other countries. International patents are signals that a company is a global player.
7. - 7. Com*petitive intelligence: Co*mpanies often research competitors by searching and reviewing patent filings. Thorough searching helps in filtering and decision making, and helps to avoid legal problems by avoiding the intellectual property of competitors and others.
8. - 8. In *terrorem effect: Th*e mere filing of a patent application can be an actual or perceived roadblock to competitors.

This list highlights the many ways that patents can affect the policies and approaches of any company to open innovation. Most companies will find one, or perhaps several, of these uses of patents to either drive their R&D decisions, limit the R&D to internal resources, or engage in some form of open innovation. Given that patents necessarily will play a role, what should companies engaged in open innovation do as regards patenting? This is not a simple question.

One answer is "patent everything in sight that you can, then open up for innovation by others." This is impractical. One major point of open innovation is to get ideas and technologies that might otherwise not be visible to the company or its R&D personnel. The beauty of open innovation is that it opens up the possibilities for new products and services, processes, and improvements, and profitability. An OI company must be practical in its approach to patenting, and work with its ideation sources toward an arrangement that makes suitable use of patents, when appropriate, and allocates responsibility and risk, as well as reward, in a manner that works for all parties.

The two major decisions that remain are: *when* to file patent applications, and *what kind* of application to file. The question of when to file is dependent on a number of factors—most significantly driven by the possibility of loss of patent rights due to the "bar date." The question of what kind of application to file generally revolves around whether to file a *provisional* patent application (PPA) first, followed by a regular or *nonprovisional* patent application (NPA) in due course, or whether to go straight to an NPA.

The pros and cons of filing a PPA vs. NPA are beyond the scope of this article. The primary issue with PPAs is the risk that the application will not contain sufficient information to support the claims that may ultimately be made in a subsequent NPA that claims priority to the PPA. Although a PPA does not have the same "formal" requirements as an NPA, they actually have many of the same legal requirements in order to provide adequate legal protection. That is, if the disclosure of a patent application (the technical contents of the application including written description and drawings) does not adequately support the claims, then the application is not entitled to the priority date of its filing.[18] This can result in the invalidity of the claims of a later NPA that claims priority to an earlier PPA. Some people regrettably are lulled into a false sense of security that by filing a PPA, they have taken all the required steps for full protection. Sadly, that is often not the case.

For the time being, and until and unless the patent laws are repealed or otherwise radically curtailed in effect, companies engaged in open innovation will primarily need to answer those two questions—when to file and what to file—in determining an OI policy. Those primary questions will likely remain for the indefinite future.

Effects of Patent Reform: The AIA

However, the nature of when to file and what to file is undergoing change due to patent reform. Efforts to reform the patent system have been attempted about every two to four years since the last major reform in 1999. Extensive lobbying efforts finally paid off: on September 16, 2011, President Obama signed H.R. 1249, the Leahy-Smith America Invents Act (AIA).[19] The AIA put into effect several profound changes in U.S. patent laws. The changes affect the front-end stage of filing and prosecuting patents, as well as the postgrant stage after patents have been issued and are in the enforcement/licensing/litigation stage.

The stated goals for the patent reform efforts that led to the AIA were laudable, and are hard to find fault with at an abstract level. Those goals included:

- - International harmonization—make the U.S. patent system more consistent with the patent systems in other countries, to facilitate global commerce;
- - Cut down on the backlog of patent applications at the United States Patent and Trademark Office (USPTO) (over 700,000 backlog at the time);
- - Improve patent quality and efficiency;
- - Provide a better postgrant review/challenge of patents;
- - Address "business method" and "tax strategy" patents and "trolls";
- - Provide a way to challenge patents during examination, e.g., via preissuance submissions; and
- - Let the USPTO keep more "user fees" to fund its operations.

With the exception of patent harmonization, which is of dubious benefit to U.S. patent stakeholders, these goals of the AIA should make the U.S. patent system better. But will they? Only time will tell. In the meantime, there is a new "reformed" reality to the patent system, and it significantly affects the decision of *when* to file.

