

Identifying and Managing Joint Inventions

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Introduction

Joint inventorship is defined by patent law and occurs when the outcome of a collaborative project results in two or more people contributing intellectually to an invention. Depending upon the number and affiliations of the joint inventors, many interesting situations can arise, and a number of these issues will be addressed in this chapter. When referring to a joint invention in this chapter, the definition is an invention with one or more inventors from multiple institutions or companies.

Included in this chapter is a discussion of some of the issues involved in the identification and management of joint inventions, as well as potential hurdles that technology managers may face during these processes. Joint inventors are identified through a variety of ways, including an institution's invention disclosure report, publications, or at a patent drafting meeting with patent counsel.

Similar to any invention disclosed to a technology transfer office, once the joint invention is identified, an evaluation and decision is required to proceed with protection of the invention. In addition to the criteria used when evaluating inventions developed at a single institution, technology transfer offices need to consider additional factors, such as expense and revenue sharing, when deciding whether or not to pursue patenting of a joint invention.

In the process of determining whether to patent a jointly developed technology, the other participating inventors and institutions should be notified. If a decision is made to file a patent application, the institutions should consider entering into agreements with each other to establish the role each party will play in the patenting and licensing of the inven-

tion. While each joint invention is unique and may require special provisions, processes discussed here are presented as best practices for managing joint inventions.

Identifying a Joint Invention

When faced with a joint invention, follow your institution's inventorship guidelines, as you would when the inventors are only from your institution. To determine inventorship, focus on the individuals involved in the intellectual development of the idea. If someone merely provided a theory, data, or material but did not provide a firm or definite idea, he or she may not be an inventor. Correctly identifying inventors is crucial to the validity and enforceability of a patent. In most instances, a patent attorney should review the contributions of the proposed inventors and determine which contributors are inventors.

Identifying inventorship can be a multistage process using information from a variety of sources. Often, a technology transfer office's first source of information is the invention disclosure report submitted by the inventors. In addition to a description of the invention, these reports should also include a list of the inventors and their institutional affiliations.

Publications are also another source of information regarding inventorship of a technology. Although rules for authorship differ from those for inventorship, the list of the publication authors is an excellent way to start identifying those who contributed in some way to developing the technology. The invention disclosure report and publications then can be used as the basis for the inventorship discussion during the initial disclosure meeting.

This discussion should include questions regarding individual contributions to the conception of the invention and if they collaborated with anyone not listed as inventors, including people outside of the university. A similar discussion also should occur between the inventors and the attorney preparing the patent application. Patent law only requires contribution to the conception of one claim in order to establish an individual as an inventor, and so it cannot be determined prior to drafting the claims. Given this fact, attention should be directed back to a patent application if the patent claims are amended or deleted to ensure the correct inventors are, in fact, attributed to the application.

Once joint inventorship has been determined, it is important for the technology manager to instruct the joint inventors to disclose their invention to their designated technology transfer office, if the joint inventors have not already done so.

Evaluating a Joint Invention

As with any invention that is disclosed to a technology transfer office, many factors are considered when deciding whether or not to pursue patenting for a particular joint invention. Such factors include the likelihood of obtaining a patent, the quality and type of patent claims expected, whether the patent could be licensed and enforced, potential income and the timing of the income, and the existence of any administrative issues that may complicate handling the invention. However, in addition to evaluating joint inventions for their technical merit and commercial value, there are other factors to consider.

Often joint inventions result from collaborations between researchers at two universities. However, when the joint invention involves three or more entities that will share revenue, the potential revenue for each institution may become so small that it may not be worth pursuing a patent. Additionally, gathering all of the appropriate documentation that is necessary to file a patent from each joint inventor can be challenging. When a joint inventor is employed by a company, opportunities for licensing the technology to a competing company often are constrained. Conversely, developing a joint invention with a company may result in a license to the company for exclusive rights to the invention.

If the joint invention was developed under a research/collaboration agreement or under a funding contract, the intellectual property language of the agreement may also play a role in your decision to accept the joint invention. Many collaboration agreements discuss the intellectual property rights of the parties involved and detail how joint inventions should be handled. Additionally, as with research agreements, funding contracts may set limitations on the ability to file a patent application or provide intellectual property rights to the funder and should be reviewed prior to filing a patent application.

