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Three Years After The America Invents Act: Practical Effects On University Tech Transfer

By Robert MacWright

Abstract

The America Invents Act (AIA) has significantly changed the way university technology transfer offices operate. On the plus side, the first-inventor-to-file rule has allowed for simpler invention disclosures, since disclosures no longer have value as conception records. The AIA has also provided more relaxed procedural rules, avoiding the mad dash to get inventor signatures, and allowing universities to file in their own name from the outset. On the negative side, technology transfer offices have to make filing decisions faster, as the first-inventor-to-file rule makes it risky to wait for more data; another inventor could get to the Patent and Trademark Office (PTO) first, and there is no longer a one-year grace period for prior art. The AIA also created quasi-judicial proceedings known as Post-Grant Review (PGR) and Inter-Partes Review (IPR), in which claims are interpreted more broadly, and can be invalidated with less proof than if those same claims were reviewed by a federal court. Based on the rate that IPR proceedings are invalidating patents and patent claims, the AIA may make it more challenging and expensive for universities and their licensees to defend those patents that are most likely to succeed in bringing new products and services to the public.

The America Invents Act of 2011 (AIA) came into full effect March 13, 2013. More than three years later, university tech transfer programs have adapted to most of its changes. The biggest change, switching from a first-to-invent system to first-inventor-to-file, has been fully integrated and some procedural changes have made things easier. The wild-card is the creation of the quasi-judicial Post-Grant Review (PGR) and Inter-Partes Review (IPR) proceedings; some impact has been felt already, but it may take a decade before the full impact is known.

First-Inventor-to-File

Historically, one of the greatest traditions of the U.S. patent system was its recognition that a patent was a reward for that "spark of genius" that creates an inventive concept. Beginning with the first Patent Act in 1790, patents were to be awarded only to the "first and true inventor." Later changes to the law made it possible to invalidate a patent for naming the wrong inventor, and created "interference proceedings" to decide which person was first to conceive the invention and was thus entitled to the patent even if another inventor filed an application first. The 1953 Act, which the AIA amended, also provided for a dual grace period: an inventor could file a patent application for up to one year after they published their inventive concept, and no patent or printed publication dated less than one year before a patent filing date could be considered "prior art" by an examiner in determining patentability.

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In essentially the rest of the world, however, patents have long been awarded to whoever files a patent application first, and there are no grace periods. For academic technology transfer offices (TTOs) wishing to retain foreign patent rights, they have long had to follow the rest of the world's first-to-file rules, and join the "race to the patent office." Faculty inventors in such cases had to defer publication because, in most of the world, a publication or oral presentation by an inventor is an absolute bar to patentability. And patents, publications or even oral presentations by others, even the day before filing, would be considered by foreign patent examiners in determining patentability.

The AIA was the culmination of efforts to switch the U.S. to the first-to-file system that began in the 1970s, in part in the interest of international patent law harmonization. However, the AIA didn't really go to first-to-file; by retaining the one-year from publication grace period for an inventor to file a patent application, the AIA created a "first-inventor-to-file" system. If an inventor publishes about his or her invention and another files a patent application on the same invention within the one-year grace period, the inventor can challenge the other patent on grounds that the person who filed first derived the invention from the publication by the first inventor.

Because foreign patent law is more demanding, the AIA caused no change in how TTOs handle inventions for which foreign filings are likely to be needed. And when an inventor publishes prior to disclosing to the TTO or prior to the TTO filing a patent application, a U.S. patent application can still be filed within one year of the publication date. However, the one-year "prior art" grace period is gone; publications and patents ap-

pearing even a day before the U.S. patent application filing date can be used by an examiner in determining patentability. Another change is that only printed publications and patents, public use or products on sale used to be "prior art" in the U.S.; oral presentations were not. But the AIA added information "otherwise available to the public" to the definition of the "prior art," which arguably brings in the entire internet as well as oral presentations that are "public" (*e.g.* , a talk about a chemical invention at a meeting of the American Chemical Society). So under the AIA, even when foreign filing isn't important, the race to the patent office is on—in fast paced fields and with the ease of publication on the internet, any delay risks having to face additional, and potentially deadly, prior art.

However, for those inventions where only U.S. patent protection will be sought, which is often the case for university inventions, this change places greater cost burdens on TTOs, and a need for urgency for TTOs and inventors alike. TTOs have to urge inventors to disclose inventions as early as possible, given both the need to be first to file and the need to limit the encroachment of the prior art. And TTOs need to file provisional patent applications as soon as possible; they can no longer wait for additional data to be collected. Where initial data is scant, the inventors need to get additional needed data quickly, and another provisional or early conversion to a regular patent application will be needed once the data is in-hand. And, unfortunately, in such cases the priority claim to the first provisional may be in doubt, due to its limited data. If the provisional turns out to be inadequate to support the priority claim, which may not be revealed until a later patent challenge, then the challenger will have the prior art published between the provisional filing date and the conversion date to attack the patent with. But the expense and effort to file the early provisional is unavoidable, given the need to race to the patent office.

There is, however, one small benefit from the new first-inventor-to-file system: it is no longer important to keep records of when an invention was conceived, so the time consuming disclosure forms used by universities in the past are no longer needed. Under the old rules, whoever conceived the invention first was awarded the patent, even if another inventor got to the patent office first; and the invention disclosure was often the only record of early conception. Now that filing and not conception is the key event, TTOs no longer have to use long, detailed invention disclosure forms, and no longer have to urge inventors to have their lab notebooks signed and witnessed (which few would do anyway). Simplifying the invention disclosure process may increase the number of disclosures, and ultimately the number of patent applications and licenses.

Procedural Changes that Benefit TTOs

No more race to get inventor signatures—Before the AIA, a "declaration or oath" signed by the inventors, attesting that they were the first and true inventors, was an essential part of a regular U.S. patent application. This often required a mad dash to track down the inventors for their signatures, which could be difficult for student inventors who no longer worked at the university and may even have left the country. If the declaration or oath could not be filed along with the application, the patent office would issue a "notice to file missing parts," which meant that there were two months' more time for the mad dash, but at the expense of some lawyer fees; and if more time was needed, it was necessary to pay extension fees to the patent office.

This mad dash was often repeated some time later, when inventor signatures were needed on an assignment to be filed in the patent office, officially conferring ownership to the university. (One might think these crises could have been combined, but since there was no urgent deadline for assignments, that often wasn't the case.)

The AIA solved both of these administrative challenges by allowing the declaration and oath to be filed up until the date the issue fee is paid, which is usually three or more years after the filing date; and by also allowing the declaration or oath to be combined with the assignment document, so you only need the inventor's signatures on a single document. Thus, the mad dash is no more—but beware of the graduating student inventor who disappears to places unknown if you take too long! (Even then, all is not lost; a substitute statement can be submitted by the patent owner if an inventor cannot be found or reached after diligent effort.)

Filing on behalf of the university, not the inventors—Before the AIA, lawyers usually filed initial patent applications on behalf of the inventors who, absent an assignment recorded in the patent office, were the de facto owners. This posed an ethical dilemma: by filing an application on behalf of the inventors, an attorney-client relationship was created. After the assignment of the patent application to the university, the university would be the new client; and what if the university had interests in conflict with the inventors personally, the former clients? This potential conflict could be avoided by filing an affidavit signed by the university requesting the university be recognized as the applicant; but this was rarely done when provisional applications were filed. The AIA eliminated this concern by allowing a patent application to be filed from the outset on behalf of a party to whom the inventors have an obligation to assign ownership, which is the usual case with university inventions.

Correcting Inventorship—Another benefit of the AIA is that correcting inventorship on a patent application used to require the erroneously included or erroneously excluded inventor to submit a signed affidavit that they were erroneously included or excluded "without deceptive intent" on his or her part. (This always seemed odd; an inventor erroneously left off a patent is unlikely to have had deceptive intent, but the other inventors who left him or her off might!) This affidavit requirement sometimes made correcting errors in inventorship difficult, especially if a miss-included inventor disagreed they weren't an inventor, or if an un-named inventor graduated and left for parts unknown. The AIA eliminated the requirement to prove lack of deceptive intent, so such affidavits are no longer needed. Better yet, since inventorship errors can now easily be corrected by a patent owner without need for cooperation by a potentially disgruntled unnamed inventor or one who is removed as an inventor, it is more difficult to invalidate a patent for having errors in inventorship.

"Curing" mistakes that might be alleged to be inequitable conduct—Lastly, the AIA created "supplemental examination," which was intended to allow patent owners to avoid allegations of "inequitable conduct" (*aka* "fraud on the patent office") which could lead to a patent being held unenforceable. At the time the AIA was being debated in Congress, allegations of inequitable conduct had become routine in patent litigation, and the courts entertained arguments that seemingly erroneous failure to disclose a reference to the patent office could, if the reference was highly relevant, infer an "intent to deceive" required for unenforceability.

Supplemental examination was the Congressional remedy, and this new process allows such errors or omissions to be corrected, subject to further examination by the PTO. Importantly for universities, this provision can also be used to correct an erroneous claim of small entity status, which can happen if the TTO doesn't recognize that a large entity has an option to license an invention under a sponsored research agreement. Such erroneous claims had previously been alleged to constitute inequitable conduct, sometimes successfully. But supplemental examination is not a passive cure; the request has to be sought before any litigation challenging the patents is filed.

Supplemental examination was a good idea, but the Court of Appeals for the Federal Circuit (CAFC), in its 2011 decision in *Therasense, Inc. v. Becton, Dickinson & Co.* (No. 208-1511), largely put an end to the inequitable conduct craze by requiring that a challenger show that "but-for" the alleged inequitable conduct the patent would not have issued, and separately prove, by clear and convincing evidence, that there was specific intent to deceive the patent office that was knowing and deliberate. The need to prove intent to deceive, and disallowing intent to be established by inference, has greatly reduced the number of cases in which inequitable conduct is alleged.

Into the Great Unknown—PGR and IPR

The AIA created two new quasi-judicial trial mechanisms to challenge patent validity, and it re-organized the old Board of Patent Appeals and Interferences to become the Patent Trial and Appeals Board (PTAB), which would decide such cases. One such mechanism is Post-Grant Review, which is entirely new, and the other is Inter-Partes Review, which is an expansion of the previous inter-partes reexamination process. Both of these mechanisms have most of the trappings of a court trial, but are designed to be much faster and cheaper.

Post-Grant Review—Post-Grant Review (PGR) provides a nine-month window after a patent issues during which anyone can challenge validity of the patent on any grounds—*e.g.*, prior art (35 USC 102, 103), inadequate written description (112), and non-statutory subject matter (101). It is difficult to predict what the impact of PGR will be on universities since as of June 2016, only 30 PGR petitions had been filed. Since PGR only applies to patents issuing on applications filed on or after March 16, 2013, the day the first-inventor-to-file rule went into effect, the small number of cases is probably because it can take years to get a patent issued, and relatively few patents filed after that date have been issued. Nevertheless, bearing in mind that university patents are generally more advanced and less incremental than most patents, their commercial value at the time they issue is often speculative at best, and a company may have little concern about issuance of patents on such early-stage inventions. So it seems likely that Inter-Partes Review (IPR), discussed below, will be a far more important concern for universities, as IPR challenges can be made after the commercial value of such patents and their preclusive effect on non-licensed competitors is more clearly demonstrated.

Inter-Partes Review—An Inter Partes Review (IPR) can be filed any time after nine months from the issue date of a patent, which is after the PGR window closes. Unlike PGRs, IPRs can only challenge patents on the basis of prior art, *i.e.*, under 35 USC 102 and 103, and the prior art must consist of printed publications and patents.

By design, a patent challenger will often find IPR preferable to challenging a patent in court. Court challenges to patent validity can take 3-5 years and cost millions of dollars in legal fees and expert witness fees; in contrast, IPRs are completed in about 20 months and are said to be 10 times cheaper. In addition, IPR rules are more favorable to challengers than court rules: in

IPRs, claim terms are given their "broadest reasonable interpretation," and only a preponderance of evidence for invalidity is needed; whereas in a declaratory judgement action brought in a Federal District Court, the court applies the "ordinary and customary meaning" of claim terms, and requires "clear and convincing evidence" of invalidity. With these lower costs and more favorable rules, there are significant incentives for companies to file IPRs on their competitors' patents, even on patents where there is no risk of infringement and the only goal is to stop the competitor from enjoying the market exclusivity a patent provides.

Because of the more favorable IPR rules, IPRs are frequently also filed when infringement litigation is brought (an IPR petition can be filed by an infringement suit defendant within one year after suit is brought); and infringement cases are not infrequently stayed by the court pending the outcome of the IPR. The AIA imposes a risk for IPR petitioners, as later declaratory judgment claims based on prior art that was raised or could have been raised by an IPR petitioner are estopped; however, in *Shaw Industries Group, Inc. v. Automated Creel Systems Inc.* (opinion 15-1116), the CAFC ruled that any art raised but excluded by the PTAB when instituting an IPR, including references considered redundant, are not estopped—so a wise infringer could possibly avoid estoppel by petitioning on the basis of multiple redundant references, thus preserving a "second bite at the apple" in district court.

Based on Patent and Trademark Office (PTO) reports, as of July 2015, since the AIA was passed there had been 1777 IPR petitions filed. Trials were instituted on 47 percent of them (827), and no trial was instituted on 950 of them—some for lack of grounds, and some because of settlement between the parties. Of the instituted trials, 54 percent (447) went to a written decision, and the remaining 380 were settled or dismissed. Of those that went to a written decision, 84 percent (376) had at least some of the claims invalidated, and only nine percent (71) of written decisions held all claims to be valid.

So what do these statistics tell us? Of all initial petitions filed, only 22 percent of them led to invalidated claims, which doesn't seem too bad. However, only four percent of initial petitions led to affirmation of all claims! Many of the petitions were settled between the parties before or during trial, and it is impossible to know how often a patent owner obtained a positive result in settlement.

For comparison, in 2014, 5,700 infringement/declaratory judgment cases were filed, nearly five times as many as the IPR petitions filed that year. It is estimated that 90 percent of infringement/DJ cases settle, and it is impossible to know how often a patent owner obtained a positive result in settlement. Of the estimated 10 percent of cases going to trial, patent owners prevailed about 33 percent of the time. Thus only about three percent of the infringement/DJ cases filed resulting in a district court win for the patent owner. And only half of these wins were fully affirmed if appealed.

Although comparison between IPR and litigation is difficult, it is likely that the broader claim construction, lower standard of proof and lower costs of IPR are considerable incentives for companies to challenge patents through the IPR process. And because of the lower costs, companies may be incentivized to challenge patents they might not have been willing to file declaratory judgments on. Although this raises risks for all patent owners, for universities with limited budgets the risks are considerable. Spending $300,000-$500,000 on an IPR is a major expense for most TTOs unless there is a licensee willing to cover those costs; and the incentives cited above may make IPRs against university patents much more frequent than declaratory judgement actions in the courts. Only time will tell what these risks really are.

Net Effects for Universities

The procedural improvements described above are mildly positive for universities, and it is good that the first-inventor-to-file rule retained the one-year grace period for an inventor's own publications. But for universities the negatives are more significant. The loss of the one-year grace period for prior art references is most immediately felt, as publications made yesterday are now prior art to a patent application filed today. This and the "race to the patent office" mean TTO budgets and human resources will be stretched as they are compelled to file provisional applications even though data is scant. And if data collected during the provisional year change the scope of the invention, the provisional date may not hold, meaning there will be even more prior art to worry about.

It will take time to measure the impact of PGR and IPRs on universities, since they are relatively new proceedings. However, in light of the PTAB's "broadest reasonable interpretation" of claim terms rather than the "ordinary and customary meaning" used when federal courts interpret patents, the lower "preponderance of the evidence" standard of the PTAB, rather than "clear and convincing evidence" required by courts, and the substantially lower cost of PGRs and IPRs compared to declaratory judgment actions, it is hard to avoid concluding that all patents, including university patents, are more susceptible to challenge and invalidation than ever before.

There may, however, be an exception for patents owned by state universities. The BTAB recently dismissed an IPR petition against the University of Florida on the grounds of sovereign immunity. The court held that IPRs are similar enough to federal litigation that

the states should be immune under the 11th Amendment, which largely shields states from being sued in federal court without their consent. *Covidien LP v. University of Florida Research Foundation Inc.,* Case Nos. IPR 2016-01274; -01275, and -01276 (PTAB January 25, 2017). Assuming that this finding is upheld on appeal, or is found to be un-appealable (as IPR institution decisions are), some commentators have suggested that the ability to avoid IPRs (and probably also PGRs) may make licenses to state university-owned patents more valuable. However, some state attorney generals and university general counsels are loathe to assert sovereign immunity, at least in part because it gives the public impression that the state sees itself as "above the law." So it may turn out that such immunity is only occasionally asserted.

There were many years of political jockeying for "patent reform" that led to passage of the AIA, which some analysts viewed as a battle between the information technology and telecommunications industry trying to weaken the patent system to limit infringement claims arising from the dense "patent thickets" in their fields, and the biotechnology and pharmaceutical industry trying to maintain the strength of the patent system to protect their product development investments and valuable drug market exclusivity. Fortunately, these industries flourish in many states, leading members of Congress to reject more harsh legislative proposals in one direction or the other; as a result, the AIA is far less onerous than it might have been, and even has some positive aspects. But the loss of the one-year grace period for prior art and the advent of PGRs and IPRs present new challenges for all patent owners, including universities. The full magnitude and impact of these challenges will be revealed in the years to come. ■

Available at Social Science Research Network (SSRN): *https://ssrn.com/abstract=2961434.*

Importance Of IP And Innovation For The Development Of Emerging Nations: Lessons Learned From Silicon Valley And Other Regions*

By Rashid Khan, Lawrence J. Udell, Tanja Sovic-Gasser, Denis Croze, Audrey Yap, Elizabeth Chien-Hale, Hector E. Chagoya-Cortes, Mark Horsburgh, Johannes Homa, Suraiya Chowdhury

Abstract

The objective of this paper is to present various regional "ecosystem" models that enable intellectual property (IP) based entrepreneurship and business creation for economic transformation of a region or the nation. By better understanding successful regional models, one can recommend appropriate strategies and models, enabled by IP and innovation, for rapid development of the emerging nations. Various contributions are presented in this paper based on the presentations made in Beijing at the LESI Annual Meeting, May 2016 during a workshop on the subject matter. A number of representatives, from various parts of the world that have thriving entrepreneurial ecosystems, provided different perspectives on the topic at the event. Despite the differences in many regions, models and perspectives, we managed to identify underlying common themes that can be leveraged by the emerging nations. These common elements are the foundation of this paper.

1. Introduction: What is the Right Model for Leveraging Intellectual Property for Entrepreneurship and Economic Development in Emerging and Developing Countries?

By Rashid Khan, formerly with Saudi Aramco, with comments by Kathrine Ku

It is well known that Silicon Valley has created a culture of innovation that is unparalleled in the world. Indeed, it has become the "mecca" of IP based start-ups that became global giants. There are countless examples. Governments like Denmark, Ireland and Finland and large companies have established centers in Silicon Valley to tap into that network. Historically, what ingredients allowed it to become the home of so many new world class ventures and start-ups? While there are many views and perspectives, some of the cultural ingredients can be identified, which are highlighted below:

Relentless talents from all regions aiming high from concept to conquest by collaboration and scale-ups: Stanford, Berkeley, 20 institutes and five national labs evolve and incubate large talent pools who are encouraged to create start-ups that co-mingle in the Valley cultivating fertile ground for new concepts. Silicon Valley companies—and the venture capitalists who support them, continuously seek collaboration to develop scalable opportunities. The presence of universities such as Stanford and legacy companies such as Hewlett-Packard created an ecosystem that encourages new ventures and attracts talents from all regions including overseas. The large Venture Capital (VC) community and influx of immigrant founders served as both a driver of the success and a positive feedback consequence of it.