The AIA contained 37 different modifications to the U.S. patent laws. Not all of those 37 are significant. But some of the changes were major and conceptual. Perhaps most significant was the conceptual change of the U.S. patent system from a "first-to-invent" system of priority to a "first-inventor-to-file" (FITF) priority, creating a sort of race to the USPTO. The FITF provisions will doubtless result in major changes to patent filing behavior because of the increased fear that some other entity will win the race to the USPTO and get a patent, even if you were the first inventor. In essence, an inventor now risks being *penalized* for refining his or her invention and technology to see if it works or is economically viable—if someone else files first, the "real" inventor may lose. The upshot of this change is an increased urgency to file patent applications, even if the idea is only half baked, so as to get a filing date and possible priority over someone else who might be competing in the same technical area.

This is an unfortunate unintended consequence—a potential increase in the number of marginal patent filings that may never see the light of day for many reasons, and cost patent applicants great sums of money. But FITF virtually compels entities playing the patent game to get in the game early by filing early, and in some cases by filing often.

The AIA also made a number of other changes that profoundly affect the patent system. A full explanation is beyond the scope of this article, but more information is available online from many sources.[20]

Patent Reform and First-Inventor-to-File Regime

The FITF provisions of the AIA patent reform law went into effect on March 16, 2013. The primary take-away from the FITF implementation is that companies should file a fully enabling patent application, whether a PPA or an NPA, as soon as practicably possible to minimize the risk that another person may obtain filing priority.

Those responsible for patent filings in OI companies should understand that it may take some time for an inventor and patent counsel to prepare a patent application of adequate disclosure and acceptable quality. In the time between engagement of counsel to assist and the filing of a patent application, it is possible that another person may file a patent application directed to the same or a similar invention. Under the FITF law, that person may be entitled to receive the patent instead of the actual, first inventor. The right to obtain a patent may also be limited by the quality, completeness, and accuracy of the information provided to counsel about the invention for use in preparing a patent application.

In view of these circumstances, what should a company do to address the FITF risks? There are several potential actions that can and should be taken:

In many cases, a company should file a patent application *as soon as practicably possible*—whether a PPA or an NPA, depending on the state of completeness of the supporting documentation—based on the information currently in possession in order to secure an early filing date with respect to that information.

If for any reason an initial but early-filed patent application may not be as complete or of adequate quality for examination and allowance, one should work as quickly as practicably possible to *augment or expand* the initial filing with another patent filing that is of adequate quality to meet the legal and business objectives. For example, a later-filed continuation-in-part (CIP) patent application may be a good idea, with a view towards abandoning an earlier, lower quality, less comprehensive patent application in favor of the later-filed CIP.[21]

You may also need to consider filing *multiple* PPAs or NPAs in succession in order to minimize the risk of third-party filing priority. Some technologies are amenable to "slicing and dicing" into discrete chunks of subject matter, each of which may arguably possess novelty and nonobviousness and justify a separate filing. For example, software technology is often carved into specific topically-specific units (APIs, user interface features, operating system functions, data communication protocols, etc.), each portion of which is presented in a discrete, stand-alone patent application of limited size and numbers of claims. Be aware, however, that multiple patent filings–whether via more PPAs, additional NPAs, or expanded CIPs–can be expensive and introduce significant complexities in managing international patent rights.[22]

You should also be aware that filing date priority issues can arise if there are *substantive differences* between an initial patent application (whether a PPA or an NPA) and a corresponding later patent application (again, whether a subsequent PPA or an expanded NPA). These issues can be problematic if those substantive differences are required to support the claims sought. In order to mitigate this risk, an inventor should file any necessary expanded subsequent patent application as soon as practicably possible after the initial patent application, paying careful attention to priority claims. If the initial application is a PPA, one should not wait the entire year that is legally available for filing an NPA and claiming priority to the PPA.

The AIA has created other complications in the patent process that could affect the right to obtain a patent. For example, more types of information are now deemed "prior art" that can be considered in deciding whether a patent can be awarded or, if awarded, is valid. The AIA also modified but did not eliminate the one-year "bar date" rule as regards the requirement to file a fully enabling patent application before the one-year anniversary of a patent-barring event. Be aware of the significant time limitations after certain disclosures of technology within which a patent application must be filed.

For all these reasons, the FITF created an increased sense of urgency to identify potentially patentable inventions and move promptly to file patent applications before rights are lost.