Managing a Joint Invention

Notifying the Other Party

When a joint invention is identified, it is in everyone's best interest to establish an open dialog early in the process regarding the invention and the framework for the parties to handle the invention. If possible, technology managers should work with the joint inventor to ensure the other institution (or company) is aware of the joint invention. This allows for accurate identification of the funding sources, important for subsequent reporting, as well as triggering a discussion of the basic issues of patenting and licensing. Many universities choose to enter into agreements with each other, such as an Inter-Institutional Agreement (IIA), to designate who will take the lead in the patenting and licensing processes. If the inventor is from a company, it is possible to enter into similar agreements or license agreements in which the company may license all of the rights to the invention.

Agreements between Parties: The Inter-Institutional Agreement (IIA)

An inter-institutional agreement is a mechanism for owners of a joint invention to establish the responsibilities of each party during the lifetime of the invention. Negotiating IIAs is sometimes difficult and time-consuming, and as such, these agreements often are not given priority in a technology transfer office. However, these agreements are important to the management of joint inventions. Without IIAs, there is no documented understanding between the parties about managing the patenting and licensing of the invention.

IIAs provide a number of benefits. They may provide a means of obtaining from the joint inventor all the proper documentation required to file and prosecute a patent application. The IIA should establish which institution handles the patenting and licensing of a joint invention, avoiding interference within the patent office if both groups are trying to pursue protection, as well as avoiding competition with each other when trying to license the invention.

IIAs usually allow one of the parties to exclusively license the joint invention and enable the licensing of the technology in foreign countries, as certain foreign jurisdictions

require that all owners of an invention approve the licensing of the patent. These agreements often also establish sharing of both expenses and revenue derived from the patenting and licensing of the joint invention.

When to Enter into the IIA

With respect to the intellectual property protection of a joint invention, it is best to enter into an IIA as soon as possible. This ensures that all appropriate documentation can be obtained from all of the inventors for the filing of the patent. With an IIA in place at the beginning of the process, the foundation and terms for the sharing of patent expenses is established. Alternatively, institutions could agree to wait to enter into an IIA until a company is interested in licensing the technology. One reason for waiting is the possibility that the claims are amended during prosecution of the patent application, possibly eliminating a joint inventor and the need for an IIA.

However, caution should be exercised when waiting to enter into an IIA due to several potential and significant drawbacks. Without an IIA, sharing of the patent expenses, which are incurred immediately, typically does not occur. Waiting can also delay the ability of an institution to enter into a license agreement as another party also has rights to the invention. A number of hurdles must be overcome during the licensing process, and the negotiation and execution of an additional agreement prior to licensing can slow down the licensing discussions. In general, entering into an IIA early in the process is best for all parties.

Essentials of an IIA

Many different terms are addressed in an IIA. Depending on the situation, the IIA can be straightforward or very complex. However, most agreements will include terms that establish a means for filing and prosecuting the patent, administering and licensing the patent, and sharing expenses and income derived from the patenting and licensing of the invention.

When entering into an IIA, the parties need to establish the rights of each party in the joint invention (e.g., will both parties own the invention or will one party assign his or her

rights to the other party). Ownership of the IP will determine the relationship between the parties and the terms of the agreement. Assignment of rights to the other party is not frequently seen in IIAs, particularly if federal or other funding agreements limit the ability of the institution to assign its rights.

However, assignment of rights may be appropriate if one of the parties does not wish to pursue the invention, does not want any involvement in the patenting and licensing process, or does not want to share in any of the expenses. In most cases, if a university does not want to be involved, its inventors can assign their rights to the other university and be treated the same as the other inventors.

Taking the Lead

In an IIA, typically the parties will designate one party to take the lead and be responsible for the patenting and licensing of the invention. This designation can be based on a number of factors, including each party's ownership of background IP, the number of inventors, existing relationships with potential licensees, case load in the technology transfer office, and experience in the technology field. Usually the party in the lead for patenting is also in the lead for licensing.

When taking the patenting lead of the joint invention, the lead party is then primarily responsible for preparing, filing, prosecuting, and maintaining the patent. Depending on the desired relationship between joint owners, the lead party may have sole discretion in making decisions regarding the patenting or the other party may have the opportunity to provide comments. If a commenting period is negotiated, then the lead party also may be obligated to send the other party copies of all formal correspondences with the patent office regarding the filing, prosecution, and maintenance of the patent. In addition to patent applications filed in the United States, an IIA also should address how foreign filings will be handled.