Ventures and other structural capitals: In addition to availability of funds to develop a concept into a conquest, strong logistic support must be present to incubate growth and development of start-ups. Regional culture and public policies must support the growth of the regional industries. The sources of funding are not just limited to VCs. The presence of government support, contracts and R&D funding are vitally important for new concepts to test where industrial support is lacking. Support by several national labs make the presence of funding one aspect of the structure capital present in the region when investing and innovation, business sophistication and governmental support is crucial for promoting it. Deeper integration with credit, investment and trade markets, and a sophisticated business community makes Silicon Valley more effective. The valley has been the hot-bed of VC firms for decades. As a result, raising funds is not difficult. As an example, 125 VCs raised $13 billion in the First Quarter of 2016. Strong government support has been a strong enabler through various National Labs that are present in the region. Strong government and industry links also supported the region. It was shown that when investing in an entrepreneurial ecosystem, innovation, business sophistication and governmental support are crucial for promoting it.

Creation by culture of collaboration and network: In Silicon Valley, companies collaborate and concurrently compete, which allow these companies to be more creative. The fertile farmland of the valley has become a location for cross-fertilization. Continuous innovation takes place in an informal setting more often than it does in formal R&D. Instead of investing in R&D, to a large extent, firms try to reap the benefits of catching up through adoption and international technology transfer into everyday thinking. The tradi-

*Paper based on a workshop presented in Beijing at the LESI Annual Meeting, May 2016.

tional linear model of innovation focuses on customer or market-needs and creating products to fulfil those needs. Apple and many others, for example, create something customers do not know exists, or they need to create something from nothing flipping the traditional marketing model upside down by "co-creating" with the customer's creativity. Zazzle dazzles its customer by personalized products and allowing customers online tools to customize their own trendy design, concept to creation.

Fail fast and learn hard: Promoting "risk-taking" involves specific behaviors associated with free-spirited thinking and action. Facebook promotes that "done is better than perfect" and that employees should "move fast and break things." But more importantly, when employees deliver something that is less than perfect or actually do break something, they're not fired—the experience is used as a learning opportunity. Valley companies value trial and error, realizing it's better to put ideas forward early than wait until they're fully baked. It's better to sacrifice face-saving and focus on saving time and money.

Making unusual business as usual: Companies recognize that inspiration and growth come from expanding oneself through new experiences. Seemingly unrelated explorations transform businesses. The employee experiences quality customer experience that creates differentiation.

Invite and embrace disruption: Silicon Valley invites disorder and invents new orders. A consulting firm found that only 20 percent of global companies reinforced their business strategy with an innovation strategy. In Silicon Valley, the study finds this number is over 90 percent. The Silicon Valley companies breathe innovation in every step of the way, and these companies just don't talk about it. For example, Netflix does not have an innovation policy, or police, as disruption innovation is the norm. Innovation is deeply embedded in the company's self-perception. Many Silicon Valley companies view their entire business as the disruptive innovation. Whatever the approach, these companies have big visions focused on making the biggest possible difference for their customers. The disruption in business model is not disturbing and the innovation culture it built is part of an ecosystem that will endure in Silicon Valley and also globally in the cloud that Silicon companies reached out to so successfully.

Flat organizations: Flat organizations support creativity and culture of entrepreneurship and risk-taking. Focused on regional excellence, young people from around the world embrace risks along with other co-minded spirits from everywhere. Immigrants are drivers for innovation.

A lot has been written regarding the success factors of Silicon Valley. Based on the experience of the developed and emerging nations, it was shown that when developing an entrepreneurial ecosystem, innovation, business sophistication and governmental support is crucial for promoting it. By review of the entrepreneurship ecosystems in many parts of the world beyond Silicon Valley, the similar elements could be identified in nearly all regions that facilitate in developing an entrepreneurial ecosystem. The factors that contributed to the success of various ecosystems of economic development are listed below:

■ See page 84 for the authors' bios and contact information

Successful Ecosystem: Beijing

- Knowledge and Talent Capital; Top universities: Peking, Tsinghua, Beijing Polytechnic; Multinational R&D.
- Funding Capital and other Structural Capital: Second largest capital of VCs; Experienced entrepreneurs for mentoring; Government support for domestic and foreign entrepreneurs, and easy access to markets.
- Culture and Network: Huge market-size presents mega-opportunities for networking and marketing; Focused on regional excellence.

Successful Ecosystem: Stockholm

- Knowledge: Top universities and serial entrepreneurs.
- Capital: Highest concentration of VCs and VC funded incubators.
- Government: Massive government support for in technology infrastructure. Free university.
- Network: Flat organizations encourage innovation and creativity. Network of institutions support start-up clusters. Focused on regional excellence and easy access to market.

Successful Ecosystem: London

- Knowledge: World-class universities and multinational talented workforce.
- Capital: High concentration of VCs with incubators and accelerators.
- Government: R&D tax credit. Immigrant visas for migrant founders.
- Network—Entrepreneurship: risk-taking encouraged; Central time-zone allows better global network; Focused on regional excellence.

Best practices: Based on the above analysis in different regions, there are common themes or ingredients that are in all the ecosystems. These are (a)human capital and regional talents, (b)strong network and relationship capital as well, and (c)structural capital including funding, a streamlined process and well-defined governance to enable start-ups and commercialization in the regions. Most importantly, "a culture of entrepreneurship" is of highest priority in creating start-ups and new

businesses for economic development.

As stated previously, highlighting the importance of intangibles, as early as 600 BC, Lao Tzo, the Chinese philosopher stated, "We make doors and windows for a room. But it is the spaces that make the room livable." While the tangible has advantages, it is the intangible that makes it useful. Intellectual capital (IC) is the main driver behind organizational growth, development, innovation, mergers, start-ups and hence business performance for a long period of time in a free enterprise system, although it not recognized in this manner. Developing IC management as the core organizational competency is the formula for success. The IC concept can be divided into a number of "fitnesses" (also known as competencies), such as knowledge innovation, and intellectual property, and its management. Creating the right traditions for IC management and harmonizing different programs into a comprehensive IC system are vital for organizational performance. To maximize benefit from IC, identifying, managing, and utilizing IC are important but challenging tasks. Managing IC assets help to sustain performance, maximize profitability, and capitalize on future opportunities for growth of the nations.

- Human Capital: Create an ecosystem for commercialization with the presence of various talents.
- Network Capital: Leverage with internal and external partners.
- Structural Capital: Enable funding to high value start-ups for local development.
- Cultural Capital: It is the culture that embraces changes and seeks out disruption. It is the culture that allows finding entrepreneurs new opportunity and creating new value. Cultural capital is embedded in all three types of capital described above to create regional "Silicon Valleys" or allies to serve regional needs.

The Lessons from Silicon Valley: An Overview

by Lawrence J. Udell

The Silicon Valley, which actually comprises the entire San Francisco Bay Area, is a true hotbed of angel investors. These are the individuals, who decades ago combined their knowledge and funding by forming groups to review investment opportunities. Several of them, from Sand Hill Angels to U.S. Angels provide the necessary funding to young entrepreneurs start-up ideas that often become billion dollar successes. Over the last fifty years the giants of today, from HP to Apple and from Google to Yahoo started from the funds provided by individuals who recognized the opportunity and went along for the sky-rocketing ride.

With each success, the individual funding grew to where today, instead of the initial investment which was $10,000 is now a million dollars because of their previous successes. Another creative development in the Valley was the formation of incubators, where kids could meet, exchange ideas and start new ventures. There are numerous ones all over Northern California and now there are accelerators, which house young companies that are approaching not only additional funding, but market value based on their investments which have gone from angels to venture capital firms.

Within almost all of the new ventures, one of the critical ingredients is intellectual property. In most cases, the start-ups only asset is the IP that helps determine how competitive they will be on their path to success. But let's not overlook the fact that the world only reads or hears about the successes. For each one that "makes it" there are hundreds who have fallen by the wayside. In many cases, the individuals or team realizes why they failed, and in so doing go on to new ventures and potential success. Failure in anything in life is a learning experience. Because the Silicon Valley is recognized as the Technology Hub of the planet, the world looks to see what are the secret ingredients to its success. There is no secret; it is the creative stimulation by thousands of young people who have a dream of fame and fortune. It is a magnetism that attracts people of all ages to recognize their own creative abilities. To be human is to be creative. We all have the innate qualities that make us each unique.

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Note: *Author contacts can be found at the end of the article, the comments by Ms. Kathrine Ku of Stanford University Tech Transfer Office are appreciated.*

The following sections provide specific examples of other IP-based economics, policies and the resulting successes in various parts of the world.

2. Effective Innovation Policies for Development Based on the Global Innovation Index (GII) 2015—Policy Recommendations

By Denis Croze and Rashid Khan

The eighth edition of the Global Innovation Index (2015), co-published by WIPO, Cornell University and INSEAD focuses on "effective innovation policies for development." It reviews profiles of 141 countries—representing 95.1 percent of the world population and 98.6 percent of the world GDP—based on 79 indicators from international and private sources.

In addition to ranking the world economies' innovation capabilities and results, the GII 2015 addresses more specifically the challenges faced by emerging economies and developing countries and the best practices from innovation actors who have successfully designed and implemented effective innovation policies and practices. Key findings are:

- Innovation-driven growth is no longer the entitlement of high income countries alone with the narrowing of the technology gap between developing and developed countries. It is demonstrated that today, innovation policies occupy a central role in development plans and strategies in every country.
- Technology adoption alone is no longer sufficient to maintain a high-growth scenario. For emerging countries that are catching up, experience shows that business sophistication and governmental support are, among others, crucial for their promotion. Innovation achievers demonstrate rising levels of innovation input and output results because of factors such as improvements made to institutional frameworks, a skilled labor force with an expanded tertiary education, better innovation infrastructures, deeper integration with credit investment and trade markets and a sophisticated business community.
- In emerging economies, besides top-performing companies, large groups of micro and small businesses operate far below the frontier of innovation with basic technologies and low levels of human capital. Raising the productivity of these smaller producers through innovation, and the adoption of better technologies that have a substantial impact not only on a country's economic growth, but also on employment, poverty alleviation and sustainable development.

With globalization, emerging economies and developing countries are facing numerous challenges: limited budgets (hard choices on where to invest to make the most of their available human and natural resources and their competitive advantage), very young and growing populations (with high levels of unemployment), widespread poverty, uneven growth, standards (process, labor and environment standards that firms have to implement), increased pressure on natural resources and increasing pollution. Moreover, innovation takes place in an informal setting—the informal economy—more often than it does in formal R&D laboratories and is primarily driven by investments in, and mastery of, new machinery and equipment that embody more advance technologies. Innovations less often arise from new products or technologies developed through local R&D.

There are a number of key barriers to innovation, which are identified in the GII report: Lack of government or high-level political support for innovation and science policies; frequent organizational changes and absence of long-term planning; insufficient enforcement of institutions to promote innovations (such as IP and competition); lack of coordination among government agencies and policies; lack of absorbing capacity and weak educational system; difficulties in financing science and innovation; and lack of policy evaluations.

The GII report also identifies a list of best practices, such as political stability and supportive institutions, widespread technical and tertiary education to enhance absorptive capacity, reliable and widespread infrastructure, excellent provision of information and communication technology (ICT) property rights, and stronger links and interaction between publicly funded research institutes and private companies. In addition, emphasis in emerging countries should be placed on reaching R&D levels as much as on providing the right framework conditions that stimulate a process of innovation and knowledge diffusion. Local firms should gradually move from adapting imported technology to indigenously developing technology. These enablers should play an increasing role in the production of goods and services in traditional industries such as textile and food, or even in agriculture. Since emerging economies have a high demand for agricultural and biotechnological research, as well as a need for more research on neglected tropical diseases, influencing the direction of the international research agenda into these research domains would have important consequences for multiple areas, such as agricultural production, nutrition, and health.

Today the concept of innovation is broadly approached and is seen as key to addressing pressing societal problems such as pollution, health issues, poverty and unemployment. Its role goes beyond the objective of economic success and should be seen through the lens of inclusive development (in that it can address poverty and health issues) and environmental sustainable development (in that it can address problems of pollution and energy provision). Therefore, a few basic recommendations and key principles can be considered: Innovation policies and strategies should focus on maximizing innovation in all industries and should support all types and phases of innovation. Emerging economies and developing countries also need to develop innovation-support policies that take into account the specificities of their domestic industries. In this respect, they should invest in research and innovation to develop products that address their particular needs.

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3. The ASEAN and Singapore IP Perspective

By Audrey Yap

The world is rapidly evolving and Asia is now leading in global IP filings. Statistically, Asia has become the largest user of the global IP system. Based on 2014 statistics, patent applications worldwide grew by 4.5 percent but Asia contributed 60 percent of the growth. Asia's IP filing in effect grew by 7.3 percent as a whole with China's patent applications rising 12.5 percent, showing that it is indeed a key driver in the region. Similar trends are reflected for trademark filings as well. Whilst the traditionally active participants have been Japan and Korea, and now China, there is an increasing interest in ASEAN and its 10 member states, (Singapore, Malaysia, Philippines, Thailand, Indonesia, Vietnam, Cambodia, Laos, Brunei, and Myanmar). The ASEAN Economics Community (AEC) has been the catalyst for renewed IP activity. By way of background, ASEAN with a population of over 620 million people and expanding consumer class is currently the seventh largest economy in the world with a market capital of $280 billion and is projected to be the fourth largest economy by 2030 at $615 billion. The ASEAN working group of IP Cooperation (AWGIPC), which consists of the heads of all ASEAN IP offices, was established to be responsible for harmonizing, cooperating and improvising on IP regimes. With the AEC, there has been more focus on IP in trade negotiation, resulting in a push for greater regional IP platforms and interoperability. AWGIPC works not only with the World IP Organization (WIPO) but also the big five IP offices of USPTO, EPO, KIPO, JPO, SIPO, as well as IP Australia. A key initiative to encourage more ASEAN filing and expedited prosecution is the ASEAN Patent Examination Cooperation (ASPEC). ASPEC is the first regional patent work sharing program among nine participating members states (all countries in ASEAN except Myanmar). The program was launched on 15 June 2009 but has recently received more momentum. The purpose of ASPEC is to reduce the duplication of search and examination (S&E) work done, thus saving time and effort. Further, the S&E work will be useful reference towards producing quality reports. ASPEC operates in the English language and is free of charge to the applicant of any participating IP office. However, local S&E fees at the relevant offices will still apply.

Finally, four ASEAN countries, namely Singapore, Vietnam, Malaysia and Brunei have agreed to participate in the Trans-Pacific Partnership (TPP). One of the primary trade negotiating objectives of the TPP is to promote adequate and effective protection of IP rights. The fact that less developed countries in terms of IP such as Vietnam are coming on board is a reflection of the changing attitudes towards IP, as well as the flexibilities that have been included to allow a more diverse range of countries to have their concerns addressed. The chair for the TPP IP Chapter negotiations was Singapore; then led by Daren Tang, the current Director General of IP Office of Singapore. Despite all the developments and strides made, challenges to IP and innovation and ASEAN still remain. The experiences here mirror what is happening globally in the IP journey. The inherent conflict in policies that focus on R&D spending (input) compared to IP commercialization (output) remain, particularly for publicly funded research institutes. Other concerns that are common are the commercialization gap(s) (newly minted innovation that is not marker ready), inconsistent IP ownership, funding agencies who want to own or co-own IP that they have no knowledge of nor are able to use and lack of institutional IP policies. Another key issue is the different cultural attitudes towards research and IP in public research organizations and industry—it is difficult to shift the academic mindset to a market driven one that needs to be justified by profits and the bottom line. Spin-offs or start-ups driven by the lead inventor or patent holder may find themselves floundering for lack of understanding on how businesses work to survive and then thrive. Small and Medium Sized enterprises (SMEs) on the flip side need these new innovations but lack resources and expertise for R&D or technology transfer.

A balanced approach is required to allow for effective and strategic IP management systems to be put in place. In Singapore, the government has announced a five-year plan for R&D and a budget of $19 billion. In all this, the Agency for Science, Technology and Research (A*STAR) has played an important role in the cycle of innovation in Singapore. Its latest report for 2011-2015 underscores this. Over the last five years, ASTAR has entered into 1,030 technology licenses and catalyzed $1.6 billion in industry R&D spent for value creation. In various programs to engage SMEs and industry, it has lent expertise in 8,900 projects and seeded 71 start-ups, attracting $90 million in funding. These projects include both local enterprises (4,000 in total) and multinationals (4,921 to-date). In its continuing efforts to establish its role as one of the IP hubs in Asia, Singapore recognizes its need to build its IP capability. In 2012, it embarked on its plan to be a center for quality IP filings by recruiting and training its first batch of patent examiners. Fast forward, in September 2014, Singapore was officially appointed by WIPO as International Search Authority under the PCT, and was operational in September 2015. It is the first International Search Authority outside China with Chinese language search and examination capability. This is a useful consideration when determining whether Singapore is a useful base for IP holding and/or as a gateway to the greater market of China.

4. Entrepreneurship Model with Examples from China, Hong Kong, and Taiwan

By Elizabeth Chien-Hale

It has been a long-held belief that innovation drives economic growth, which theory is often explained as follows: innovation encourages capital spending and investment; capital spending, in turn, creates better paying jobs by the manufacturers; new products are generally aimed at improving the quality of life for consumers; finally, innovation is believed to increase efficiencies throughout society thereby producing higher economic output. Because the intellectual property system supports and protects the fruit of innovation, the IP system is a part of the virtuous cycle that enables industries with large outputs to contribute significantly to national GDP. There are dissenting voices to the above model; however, the Chinese government seems to be a true believer in the economic benefits of innovation, and it steadily steers the country toward innovation, hoping to invent its way out of many of the current problems, and to innovate its way up the world's economic ladder.

Following this general narrative, China seeks to protect its intellectual property by adding provisions and regulations to further incentivize innovators. The government's goal is to use state power to protect private intellectual property rights, and at the same to recalibrate the power imbalance between the enterprise and the inventor-employees. Although the system is far from perfect, it is clear that China intends to transition itself from a manufacturing-based economy to a knowledge-based economy. The rapidly increasing patent filing numbers reported by China's State Intellectual Property Office and the World Intellectual Property Organization is only one of many indicators of China's success in this direction. China also has a comprehensive national IP strategy which sets national IP goals; the National IP Strategy of 2008 states that, by 2020, China will become a country with a comparatively high IP standard in the creation, utilization, protection and administration of intellectual property rights. There are also annual implementation plans which spell out more immediate plans. For example, in the 2014-2020 Action Plan, the government stated it hopes to accomplish the following: (1) significant improvement of IP creation, (2) significantly enhanced effect of IP utilization, (3) significant improvement of IP protection, (4) significant enhancement of IP management capability, and (5) all-around enhancement of IP basic capability. Echoing the government's official strategy goals are various private initiatives that also aim to foster innovation. One such private initiative is the Beijing Institute of Collaborative Innovation (BICI). BICI is a platform created and managed by key universities and research institutes located in Beijing. In addition, it has support from the private sector companies such as COMAC, the company leading China's "big airplane" project to develop China's own fleet of commercial airplanes. BICI embodies some of the typical Chinese characteristics in innovation, including strong government guidance and influence, enhanced (or forced?) research to market speed, and eagerness to plug into the network of innovators at world universities. BICI offers its technical capabilities and connections to assist innovators. While intellectual property is an important element in its deciding whether or not to assist a new enterprise, BICI may ultimately focus more on tangible products rather than the intangible IP assets. There are also similar efforts in Hong Kong and Taiwan which, when used as points of comparison, also bring to surface the Chinese characteristics. Broadly speaking, the writer observes that the main differences in China, Hong Kong and Taiwan have to do with the following: first, the roles played by each respective government (strongest in China, weakest in Hong Kong); second, the dominant supporting infrastructures (financial infrastructure in Hong Kong versus technical infrastructure in China and Taiwan); thirdly, the incubation cycles and harvesting approaches (most lenient in Taiwan, harshest in China); and finally, the openness to international influence and contributions (most open in Hong Kong, least open in Taiwan). As the writer mentioned at the beginning, the innovation-driven economic growth model has its critics. While this model has helped to create unprecedented growth and progress, it is possible that the growth model is unsustainable. Quoting WIPO Chief Economist Carsten Fink, "…the bottom line is this: even if we invest in innovation, we cannot be sure that we will return the growth rates of the past 50 years. But if governments and businesses stop investing, those days are definitely over."