Important IP Questions for Open Innovation

Given that patents will play a role in R&D, and given the likely effects of patent reform—AIA and other law changes that might follow—the IP managers of an OI organization must answer some fundamental patent-related questions in establishing its OI policies:

1. - Is this a highly competitive business that requires a careful patent strategy? If not, the significance of patents may not be as great. But if the players in the industry already have patent portfolios (the business is "patent intensive"), one may have no choice but to consider patents as integral to the overall project.
2. - Should initial information exchanges be confidential or nonconfidential? Can the confidentiality provisions be staged? This is one of the most problematic decisions. As discussed earlier, many companies require external submissions to be nonconfidential—submitters are forced to rely on their patent rights as the sole basis for protection of their submissions. This necessarily puts a burden on the submitter to make an upfront investment in the patent process. The receiving company can of course reimburse the submitter if the project goes forward, but the burden of patent filing can dampen the enthusiasm of small businesses and individuals who often cannot afford to pursue a patent of good quality.
3. - At what point is patent filing necessary/advisable? This relates to the question of confidential or - nonconfidential submission. If a patent has already been filed, the submitter has some degree of - confidence that it can rely on its patent filing in the event of a dispute. But if a patent has not yet - been filed, the "bar date" clock may be ticking. The receiving company should inquire early on as - to whether there have been any patent-barring disclosures. In some cases, the parties must move - quickly to a patent filing to preserve rights. This brings additional pressure on both parties to - move quickly in the patent process. -

4. - Should a PPA be filed before the idea is exposed or exchanged? PPAs are often, and incorrectly, perceived as being the way to get a patent on file quickly and inexpensively. Despite the many problems, PPAs are still used to get the patent process started. PPAs can help by serving as a formal legal filing, but the quality of the PPA filing can affect later patent rights and the eventual strength of the relationship between the submitter and recipient. Usually, however, the advice given is that a PPA should be filed before an idea is exposed or exchanged.
5. - Is the idea ripe enough for an NPA filing? At some point, a full NPA must be filed. But when? Sometimes ideas are so thin or premature that further research and testing must be done. Ideas must often be moved from proof of concept to a commercializable embodiment. Proof-of-concept patent filings are often insufficient to provide broad coverage and may even be invalid. Nonetheless, the process toward NPA filing must move quickly and deliberately.
6. - Should a patent search on the idea be conducted (as a mechanism for filtering)? Patent searching is almost always a good idea: Who else is in the field? Do others already have patents? How are patents in this field constructed? Is there a blocking patent? Is the idea patentable over the prior art found in a search? Is there an infringement risk? Patent searching, however, takes time and has a cost. Who will bear that cost? This is another aspect of the OI environment that needs careful consideration.
7. - Who will pay the patent costs? Search costs? Under the assumption that searching will be conducted and patents will be filed, someone must pay these costs. Should the submitter initially pay? Should the recipient offer to reimburse? Should the costs be split? What limits or budgets should be put on these costs?
8. - Who should own any inventions/innovations/patents arising from the relationship? IP ownership can be a divisive issue for an OI project. Patents of course provide a well-established legal vehicle for determining initial ownership of patent-eligible technology. But the ownership question can be difficult, especially as to ult*imate ow*nership and what happens when the deal terminates or falls apart. Although someone will necessarily end up owning the intellectual property, relationships can be constructed so that ownership is a less divisive issue. Perhaps a better way to frame the issue is "access vs. ownership."[23] In some circumstances, ac*cess to* the innovation is sufficient for a party's business purpose, and an insistence on ownership is an unnecessary complication. In such situations, a license agreement may provide sufficient access to the patent or other intellectual property. A license can determine exclusivity arrangements, geographic constraints, time limits, usage restrictions, and other key issues. Often it is access to other things like trade secrets, human capital know-how, trademarks, or market channels that make the difference between a patent protecting a business interest and a patent being a costly but unnecessary detour.
9. - How do you unwind the deal if things do not go as mutually hoped? Unwinding is perhaps the most uncomfortable topic. No one wants to talk about the deal going sour, especially when both parties to an OI submission are in sales mode and want to show good attitudes and trust. But the harsh truth remains—this might be a bad idea. The technology might not be viable. It may be too costly. Mistakes could have been made by the submitter, resulting in loss of patent rights or loss of momentum. The deal might require unwinding. How and when do you raise that sensitive, unpleasant subject? It must be dealt with and managed, or there can be unhappy consequences to both parties.