Often the responsibilities established for each party regarding the patenting of a joint invention are reflected in the responsibilities of the parties in the marketing and licensing of the patent. The party designated as the licensing lead is primarily responsible for

marketing the technology, as well as negotiating, executing, and administering licensing agreements. As with the patenting process, the decisions regarding the licensing of a joint invention can be at the sole discretion of the licensing lead or can have various degrees of involvement and approval from the other party.

In negotiating IIAs, some institutions prefer to receive copies of the executed agreements, while others want to be involved in all licensing discussions and negotiations. A certain level of involvement may be warranted; however asking for too much involvement puts an extra burden on the lead party when negotiating and finalizing licensing agreements. It is important to develop trust early in the process with the joint institution and recognize that the lead party must represent both parties' best interests when entering into license agreements for the joint invention.

Unlike the patenting process, there is some room for flexibility in allowing both parties to pursue licenses for the joint inventions. Typically IIAs give one party exclusive licensing rights. However, both parties may be given nonexclusive licensing rights or exclusive rights for different license fields. This flexibility may be desired if both institutions have other technologies that may be licensed along with the joint invention, making it easier for a licensee to acquire all desired technology from one source.

In addition to addressing how patenting and licensing will be handled, many IIAs also address how the parties will be involved in the enforcement of the joint invention. Typically, the lead party for patenting and licensing also will take lead in legal actions involving the joint invention. However, the law requires some involvement of the other party, and the costs and revenue usually are shared according to the patent expenses and licensing revenue allocations.

Sharing the Money

A primary goal of a university when patenting an invention is to license the technology for commercialization for the public benefit and receive license fees and royalties from the licensee as a result of that commercialization. Those funds are used to reward the inventors and fund additional research at the university. Therefore, it is important in an

IIA to establish how the revenue derived from the licensing of a joint invention will be shared. However, before revenue is earned, expenses are incurred.

It is important to determine how expenses will be split and when the expenses will be paid. The parties may agree to share in the expenses based on the number of institutions involved, the number of inventors at each institution, or the inventors' contribution to the invention. Cost sharing typically is determined by the number of institutions or the number of inventors. Basing the share on the contribution of the inventors questions the value that each inventor provided and may lead to disagreement among the inventors and/or the institutions, especially as the patent claims may change through prosecution.

After a decision has been made on the sharing of the expenses, it is important to consider when each institution pays its share of expenses. Typically, IIAs require that each party pay its share as the expenses are incurred. However, another option is for the party filing the patent to pay all of the patent expenses and then reimburse themselves prior to sharing revenue with the other party. This option is less popular as all of the parties are not sharing the risk involved in patenting the joint invention, and if the technology is never licensed, only one party will have incurred the financial burden.

As with expenses, the proceeds from the licensing of the technology can be split based on number of institutions, the number of inventors at each institution, or the inventors' contribution to the invention. An inventor's contribution can be based on either his or her intellectual contribution to the invention or on the research funding that each inventor directed toward the invention. It is critical that all parties come to a clear understanding on this term as it is one of the driving forces behind entering into such an agreement. If the parties cannot agree on the sharing of costs and revenue, the agreement most likely will not be finalized. Typically, the revenue sharing mirrors the patent cost sharing.

Another financial term that may be the subject of some negotiation is the concept of an administrative fee. This fee is used to partially reimburse the technology transfer office that has taken both the patenting and licensing lead for the time it has put into patenting, marketing, licensing, and administering the agreements. This fee can be a fixed fee or a

percentage of the gross income received, with or without a cap. Percentages typically range from 5 percent to 25 percent, and the caps typically range from \$10,000 to \$50,000. Each institution likely will negotiate an administrative fee that it feels reflects its costs and needs.

Special Issues to be Considered

Every joint invention seems to have its own interesting twist, but here are a few situations that deserve special attention.

Incorrect Inventorship

As previously discussed, determining the correct inventors can be challenging and can change significantly as the patent application moves through the patenting process. However, it is important to the validity of a patent to always list the correct inventors on the patent. Mechanisms exist to correct inventorship if it is believed that the inventorship of a patent is incorrect.

When a patent application is still pending and the inventorship error occurred without deceptive intent, inventorship may be amended by filing a petition with the patent office (35 U.S.C. §116). The amendment must include consent from the newly added inventor (or the removed inventor if such the case). If the patent has already issued, inventorship can be corrected via a certificate of correction or by the reissue process (35 U.S.C. §256). Since all assignees to the patent or application must agree to change inventorship, agreement must be reached among all the parties. Inventorship cannot simply be changed through an amendment or reissue process without consent from all the parties involved.