5. An Overview of IP and Entrepreneurship in Mexico

By Hector E. Chagoya-Cortes

Mexico was strategic for commerce between Asia and Europe back in the times when it was a Spanish colony, and still is. But more recently, Mexico's relevance increased also as a port of entry to the United States of America, a commercial leadership particularly boosted by the benefits of the once largest free trade agreement: NAFTA.

The business environment has been good for investment, as evidenced by the fact that most automotive companies from all over the world have manufacturing facilities in Mexico; either U.S., Asia or Europe based. However, and perhaps because the location was enough to sustain a commercial growth based in manufacturing, entrepreneurship was not seen as a strategic need within Mexico until more or less recently, when the need to enhance the economic relevance of the in-

ternal market became apparent, particularly driven by the need of the government to diversify tax income beyond petroleum sales. Of course, along with entrepreneurship promotion, the need to reinforce the intellectual property culture and system also became apparent. In fact, there are interesting indicators that make some IP professionals optimistic about the future role of intellectual property in Mexico for business in general.

Regarding patents, before 2008 the number of patents filed in Mexico by residents was negligible as compared to the total number of patent applications filed. The numbers for the 30 years prior to 2008 are not very different and fluctuate between 400 and 600 patents per year. However, if we look closely the trend of resident patent filings alone in Mexico, we can easily see that the growth has been very significant in the last few years. Whereas the compounded annual growth rate of patent applications 2000-2007 was in the order of magnitude of 5.6 percent, after 2008 until 2015 it has been 10.3 percent. That is, the pace of relative growth has doubled in that period. What happened? We can link the inflection point with two pieces of public policy: eligibility of IP expenditures in government funding, and promotion of technology transfer offices in universities and R&D centers.

As opposed to patent application trends, Mexican residents are very active in the trademark arena. In fact, for many years trademark registers by residents have represented consistently over 60 percent of the total trademark registers in Mexico. In fact, one of the most successful commercialization and business growth models in Mexico since the 1990s has been the franchise. Therefore, the eagerness of small business to register a trademark in order to eventually become a franchise is explained because, back then, public policy intensively promoted the development of this business model.

Finally, regarding copyrights, it is a reality that commercialization of contents, particularly music, photography, movies and television shows have been a very important part of the Mexican economy. A proof of this is the Mexican Society of Authors and Composers being recognized worldwide as one of the strongest. It was the first society worldwide to reach an agreement with YouTube for royalty payment of reproductions in that platform.

In conclusion, the Mexican entrepreneurship and business environment includes in Mexico a functional intellectual property system that, in spite of requiring tuning in many aspects, is enough to monetize intellectual property under international standards.

6. Importance of IP and Innovation for Entrepreneurship and Economic Development—Importance of Effective Mentoring

By Mark Horsburgh

There have been many reviews and reports that seek to identify the key indicators for successful translation of innovation to economic benefit. At a micro level the question can be distilled to, "How can this good idea be monetized?" Perhaps a somewhat blunt question, but one that is often asked. It is easy to talk about the importance of IP and innovation for economic development from a big picture perspective but it is far more difficult to actually achieve an economic benefit at a micro level, at the coal face one might say.

It is true that economic development can be driven by entrepreneurship (and there are certainly examples of countries developing on the back of innovation, the U.S. in the past and China in the present), but the world is a far more connected place today, which introduces challenges that did not exist 50 years ago. Markets are global rather than local so competition arises more quickly and first mover advantage is very short lived. Products flow across international boundaries with ease so barriers to entry to a market are low. These factors and others mean that innovators do not have the opportunity to learn by mistakes. One mistake can be fatal to a new enterprise.

So what factors do contribute to the success of a new enterprise? What is useful in moving an innovation from idea to reality and to contribute to economic development?

One answer is incubators and accelerators. By way of example, the findings of a recent study of global best practices on incubation and acceleration [1] found mentors, alumni and investors play a key role in the success of new ventures. The report has a quotation that summarizes the findings in this regard, *"Building a sense of community around an incubator/accelerator is no small feat, nor is it easy to quantify these relationships. That said, these relationships are considered fundamental cornerstones of a successful program, and they also foster a self-perpetuating truth. Those entities that are successful attract more attention and involvement than those that are not."*

To highlight the truth of this statement I draw upon my own experiences at an incubator in Brisbane, Australia. Not only are there useful lessons from the companies that passed through the incubator, but the evolution of the incubator itself provides a useful lesson on how an innovation needs to develop if it is to make a contribution to economic development.

iLab was established by the Queensland State Government in 2000 originally as a business incubator for start-up founders, creating investor ready companies,

and graduating companies with increased chances of success. In 2009, The University of Queensland (UQ) acquired iLab, which then shifted focus onto "Germinate" for early stage accelerator support. iLab has incubated over 140 start-up companies and helped them raise over $80 million in grants and investment to fund their growth and has generated nearly 800 technology jobs. iLab currently has more than 30 mentors with a diverse range of skills and experience. It has strong connections with the local investor community including Brisbane Angels and Uniseed, as well as a small investment fund. iLab regularly invites alumni to share experiences with current incubate companies.

It is evident that in order to achieve the goals set for iLab it has needed to change over time from a government run entity to a closer relationship with a university and from a broad-based incubator to a more focused organization. Nonetheless, whatever the manifestation of iLab, the key has been the people involved. As a former CEO of iLab put it, "The best things and the worst things are the people."

This is borne out in three examples I draw from my own experience as a mentor at iLab. Although the examples are real, care has been taken to avoid identifying individuals.

The first example is a catch management system for commercial fishing fleets. The idea and initial development was promising and the founder formed a small company to employ the software developer. He took on a CEO to commercialize the idea and the company came into iLab for early stage support in 2008. The idea may have been viable but the implementation strategy was not workable. The team of mentors, of which I was one, recommended a change in direction to focus on getting a beta product into the market. The founder wanted perfection before going to the market. Unfortunately the founder was very strong-willed and did not take advice easily. The other members of the company looked to the mentors to control the founder. This is the first lesson, you cannot expect external agencies to fix internal problems. The stakeholders in this company needed to address the problem head on, not try and make it the problem of somebody else.

The second example is a robotic strawberry picker. Like the first example, the fundamental concept seemed good and a small company was started to commence development. The company was able to attract grants and employ a small staff to work on the robotics. They came into iLab in 2009 for advice on managing the development process, particularly the financial aspects. For this company a major problem was the technology. It proved to be very difficult to identify a ripe strawberry and to pick it without damage. There was also no driver for change in the industry since strawberry picking was done by low cost backpacker labor. The cost of the robotic strawberry picker coupled with the technological challenges meant that it could not compete with cheap unskilled labor. This particular problem was surprising since the Founders were in the industry and should have recognized the barrier to implementing the technology. Unfortunately they believed they knew what the market needed better than the market knew. This company is still trying to find a market for the technology and has made a number of changes to their approach, but the lesson is to know what your market actually wants, not what you think it needs.

The third example is a flowing electrolyte battery technology. The company came into iLab in 2010. I was not a mentor for this company, but I have followed the ups and downs over the last six years. The technology was proven scientifically and successfully raised capital as an IPO at the time. After an initial surge the share price crashed as the company failed to deliver on promised milestones. There are many reasons that this company struggled, and it could be said that sometimes the market just beats you, but I think a significant issue was a struggle to transition the technology from science to engineering. A different skill set is needed for development compared to research. Many times I have observed the originators of a technology not be able to recognize that they need to hand their creation over to somebody else to turn it into a financial success. Interestingly, this company has survived and with a new skill set is developing commercial product. The lesson from this example is to match the people to skills needed at the time and not think the Founders can do everything and anything.

These examples support the point that success is often determined by the people involved, and incubators/accelerators have a very important role to play in providing mentors, alumni and investors that can mean the difference between success and failure. A key finding from the report mentioned earlier, and confirmed by my own experience, is that it is depth of engagement by mentors, alumni and investors that has the greatest impact, more than the number of advisors that may sit on an advisory board. There is an opportunity for LES to contribute mentors to incubators/accelerators in many countries through local chapters. There is no doubt that by doing so LES can play a key role in converting IP and Innovation to Entrepreneurship and Economic Development.

7. University Spin-off to World Market-Leader: A Case Study

By Johannes Homa and Tanja Sovic-Gasser

It is favorable for a small start-up to grow-up in a fostering environment. Austria has a very attractive community to support start-ups, which are not only providing funding but also consulting. Research funding is provided on an international level by the European Union under its Horizon 2020 program, in Austria

by the FFG (Federal Funding Agency) and on a regional level in Vienna by the Wirtschaftsagentur Wien (Vienna Business Agency). Austria also supports market entries through the Austrian Chamber of Commerce (WKO). The AWS (federal promotional bank) is not only providing funding and consultancy for high-tech start-ups, but also for IP-related issues. In 2014 the Austrian ministry of science, research and economy (BMWFW) launched a new program called Knowledge Transfer Centers (WTZ) with the aim to increase the cooperation between universities, industry and society, to optimize the knowledge transfer between them and to promote entrepreneurship at Austrian universities and university spin-offs. WTZ is a partnership of all Austrian universities and affiliated partners and is subdivided in three regional knowledge transfer centers (East, South and West) as well as a thematic knowledge transfer center in the field of Life Sciences. Since the cooperation partners come from different research and science fields (technology, life sciences, arts, humanities, social and cultural studies, economy, medicine and much more), their transdisciplinary skills and expertise lead to unique ways of developing novel innovative approaches of strengthening the knowledge and technology transfer from the universities to the society and industry. Through this program the universities started several initiatives to raise awareness and to promote and professionalize entrepreneurship among students, researchers, faculty members and alumni. Numerous opportunities have been created.

At the competence center "WU Gründungszentrum" and within the framework of the Entrepreneurship Center Network (ECN), the cooperation between Austrian universities, allows the students the possibility to increase their "entrepreneurial spirit." Diverse training sessions, workshops, consulting and support services for entrepreneurs were developed with the aim to help them generate and shape their own innovative ideas. The platform *ecn.ac.at* provides an excellent opportunity for networking and promotion of young students. i²c at Technische Universität Wien (TU Wien) is a cross-faculty Entrepreneurship & Innovation Center that offers researchers a high-ranking consultation on entrepreneurship, organizes events and gives them the possibility to network with well-grounded mentors, founders and potential investors. i²c developed a Start Academy, a workshop that offers scientists the possibility to evaluate the business potential of their ongoing research projects. Viennese business incubator units, owned by TU Wien, Universität Wien and Vienna Business Agency, supports young entrepreneurs with the planning, starting and growing of a new business by offering them funding, office space, infrastructure, training and access to the network of mentors and investors. Together, all these players have built an extraordinary interdisciplinary network that plays a vital role in the economy of the country by supporting young entrepreneurs.

An example of such a fruitful cooperation is a successful university spin-off Lithoz, a young company that has navigated through the spin-off phase including the licensing agreement with the university and now is establishing itself as a world market leader in the field of additive manufacturing (3D printing) for high-performance ceramics. The rapid rise of the company shows the huge growth potential of the technology and gives first insights about the necessary environment in which a start-up can prosper.

Additive Manufacturing: Lithoz GmbH, based in Vienna, is a spin-off of the TU Wien (Vienna University of Technology) and is specialized in the development and production of systems for additive manufacturing (AM) of ceramic materials. Based on long-term research at the TU Wien, Lithoz has developed the patented Lithography-based Ceramic Manufacturing (LCM)-process. The LCM-process allows the production of high-performance ceramic parts at the highest level without any tooling costs. Especially in terms of density, strength and precision the produced parts meet the high demands of the ceramic industry. Lithoz offers its customers a complete system—machine, software, and feedstock based on different ceramic materials for the efficient production of ceramic parts directly from CAD-data. Due to the high quality and precision of the produced parts, they can also be used in series production. In addition to its standard products Lithoz also offers customer-specific developments and individual solutions. Lithoz currently has 28 employees in the fields of polymer chemistry, ceramics, mechanical engineering, process management, application and software development. In this way Lithoz covers the whole process chain within the company. Figure 1 shows a few of the complex geometries achievable with the LCM-process.

The founders of Lithoz, Johannes Homa and Johannes Benedikt, both started their academic careers at the TU Wien. At that time no technology was commercial-

Figure 1: Various Alumina Parts Made By The LCM-Process

ly available for AM of ceramics, and their professor, Dr. Jürgen Stampfl, recognized the unique potential of AM for this class of materials. So they decided together to develop this technology themselves in 2006. It started with the development of the material, but it soon became apparent that state of the art AM machines were not able to process the newly developed ceramic slurries. Thus, they also started to investigate new concepts for AM machines and software. After half a year of experiments, the dental company Ivoclar Vivadent from the Principality of Liechtenstein decided to start a joint development program in 2007. TU Wien's technology transfer knew that it was essential to clearly define the field of use and therefore the exploitation rights markets were divided into dental and non-dental, with Ivoclar Vivadent getting the exclusive rights for dental applications. During their first three years of cooperation six patents in the field of material and machine were filed, but still the breakthrough was not achieved yet. The challenge was to realize the same material density and strength by AM as achieved via conventional ceramic forming technologies, a challenge other research groups had failed so far. After four years of intense research the scientists finally achieved the breakthrough in 2010 when they achieved the same material properties with their printed ceramic parts. Homa and Benedikt were already thinking of establishing a business while conducting research and development at TU Wien. Encouraged by their success, they followed their vision to build up a company based on this technology. Spinning off Lithoz from the TU Wien finally took place in 2011. The first production-ready machine was delivered a year later and from that time on the company started growing. Two years later, the company achieved an important milestone by extending its company's ownership when Hans J. Langer, CEO and founder of EOS GmbH (Krailling, Germany)—one of the first commercially successful AM enterprises—joined the company in 2014.

Licensing agreement: The spin-off's core was the licensing agreement with the university, where the usage of patent rights was arranged. As mentioned earlier the whole development was embedded in an industrial cooperation between Ivoclar Vivadent and TU Wien, which was limiting the scope for the licensing agreement. The fields of applications have been defined at the beginning of the joint development and therefore there was no doubt how to proceed with the licensing. TU Wien was completely free to license in the non-dental field, which was sufficient for Lithoz. The licensing agreement was based on royalties only, because it would have been very difficult for a small start-up to finance a huge down-payment. It is very essential for a successful licensing to a start-up to have a very open discussion about all rights and liabilities, because start-ups have usually very little knowledge in licensing agreements. Both parties should have the wish for a mutual beneficial agreement. It is obvious that the start-up is interested in low royalties and no down-payment, but this is also in the university's interest, because they want to have a successful spin-off. On the other hand, the royalties should correspond to market standards to ensure a fruitful long-term relationship. It was especially crucial to define standard market conditions, because a third party (Ivoclar Vivadent) was a stakeholder (not a party) in the license agreement.

8. Creating Value from Intangible Cultural Heritage in the Developing Nations

By Suraiya Chowdhury and Hanan Daccache

Intangible Cultural Heritage (ICH) also called living cultural heritage defines the traditional practices, representations, expressions, and the knowledge and skills that communities, and groups recognize as part of the heritage. These are manifested in many forms:

- Traditional craftsmanship
- Performing arts and folklore
- Oral traditions
- Food heritage
- Knowledge/practices on nature and the universe; practices, rituals and festive events
- Digital heritage.

The preservation and use of many rich heritages can create powerful value by converting the intangible heritage into living products creating jobs and changing lives in the developing nations. A case study based on Bangladesh is highlighted as an example where traditional culture was used to develop new businesses. Bangladesh, formal Indian East Bengal, the most flourishing part of Asia was invaded by the Dutch and later the British East Indian Company. While much of the traditional culture died during the period of invasion during the past several centuries, many of these are now being revived and linked to entrepreneurship and economic development. Organizations such as Prokritee, a fair trade company in Bangladesh, support thousands of jobs in rural areas. Small organizations were formed by the Mennonite Central Committee during the period 1977-1999.

UNESCO adopted the Convention for the Safeguarding of the Intangible Cultural Heritage that went into effect in 2006. The Convention recommends that countries and scholars develop inventories of ICH in their territory, and work with the groups who maintain these ICH to ensure their continued existences. Organizations such as Prokritee and currently "Crafting for Living," and many successful world-class achievements are exemplified regarding the use of cultural heritage products without the assistance of any government or organizations such as UNESCO.

The formation of Organization of People Exporting Countries (COPEC) focuses on empowerment of regional labors.

How do we create value out of ICH? The process involves the following: Capture intangible traditional skills, research applications, preserve skills by creating a craft, protect unique designs by IP protection, promote and transmit skills globally and to next generations. The process of capture to intangible to protection, product development, deployment and value creation is described in Figure 2.

Case study: Bagda Enterprise

A case study on value creation is provided. Bagdha Enterprise is situated along a small, winding river in the village of Bagdha in Barisal District. The project started in 1982 in order to create employment in a remote area, as there were almost no employment opportunities for the women.

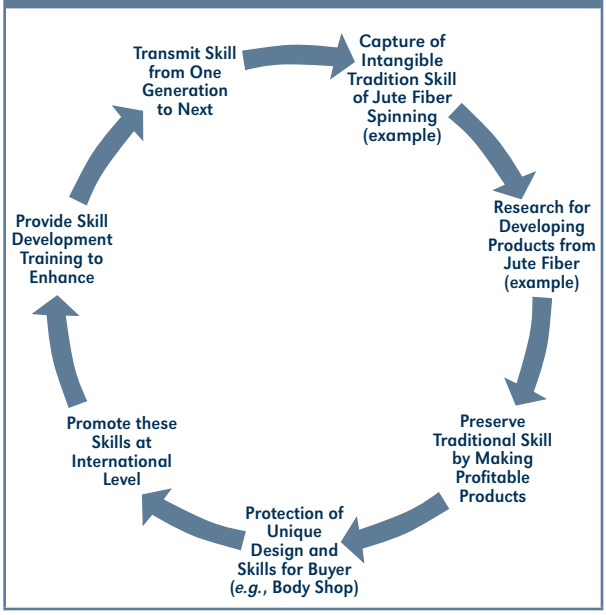
Bagda produces eco-products that are made from inexpensive natural products such as jute. They are marketed and exported to organizations such as the "Body Shop." See Figure 3 for examples.

This project alone has created 300 waged-jobs that allowed profit sharing and other benefits such as medical saving and education benefits. While Silicon Valley and various allies create value from information and communication technology (ICT), Bangladesh is a country that is developing jobs and employment by leveraging ICH sectors.

Concluding Remarks:

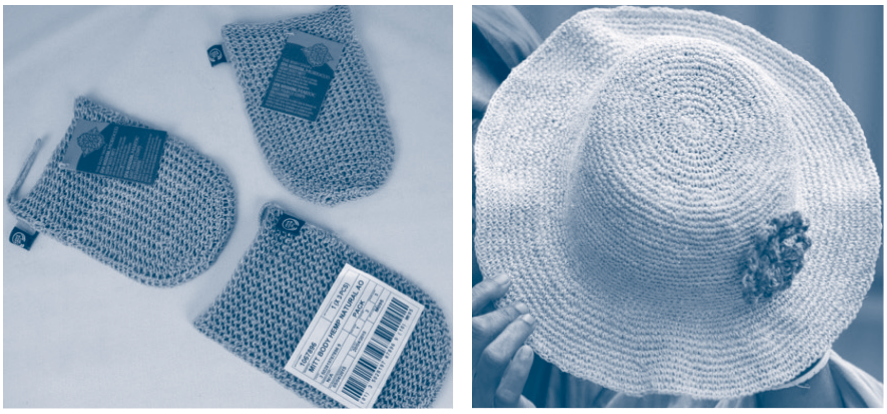
Simply adopting existing technologies is not sufficient to maintain a high growth rate for the emerging nations. Therefore, regions or countries need to invest in research and innovation to develop products that address their particular needs. However, to be successful, organizations need to develop policies that take into account the specificities of their domestic industries. There are multiple models for entrepreneurship and economic development enabled by intellectual property and innovation. We described the factors that made Silicon Valley, an engine of global entrepreneurship, and what the common ingredients that made Silicon Valley and other ecosystems around the world shine. Lessons learned from the key innovative ecosystems can be captured in some simple themes or ingredients.