10. - What changes may be expected in the patent system beyond the AIA, and how does that affect OI efforts? More patent reforms, this time primarily directed at alleged bad behavior of so-called "patent trolls," are presently before the U.S. Congress.[24] It is impossible to predict what additional changes may occur, or how those changes may affect an OI environment. Nonetheless, it can be expected that the laws will change again, and the pace of change in the patent laws is likely to increase. An OI company must take the fact of continuous change into account and stay abreast of developments that may affect OI and global IP strategy.

Possible Effects of Further "Anti-Troll" Patent Reform on Open Innovation

The list of questions above that address OI policies is by no means exhaustive. But the last major question—what further changes may be expected in the patent system—is dominating the recent discussion. There is a major reason for that: the emergence and continued activity of patent trolls. The term "patent troll" is a perjorative term for entities that go by several different names: patent monetization entities (PMEs), patent assertion entities (PAEs), licensing entities, and nonpracticing entities (NPEs).

In the views of some, a patent troll (by any of these names) can be any entity that files a patent infringement lawsuit. The term can apply to small companies with no assets other than patents, all the way to corporate consortiums such as Intellectual Ventures, the entity formed and run by the former Microsoft executive Nathan Myhrvold.[25] It is an unfair generalization to call any company that files a patent infringement lawsuit a patent troll, but there is a tendency in the popular media, especially the FOSS movement and others who favor openness and disdain the notions of intellectual property, to call any entity that asserts patents a "troll." This is to some degree simply a defensive reaction—no one likes to be sued for anything, let alone sued by an ogre who, according to some, makes no contributions to the cause of innovation because it does not itself make the patented product.

One primary reason for the recent visibility of patent assertion entities in the news is the view that it is not fair for companies that own no assets other than patents to assert them in litigation. The most objectionable behavior of some of these entities is the practice, not universally followed, of conducting minimal investigation of the possibility of patent infringement, writing a cease-and-desist letter to the target company, threatening or at least strongly intimating that a lawsuit may soon follow unless a settlement is reached, offering to settle at a nuisance value (which is always significantly less than the cost of defending a patent infringement lawsuit to any reasonable extent), taking the settlement . . . and then moving on to another target company.

One recent and well-publicized example of this kind of behavior is the so-called "scanner" troll, MPHJ Technology Investments LLC and its predecessor Project Paperless LLC.[26] This company purportedly owns a number of patents relating to the scanning of documents and directly storing the scanned documents in a storage medium or routing the scanned documents via e-mail to a recipient.[27] A number of small businesses, including accounting firms and other professional firms, were targets of MPHJ or related companies in recent years.[28] A few targeted companies elected to buy licenses from MPHJ or its affiliates rather than suffer the expense of defending the lawsuit, which could cost hundreds of thousands of dollars (or more) with no guarantees of success.

It is not a simple matter to identify which entities have valid patents and legitimate complaints that their inventions are being violated, and which entities are merely engaging in what some call extortionist behavior—threatening litigation with menacing letters and hoping to extract some payment before moving on. Many IP professionals believe that behavior resembling extortion by the threat of litigation unless there is a payment is reprehensible and should not be countenanced. However, draconian remedies that gut the ability of legitimate patent holders to enforce their patents would damage the patent system as severely as the trolls purportedly have. Congress, however, seems to be listening to some of the more vocal critics of the patent troll litigation misbehavior and are considering a number of further patent reform measures.[29]

Under the bill passed in the House of Representatives, entitled the Innovation Act,[30] U.S. patent laws would be further amended, beyond that of the AIA, to incorporate a number of mostly litigation-behavior type changes. Those changes include:

- - Disclosure of patent ownership—requirements for more transparency in patent ownership, so that accused infringers can identify who is actually behind a lawsuit;
- - Stays of patent suits against customers and end-users;
- - Bad faith demand letters;
- - Modifications to postgrant proceedings;
- - Fee shifting—an assumption that attorney fees will be awarded to the prevailing party ("loser - pays"); -
- - More detailed complaints/a heightened pleading requirement, requiring more specific information in an infringement complaint;
- - Limited discovery until claim construction (*Markman* hearing); and
- - Certain changes to the USPTO postgrant review process, including a more robust estoppel against later arguments contrary to those in the postgrant review and a requirement that the USPTO use the same standard as the courts in claim construction.

The Senate version of the bill, S. 1720, has some similar provisions, but the approach by the Senate varies in a number of respects from the House version so that a markup is necessary.