If agreement cannot be reached with the assignee of the patent regarding the inventorship, other methods, such as resolution through the courts or patent offices, can be used to correct inventorship. However, avoiding the necessity for this is desirable. An issued patent with incorrect inventors listed is an invalid patent, so it is important to be accurate in assigning inventorship of the invention.

Licensing without an IIA

As an assignee of a joint invention, an institution has the ability to license its rights in a United States patent to a third party without the permission of the other joint owners and without providing consideration to the other joint assignees. Without an IIA, an institution can license the patent rights nonexclusively or license its rights to the patent exclusively. However, as previously mentioned, some foreign jurisdictions require that all owners approve the licensing of the patent, which can prove difficult without an IIA.

Multiparty Joint Inventions

IAs can be difficult agreements to negotiate and execute when there are just two parties, let alone when three or more parties are involved. When dealing with multiple parties, it is very important to discuss early in the process the goals that each party hopes to achieve with the technology and the role it would like to play in achieving those goals. These discussions create the framework for any agreement that the parties enter into with each other for the management of the technology.

The ease of entering into such an agreement is a consideration that many technology managers think about when deciding whether or not to pursue a joint invention with multiple parties. A technology manager also should consider the potential value of a technology, as the financial benefits of patenting a technology can be diminished when multiple parties are involved.

When entering into a multiparty IIA, it is important for nonlead parties to recognize that their requests of the lead party for comment or updates on the patenting and licensing activity can be counterproductive. Requests for frequent updates reduce the amount of time and focus the lead party can allocate to essential patenting and licensing activities. For this reason, it is a recommended practice to minimize the obligations of the lead party in multiparty IIAs.

Sponsored Research Contracts and Joint Inventions

Many institutions have sponsored research contracts with industry, and these contracts usually provide the companies with some rights to inventions developed under the

contract. These rights usually extend to both inventions developed solely by the institution and joint inventions that are developed by both the institution and the company. The agreements usually establish how joint inventions will be handled, such as responsibility for filing the applications and the sharing of expenses.

However, these agreements typically do not address a joint invention developed by the institution and a research collaborator at a different institution, who is not part of the specific sponsored research contract. A company may simply consider this type of joint invention to be an institution invention and expect the same rights to these joint inventions as it would for institution inventions.

This situation requires the technology manager to work with the other institution to ensure the granting institution is able to give those rights. This may become an issue if the other institution has developed other plans for the technology or has a sponsored research contract of its own. Thus, when evaluating any new invention, it is very important to identify early in the process whether the inventors are supported and obligated by any research contracts or funding agreements.

Collaboration Agreements and Master IIAs

Once a collaboration has formed and been successful in developing inventions, it is likely that the collaborators will continue to work together in the future. In this situation, it may be to the benefit of both institutions to enter into an agreement to establish the process for handling any future intellectual property that results from the collaboration. These can include research collaboration agreements or a master IIA. In addition to IP terms, collaboration agreements help define other terms of the collaboration such as deliverables and publications, which may be important if funding is shared amongst the collaborators.

It is imperative to include language in the research collaboration agreement that assures all joint inventors must be informed of joint inventions before any patent actions are taken. This practice helps to ensure all inventor institutions are aware of the existence of a joint invention.

When institutions frequently share inventions, it may be beneficial to establish a master IIA between the parties to handle all joint inventions between their institutions. With a Master IIA, neither party will need to wait for a new IIA to be negotiated prior to moving forward with the patenting and licensing of the joint invention. Alternatively, institutions can develop a template IIA for joint inventions. When new IP arises, the parties can use the predetermined terms or modify them to better reflect the technology at hand.

Summary

As collaborations continue to flourish and large multicenter research projects spread across the country, joint inventions will continue to be part of a technology manager's daily life. In an effort to ease the joint invention process, technology managers should foster an open dialog with each other very early in the patenting process to establish the framework among the institutions for handling the invention. Technology managers should discuss the goals they want to achieve through the patenting and licensing of the invention and the roles that they want to play to help achieve those goals.

Once the institutions have agreed upon the responsibilities of each party and how they will share the expenses and the revenue, the parties should enter into an inter-institutional agreement, which serves as the basis for all future decisions regarding the joint invention. By creating an open dialog soon after a joint invention has been identified, technology managers can more efficiently determine how the technology will be managed and the more promptly they can license and commercialize the technology, which is the ultimate goal of patenting an invention.