Figure 2: The Process Of Capture To Intangible To Protection And Product Development And Deployment And Value Creation



Based on review, the common themes or ingredients that are present in all ecosystems include (a) human capital and regional talents, (b) strong network and relationship capital, as well as, structural capital including funding, and (c) streamlined process and procedures that enable start-ups to progress to commercialization. These factors that make Silicon Valley great are also present in other successful ecosystems. However, Silicon Valley is unique as it offers the longest culture of risk taking, human and venture capital, network, access to big markets, governance and financial literacy, good regulations, etc. Other areas may have good eco-systems but do not necessarily match Sili-

Figure 3: Examples Of Eco-Products From "Body Shop"



con Valley's resourcefulness with all its cultures and factors that make them so successful.

The WIPO study compared economies which perform well versus others and identified key finds and provided recommendations for the emerging economics. IP and entrepreneurship for developing or emerging nations from the ASEAN/Singapore perspectives was discussed. The role of government-organized or -led innovation organizations/platforms in China, Hong Kong, and Taiwan was compared. The paper also addressed Mexican IP context as related to public policy, support to new enterprises, industry/university relationships, public-private partnerships and the resulting impact on the national development. A survey of global best practices in incubators and accelerators was highlighted. It was identified that one of the biggest factors for success of a start-up is the effective engagement of mentors, alumni and investors. Based on the Austrian experience "from researcher to entrepreneur," the importance of collaboration between university and industry, IP-regulations and the resulting success story was discussed. ■

Available at Social Science Research Network (SSRN): *https://ssrn.com/abstract=2961435.*

Workshop participants at the LESI Annual Meeting in Beijing, China 2016.

[1] 2015 Global Best Practices Report on Incubation and Acceleration, Capria Ventures LLC, October 2015.

*The view expressed by the article reflects that of the authors. However, review and approval of the article by the Public Relations Dept. of the Saudi Aramco Company was appreciated.

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A New Strategic Approach To Technology Transfer

By Mojdeh Bahar and Robert J. Griesbach

Abstract

The principal goal of federal research and development (R&D) is to solve problems for public benefit. Technology transfer (TT) within the U.S. Department of Agriculture (USDA) has always been a core part of its mission, but has usually been addressed after a research project is completed. As a result, TT may either not reach desired impact, or arrive at the scene when the technology is commercially non-viable or scientifically obsolete. In order to better help USDA scientists, we have adopted a new paradigm. In this new paradigm, TT is not an afterthought, but an essential and integrated part of the research process beginning when the research objectives are first conceived. By aligning TT with research objectives, the impact of research outcomes will be strengthened.

In his book, *7 Habits of Highly Effective People*, Stephen Covey divides tasks and their relation to time management into four quadrants arranged in a two-by-two grid. The top row represents the most important tasks, while the left column represents the most urgent tasks. The first quadrant, in the upper left, captures tasks that are both urgent and important, such as crises or deadline driven projects and pressing problems. The second quadrant on the upper right covers non-urgent yet important tasks such as planning, relationship building, preparation for meetings and presentations. The last two quadrants, in the bottom row, cover non-important but urgent tasks such as some emails, phone calls and non-important and non-urgent tasks such as busy work, junk mail, time wasters, respectively. Technology Transfer professionals in most organizations are called upon when bumps in the road are encountered, for example, when there is a dispute over inventorship or ownership for an invention, or problems with materials received from a scientific collaborator. Thus, technology transfer (TT) is usually in the first quadrant. Our goal at the U.S. Department of Agriculture (USDA) is to move TT from quadrant I to II, or from crisis management to strategic planning (Table 1).

Shifting Tech Transfer to the Beginning of the Research Continuum

Since the passage of the Federal Technology Transfer Act (FTTA), TT at the USDA's Agricultural Research Service (ARS) has usually been addressed well after a research project is underway. As a result, TT may either not reach desired impact, or arrive at the scene when the technology is commercially non-viable or scientifically obsolete. In order to better help our ARS

Table 1. Time Management For Technology Transfer

The table is based upon Stephen Covey's model in 7 Habits of Highly Effective People, which specifies the activities in the realm of technology transfer.

	Urgent	Not Urgent
Important	**Requires Immediate Attention** • Submitting a provisional patent application on a technology being disclosed tomorrow at a scientific conference. • Litigation matters, *e.g.*, infringement, inventorship. • Filing a patent application with a bar date of tomorrow.	**Important, But Can Wait** • Consolidating rights with a co-owner prior to licensing. • Inventorship analysis on co-owned inventions. • Strategizing about the desired collaboration or commercialization partner. • TT Education and Outreach.
Not Important	**Distractions** • Phone calls and meetings on possible vendors. • Data compilation (dicing and slicing the data for different stakeholders). • "Red Herrings," non-issues that have somehow been flagged and perceived as issues.	**Wasting Time** • Submitting an invention disclosure on a technology disclosed in a paper published a year ago. • Insisting on patenting non-patentable inventions.

scientists reach the full impact of their research, we have proposed a different paradigm.

In this new framework, TT is not an afterthought, but an essential and integrated part of research from the time the research problem statement and objectives are first conceived. Technology Transfer professionals would discuss the desired impact of a given research project with the scientists. Based upon the desired impact and through an iterative process with the research team, administrative program team, line management team, public information team, and technology transfer professionals a comprehensive TT strategy and tactical implementation plan is crafted that, if the research project is successful, can lead to the commercial adoption of the research results. The first step is to determine if a license is needed to transfer the technology and, if so, whether it needs to be exclusive or non-exclusive (Figure 1). The tactical plan integrates technology transfer with the research plan in a step-by-step outline demarked by the proposed research objectives and milestone timelines (Figure 2). This new paradigm will align technology transfer with research objectives early in the project cycle, strengthening the impact of research outcomes.

Personalized Plan

One important characteristic of this new approach is its personalized and customized nature. ARS's four research areas span from crop production and protection to animal production and protection, from nutrition, food safety and quality to natural resources and sustainable agricultural systems. While full impact of a research project in nutrition can be realized by widely disseminating the nutritional content of a particular food in a publicly accessible database, when dealing with animal vaccines patent protection is a requirement.

Team Approach

A team's performance hinges on each member's individual expertise and strength and the team's collective ability to exhibit those strengths. This is no different in a research enterprise. The researcher possesses the scientific expertise and the vision as to the desired outcome of a research project; the technology transfer professionals strong suit is his or her ability to contextualize and analyze the business and legal (both contract and IP implications) aspects of research and recommend the appropriate mechanisms and legal instruments to achieve the desired impact. A complete picture requires both the scientist's input and the technology transfer professionals expertise.

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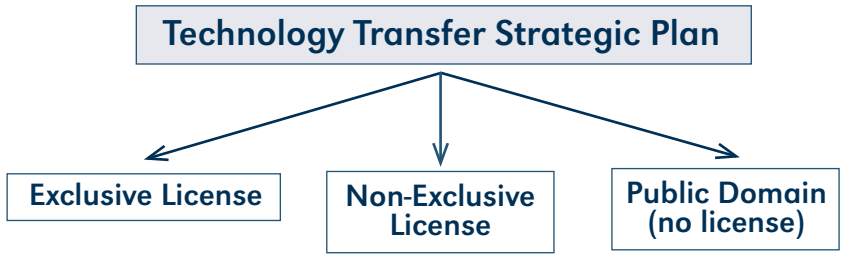
Timeline

During the implementation phase, every national program leader that we interviewed, irrespective of the research area, expressed that technology transfer professionals should be involved early on in the research cycle. Interestingly, 'early' meant different things to different people, some programs wanted TT involvement at the very conception of a research project, others wanted to obtain data prior to engaging with technology transfer, yet a select few considered proof of concept as the right time for TT involvement. While these appear to be different points along the research and development continuum, the diversity of responses make sense in the context of the research program. Scientists involved in food safety and animal health, two areas with products such as diagnostic tests or animal vaccines which have longer and more expensive development timelines and where patents and a subsequent

Figure 1. Technology Transfer Strategic Plan

The goal of tech transfer is to make research outcomes widely available. Adoption of research outcomes may require non-research assets (e.g. further product development, manufacturing facilities, marketing and distribution capacity, investment capital, product registration expertise, etc.). A license provides an incentive for the private sector to invest in making those research outcomes widely available. Depending upon the research outcomes, there at least three difference tech transfer strategies: (1) public domain; (2) exclusive license to a single party; or (3) non-exclusive license to multiple parties.



license play an important role, needed proof of concept studies prior to making TT decisions. Programs with multiple options in achieving impact such as plant breeding were more amenable to involving TT earlier on.

One-on-one Strategy Sessions

To further improve the chances that research outcomes will be adopted, a technology transfer strategy session is held for each of the invention disclosures reviewed by the patent committee. After the patent committee, the researcher, Area Technology Transfer Coordinator and a member from each of the OTT Partnership, Patenting and Licensing Sections discusses the strategy for moving forward. If the decision was not to pursue a patent-license strategy, the discussion focuses on what other mechanisms could be used to get the research results adopted (*e.g.,* trade journal article, workshops) or what other data was needed for a successful patent-license strategy (*e.g.*, research partnerships). If the decision was to pursue patent-license strategy for the technology, the discussion focuses on what claims are needed in the patent application to get the widest adoption and the ensuing licensing strategy (*e.g.*, exclusive license, target market sector). In either case, TT engages the scientist in a dialog that charters a path forward for the adoption of his/her research outcomes.

Conclusion

Technology Transfer works best when it is a part of the research plan and conducted in an iterative and collaborative manner. The earlier the interaction between the scientist and the technology transfer professionals starts, the more likely it is that the research outcomes will be adopted. Knowing how early Technology Transfer should get involved depends on the nature of the scientific research, as one size does NOT fit all. ■

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Stephen R. Covey, "The 7 Habits of Highly Effective People," (New York: Franklin Covey, 1989).

Federal Technology Transfer Act of 1986, an Act to amend the Stevenson-Wydler Technology Innovation Act of 1980, codified in 15 USC § 3710.

Available at Social Science Research Network (SSRN): *https://ssrn.com/abstract=2961849.*

Figure 2. Technology Transfer Tactical Plan: A.) No License (Public Domain), B.) Exclusive License, C.) Non-Exclusive License.

1. IP landscape (*i.e.*, freedom to operate). Do you know of any patents on technologies that would be similar to the predicted research outcomes of the project plan? Do you know of any publications on similar research which would preclude a patent on the predicted research outcomes of the project plan?

2. Partner/Funded Need. How do I plan my research so I am best prepared for a partnership? How do I stay out of trouble when working with companies?

3. Collaborative Research Relationship. Once an outline of a research plan is developed, the technology transfer team can then determine the appropriate type of agreement to formalize the research collaboration.

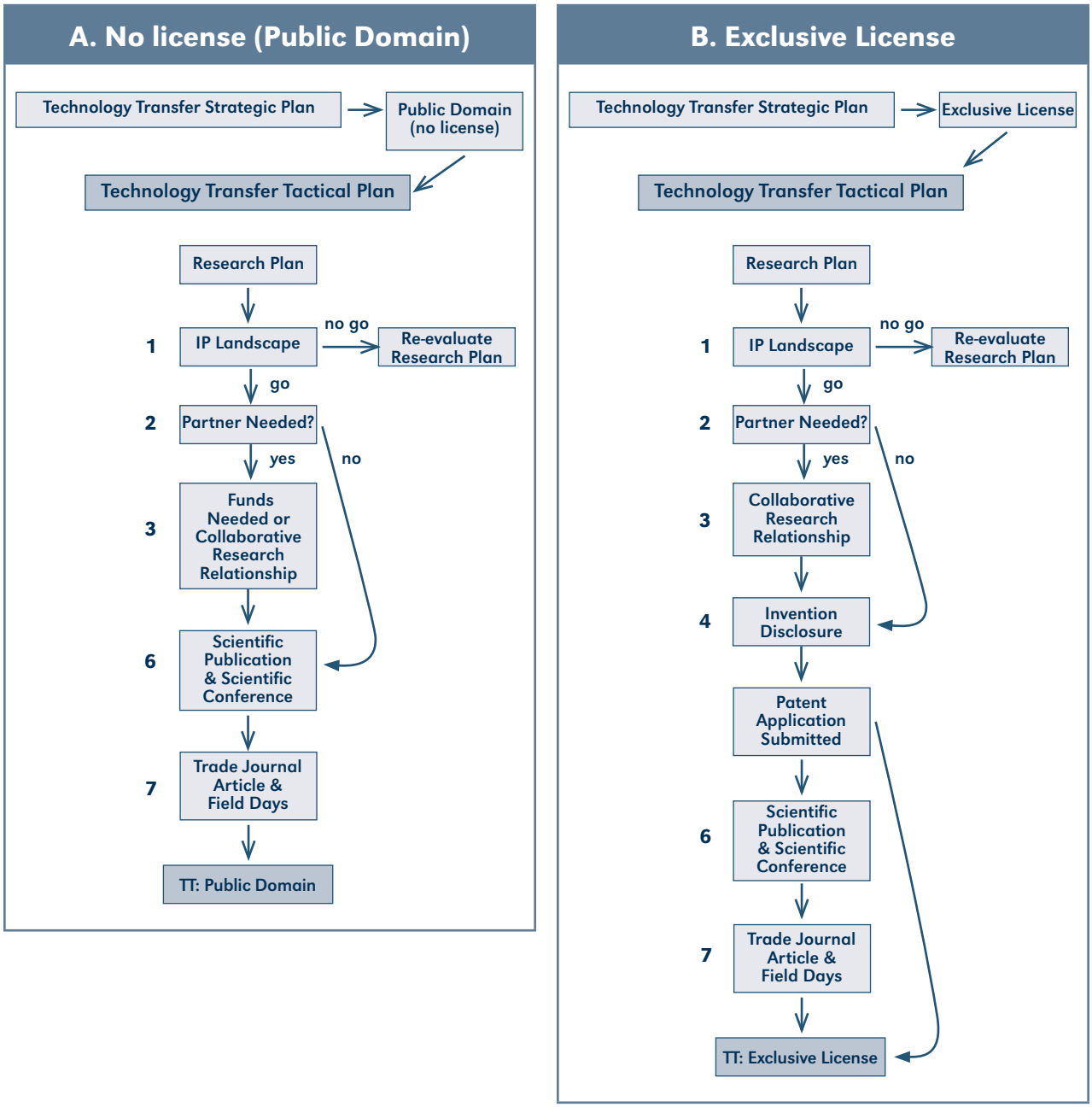
4. Invention Disclosure. Once the research is completed and data has been collected, an invention disclosure should be submitted.

5. Patent Committee. Invention disclosures are reviewed by one of the National Patent Committees: (1) Life Sciences, (2) Chemical, or (3) Mechanical and Measurement. Patenting decisions are based on technology transfer requirements.

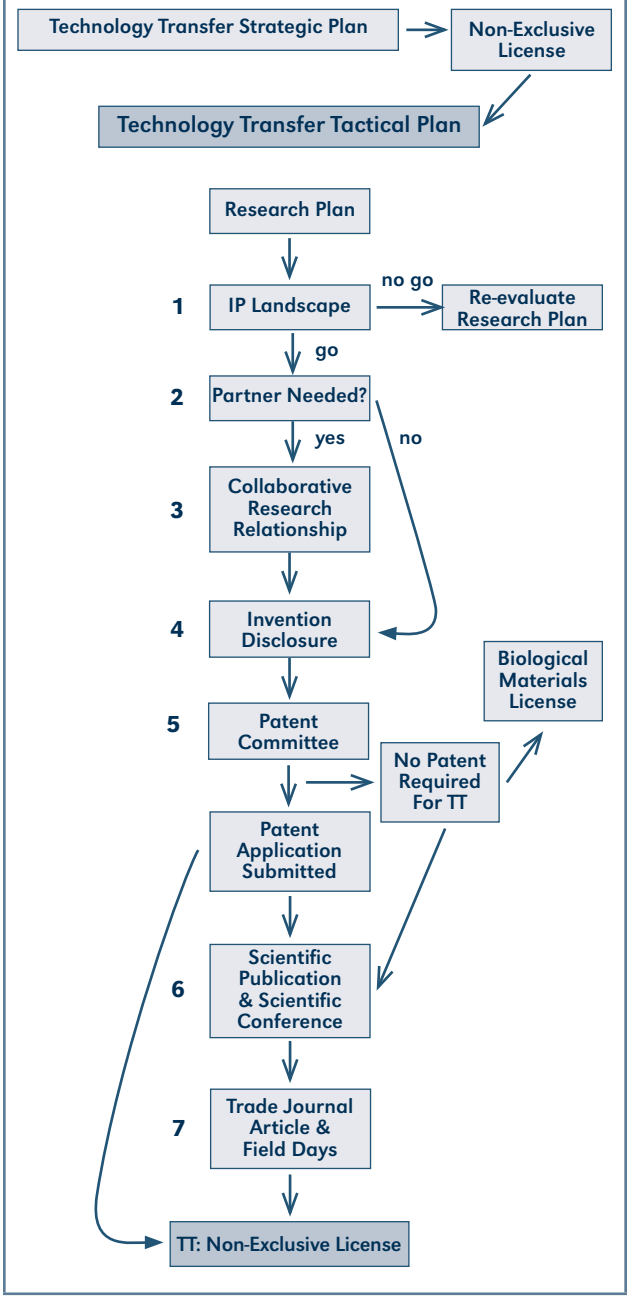
6. Scientific Publication. In order to retain patent rights, publication (paper, abstract, talk, poster, etc.) cannot occur before the patent application is submitted to the USPTO.

7. Trade Journal. The adoption of research outcomes (*i.e.*, impact) may not necessarily occur through a scientific publication. The presentation of research outcomes through a trade journal article, newsletter, website, field days, etc. may be a more appropriate way to reach the users of research outcomes.

See charts A, B, C continued on pages 88-89.


A. No license (Public Domain)
Technology Transfer Strategic Plan
Public Domain (no license)
Technology Transfer Tactical Plan
Research Plan
1
IP Landscape
no go
Re-evaluate Research Plan
go
2
Partner Needed?
yes
no
3
Funds Needed or Collaborative Research Relationship
6
Scientific Publication & Scientific Conference
7
Trade Journal Article & Field Days
TT: Public Domain
B. Exclusive License
Technology Transfer Strategic Plan
Exclusive License
Technology Transfer Tactical Plan
Research Plan
1
IP Landscape
no go
Re-evaluate Research Plan
go
2
Partner Needed?
yes
no
3
Collaborative Research Relationship
4
Invention Disclosure
Patent Application Submitted
6
Scientific Publication & Scientific Conference
7
Trade Journal Article & Field Days
TT: Exclusive License

C. Non-Exclusive License



Employee Inventions Around The World

By Sun-Ryung Kim

Multinational companies have relied on their employees for research and development projects and for creating valuable IP portfolios. The ownership of employee invention and related remuneration issues have been discussed at an international level. The issue of employee remuneration is not only important for innovative companies but also for employee inventors. Seeking clarity on all aspects of employee invention is critical for international companies conducting cross-border research. Since the laws relating to the ownership of employee invention and remuneration vary significantly from country to country, uncertainty becomes problematic.

Most countries have codified provisions for the ownership of employee invention and compensation either through national patent legislations or specific employee compensation laws. For instance, for countries such as the Netherlands, China, Japan and France, the relevant provisions are found in their national patent legislations. On the other hand, countries such as Germany and Korea have enacted specific employee compensation laws and provisions for transfer of ownership and entitlement to compensation. Australia and the U.S. lack any explicit provisions regulating employee's entitlement to remuneration, whereas in Japan and China, employee inventors have a right to seek reasonable remuneration for the transfer of the invention to the employer. Even within such legal frames, there may be a number of different approaches to the calculation of remunerations due to the employee.

This edition will feature eight articles discussing the regimes of ownership of employee invention and remuneration in eight different jurisdictions in alphabetical order, Australia, China, France, Germany, Japan, Mexico, the Netherlands and the United Kingdom. It will provide an overview of national legal frameworks and case studies on these issues. Some of the relevant legal issues include transfer of ownership of employee invention, identifying entitlement requirements, if any, employer's rights and duties, employee's rights and duties, establishing fair compensation/benefit, determining the level of remuneration, valuation of remuneration, for international collaboration and whether employer and employee may contractually deviate from the statutory provisions, practical challenges, etc.