Almost all of the proposed changes in both the House and Senate bills are directed to behavior of the patent owner. One frequent complaint by many patent system stakeholders is that the patent system is broken because it issues too many invalid and unenforceable patents—some of which end up in the hands of patent trolls and result in the complained-about troll behavior. But rarely have any legal commentators, let alone Congress, proposed any patent reforms directed to the manner in which patents are examined and granted.

Several years ago, law professors Mark Lemley of Stanford University, Doug Lichtman of the University of Chicago, and Bhaven Sampat of Columbia University proposed a modification to the U.S. patent system that would allow the identification of economically important patents in part by allowing applicants to, in effect, earn a presumption of validity by paying for a thorough examination of their

inventions.[31] These proposals would allow the USPTO to focus its examination resources on important patents and pay little attention to the rest. But it is difficult for the government to know ahead of time which patents are likely to be important.

Oddly, however, no examination-type reforms such as those mentioned above by the law professors were proposed for the AIA, and none appear proposed for the current round of patent reforms being circulated at Congress. That is unfortunate—those who complain that the patent system is broken should focus as much on issues in the examination/prosecution stage as in the postgrant/enforcement stage.

For the present, the only thing that seems certain about the patent system is that people will continue to complain about it, additional reforms will be proposed, and, occasionally, some reforms will be enacted into law.

How to Maintain Open Innovation in the Era of Patent Reform

After roughly a year of AIA experience, it does not seem likely that the AIA and expected new patent reforms will radically change the environment of obtaining patents—with the exception of FITF. The real implications of FITF have not even begun to be felt, aside from the unease that results from the realization that patent applications must be filed as quickly as possible to minimize risk of loss of patent rights to others.

Unfortunately for OI advocates, some provisions of the AIA and FITF provisions could chill a company's OI programs and limit the potential return to the company and to the inventor. As an unintended consequence, the AIA has provided added motivation for inventors to remain secretive regarding their innovation efforts to avoid tipping off another party that may outrace them to a patent filing.[32]

One proposed approach to minimizing the risk of not being the first to file is to increase reliance on the inventor's publication of aspects of his or her technology, so as to invoke the potential protections of the modified grace period.[33] Arguably, a publication by the inventor is a "disclosure" that immediately bars others from patenting the contents of the disclosure but provides the inventor up to one year to file a patent. Some attorneys argue that the modified grace period allows inventors to publish the details of their inventions up to one year before filing the patent application, thereby protecting the invention for that time period.

There are, however, significant drawbacks to inventor publication as a part of OI policy. By publishing before filing the patent application, the inventor loses the advantage of competitive stealth within the United States and forfeits ownership rights outside the United States, given that most other countries consider published details of innovations as public domain. Additionally, publishing before filing is often viewed negatively by companies considering a licensing or acquisition agreement because it may give an early warning to competitors.[34]

All of these issues tend to make larger companies that wish to work with smaller companies in an OI environment operate in secret as much as possible. Larger companies might wish to restrict their collaborators from publishing their inventions early or requiring them to accept restrictive conditions before submitting ideas or innovations for consideration.

Although the AIA presents challenges, there are ways in which it can be managed with collaborative, OI programs. The key to success is an OI management *system* that bilaterally controls the flow of information between multiple parties and also prevents the disclosure of confidential information until an agreed-upon event. Such a system can protect the inventor submitting an idea as well as a company receiving the idea, and provides IP security. When managed well, OI-based partnerships function as symbiotic business relationships where the parties support each other in making a new invention a profitable venture.

Bilaterally secure OI programs create an environment through which corporations and independent inventors help shield each other from the side effects of the new U.S. patent law. This result may best be achieved through dedicated systems that offer secure gateways for information, an automated submitter communications process, and other processes, such as screens, filters, and analytics to protect both parties without requiring restrictive confidentiality conditions. Corporations can even leverage open innovation to conduct "prior art" searches without the risk of contaminating intellectual property, which helps create more defensible patents and prepare for potential challenges.