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Significant disparities are found amongst the laws of different jurisdictions. Countries such as Germany may reward compensation routinely yet the amount of compensation is relatively lower than some other countries given the fact that the compensation is assessed at the time the invention is created. On the other hand, the amount of compensation may be significantly more in the UK perhaps given to the fact that the amount of monetary compensation is calculated after such invention is commercialized/exploited, not when the invention is made. Seeking clarity on the laws on employee invention and related remuneration issues may be burdensome. Yet, for innovative companies conducting research around the globe, it appears to be a must. I hope the publication may provide some legal and practical guidance on the different national employee invention and remuneration regimes in a few key jurisdictions.

I wish to take this opportunity to express my sincerer gratitude to each of the authors for their generosity in contributing their expertise and valuable time to our effort and making the special themed issue possible. Thank you. ■

Employee Inventions In France

By Francis Declercq and Didier Intes

Executive Summary:

- *In France, and by virtue of the French Intellectual Property Code, employees' inventions are in most cases the property of the employer;*
- *In return, employee inventors must be paid financial compensation by the employer;*
- *In order to prevent legal disputes with employee inventors, it is important that the employer implements within the company an inventors compensation program.*

1. Main Principles Governing Ownership of Employee Inventions in France

The French Intellectual Property Code (FIPC) distinguishes between:

- Inventions made by an employee within the framework of an inventive mission ("in-mission inventions"), and
- Inventions made by an employee outside the framework of an inventive mission ("attributable out-of-mission inventions").

(i) In-Mission Inventions

FIPC Article L. 611-7§1 provides that:

> *"Inventions made by a salaried person in the execution of (i) an employment agreement comprising an inventive mission corresponding to the effective functions of the employee or of (ii) studies and research which have been explicitly entrusted to him, shall belong to the employer.*
>
> *The conditions under which the salaried person who is the author of such an invention shall enjoy additional remuneration shall be determined by collective bargaining agreements, company agreements or individual employment agreements."*

(ii) Attributable Out-of-Mission Inventions

Concerning inventions made by an employee outside the framework of an inventive mission (*i.e.*: inventions made on his own initiative by an employee, who is not entrusted with any inventive mission neither permanently nor on a punctual basis), FIPC Article L. 611-7§2 states that such inventions belong to the employee. However, the employer is entitled to claim the property of such inventions if:

- The invention is an "attributable out-of-mission invention," made by the employee during the execution of his functions or in the field of activity of the company, or by reason of knowledge or use of technologies or specific means of the company, or of data acquired by the company, and
- The employer pays the inventor a "fair assignment price," whose amount is to be fairly negotiated between the employer and the employee taking into account the conditions in which the invention was made and the industrial and commercial interest of the invention.

As noted, **the employer is automatically and as of right vested with the property of an "in-mission invention;"** therefore, no assignment agreement between the employer and the employee is needed; however, the employer is under the obligation to pay the inventor **"additional remuneration"** whose amount/way of calculation must be determined in advance by the collective bargaining agreement applying to the company, or a company agreement in force within the company, if any, or by the employee's employment agreement.

In addition, **the employer is entitled to acquire an "attributable out-of-mission invention,"** in which case an assignment agreement from the inventor to the employer is needed, and the employer has to pay a **"fair assignment price,"** whose amount must be fairly negotiated with the employee.

2. How to Deal With Employee Inventions?

FIPC Articles R. 611-1 *and seq.* provide for a declaration and information procedure aimed at allowing the employer and the inventor to agree on whether the invention is an "in-mission invention" or an "attributable out-of-mission," said procedure having two steps:

(i) Step 1: T he employee must immediately declare the invention to his employer.

Note that the inventor is **under the obligation to declare to his employer any and all inventions he makes during the term of his employment**, even if he believes, due to the features of the invention or the context of its reduction to practice, that his employer isn't entitled to the property of the invention. According to French case law indeed, it is not up to the employee to decide unilaterally on the characterization of the invention, and in particular whether it is neither an in-mission nor an attributable out-of-mission invention.

The declaration must be made by the employee in writing.

Such declaration must contain:

- The subject matter of the invention along with its envisaged applications;

- A description of the invention;
- The circumstances in which the invention was made (for example: instructions or directives received from the employer, possible use for the making of the invention of former experiment or research work carried out by the employing company, etc.;
- The opinion of the employee as regards the characterization of the invention (in-mission, attributable out-of-mission or non-attributable out-of mission).

In case the employee inventor characterizes the invention as an "attributable out-of-mission" invention, the declaration must additionally provide details about the circumstances which led the inventor to the invention.

It is recommended that the employer provides general guidelines, inviting his employees to declare their inventions using the declaration form made available by the French Patent Office.

(ii) Step 2: Within two months from receipt of the employee's declaration, the employer must indicate to the employee if he agrees with the proposed characterization of the invention. Failure to provide such information within said time limit will result **in a presumption of agreement with the characterization of the invention proposed by the employee.**

Should the employee characterize the invention as an "in-mission invention," then the employer will be automatically and as of right vested with the property of the invention. It is to be noted that the "in-mission" characterization is from a financial standpoint the most favorable characterization to the employer (see section 3 below). Therefore, in case the employee is permanently entrusted with an inventive mission, it is important that the employment agreement clearly reflects such a situation so as to facilitate the "in-mission" characterization (details should be given about the position of the employee, his possible assignment to the R&D department of the company, his involvement in missions requiring innovative approaches, etc.). Same precautions should be taken if changes are made to the scope or content of the employee's missions: the employment agreement should be updated for reflecting the involvement of the employee in innovative activities.

Should the employee characterize the invention as an "attributable out-of-mission invention" and should the employer agree with such a characterization, **the latter shall then benefit from a four month period, from receipt of the employee's declaration, for claiming the property of the invention.** Such a claim must be made in writing.

The time limits referred to above may be suspended in the event of institution of legal actions with regard to the compliance of the employee's declaration or to the characterization of the invention proposed by the employee.

It is of importance to stress that any declaration or communication made by the employer or the employee in accordance with the above must be made by registered letter with acknowledgment of receipt, or by any other means enabling to bring evidence that it has been received by the other party.

Finally, pursuant to FIPC Article L. 611-7, any agreement between the employer and the employee having the invention for purpose (and in particular its characterization) must be made in writing in order to be valid and enforceable.

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3. What Compensation Must be Paid to Inventors?

3.1 With Respect to "In-Mission Inventions"

According to FIPC Article L. 611-7§1, *"the conditions under which the salaried person who is the author of [an in-mission invention] shall enjoy **"additional remuneration"** shall be determined by the collective bargaining agreements, company agreements or individual working contracts."*

(i) What are collective bargaining agreements and company agreements?

Briefly said, **collective bargaining agreements** are agreements which are negotiated at a regional or national level between employer's unions and employees' unions. A collective bargaining agreement usually applies to a particular industrial branch and, as a consequence, applies to any and all companies carrying out activities in such branch. A collective bargaining agreement deals with the working and employment conditions of salaried persons.

A **company agreement** has the same purposes as a collective bargaining agreement, but is negotiated between unions within a single company and applies only to said company.

A company may be governed by a collective bargaining agreement and a company agreement, it being noted that the company agreement cannot be less favourable to the employees than the collective bargaining agreement, and that the latter cannot be less favourable to the employees than the provisions of the French Labor Code and of the FIPC.

(ii) How should the amount of "additional remuneration" owed to the author of an "in-mission invention" sbe calculated?

Despite the provisions of FIPC Article L. 611-7, collective bargaining agreements as well as company agreements do not usually deal with the practical conditions under which additional remuneration must be paid to employee inventors; this in particular is the case as regards to the amount of said remuneration and its way of calculation.

Therefore, the amount of the additional remuneration is most often determined by the employment agreement. More particularly and in most cases, the employment agreement reproduces the provisions of an inventors compensation program implemented by the employer within the company. In case such a compensation program is not part of a company agreement, it is highly recommended to attach it as an exhibit to the employment agreement, thus making it part of this agreement and ensuring its enforceability vis-à-vis the employee.

For the company, the purpose of an inventors compensation program is to anticipate the amount of additional remuneration which will be paid to employees inventors, and to make such an amount enforceable vis-à-vis employees. Consequently, the inventor shall be prevented from claiming a higher amount for the additional remuneration than that owed under company's compensation program. Such program also provides visibility and confidence to the employees. Implementing such inventors compensation program results in saving of time and money noting that, in case of litigation, the French patent office or the Court tend to grant inventors significantly higher amounts for additional remuneration, than that usually laid down in companies' inventors compensation program.

Based on a study released by the French Patent Office in 2016 and dealing with inventors compensation programs implemented by companies, the average amount of additional remuneration paid to employees inventors is approximately € 2,200 per invention giving rise to the filing of patent applications. Each company freely determines the amount of additional remuneration which will be paid to its employees, said amount being enforceable vis-à-vis the latter provided that it is part of their employment agreement.

It is to be noted that the payment of additional remuneration is **mandatory provided that the invention is merely patentable,** and irrespective of the employer's decision to file or not to file a patent application. The assessment of the patentability of the invention may be made as follows:

- It is recommended that the inventor be requested to make a thorough description of the invention on the invention declaration form, so as to avoid any fanciful declaration which might not enable the employer to have an accurate idea of the invention concerned;
- Based on said description, the employer should be in a position to carry out a quick preliminary prior art search in order to have a preliminary opinion about novelty and non-obviousness of the invention.

Some employers also set up within their company an internal dedicated committee for dealing with employee's inventions and in particular assessing patentability of employee's inventions. In case the employee disagrees with the employer's opinion on patentability, the employee (as well as the employer if he so wishes) may require at his own costs a patent attorney to provide a patentability opinion.

The employer may consider paying the additional remuneration in a single lump sum. However, most large-size companies implement compensation programs providing for the payment in several installments, such as:

- A first installment upon filing the first patent application, based on the declaration of the invention by the employee and upon agreement between the employer and the employee on the in-mission characterization of the invention,
- A second installment when filing further patent applications claiming priority of the patent application first filed,
- A third installment if the invention gives rise to the grant of a patent in a jurisdiction listed among several specific jurisdictions (such as EPO, USPTO, JP, CN, etc.).

As regards the first installment referred to above, one must note that remuneration is due in principle for each patentable invention, irrespective of the filing of a patent application. Consequently, if the employer decides not to file a patent application, it is highly recommended to give reasons for this decision. If such reasons are a lack of patentability, a rough opinion on the lack of patentability (citing prior art) should be communicated to the employee.

3.2 With Respect to "Attributable Out-of-Mission Inventions"

Under FIPC Article L 611-7, it is not possible to lay down in advance the amount of the "fair price" to be paid to the employee as compensation for the assignment of the invention to his employer, since the amount of such a fair price must be negotiated on a case-by-case basis between the employer and the employee. The amount of said fair price must be negotiated taking into consideration all elements which may be

supplied, in particular by the employer and by the employee, to compute the fair price as a function of **both the initial contributions of either of them and the industrial and commercial utility of the invention.**

Therefore, with respect to attributable out-of-mission inventions, the employer shall enter in each case into an agreement with the employee providing for:

- The assignment of the invention to the employer, and
- The amount of the "fair price" negotiated with the employee.

4. Litigations

Litigations dealing with employee inventions may be brought either before the National Board of Employee Inventions (CNIS) with the French Patent Office or before the Courts of Paris (which have sole jurisdiction for patent matters, including for employee inventions). Should a decision be first rendered by the CNIS, the parties to the litigation may appeal the decision before the Courts of Paris. Similarly, should the case be first brought before the Court, the possibility to bring the case before the CNIS remains, in which case the Court will then put a stay on proceedings. Note that amounts of compensation granted by the CNIS are in most cases lower than those of compensation granted by the Courts.

Litigations often deal with both the characterization of the invention and the amount of compensation owed to the inventor. Assessing the amount of compensation which may be granted to inventors remains difficult. Depending on the case, the amount of compensation per invention often ranges from € 6,000 to € 40,000, but is in most cases rather unpredictable and can be higher. In a case where the invention at stake, characterized as an "in-mission invention," consisted of a particularly successful pharmaceutical product (Paris Appeal Court, December 19, 1997—*Raynaud vs Roussel Uclaf*) and in the absence of implementation of an inventors compensation program by the employer, the inventor was granted additional remuneration in the amount of € 609,796. ■

Despite an attempt to reform the employee inventions system in 2010, and apart from a slight addition made in 2015 to FIPC Article L 611-7 (making it mandatory for employers to inform authors of in-mission inventions about the filing of patent applications), the French system remains unchanged since 1994. No further reform is currently contemplated.

Available at Social Science Research Network (SSRN): *https://ssrn.com/abstract=2961831.*

An Employer's Entitlement To An Employee's Invention In Australia

By Rodney DeBoos

Australia

In Australia, the entitlement of an employer to a patentable invention made by its employee is governed by the common law and equity. There is no statute which dictates the rules which apply, although the impact of the Corporations Act 2001 is discussed below in relation to fiduciary duties. The situation in relation to patents can be contrasted with the situation regarding copyright where the Copyright Act 1968 provides a set of default rules regarding ownership of works and subject matter other than works.

Equally, there are not rules which give an employer any rights over an employee's invention in the way that "shop rights" do in the United States.

It follows that there are also no rules regarding the level of remuneration an employee should receive in the event of use of an employee's invention by his or her employer.

There are three means by which the entitlement of an employer to inventions made by its employee can be imposed. These are by an express term in an employment contract; by an implied term in an employment contract and pursuant to a fiduciary obligation.

Express Terms

The inclusion of an express term in a contract of employment calls for little comment. Clearly if the contract of employment provides that inventions made by the employee "belong" to or are held in trust for the benefit of the employer, then, prima face, that is an end to the enquiry. Perhaps the only caution that needs to be mentioned is that unreasonably broad provisions might well be struck down as being in restraint of trade (see paragraph 130 *University of Western Australia v Gray*).

This doctrine provides that all restraints of trade are unenforceable unless they are reasonable as between the parties are reasonable in the public interest and are no broader than is necessary to protect a legitimate interest of the beneficiary of the restraint. For instance, in *Maggbury v Hafele Australia Pty Ltd.* ([2000] HCA70) the High Court held by a majority that a confidentiality agreement where the obligation of confidentiality lasted "forever" and there was no exception for information which had become public, was an unreasonable restraint of trade and therefore unlawful.

On this basis, one might argue that an express contractual provision which entitled an employer to any invention made by an employee:

(a) whether during or outside the hours of employment;

(b) which could be of interest to the employer whether or not part of the employer's business at the relevant point in time; and

(c) whether within the scope of work performed by the employee or not;

would be unreasonable both as between the parties and as a matter of public interest. As a result, such a clause would be unenforceable. It may be that other factors, such as the level and breakdown of remuneration paid, would mitigate against such an argument which only serves to illustrate that each case has to be viewed separately against all of the relevant circumstances.

Implied Terms

The second means by which an employer might become entitled to an employee's invention would be through the implication of a term into the employment contract.

Terms are implied into contracts in two situations. The first is to give business efficacy to the contract and the second is as a matter of law. In dealing with employee inventions, the implication of the term would necessarily depend upon the implication as a matter of law rather than implication in order to give business efficacy to a contract. This was made clear by the *Full Federal Court of Australia in University of Western Australia v Gray* ([2009] FCAFC116).

The implication of a term into a contract as a matter of law is an issue of public policy. It is now "well settled" in Australia that:

> "It is an implied term of employment that any invention or discovery made in the course of the employment of the employee in doing that which he is engaged and instructed to do during the time of his employment, and during working hours, and using the materials of his employers, is the property of the employer and not the employee. …but the mere existence of the employer/employee relationship will not give the employer ownership of inventions made by the employee during the term of the relationship. …unless the contract of employment expressly so provides, or an invention is the product of work which the employee was paid to perform, it is unlikely that any invention made by the

employee will be held to belong to the employer."

The critical question in determining whether or not an employer is entitled to an invention made by an employee is to ask whether the invention arose out of activities which the employee was employed to undertake; that is, out of a duty to invent. This question can be difficult to answer and is complicated by such circumstances as a vague job description, discretion given to the employee in tasks to be undertaken and changes in an employee's responsibilities over time.

Fiduciary Obligations

The third means by which an employer might become entitled to an invention made by an employee is as a consequence of the employee being in a fiduciary relationship with the employer.

Not all employees will owe fiduciary obligations to their employers. Generally speaking, employees will only be in the position of fiduciaries and therefore owe fiduciary obligations to their employers if they occupy a senior position with their employer, have a significant managerial role or place themselves in a position of conflict of interest. For instance, directors clearly owe fiduciary obligations to the companies of which they are directors but manual labourers are unlikely to. Whether or not a fiduciary obligation exists depends upon the terms of the relevant employment contract and the role and position held by the employee in the business of the employer.

If a fiduciary relationship exists, then the employee will owe the employer an obligation of undivided loyalty and an obligation to act in the best interests of the employer. This would include an obligation on the employee not to use his or her position to secure or assist in exploiting a profit making opportunity otherwise than for the benefit of the employer.

The fiduciary obligations owed by directors and other senior managers in a company are supplemented by the provisions of the Corporations Act 2001. These include that a director, secretary, other officer or employee of a corporation must not improperly use their position to gain an advantage for themselves or someone else (section 182).

Examples of Decisions of Australian Courts

Spencer Industries Pty Ltd v Collins [2003] FCA 542

Collins was employed as a Sales Manager by Spencer Industries which manufactured equipment used in tire retreading. His primary duty was to increase sales for the company. Collins developed an improvement to the configuration of the blades of a "buffing" machine used to remove tread from worn tires. Collins asserted that he owned the rights to the invention and refused to execute an assignment of the rights to the invention to Spencer Industries. The circumstances in which the invention was made are that in 1996 Collins conceived an improvement to the configuration of the teeth of a blade which he and another employee had designed in 1990 and in respect of which Spencer Industries had obtained a patent. Collins developed his idea by making paper cut-outs and subsequently transparencies of a prototype for the invention in his own time. When he presented his idea to a senior executive of Spencer Industries, he was effectively rebuffed. However, two years later, and whilst Collins was still employed by Spencer Industries, interest was revived and he was asked to produce a further drawing. Ultimately, the new blade assembly was produced and the company applied for a patent in respect to the improvement. In the dispute over ownership of the invention and entitlement to the patent, Spencer Industries argued that it was entitled to the invention because the invention was made by Collins in the course and scope of his employment. This was disputed by Collins. The Patent Office found in favour of Collins and this decision was subsequently upheld in the Federal Court on Appeal. The Federal Court stated that: the invention was not made by Collins in carrying out his normal duties as a Sales Manager; he was not paid to invent; and the assembly was not a product of work that Collins was paid to perform.

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Victoria University of Technology v Wilson & Ors [2004] VSC 33

Two senior academics, Wilson and Feaver, were employed by Victoria University of Technology in the School of Applied Economics. Wilson was the head of the school and Feaver was a senior lecturer. At the relevant time the University (in a previous incarnation) had developed a centre for the co-ordination of research into international trade. In 1999, one of Wilson's former students contacted him regarding the possibility of the University developing a range of online international business and trade subjects to assist his company exploiting a concept for an electronic international trade exchange. This led to discussions with Wilson and Feaver and other members of the University's research centre as a result of which there was a consensus that the University had a role in the design of a system as well as in the provision of an online education component which could be used for the accreditation of users of the system. Wilson and Feaver used their complementary skills to develop a specification for the software and external funding was acquired. In the final analysis, a new corporate entity was established in which Wilson, Feaver and the finan-

cier held shares. Over the next two years, the company further developed the software using employed programmers and with Wilson and Feaver devoting considerable periods of time to the company. By the second half of 2001, Feaver was only working half time for the University and Wilson was using overseas study leave and long service leave to allow him to devote time to the company. In 2001, a patent application was filed in which Wilson, Feaver and the financier were named as inventors and on the day of filing, those persons assigned their rights in the application to the company. Subsequently, the University commenced proceedings to assert its rights over the patent. The Supreme Court of Victoria held that the University had no direct rights in the invention because all that the University had employed Wilson and Feaver to do was conduct research. It had not employed them to invent. However, the Court held that the employees had placed themselves in a position of conflict of interest by appropriating to themselves an opportunity which had been presented to the University. Consequently, they breached their fiduciary obligation and were consequently required to compensate the University for the lost opportunity to develop the invention.

University of Western Australia v Gray [2009] FCAFC 116

Professor Gray was a full-time employee at the University of Western Australia (UWA). His contract required him to teach, conduct examinations, supervise work in his fields and to undertake research among the staff and students. Professor Gray developed technologies for the production and use of microspheres for the targeted treatment of tumours whilst employed by UWA. He filed several patents relating to those technologies. UWA brought action against Professor Gray and argued that he had breached his contract of employment by failing to comply with an implied term of the contract which provided that UWA owned the inventions developed by him in the course of his employment. UWA also argued that Professor Gray breached a fiduciary obligation to preserve the benefit of his inventions for UWA. The Federal Court rejected these arguments and found that Professor Gray's duties as an employed researcher did not include a 'duty to invent' and this decision was affirmed on appeal. The Court was particularly influenced by the fact that Gray was left to obtain funding for his research and that he owed no duty of confidence to the University in respect to the results of his research; in other words, Gray was entitled to publish or share those results as he saw fit. UWA pleaded that Dr. Gray owed fiduciary obligations to UWA to deal with University property rights and interests so as to protect them for the benefit of UWA, not to make any secret profit or receive any secret benefit, to account for any secret profit or benefit and to observe the duties of a trustee in respect of University property. The allegations failed because the Court held that there could be no breach of the fiduciary duties as pleaded as UWA did not have an ownership interest in the inventions Gray made. It was not initially pleaded by UWA that the contract of employment of Gray contained an implied term that he owed a duty of fidelity and good faith to UWA. There was a late attempt by UWA to amend its pleadings to make that allegation but that amendment was denied by the Court. Thus the case was differently pleaded and therefore decided on a different basis to *Victoria University v Wilson*.

International Issues

Whilst the entitlement of an employer to the inventions of its employees has been the subject of intense judicial scrutiny in Australia with the consequence that the rule is relatively clear, whether the same rule is applied to foreign inventor employees and employers is not so clear. Despite the fact that foreign employers and inventors file the vast majority of patent applications in Australia, the issue does not appear to have received any judicial consideration.

When considered in the context of patent applications in respect to inventions made outside Australia or in Australia by inventors employed by foreign companies, there are two questions which potentially arise. These are the questions of invention and questions of entitlement.

In determining when an invention has been made, the approach in Australia is to identify the "inventive concept" of each relevant invention as defined by the claims and then to determine who was responsible for deriving the inventive concept and the time of conception of that concept. It is clear in Australia that the time at which an invention is made and the identity of the inventor who made that invention is not affected by any further work required to reduce the invention to practice; whether or not some elements of the process of reduction to practice are contained in the relevant claims. As patents are a creature of statute, the requirements for granting a patent will be those prescribed as a matter of law in Australia. Thus, for the purposes of an application for a patent in Australia, the appropriate law to apply to the question of whether or not an invention has been made are the rules developed by the Australian Courts.

The second question is the question of entitlement to the invention. The Australian law in relation to entitlement of an employer to an invention made by an employee is dealt with above. However, these rules are not necessarily the same in other jurisdictions. The question then arises as to whether it is Australian law or perhaps a foreign law (for instance, the law of the place where the invention is made or the law governing the relevant contract of employment) should apply.

This question does not seem to have been judicially considered in Australia.

The Australian cases dealing with inventions made in foreign countries, to the extent that they deal with questions of entitlement, assume that the employer in the particular case is entitled to the invention of the particular employee. For instance, in *Apotex Pty Ltd v AstraZenica* AB(4) [2013] FCA162, there was a contest as to whether AstraZenica (a Swedish company) or Shionogi & Co., Ltd. (a Japanese company) was entitled to the benefit of an invention. The actual inventor named in an application for a patent in respect to the invention was an employee of AstraZenica. However, it was argued that, in fact, it was the employees of Shionogi who made the invention which was then disclosed to AstraZenica under a Licence Agreement. The issue of whether the relevant employer was entitled to inventions made by its employees was not an issue and was not argued. Of course, it may not have been argued because it was not an issue. This could have been because under Australian, Swedish and Japanese law, the same result would have been reached on the question of entitlement, although the writer has not researched this question. Alternatively, all of the relevant employees might have formally assigned all relevant rights to their respective employer.

As noted above, the three means by which an employer might become entitled to an invention made by an employee are by an express term, an implied term or pursuant to a fiduciary obligation which arises in the context of the employment relationship. An employment contract will have a particular governing law being the law the parties have specifically agreed to or, in the absence of doing so, the law deemed to be the governing law by the Courts of a particular jurisdiction in which the matter is being determined. It would therefore seem likely that an Australian Court, in considering the issue of the entitlement of an employer to an employee's invention, would look firstly to the contract of employment between the relevant employer and employee. If that contract contained no express term, then the Court would presumably look to the law which governed that contract and then determine the issue of entitlement under that law. It would seem unlikely that an Australian Court would imply a term or find the existence of fiduciary obligation in a contract which was not governed by Australian law. On this analysis, it would follow that in a contest as to entitlement of an employer to an invention made by an employee the issue will be determined in accordance with the law of the contract governing the relevant employment contract.

In practice, these issues are overcome by the general practise of obtaining formal assignments of rights from employees in favour of employers as part of the application process.

Concluding Remarks

Disputes between employers and employees are disruptive at the best of times. The disruption and consequent frustration are exacerbated when the dispute involves the application of foreign laws which neither party might have contemplated. In order to minimize the risk of unintended outcomes arising out of these disputes, it is recommended that:

1. Written employment agreements are entered into which clearly set out the entitlement of an employer to inventions made by an employee;
2. The employment agreements are drafted so as to ensure enforceability in the jurisdiction whose law governs the agreement;
3. Where possible, the employment agreement contains a power of attorney provision allowing the employer to sign documents dealing with an employee's inventions in order to perfect entitlement;
4. An assignment of rights is taken from each employee inventor prior to an application for a patent being made. ■

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Service Invention In China— Current Provisions & Proposed Changes

By Stephen Yang

Ownership of Service Inventions

Current Provisions

Article 6 of the current Chinese patent law defines "service invention-creation" and the ownership thereof. Specifically, it provides that:

> An invention-creation, made by a person in execution of the tasks of the entity to which he belongs, or made by him mainly by using the material and technical means of the entity, is a service invention-creation. For a service invention-creation, the right to apply for a patent belongs to the entity. After the application is approved, the entity shall be the patentee.
>
> For a non-service invention-creation, the right to apply for a patent belongs to the inventor or creator. After the application is approved, the inventor or creator shall be the patentee.
>
> In respect of an invention-creation made by a person using the material and technical means of an entity to which he belongs, where the entity and the inventor or creator have entered into a contract in which the right to apply for and own a patent is provided for, such provisions shall apply.

As can be seen in China, under the current law there are two kinds of service invention-creations. The first kind of service invention-creation is an invention-creation made by a person in execution of the tasks of the entity to which he belongs, which is defined in Rule 12 of the Implementing Regulations of the Chinese Patent Law as any invention-creation made:

(1) In the course of performing his own duty;

(2) In execution of any task, other than his own duty, which was entrusted to him by the entity to which he belongs;

(3) Within one year from his retirement, resignation or from termination of his employment or personnel relationship with the entity to which he previously belonged, where the invention-creation relates to his own duty or the other task entrusted to him by the entity to which he previously belonged.

"The entity to which he belongs," referred to in Article 6 of the Patent Law, includes the entity in which the person concerned is a temporary staff member. For the first kind of service invention-creation, the right to apply for a patent belongs to the employer rather than the inventor.

The second kind of service invention-creation is an invention-creation made mainly by using the material and technical means of the entity. Rule 12 of the Implementing Regulations of the Chinese Patent Law further defines "material and technical means of the entity" as the entity's money, equipment, spare parts, raw materials or technical materials which are not disclosed to the public, etc. As can be seen from Article 6 of the Chinese Patent Law, for this kind of service invention-creation, if there is a contract entered between the entity and the inventor or creator which provides for the right to apply for and own a patent, such provisions shall apply. If there is no such a contract, then the right to apply for a patent belongs to the entity and entity shall be the patentee, if the application is granted.

Proposed Changes

The above are the current provisions. However, to encourage more invention-creations to be made, the latest draft 4th amendment to the Chinese patent law revises the definition of service invention-creation. Specifically, the proposed new Article 6 redefines service invention-creation by limiting it to an invention-creation made by a person in execution of the tasks of the entity to which he belongs. In other words, an invention-creation made by a person using the material and technical means of an entity to which he belongs is no longer regarded as a service invention-creation.

The new draft further proposed that in respect of an invention-creation made by a person using the material and technical means of an entity to which he belongs, where the entity and the inventor or creator have a contract in which the right to apply for and own a patent is provided for, such provisions shall apply and in absence of such a contract, the right to apply for a patent belongs to the inventor or creator.

Reward and Remuneration of Service Invention

Current Provisions

Article 16 of the Chinese Patent Law provides that the entity that is granted the patent right shall reward the inventor or creator of an employment invention-creation. After such patent is exploited, the inventor or creator shall be given a reasonable amount of remuneration according to the scope of application and the economic benefits yielded. As can be seen from this article, an inventor or creator of a service

invention-creation may receive two kinds of compensation, *i.e.* reward and remuneration.

Rules 76 of the Implementing Regulations of the Chinese Patent Law further provides that the entity to which a patent right is granted may, on the manner and amount of the reward and remuneration as prescribed in Article 16 of the Patent Law, enter into a contract with the inventor or creator, or provide it in its rules and regulations formulated in accordance with the laws. The reward and remuneration awarded to the inventor or creator by any enterprise or institution shall be handled in accordance with the relevant provisions of the State on financial and accounting systems. In other words, the amounts of the reward and remuneration can be specified in a contract between an employer and its employees or in the internal rules of the employer. It is to be noted that such amounts, especially the amount of remuneration, must be reasonable, according to Article 16 of the Chinese Patent Law. However, what can be regarded as reasonable may be open to debate.

In absence of such a contract of provisions in the internal rules, Rules 77 and 78 of the Implementing Regulations provide for specific amounts of reward and remuneration.

> Rule 77: Where the entity to which a patent right is granted has not entered into a contract with the inventor or creator on the manner and amount of the reward as prescribed in Article 16 of the Patent Law, nor has the entity provided it in its rules and regulations formulated in accordance with the laws, it shall, within three months from the date of the announcement of the grant of the patent right, award to the inventor or creator of a service invention-creation, a sum of money as a prize. The sum of a money prize for a patent for invention shall not be less than RMB 3,000; the sum of a money prize for a patent for a utility model or design shall not be less than RMB1,000.
>
> Where an invention-creation is made on the basis of an inventor's or creator's proposal adopted by the entity to which he belongs, the entity to which a patent right is granted shall award to him a money prize on favorable terms.
>
> Rule78: Where the entity to which a patent right is granted has not entered into a contract with the inventor or creator on the manner and amount of the remuneration as prescribed in Article 16 of the Patent Law, nor has the entity provided it in its rules and regulations in accordance with the laws, it shall, after exploiting the patent for invention-creation within the duration of the patent right, draw each year from the profits from exploitation of the invention or utility model a percentage of not less than two percent, or from the profits from exploitation of the design a percentage of not less than two-tenths percent, and award it to the inventor or creator as remuneration. The entity may, as an alternative, by making reference to the said percentage, award a lump sum of money to the inventor or creator as remuneration once and for all. Where any entity to which a patent right is granted authorizes any other entity or individual to exploit its patent, it shall draw from the exploitation fee it receives a percentage of not less than 10 percent and award it to the inventor or creator as remuneration.

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As can be seen, the amounts of remuneration provided for in Rules 77 and 78 are quite high if no contracts or internal rules as prescribed in Rule 76 are available, especially in the case that remuneration is paid on a percentage basis rather than a lump sum amount. Hence, it is strongly recommended that any enterprise or institution should have such a contract or internal rules in place. In the contract or internal rules, the employer may specify amounts lower than the ones specified in Rules 77 and 78 of the Implementing Regulations. However, again, the amounts of remuneration are still required to be reasonable. Hence, employers are advised not to abuse Rule 76 and to make the contact or internal rules in such a way that the specified amounts are arguably reasonable.

Proposed Changes

As mentioned, the draft 4th amendment to the Chinese Patent Law exclude, from service invention-creations, the invention-creation made by a person using the material and technical means of an entity to which he belongs. However, the proposed new Article 16 provides that for an invention-creation made by a person using the material and technical means of an entity to which he belongs, if the entity and the inventor or creator have a contract which provides that the right to apply for a patent belongs to the entity, the entity shall award the inventor or creator a reward after the patent right is granted, and in addition pay the inventor or creator remuneration upon exploitation of the patent.

In other words, according to the draft 4th amendment to the Chinese Patent Law, where an inventor or creator who makes an invention-creation by using the material and technical means of his employer, the employer can choose either to own the right to apply for a patent and the potential patent right through a contract with the inventor or creator and pay the inventor

or creator an award and remuneration, or to let the inventor or creator own the right to apply for a patent and the potential patent right through a contract or by default as prescribed in the proposed new Article 16, without the obligation to pay the inventor or creator.

This makes more sense than the current provisions, as according to the current Article 6, where an inventor or creator who makes an invention-creation by using the material and technical means of his employer, even though the inventor or creator enters into a contract with his employer which prescribes that the right to apply for a patent belongs to the inventor or creator, the invention-creation is still regarded as a service invention. For this reason, the employer still has the obligation to pay the inventor or creator according to the current Article 16 of the Chinese Patent Law. In other words, the employer could end up with no patent rights and still have to pay the inventor or creator.

Up until this article is finished, no draft Implementing Regulations of the Chinese Patent Law has been published. Hence, it is not known what is being changed in regards to specific amounts of inventor rewards or remuneration.

Proposed Regulations on Service Invention

In addition to the provisions in the Chinese patent law and the implementing regulations, the State Intellectual Property Office (SIPO) published a latest draft of Regulations on Service Invention (herein after referred to as "the Regulations") on April 2, 2015. The status of the Regulation is departmental rules, which has a lower status than the Chinese Patent Law and its Implementing Regulations. The Regulations include many provisions regarding detailed procedures and obligations in the exercise of service invention for both the inventors and their employers.

Contradictory Definition of Service Invention

It is to be noted that Article 7 of the Regulations defines service invention. Most of the provisions are in line with the provisions of the Chinese Patent Law, except the Paragraph 4 thereof. Paragraph 4 of Article 7 of the Regulations includes as service invention, the inventions that are made by inventors mainly by using the material and technical means of the entity such as money, equipment, spare parts, raw materials, propagation materials, technical materials which are not disclosed to the public, except where capital shall be repaid or use fees shall be paid as agreed, or where the inventions are merely verified or tested after being completed with the material and technical means of the entity. Apparently, this article is contradictory to the latest draft 4th amendment to the Chinese Patent Law.

Service Invention Reporting System

The Regulations have a whole chapter directed to the service invention reporting system, which requires a lot of documentation. Such service invention reporting system imposes many obligations on the employer. Fulfilling the obligations can be quite burdensome for an employer.

Article 10 of the Regulations provides that unless agreed between an inventor and its employer or provided it in the employer's rules and regulations formulated in accordance with the laws, the inventors should report to its employer within two months after completing the invention which is related to the business of the employer. All inventors or their representative should make such report where the invention is made by two or more inventors. The report submitted by the inventor's representative should be agreed upon by all the inventors.

Article 12 of the Regulations provides that unless agreed between an inventor and its employer or provided in the employer's rules and regulations formulated in accordance with the laws, where the inventor reports his invention as a non-service invention, the employer shall provide a written response within two months from the date of receipt of such report; if the employer fails to respond within the aforementioned period, it is deemed that the employer agrees with the inventor's opinion. Article 12 further provides that if the employer claims in its written response that the invention in the inventor's report belongs as a service invention, it should provide reasons and that the inventor may raise his objections in writing within two months from receipt of the entity's response. If the inventor does not raise objections, it is deemed that he agrees with the employer's opinion.

Article 13 of the Regulations provides that unless agreed between an inventor and its employer or provide it in the employer's rules and regulations formulated in accordance with the laws, where the inventor reports his invention as a service invention, the employer should, within six months of receiving the report, decide to apply for an IP right, protect it as technical know-how or publish it, and inform the inventors accordingly in writing.

Article 15 of the Regulations provides that where the employer intends to terminate the application process of the IP rights or abandon the IP rights of the service invention, it should inform the inventor in advance. The inventor may acquire the right of application of the IP right or the IP right through negotiation with the employer. In the case where the inventor acquires the IP right free of charge, the employer has the right to freely exploit the service invention and the IP right thereof.

The Regulations have caused a lot of discussion among in-house counsels due to its numerous requirements. It will be interesting to see whether further amendments, in light of the upcoming amendment to the Chinese patent law and public opinions, are solicited after the publication of the Regulations. ■

Available at Social Science Research Network (SSRN): *https://ssrn.com/abstract=2961862.*

Managing Risks And Rewards For Employees Inventions And Intellectual Works In Mexico

By Hector E. Chagoya-Cortés

Introduction

The Mexican patent system has had for several years the necessary legal framework in order to give certainty to employers regarding ownership of inventions made by its employees, but current trends related to multinational open innovation and the public policy promoted in Mexico for conforming technology transfer offices at R&D centers have made it necessary to study the obligations and risks arising out of poor management of employees' inventions. This article intends to provide an overview of the critical aspects of such management.

The Legal Framework

The historically relevant statutes for analyzing employees' inventions are the Mexican Industrial Property Law (IPL), the Mexican Federal Law on Labor (FLL), and the Mexican Federal Law on Copyrights (FLC). However, as of year 2016, the Law on Science, Technology and Innovation (LSTI) has become important in order to determine the amounts that researchers at R&D centers might receive from the commercialization of their inventions.

Article 9 of the Mexican IPL states that any natural person that develops an invention, or his successor in title or interest, shall have the exclusive right for exploiting the same either by himself or through authorizations to third parties. In turn, Article 10 Bis of the same law states that the right to obtain a patent belongs to the inventor and that such right can be transferred. Altogether, these articles of the Mexican IPL establish the foundation of the contractual nature of the assignment of rights from natural persons as inventors to legal persons as owners in general, without regard to the nature of such contractual relationship.

Mexico is a civil law country and in this kind of environment there are contracts known as "typical." Typical contracts, in fact, must be interpreted under specific statutory provisions to be effective, may guarantee certain rights to one or both parties, may provide for interpretation provisions in the absence of agreement between the parties, and may render the provisions of the contract per se null or void if contrary to such statutory provisions. Perhaps the most common and widely used typical contracts are precisely labor contracts, although in intellectual property there are other typical contracts such as copyright assignments and licenses and franchising contracts.

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This becomes very important in assessing employees' inventions because an inventor may be hired by a company through a labor contract or through professional service contracts. Professional service contracts are not typical while labor contracts are, and in the absence of a contract, if the person that is hired performs activities under terms and conditions typified in the FLL such person can be considered an employee, because the lack of a written labor contract is considered the responsibility of the employer.

This is relevant because with regard to employees' inventions, Article 14 of Mexican IPL states that the FLL shall apply to those inventions of persons subject to a labor relationship (employee—employer) and this law is not applicable for general professional services where there is not an employment relationship. The statutory rules for inventions made by an employee are:

1. The inventor shall have the right to be named and recognized as such.
2. When the employer sponsors the work for developing the invention and the employee is hired for performing such work, the employer will own the inventions. Under Mexican law only these inventions are considered "employee's inventions."
3. When the importance of the employee's invention and the benefit to the employer is out of proportion as compared to the regular payment to the employee, the employer shall pay the employee a complementary amount, independent to the regular payment. Such complementary payment shall be determined through agreement of the parties. In the absence of an agreement, the amount shall be determined by a Conciliation and Arbitration Board (CAB, a government board mandatory as first instance in employment cases).
4. In any other case, the employee or employees that developed the invention shall own the same, but the employer shall have a preferential right to obtain an exclusive license or to acquire the invention and the corresponding patents (right of first refusal).