What to Do for OI Programs

OI companies must be as cautious as ever to preserve patent and IP rights. Inadvertent or premature disclosures can affect the rights of both parties in an open collaboration to develop new products or services. Here is a summary of actions that OI companies should do to preserve patent rights, whether from an inbound or outbound innovation perspective:

1. - 1. Mai*ntain the urgency to file patents, if patents are critical for competitiveness of your business. Th*e FITF provisions make it more important than ever to file patent applications quickly, before someone else files. The OI company culture should adapt to the environment that patents must be initiated early in the process, and the pace for application preparation should be kept up.
2. - 2. File *patent applications before disclosure to partners if possible. If* possible, one should file a patent application, even if just a PPA, on a proposed contribution to a possible collaboration before making a disclosure to a prospective partner. That helps alleviate some of the tension from a nonconfidentiality submission policy such as Shell's GameChanger.Be *cognizant of the patent application quality issue. Re*member, even a PPA must satisfy the stringent legal requirements of disclosure in order to be fully effective. If at all possible, any patent applications should be complete, comprehensive, exhaustive in discussion of equivalents, include a full claim set, and basically be ready for examination. But realistically, this may not be practically, financially, or temporally possible.
3. - 3. De*spite the issues with provisionals, there's no real alternative. De*spite the shortcomings of provisional patents, inventors really don't have a choice under many circumstances. If one is up against a deadline or needs a protective, precautionary filing, a PPA is still a good idea. A thin, sparse,

incomplete provisional may not provide all the legal protection needed. But at least a PPA is a patent filing, and at least it provides evidence that the named inventor had a conception of something and a reduction to practice of something, as of the filing date. That may be enough to tilt the scales in the event of a priority fight or a non-patent litigation type dispute resolution.

4. - 4. Avo*id public disclosures. Th*e need remains to keep technology secret until all the patent and - other IP decisions and perhaps filings have been made. An innovation-inbound company should - avoid publishing anything that could jeopardize rights to the joint effort, and should continue to - operate in secrecy as long as possible. -
5. - 5. Ope*rate under confidentiality if at all possible. De*spite the complications, it remains in the best - interest of both inbound and outbound innovators to keep their respective contributions private - and only partially revealed, until a definitive sharing agreement can be reached. The element of - trust in the relationship remains highly important—but you never really know who you can trust. - Proposing an NDA, even if rejected, at least puts the issue of secrecy and confidentiality on the - table, and opens a dialog about the subject, which can benefit both parties to the collaboration. -
6. - 6. Con*sider use of technology solutions to help manage the disclosure and exchange process. As* mentioned above, third-party technology-based solutions with staged disclosure can perhaps ease the tension that arises from receiving inbound ideas that are not yet patented or the subject of a patent application.

Conclusion

Although the AIA, patent reform, and the patent laws present challenges, there are ways in which these legal regimens can coexist with collaborative, OI programs. The key to success is awareness of the legal issues and careful *management* of them. OI policies can be constructed to control the flow of information and also prevent the inadvertent disclosure of confidential information. A thoughtful OI policy will protect outbound inventors submitting ideas as well as inbound entities and secure IP protection for the benefit of both parties. When managed well, OI-based partnerships allow both inbound and outbound parties to support each other in making new collaborative inventions a profitable venture. Because not all good ideas are developed internally, it can pay to manage well the IP issues of open innovation.

Endnotes

1. Ben Kerschberg, *How Intellectual Property (IP) Enables and Protects Open Innovation Platforms*, FORBES (Apr. 23, 2012), http://www.forbes.com/sites/benkerschberg/2012/04/23/how-intellectual-property-ip-enables-and-protects-open- innovation-platforms/.

2. *See*HENRY CHESBROUGH, OPEN INNOVATION: THE NEW IMPERATIVE FOR CREATING AND PROFITING FROM TECHNOLOGY (2003); OPEN INNOVATION: RESEARCHING A NEW PARADIGM (Henry Chesbrough et al. eds., 2006); Henry Chesbrough & Adrienne Kardon Crowther, *Beyond High Tech: Early Adopters of Open Innovation in Other Industries*, 36 R&D MGMT. 229 (2006).

3. A comprehensive listing of SSOs in the information and communications technology industries may be found at *Standards Setting Organizations and Standards List*, CONSORTIUMINFO.ORG, http://www.consortiuminfo.org/links/#.Ut1obbQo6Uk (last visited May 12, 2014). Each of these SSOs has its own IP rights policy, some of which can be found through this site.

4. *How to Protect Your Intellectual Property?*, SPECIALCHEM'S OPEN INNOVATIONhttp://www.specialchem.com/open-innovation/intellectual-property.aspx (last visited May 12, 2014).