On the other hand, inventions arising from service

contracts (independent contractors) are not regulated at all regarding ownership and therefore the inventor will have the rights on the inventions unless the service contract has contrary provisions.

It is also important to stress that rules for copyrights are opposite. The Mexican Federal Law on Copyrights (FLC) states in its Article 84 that when a copyright is developed because of an employment contract, unless agreed upon in contrary by the parties, the rights will be jointly owned by the employer and the employee. In addition, it is clearly stated in Article 83 of the same FLC that in the case of sponsored work, the sponsor shall own the work. In terms of technology, the provisions of the FLC are relevant for software related inventions because computer programs are protected through copyrights in Mexico.

The newest piece of statutes is directed to public R&D centers, higher education institutions and other entities that are considered "Public Research Centers" under the Law for Science and Technology (LST). Article 51 now includes specific provisions for promoting the formation of technology transfer units in such institutions, regulating conflict of interest, but also regulating the benefits to inventors from the intellectual property arising out of R&D projects in such institutions. The last paragraph of this Article 51 clearly states that, in order to promote IP commercialization, the governing bodies of R&D institutions shall approve rules for granting researchers, academic personnel and specialists up to 70 percent of the generated royalties, or less.

Managing Risks in Labor and Professional Services Contracts

Most labor contracts in Mexico omit provisions regarding intellectual property. The main risks in omitting such provisions are ownership and remuneration.

As for ownership, when the labor contract is silent regarding intellectual property rights, it is left to interpretation if the invention can be considered an employee's invention. In other words, it will not be straight forward that the activities for which the employee was hired for, include the development of inventions or copyrights, and therefore if the employer is entitled to ownership by statute. In turn, the determination of the status of the employees' invention determines if the employer will have to pay an additional consideration. When inventions are developed "independently" by the employee, the omission has the effect that both employees and employers simply do not know of the right of first refusal of the employer, and therefore it is seldom enforced.

On the other hand, the omission of provisions regarding the remuneration of employees' inventions is perhaps the biggest risk in practice. The reason is that the CAB, the body in charge of determining such remuneration in the absence of agreement between the employer and the employee, has no experience at all determining such remuneration and the outcome could be disastrous for both the employees and the employers. With the new piece of law in the LST, the CAB, typically known to be pro-employee, will have an incentive to have as a benchmark the 70 percent of the "royalties" received for the inventions, but the royalty would still have to be determined by the same CAB.

Accordingly, labor contracts with effect in Mexico should contain at least the following provisions for managing properly the above identified risks:

1. Clear job descriptions including amongst the activities, development of inventions and copyrights.
2. That the patents or copyrights arising out of the work performed by the employee will belong in full to the employer or a third party designated by the employer.
3. That the parties agree that the remuneration is considered consistent with the effect of the inventions according to the activities for which the employee is hired.
4. A clear formula or procedure triggering an additional remuneration to the employee with an agreed fixed amount of money so that the CAB will not determine such amount.

Under such provisions, additionally the employer will have the possibility of obtaining regular assignments of rights to be filed along with the patents, but will also have a document proving the labor relationship and, if the inventor is no longer available for signing assignments of rights, a labor contract can be used to prove ownership by the employer if there is evidence that the invention was a result of the work for which the inventor was hired. Even if the evidence is not available, the sole labor contract can also be a vehicle for obtaining at least an offer from the inventor given the lack of first

Regarding professional services, the contracts can contain typical intellectual property assignment provisions as agreed to with the service provider, including the possibility of simply assigning all intellectual property in exchange for the consideration paid under such contract, as a typical work-for-hire. However, it is extremely important that the contract does have this provision for inventions because otherwise, in the absence of express agreement, the inventions will belong to the service provider.

Collaborative and Multinational Work

As explained above, the IPL refers to the law on labor regarding ownership of patents for employees' inventions. However, the Mexican FLL is applicable

to the relationship of the employer with the employee in general and it does not refer to patents but to inventions. Therefore, ownership of foreign patents covering Mexican employees' inventions will also be determined according to the FLL.

When a collaboration is made between inventors from different Mexican companies, it will be important to determine first if the inventors are under a labor relationship or not, and who is the owner. Particularly when the collaborators use outsourcing services, this issue becomes extremely relevant because the parties may not consider that formally the employer is not one of the parties that are collaborating, but an independent outsourcing company. Furthermore, in such a case, outsourcing service contracts must contain provisions assigning intellectual property to the client, because as explained before, if the service agreement is silent, the inventions will belong to the service provider.

Therefore, when one of the inventors has a labor relationship in Mexico and collaborates with other inventors, it is important to formalize the collaboration relationship and include intellectual property provisions depending on the nature of the relationship of the Mexican inventor with the institution he represents in the collaboration.

Furthermore, in such collaborations, the different institutions may also have different incentives or agreements regarding the benefits to inventors from the inventions. Particularly when a university or public research center in the context of the Mexican LST is involved, the following provisions are advisable for managing the risks:

a) Name of the researchers or scientists that will participate and an obligation not to include further researchers unless authorized by the parties.

b) IP ownership assigned to the sponsor clearly in the contract, including both, resulting from the project or from the use by the sponsor after the project. If the parties will sponsor jointly, rules for determining intellectual property ownership.

c) Obligation to obtain an assignment of the inventions resulting from the project from the researchers.

d) A statement that the researchers will be paid in accordance with the FLL for the inventions developed under the project by inventors under Mexican law, with no further obligation to the sponsor to pay for the inventions to the researchers of the university.

e) If the outcome of the project can be protected through copyrights (such as computer programs, architecture projects or the like), it is necessary to clearly state in the contract that the rights are to the sponsor and that the outcome will be considered as a sponsored work under the terms of Article 83 of the FLC.

In addition, it is very important to verify whether the researchers are employees of the university or consultants, because the FLL applies only to employees. If the university uses the advisory of an external consultant for the project, then the consultant should sign the same agreement, or a separate agreement, in order to ensure the IP to the sponsor.

Finally, when collaborations are performed between parties in different jurisdictions, it is important to remember that even though the collaboration agreement will have the applicable law established by the parties, such collaboration is independent from the labor relationship of the parties to the collaboration with their inventors. Therefore, such collaboration agreement should contain provisions that at least put the burden of complying with obligations of benefits to inventors to each collaborator, carefully establishing that the other collaborators will not be responsible for any failure to comply with such obligations with the other collaborators.

Conclusion

The Mexican system for employees' inventions is suitable for managing properly the inventions, and even though the inventors have rights to additional income when an invention provides more benefit to the employer, the same law establishes that the agreement between the parties will prevail. However, in order to provide legal certainty to companies and collaborators, the agreements should have express provisions regarding ownership and payment of benefits to inventors because the lack of agreement will impose high risks to the employer and the other parties to the projects. ■

Available at Social Science Research Network (SSRN): *https://ssrn.com/abstract=2961883.*

Employee-Inventors Compensation In Germany—Burden Or Incentive?

By Sebastian Wündisch

Introduction

In Germany, around 80 to 90 percent of all inventions are created by employees.[1] This leads to a conflict between the German principles of employment law and patent law. According to employment-law principles, the results of work are the property of the employer; the salary compensates the employee for all assigned rights and benefits.[2] Under German patent law, however, the right to an invention arises first of all in the natural person of the employee (inventor principle). To settle this tension, the German Act on Employees' Inventions created a comprehensive set of rules back in 1957. Under the Act, the employer can acquire the rights to employee inventions on a case by case basis only; in return, the employee is mandatorily entitled to reasonable compensation for each single invention achieved. Thus, the Act on Employees' Inventions focuses on two key issues:

- Ownership of inventions
- Claim for reasonable compensation (beyond salary)

In addition, the Act on Employees' Inventions imposes certain ancillary obligations including the employer's obligation to apply for a patent or utility model in Germany and to retransfer the rights to the invention or a filed or granted patent to the employee if the employer fails to exercise its right to apply for patent protection or decides to abandon a patent application or to let a granted patent lapse (section 14-16 Act on Employees' Inventions). In these cases, the employer is obligated to notify the inventor and at the inventor's request, transfer and assign all rights to the application or granted patent to the inventor at the inventor's expense.

1. *See* draft German Patent Modernization Act 2009, (German Parlament printing 16/11339, exhibit 1p. 23).

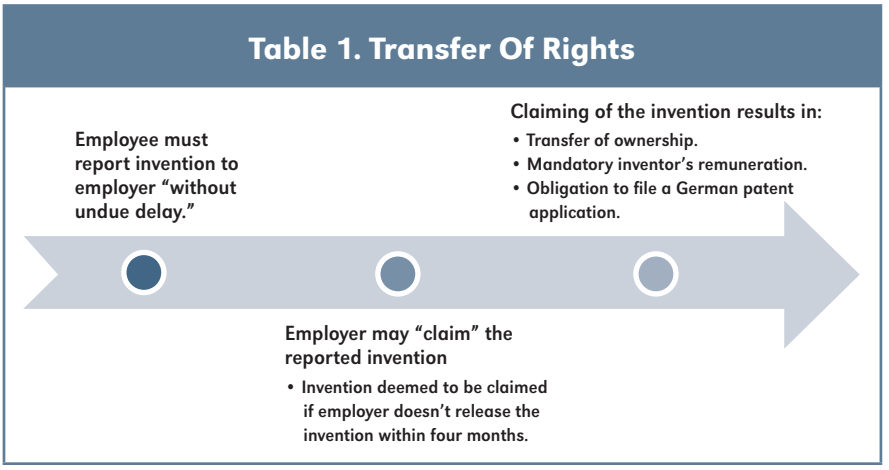
2. German Federal Court, judgement of 23 October 2001–X ZR 72/98.

3. For the U.S. approach also recognizing the employee's inital right to inventions *see* Baer/Donahue/Cantor, *les Nouvelles* Volume XLVII No.1, March 2012, 19.

Transfer of Rights

As mentioned, the Act on Employees' Inventions does not adhere to "work for hire" principles found in some common-law countries.[3] Instead, the employer has the option of claiming an invention created by an employee on a case-by-case basis: Once an employee has created an invention, he or she is obliged to immediately report the invention to his or her employer (section 5 Act on Employees' Inventions). This report triggers a four-month period in which the employer can decide whether to claim the service invention or not. It should be noted that before 2009, the employer had been obliged to actively claim the invention. This "opt-in" approach proved vulnerable to errors for the following reasons: In practice, midsized companies in particular often did not observe such formal procedures, and moreover, in 2006 the German Federal Court of Justice established a high threshold for the assumption of an implied transfer of rights to an invention in the absence of a formal "claim."[4] As a direct result of this observation, the Patent Law Modernization Act 2009 introduced the fiction of a claim to the employee's invention by the employer if a service invention is not explicitly released by the employer ("opt-out"). This major change in the law favors the employer, since in cases where an employer misses the deadline or in cases of doubt, all rights are transferred by operation of law to the employer. For inventions created before October 1, 2009, however, the old "opt-in" approach remains applicable. (See Table 1.)

Table 1. Transfer Of Rights



4. German Federal Court, judgement of 04. April 2006–X ZR 155/03.

Additional Compensation

When a claim to an invention is made or is deemed to have been made by law, the employee inventor is fundamentally entitled to *reasonable* compensation in return, in addition to his or her salary. The claim for such a payment falls due three months after the employer has started to use the invention and exists for the life of the patent issued for the invention. In the event that an invention is held to be unpatentable in the future, payments already made cannot be reclaimed by the employer. If inventions are created by several employees, each individual inventor is only entitled to proportional remuneration according to their percentage share in the invention.

The compensation is "reasonable" when it constitutes a fair balancing of the interests of employer and employee, thus, it needs to be calculated on a case-by-case basis for each individual invention created generally depending on the following factors: The value of the invention, *i.e.* the commercial applicability of the invention for the employer, the extent to which both the employee and the employing company were involved in creating the invention, and the position of the employee inventor in the company (section 9(2) Act on Employees' Inventions). The latter factors are to be deducted from the value of the invention according to the following formula: (See Table 2.)

The single factors are typically determined on the basis of the Guidelines on the Compensation of Employee Inventions adopted as early as 1959 which may be used to find an appropriate agreement. However, the method of assessing an employee invention taking into account these factors is very complex. (See Table 3.)

Contribution factor: To assess the employee's contribution to the invention, *i.e.* the deduction reflecting the fact that the consideration does not concern an invention created outside an employment relationship, a form of rate of share expressed as a percentage must be established. Such rate of share is determined by the following criteria:

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- *The employee's contribution to the problem:* The employee's share in the creation of the invention is dependent on his or her initiative in identifying the problem to be re-solved by the invention (the greater the contribution to identifying the problem to be resolved, the greater the share).
- *The employee's contribution to the solution of the problem:* This factor considers the involvement of the employing company in solving the problem and the creativeness of the employer. Again, the more the solution is based on the employer's own initiative, the higher this factor is.
- *The employee's position within the company:* The contribution of the employee is assessed in the light of individual competence, the reasonable expectations derived from the employee's actual position and, last but not least, the salary paid to the employee. In a nutshell, one can expect more innovation from the well-paid head of a research group by virtue of their position, resulting in a decrease of involvement in the invention for the purposes of calculating the contribution factor.

The contribution factor is thus higher if the company provides fewer rules and assistance and the inventor's position within the company is lower.

Value of the invention: The Guidelines mentioned also provide detailed provisions for calculating the value of the individual invention:

Table 2. Compensation

Compensation = Value of the Invention x Contribution Factor

Table 3. Value

V = Value of the invention, consisting of	
L (licensing rate) x T (turnover)	C = employee's contribution to the invention, consisting of
	A (the contribution to the problem) + B (the contribution to the solution) + C (employee's position within the company [inverse effect])

- *Analogy to a license:* The first option is calculation by way of the license analogy. According to this, the normal market license rate in the relevant industry is the basis for calculating the turnover generated with the invention. The Federal Court of Justice considers this variant particularly appropriate for determining the value.[5]
- *Sizable company benefit:* The second variant is calculating the company benefit achievable with the invention.[6] This includes turnover increases at the employer and the degree of economic monopoly position, the validity of the patent, property right costs and the exploitability of the licensed invention in advertising. It is ultimately about the increased difference between costs and earnings due to the invention.
- *Estimation of the value:* As a subsidiary option and thus the last resort compared to the calculation methods above, there is the option of estimating the value of the invention. Here we start with the price the employer would have had to pay if it had wanted to buy the invention from a freelance inventor.

In corporate and court practice, the license analogy plays the dominant role. The value of the invention comes from multiplying net turnover by the license rate as a percentage. (See Table 4.)

As in every license agreement, however, the relevant technical and financial reference values must also be taken into account. This particularly holds true when the invention only relates to part of a device with which turnover is generated. Should the total turnover achieved with the device be used as a basis or only the part influenced by the invention? If a product uses several inventions, a maximum threshold in the employer's favor can be applied. Additionally, all expenses for the employer related to the invention, such as development costs, tax or negotiation costs, can be deducted.

The question of the specific license rate applicable in the relevant area of industry is especially important for the application of the license analogy. The Guidelines from 1957 suggest the following rates: (See Table 5.)

However, the courts today assume that these license rates are no longer in keeping with the times.[7] With ever-increasing competitive pressure and the resulting declining profit margins, the license rates have generally been falling and in some industries are leading to significant reductions.

The usual inventor's share in practice is generally around two-tenths percent of the total turnover generated by the invention. So the more turnover the invention generates, the higher the remuneration. However, if especially high turnover is achieved with the invention, the license rate paid to the inventor can be reduced according to the Guidelines (nr. 11). (See Examples.)

However, the calculation of a reasonable license fee is often subject to a dispute between an employee inventor and the employer. Therefore, agreements on one-time lump sum payments are most common, as the employer and the employee are free to negotiate and agree on reasonable remuneration subject to certain restrictions as shown below. Yet while the employer may initially decide on the type and amount of additional compensation, this decision may become subject to judicial review if the employee is not satisfied with the agreement. The employee may even file an action for an unspecified reasonable amount

Table 4. Value Of The Invention

Value Of The Invention—Turnover x License Rate Factor

Table 5. License Rates

Industry	Royalty Rate
Electrical	0.5—5%
Engineered Products and Tools	3—10%
Chemicals	2—5%
Pharmaceuticals	2—10%

Examples:

Total turnover	Reduction in percent[8]
€ 0-1.5 million	No reduction
€ 2.5-5 million	20% reduction
€ 30-40 million	70% reduction

5. German Federal Court, judgement of 16 April.2002–X ZR 127/99; German Federal Court, judgement of 16.04.2002–X ZR 127/99.

6. *See* Guidelines, Nr. 5, 12.

7. German Federal Court, judgement of 30 May 1995–X ZR 54/93.

8. The single reductions only apply to the part of the turnover exceeding the respective threshold.

of additional compensation. Therefore, an employer should always consider all aforementioned factors when deciding on the remuneration.

Contractual Agreements

It goes without saying that the complicated structure and application of the Act on a case by case basis, resulting in bureaucratic and costly efforts, suggests a contractual approach to resolve this issue upfront and on a general basis. However, the Act on Employees' Inventions also provides protection to the employee inventor in that contractual agreements deviating from the Act are allowed before an invention is reported to the employer only *for the benefit of* the employee (section 22 Act on Employees' Inventions). This applies both to the transfer of rights and the remuneration. Therefore, in employment contracts there is often no clause on inventions which goes beyond a simple reference to the Act. In legal transactions with an international context this often leads to conflict, especially since in the UK and U.S. it is usual to have comprehensive arrangements regarding inventions stipulating a full buy-out of rights without any additional compensation.

By contrast, agreements reached between employer and employee after an individual invention is reported to the employer are lawful. It is thus possible that after reporting an individual invention, a lump sum of remuneration is agreed upon. But these agreements are also subject to an inequity test during ongoing employment (section 23 Act on Employees' Inventions), which can even lead to them becoming invalid. For example, the payment of a lump sum of remuneration is considered inequitable if it is below 50 percent of the compensation as statutorily assessed in accordance with the Guidelines.[9] However, there is no inequity test if an agreement is made after the end of employment: after leaving a company, the former employee is no longer deemed to require protection despite the fact that the former employee will remain entitled to the remuneration.

Inventor's Rights to Information

To be able to check whether the remuneration received is reasonable, the employee inventor has statutory rights to information. These cover all information necessary to determine the remuneration claim. This means specifically that there is a statutory right to information only about the economic exploitability of the service invention, as the invention value is based on this. In particular, there is no right to information about the profit generated with the invention as details of profit are not required for calculating remuneration.[10]

Case Studies

Group companies: If the employer is part of an (international) group, employee invention remuneration is very challenging from several perspectives. It must be noted primarily that in the case of employee inventions, the territorial law of the inventor's workplace is to be applied. Thus there are often major differences in remuneration. An example of this is an invention created by German and American employees of the same corporate group. The employee working in Germany is to be treated according to German law and therefore has a statutory claim to additional remuneration under the Act on Employees' Inventions. But the employee working in the U.S. and therefore governed by U.S. law has no such claim. This unequal treatment often results in internal discussions and even demotivation of the peers.[11]

In addition to the different legal systems applicable in different territories, the calculation of remuneration for an invention created and used within the group constitutes a special problem. In these cases, too, the individual group company at which the employee works is liable for payment of the employee's remuneration claim to extent such group company generate benefit out of the respective invention.[12] Thus, the remuneration will be calculated in accordance with such company's turnovers. In principle, the group sales are not taken into account when calculating the invention value, which leads to a substantial reduction in the invention value. Only in particular categories of cases is inclusion of group sales assumed. For example, if the inventor's employer is a subsidiary of another company set up solely for R&D purposes, instead of the possibly only fictitious purchase price, the invention value can also be determined using the sales of the (user) company according to the license analogy.[13]

In the likely event that the invention will be transferred to another group company or a group-wide patent pool, the remuneration received by the employer for such transfer initially remains decisive for the calculation of the invention value. In some cases, however, terms well below the usual market terms are sometimes paid (irrespective of the fact that for tax and transfer pricing purposes group companies need to pay

9. German Federal Court, judgement of 22 June 2012–X ZR 104/09.

10. German Federal Court, judgement of 17 November 2009–X ZR 137/07.

11. See Johnson/Suzuki/Osterrieth, *les Nouvelles* Volume XLVII, March 2012, p. 24 et sqq. for a comparison of employee-inventors compensation in Germany, Japan and U.K.