5. 35 U.S.C. § 262: "In the absence of any agreement to the contrary, each of the joint owners of a patent may make, use, offer to sell, or sell the patented invention within the United States, or import the patented invention into the United States, without the consent of and without accounting to the other owners."

6. Manual of Patent Examining Procedure (M.P.E.P.) § 301, Paragraph IV (Ninth Edition, March 2014): "All parties having any portion of the ownership in the patent property must act together as a composite entity in patent matters before the Office." (Emphasis in original.)

7. Nari Lee et al., *Interfacing Intellectual Property Rights and Open Innovation* (Lappeenranta Univ. of Tech., Dep't of Indus. Mgmt., Research Report No. 225, 2010), *available at*http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1674365.

8. Mayo Collaborative Servs. v. Prometheus Labs., Inc., 132 S. Ct. 1289, 1293 (2012) (citing 35 U.S.C. § 101) (recognizing that "laws of nature, natural phenomena, and abstract ideas" are not patentable).

9. *SeeInnovation: A Look Inside the Idea Factory*, WIRED, http://www.wired.co.uk/promotions/shell-lets-go/innovation/the-idea-factory (last visited May 12, 2014).

10. According to a simplified explanation, the patent "bar date" is traditionally understood as the one-year anniversary of the first public use, offer for sale, or publication describing an invention, whether made by the inventor or by a third party. If a patent is not filed before this one-year anniversary, a patent is said to be "barred." The U.S. law reflecting this requirement is found in 35 U.S.C. § 102, as modified by the America Invents Act of 2011 (AIA), which generally retained this simplified explanation, with some differences.

11. *See GameChanger Step-by-Step Process*, SHELL, http://www.shell.com/global/future-energy/innovation/innovate-with-shell/shell-gamechanger/step-by-step.html (last visited May 12, 2014).

12. *Share Your Idea*, SHELL, https://www.shell.com/global/future-energy/innovation/innovate-with-shell/form-share-your-idea.html (last visited May 12, 2014).

13. *See, e.g.*, *Unsolicited Idea Submission Policy*, APPLE INC., http://www.apple.com/legal/intellectual-property/policies/ideas.html (last visited May 12, 2014).

14. *See, e.g.*, *Policy regarding Unsolicited Ideas*, TASER INT'L, INC., http://www.taser.com/policy-regarding-unsolicited-ideas (last visited May 12, 2014).

15. e-Zassi has a customizable platform that includes controlled idea capture (external and internal), automated assessment, data analytics, and customized workflows and processes. E-ZASSI, http://www.e-zassi.com/connect/index.html (last visited May 12, 2014).

16. 35 U.S.C. § 118 ("A person to whom the inventor has assigned or is under an obligation to assign the invention may make an application for patent.").

17. *See* Sharon Belenzon & Andrea Patacconi, *Innovation and Firm Value: An Investigation of the Changing Role of Patents, 1985–2007*, 42 RES. POL'Y 1496 (2013), *available at*https://faculty.fuqua.duke.edu/~sb135/bio/RP_Final.pdf; Laura Gaze, *Proof: R&D Investment Pays Off*, R&D MAG. (Oct. 11, 2013), http://www.rdmag.com/articles/2013/10/proof-r-d-investment-pays.

18. *See, e.g.*, New Railhead Mfg., LLC v. Vermeer Mfg. Co., 298 F.3d 1290 (Fed. Cir. 2002). The "written description" requirement for patents is set forth in 35 U.S.C. § 112(a).

19. Pub. L. No. 112-29, 125 Stat. 284 (2011).

20. *See, e.g.*, Memorandum from Morris, Manning &Martin, LLP, to Clients and Entrepreneurs, Frequently Asked Questions (FAQs) about Patent Reform—The Leahy-Smith America Invents Act of 2011 ("AIA") (Dec. 2011), http://www.mmmtechlaw.com/2011/12/27/frequently-asked-questions-about-patent-reform-%E2%80%93-the-leahy-smith-america-invents-act-of-2011-%E2%80%9Caia%E2%80%9D/.

21. Some patent practitioners advise clients, when faced with time deadlines or resources limitations, to file an "interim, holding, priority-preserving" patent application in order to obtain a filing date with respect to subject matter currently in hand, with a view towards abandoning such an application in favor of a more complete and higher quality continuation-in-part (CIP) patent application at a later date, when further subject matter is developed or more resources are available. Such a strategy, though, has drawbacks, including the introduction of many known complications of CIP patents.

22. Article 4(C)(4) of the Paris Convention prevents an inventor from claiming the benefit of a second application where the first application (e.g., PPA) is still pending at the time a second application is filed. There are significant risks to patenting strategies involving multiple provisional and continuation applications presented by this provision of the Paris Convention.

23. Thanks to Cheryl Perkins at Innovationedge LLC for her insight on the "access vs. ownership" issue. Her company's website can be found at http://innovationedge.com.

24. The main "anti-troll" patent reform bill presently being considered, as of this writing, is the Patent Transparency and Improvements Act, S. 1720, introduced by Senate Judiciary Committee Chairman Patrick Leahy (D-Vt.). The bill has been delayed in further markup by Senator Leahy. For current status, see http://beta.congress.gov/bill/113th-congress/senate-bill/1720/all-actions/.

25. Founded in 2000, Intellectual Ventures is "a privately-held invention capital company." *Intellectual Ventures Fact Sheet*, INTELL. VENTURES (2013), http://www.intellectualventures.com/assets_docs/IV_Corporate_Fact_Sheet_2.pdf. The company purportedly has more than $6 billion committed capital and more than 40,000 IP assets in active monetization programs. Investors include a mix of Fortune 500 companies, individuals, and institutions. *Id.*

26. A description of the enforcement activities of MPHJ, at least from its perspective, can be found in Complaint, *MPHJ Tech. Inv., LLC v. FTC*, No. 6:14-cv-11 (Jan. 13, 2014), https://ia600804.us.archive.org/28/items/gov.uscourts.txwd.669787/gov.uscourts.txwd.669787.1.0.pdf (alleging unlawful interference and threats by the FTC against MPHJ directed at stopping or impeding the allegedly lawful, proper, and constitutionally protected efforts by MPHJ to identify and seek redress for infringement of its patents).

27. Julie Samuels, *MPHJ Exposed: The Real Dirt on the Notorious Scanner Troll*, ELECTRONIC FRONTIER FOUND. (Jan. 14, 2014), https:// www.eff.org/deeplinks/2014/01/mphj-exposed-the-real-dirt- notorious-scanner-troll.

28. *See* Ira Glass, *Episode 441: When Patents Attack!*, NPR: THIS AMERICAN LIFE (July 22, 2011), *available at*http://www.thisamericanlife.org/radio-archives/episode/441/when-patents-attack; Joe Mullin, *Patent Trolls Want $1,000—for Using Scanners*, ARS TECHNICA: LAW & DISORDER (Jan. 2, 2013), http://arstechnica.com/tech-policy/2013/01/patent-trolls-want-1000-for-using-scanners/.

29. On December 5, 2013, the U.S. House of Representatives passed the Innovation Act (H.R. 3309) by an overwhelming vote of 325–91. The Senate version of the legislation is S. 1720. *See supra*, note 21.

30. Innovation Act, H.R. 3309, 113th Cong. (as passed by House, Dec. 5, 2013) (sponsored by Rep. Bob Goodlatte (R-Va.)).

31. Mark Lemley, Doug Lichtman & Bhaven Sampat, *What to Do about Bad Patents?*, REG., Winter 2005–06, at 10, *available at*http://object.cato.org/sites/cato.org/files/serials/files/ regulation/2005/12/v28n4-noted.pdf.

32. Steve Berry, *New First-to-File Patent Rule Threatens Open Collaboration*, PHARMACEUTICAL TECH., May 2, 2013, at 74, http://www.pharmtech.com/pharmtech/article/articleDetail.jsp?id=813409.

33. 35 U.S.C. § 102(b). Section 102 provides:

(a) Novelty; Prior Art.—A person shall be entitled to a patent unless—

(1) the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention . . . .

(b) Exceptions.—

(1) Disclosures made 1 year or less before the effective filing date of the claimed invention.—A disclosure made 1 year or less before the effective filing date of a claimed invention shall not be prior art to the claimed invention under subsection (a)(1) if—

(A) the disclosure was made by the inventor or joint inventor or by another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor; or

(B) the subject matter disclosed had, before such disclosure, been publicly disclosed by the inventor or a joint inventor or another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor.

34. Berry, *supra* note 29.