12. German Federal Court, judgement of 17 November 2009–X ZR 137/07.

13. Higher Regional Court of Düsseldorf, judgement of 13 September 2007–I-2 U 113/05.

between each other compensation at arm's length). As the net revenues are relevant for the remuneration of the employee invention, remuneration based on the lower purchase price would be much lower. In such cases, the employee is therefore treated as if the right of use were transferred to a non-affiliated company in return for reasonable consideration.[14] In this case, a fictitious purchase price based on the usual fees in the market and location is determined.

Universities: For inventions by university employed staff such as professors, lecturers and research assistants, the inventor remuneration does not result from the invention value and the proportional factor. Instead, German law has a special provision granting the university inventor a flat rate of 30 percent of the income from the utilization proceeds of the university.[15] This not only simplifies the calculation of remuneration and offers a financial incentive; this high financial stake also takes into account that only since 2002 can the university claim the inventions of its academic personnel—not least in order to meet constitutional requirements.

The utilization proceeds result from all asset benefits the university receives due to the invention. According to recent case law of the Federal Court of Justice, these include, in addition to monetary revenues, revenues in kind and other financial benefits such as the advance commitment of the subsequent licensee to assume the cost of the property right.[16] What is decisive for the remuneration is thus not the invention value, but only the proceeds generated by utilization. If the invention is not utilized internally (for contract research) or externally (*e.g.* by sale or licensing), the university employee receives no remuneration. For inventions by several people, the remuneration must be split among all those involved according to their shares.

Research & Development: Inventions often arise in the context of R&D contracts, which provide the transfer of these inventions to the principal. Here, too, there is the question of how to calculate the inventor remuneration, which is in principle calculated according to the transfer value. This depends on what purchase price is paid by the principal to the contractor (=employer) specifically for the transfer of the inventor right. In many cases, however, this purchase price cannot be precisely determined or is shown separately in the overall contract amount. In these cases it must be estimated. The importance of the invention in relation to the overall purpose of the contract is decisive for the amount. The figure is normally one to five percent of the total contract amount.[17] The share increases along with the increasing importance to the principal of developing a technical solution eligible for patent protection. If the purchase price (=invention value) has been determined in this way, from this the amount of remuneration can be calculated together with the share factor.

M&A scenarios: The rights and duties of the Act on Employees' Inventions are restricted in principle to employees and employers. If the company is wholly or partially sold off, there is the question of what happens to these claims. In the case of a shared deal, the legal identity of the employing company remains unaffected: Despite a change in the corporate ownership structure, the employer remains obligated to the employee under the Act. In the case of an asset deal or carve-out of the respective business along with the employee invention resulting in a change of the legal entity, the provision on the transfer of a business normally takes effect (section 613a German Civil Code). According to this, the rights and duties under the employment relationships existing at the time of transfer pass to the buyer unless the employee objects to this transfer. This transfer also includes the rights and obligations under the Employees' Invention Act. In the due diligence, therefore, the buyer must take particular account of the possible liabilities arising from the Act as a result of such transfer, including remuneration claims and other obligations under the Act restricting the unlimited use of the employee invention. For inventions created before the Patent Modernization Act, there is also the question of ownership of the target in its employees inventions, as the error-prone opt-in approach was applicable at that time.

Insolvency: The German employee invention law finally specifies another special provision in the case of employer insolvency (section 27 Employees' Invention Act). In the financial crisis of 2008/09 this provision became practical effect as even technology companies with large patent portfolios became subject to insolvency proceedings (*e.g.* Qimonda AG in Germany and Eastman Kodak in the U.S.). According to such provision, the insolvency administrator is liable vis-à-vis the employee inventor for remuneration claims which have arisen through the use of the invention following the opening of insolvency proceedings; the pre-insolvency claims, by contrast, become insolvency receivables to be satisfied proportionally. In the case of the sale of the invention by the insolvency administrator

14. Higher Regional Court of Düsseldorf, judgement of 13 September 2007–I-2 U 113/05.

15. *See* Czychowski/Langfinger, *les Nouvelles* Volume XLV, December 2010, p. 221.

16. German Federal Court, judgement of 5 February 2013–X ZR 59/12.

17. Board of Arbitration for Employee Inventions, decision of 29 October 2019–51/05.

with the assets of the company, the buyer assumes by law to this remuneration obligation. Otherwise the insolvency administrator must offer the employee the invention one year after commencement of insolvency. If the employee does not accept this offer, the insolvency administrator can sell the invention without selling the assets or giving up business operations.

Incentive systems: In practice, the obligations under the Act on Employees' Inventions are increasingly being combined with incentive systems. By paying predefined lump sums, on one hand employees are encouraged to produce innovations; on the other hand, the duties of the Act on Employees' Inventions are to be reduced and compensated for. However, the challenge is that agreements to the detriment of the employee are, as shown, only permitted after reporting of the individual invention and by nature depend on the consent of the employee. The employee can ultimately refuse consent and at the same time insist on payment of the compensation as calculated under the Act. In practice, therefore, the payment of such sums is predicated on the consent of the employee to the sell-off or crediting of these claims. Still, the lump-sums paid remain subject to equity control which is triggered in case such lump-sums are below 50 percent of the remuneration according to the Act and its Guidelines. As the remuneration based on the employer's benefits can be only assessed after the expiration of the respective patents the risk of a challenge of non-creditable lump sums is to be regarded significantly high.

Conclusion

There is no denying that the unique and formalistic case by case approach of the German Act on Employee's Invention, very much focused on the individual invention, faces challenges in an international and fast driven R&D community which becomes more and more influenced by decentralized open innovation approaches and collaborations. Some authors even argue that the Act hinders innovation and results in a regional handicap for companies located in Germany. On the other hand, practice and the high number of patent applications by German companies has also shown that proper application of the Act does at least not hinder innovation. Still, the extra award granted by the Act treats German employees uniquely among their peers from other subsidiaries in a multinational company or a research project involving companies from different countries. The problem comes sharply into focus with co-inventors who have contributed to the same invention. Thus, companies are encouraged to harmonize existing incentive programs in order to avoid an "envy debate." ■

Available at Social Science Research Network (SSRN): *https://ssrn.com/abstract=2961884.*

New Employee Invention Scheme In Japan

By Shoichi Okuyama

1. Introduction

The employee invention scheme in Japan, which was initially modeled after the German system, was again revised in 2015, and the new scheme took effect on April 1, 2016. I would first like to summarize the changes made, and then put these changes into the perspective of events since the Patent Act came into effect some 50 years ago.

Article 35 of the Patent Act of Japan concerning employee inventions has been included in the Act since it was drafted from scratch in 1959. The Act was modified in 2004 at the demand of Japanese corporations. The changes were significant, but many in industry viewed the changes as inadequate and asked for further changes to be made to Article 35, or even for Article 35 to be abolished. Such strong sentiments and counter opinions resulted in the changes that took effect on April 1, 2016. We would like to review the scheme currently in effect and compare it to the 1959 and 2004 schemes.

2. New Statutory Provisions

The current system, which took effect April 1, 2016, may be practically summarized as follows:[1]

(1) A company or organization should have employee invention rules or contracts with employees, including corporate officers that have been agreed on by consultation with employees in general or with specific employees.

(2) If rules or agreements regulating employee inventions are in place, the employer will inherently own the invention. The propriety of rules or agreements will not be questioned as far as ownership is concerned. If no such rules or agreements exist, an employee-inventor retains the right to obtain a patent on the invention.

(3) The amount of reasonable "benefit" or "advantage" for the employee inventor may still be reviewed by courts as to whether the amount is really reasonable according to Article 35 of the Patent Act. Such benefit or advantage does not have to be, according to commentaries published by a government committee along with the revised provisions of Article 35, in monetary form, and can be such benefits as promotion, award or special consideration for research or studies provided by the employer.

What is new under the amended Article 35[2] of 2016 is largely cosmetic from the perspective of this author, who was involved in discussions at the government level from the outset. Notable points are as follows: (1) the ownership of rights to obtain a patent goes directly to the employer if a company has internal rules or agreement with an employee-inventor on employee inventions, and (2) "reasonable remuneration" was replaced by a Japanese phrase that would perhaps better be translated as "reasonable benefit" or "reasonable advantage," so as to give more flexibility to corporations indecisions about how to reward employees who contributed to inventive activities of the company. In this author's opinion, this flexibility also existed under the previous scheme. Also, new provisions were made as to the publication of new guidelines, reviewed and approved by a government committee, concerning how such rules or agreements are formulated upon consultation with employees.

These changes are the result of a compromise between corporate managers, who demanded more drastic changes, and law and science academics and professionals, who strongly supported the current scheme.

3. Historical Perspective: It All Started with the Olympus Case

The definition of an "employee invention" according to Article 35(1) of the Patent Act, unchanged since

1. The official summary published by the Japan Patent Office is as follows (quoted from the JPO Status Report 2016 available at the JPO website): The JPO revised the employee invention system as follows in order to realize both giving sufficient incentives for R&D activities to researchers and enhancing domestic industry's competitiveness.

(1) The revised act is to stipulate the provision that an invention by an employee belongs to the inventor's employer when the right becomes effective and when any provision in any agreement, employment regulation or any other contract stipulates in advance that the right to obtain a patent for any invention made by the employee will be vested in the employer, aiming to eliminate the instability in the ownership of a patent right.

(2) An employee has the right to receive reasonable remuneration or other economic benefits, if the employee causes the employer to acquire the right to obtain a patent.

(3) The Minister of Economy, Trade and Industry will define guidelines for procedures to determine the details of reasonable remuneration or other economic benefits, through the examination procedures of the Industrial Structure Council, aiming to encourage inventions.

Based on (3) above, the Patent System Subcommittee under the Intellectual Property Committee of the Industrial Structure Council has deliberated the draft guidelines for procedures to determine the details of reasonable remuneration or other economic benefits since September 2015, and the Intellectual Property Committee under Industrial Structure Council approved them in February 2016. The guidelines were announced as a notification of the Ministry of Economy, Trade and Industry on April 22, 2016.

1959, is "an invention which falls within the scope of the business of the employer (including government agencies and universities) and has been made in connection with the present or past duties of the employee-inventor performed for the employer."

The employee invention scheme has been in effect since 1960, when the current Patent Act took effect. Japanese corporations loosely complied, or believed that they complied, with Article 35[3] of the Patent Act. There were a very limited number of lawsuits and court decisions related to it.

A major impact was felt when the Olympus case was decided by the Tokyo High Court in May 2001. In affirming a lower court decision, the high court made it clear that the court can determine what "reasonable remuneration" is in view of the company's profits and contribution to the invention, and the employee-inventor is entitled to additional remuneration beyond the remuneration the employer determined based on its internal rules. The amount the court determined in this case was about JPY 2.3 million (USD 20,000). Corporations then had to review and rewrite their employee invention schemes. This Olympus decision was upheld by the Supreme Court of Japan in April 2003.

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Soon thereafter, Professor Shuji Nakamura's Blue LED case went to court. He was a researcher at a small, local chemical company, Nichia, when he invented a process for making LEDs that emit bright blue light. After some conflict with the management of that company, he went to the U.S. and became a professor at the University of California, Santa Barbara and an advisor to Cree. Nichia sued him for trade secret violations in the U.S.; Professor Nakamura then sued Nichia in Japan for remuneration to which he should be entitled based on one of his numerous inventions. The Tokyo District Court found that he was entitled to JPY 60 billion (USD 550 million at the exchange rate in January 2004). This caused a shock wave among Japanese corporations. In the subsequent settlement before the Tokyo High Court, Professor Nakamura received JPY 800 million (currently USD 7 million) for all his inventions made at Nichia. Professor Nakamura was one of the three recipients of the 2014 Nobel Prize in Physics for his work on blue LEDs.

4. Previous Legislative Changes in 2004

When the Tokyo District Court handed down the decision in the Blue LED case, discussions on amendments to Article 35 were already well under way. A final report from a government committee organized

2. Article 35 of the 2015 Patent Act (paragraph (1) remains unchanged. See section 3 below. Translation is by this author and important changes are underlined):

(2) In the case of an invention made by an employee, etc., unless the said invention is an employee invention, any provision in any agreement, employment regulation or any other stipulation providing in advance that the right to obtain a patent shall be transferred to the employer, etc. or that the patent rights shall vest in the employer, etc., or that an exclusive license for the said invention shall be granted to the employer, etc., shall be null and void.

(3) In the case of an employee invention made by an employee, etc., the right to obtain a patent belongs to the employer, etc. as soon as such right occurred, if any agreement, employment regulation or any other stipulation has been provided in advance to have the employer, etc. acquire the right to obtain a patent.

(4) Where the employee, etc., in accordance with any agreement, employment regulation or any other stipulation, vests the right to obtain a patent or the patent right for an employee invention in the employer, etc., or grants an exclusive license therefor to the employer, etc., the said employee, etc. shall have the right to receive reasonable consideration or other economic benefits (called "reasonable benefits" in the next paragraph and paragraph (7)).

(5) Where an agreement, employment regulation or any other stipulation provides for the reasonable benefits, the content of the reasonable benefits in accordance with the said provision(s) shall not be considered unreasonable in light of circumstances where a negotiation between the employer, etc. and the employee, etc. had taken place in order to set standards for the determination of the content of the reasonable benefits, the set standards had been disclosed, the opinions of the employee, etc. on the determination of the content of the reasonable benefits had been received and any other relevant circumstances.

(6) The Minister of Economy, Trade and Industry shall set and publish guidelines on matters related to circumstances to be considered according to the preceding paragraph to promote inventions upon hearing opinions of the Industrial Structure Council.

(7) Where no provision setting forth the reasonable benefits exists, or where it is recognized under paragraph (5) that the content of the reasonable benefits to be given in accordance with the relevant provision(s) is unreasonable, the content of the reasonable benefits to be provided according to the provisions of paragraph (4) shall be determined by taking into consideration the amount of profit to be received by the employer, etc. from the invention, the employer, etc.'s burden, contribution, and treatment of the employee, etc. and any other circumstances relating to the invention.

3. Article 35 of the 1959 Patent Act (paragraphs (1) and (2) are omitted).

(3) The employee etc. shall have the right to a reasonable remuneration when he has enabled the right to obtain a patent or the patent right with respect to an employee's invention to pass to the employer etc. or has given the employer etc. an exclusive right to such invention in accordance with the contract, service regulations or other stipulations.

(4) The amount of such remuneration shall be decided by reference to the profits that the employer etc. will make from the invention and to the amount of contribution the employer etc. made to the making of the invention.

by the Japan Patent Office was published in December 2003, and legislation for the amendments passed the Diet and subsequently became law[4] during the first half of 2004. An emphasis was placed on how the internal rules or agreements with employees as to remuneration should be made. If the internal rules or agreements were based on reasonable consultation with employees, the determined amount of remuneration based on such rules should be honored, even though employees are still entitled to file suit if an amount were truly unreasonable, such as in cases in which there was no agreement or consultation between an employee-inventor and the employer. Corporate managers demanded that remuneration be left solely to the discretion of management. On the other hand, academic opinions were strongly against taking all rights away from employee-inventors.

Since 2004, there have been only a few court cases under this 2004 scheme because the new law is applicable only to patents granted after 2005, when the new law took effect, where as a relatively large number of lawsuits were filed under the pre-2004 scheme. Corporate managers still demanded further changes or abolition of Article 35. Discussions by a government committee started in 2013 with the Intellectual Property Strategy Headquarters organized under the Prime Minister, and resulted in a report published by the JPO in 2014. The relevant legislation was passed by the Diet and subsequently became law in 2015. It then took effect on April 1, 2016.

5. Corporate Management Views on the New Scheme

Based on conversations this author has had with corporate managers and on media coverage, the new scheme is being greeted as an improvement over the previous scheme.

According to an article in the Nikkei newspaper on February 22, 2017, such major companies as Toyota, Mitsubishi Electric, Ajinomoto and Kewpie are increasing rewards for inventions by raising upper limits or basic rewards for granted patents. Mitsubishi Electric has even removed the upper limit on remuneration. ■

Available at Social Science Research Network (SSRN): *https://ssrn.com/abstract=2961886.*

4. Article 35 of the 2004 Patent Act (paragraphs (1) and (2) remained unchanged and are omitted).

(3) The employee, etc. shall have the right to reasonable remuneration when he or she has enabled the right to obtain a patent or the patent right with respect to an employee's invention to pass to the employer, etc. or has given the employer, etc. an exclusive right to such invention in accordance with the contract, service regulation or other stipulations.

(4) The amount of such remuneration shall be decided by reference to the profits that the employer, etc. will make from the invention, as well as to the amount of contribution the employer, etc. made toward the invention.

(5) If the above value has not been set, or if payment of the value that has been set is recognized to be unreasonable according to the provisions of this paragraph, the value of paragraph (3) shall be determined in consideration of factors such as the profit which the inventor should receive from the invention and the costs borne, the contributions made, and the remuneration paid to the inventor by the user with regard to the invention.

Employee Inventions In The United Kingdom

By Jennifer Pierce

Introduction

Historically, the United Kingdom has been a jurisdiction where, in relative terms, the law is more favourable to employers than to employees. This is certainly the case in comparison with some mainland European jurisdictions. In respect of ownership of employee inventions, the law is well established, but the law relating to employee compensation was amended in 2004 and the new legislation is effective for inventions applied for on or after 1 January 2005. The seminal cases on employee compensation all apply to the old legislation, which was seen as being too harsh towards employees as it was extremely difficult for an employee to claim compensation successfully. We have yet to see the results of the change in legislation in important cases.

This article will be divided into three main sections, a short section on the legal system, followed by sections dealing with ownership and compensation relating to employee inventions. The section on compensation will cover the new law as well as the old law that applies to inventions made on or after 1 January 2005.

The Legal System

The main United Kingdom statute governing patents is the Patents Act 1977,[1] which applies to England, Wales, Scotland, Northern Ireland, and the Isle of Man and that act specifies any differences between parts of the United Kingdom. There are only minor territorial differences in the case of employee inventions, which relate to the enforcement of orders for compensation. Whilst there are separate courts in Scotland, Northern Ireland and the Isle of Man, appeals from those jurisdictions on matters relating to patents are heard in the English appeals courts, so there is harmonisation.

Furthermore, the Patents Act provides that decisions relating to employee inventions may also be made by the comptroller of patents (effectively the Patent Office), and the Patent Office has jurisdiction in relation to all UK patents. However, the Patent Office may decide that the issues would more properly be determined by a court, and may decline to deal with it leading to a transfer to a court.

Ownership of Employee Inventions

In common with many patent-related issues, it is crucial to ascertain the nature of an invention in order to determine ownership effectively. The Patents Act 1977 defines the inventor as "the actual deviser of the invention." It is the inventive concept as distinct from the wording of specific claims that must be determined, more especially as there will be no claims before the application is drafted and claims will be subject to subsequent amendment.[2] Claims may, of course, assist with this process. Furthermore, it is possible that there may be more than one inventive concept disclosed in a patent or application. So having ascertained what the relevant invention is, it is then necessary to consider whether that invention belongs to the employer or to their employee.

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Under section 39(1) of the Patents Act, an invention made by an employee[3] shall be taken to belong to the employer if:

"(a) It was made in the course of the normal duties of the employee or in the course of duties falling outside his normal duties, but specifically assigned to him,[4] and the circumstances in either case were such that an invention might reasonably be expected to result from the carrying out of his duties; or

(b) The invention was made in the course of the duties of the employee and, at the time of making the invention, because of the nature of his duties and the particular responsibilities arising from the nature of his duties he had a special obligation to further the interests of the employer's undertaking."

In order for section 39(1)(a) to apply, the employer must prove that the employee was employed to innovate in the field of the relevant invention at the time

1. This act has been amended, and for present purposes the Patents Act 2004 is of particular relevance (see next footnote).

2. *See Henry Brothers (Magherafelt) Ltd v Ministry of Defence* [1999] R.P.C 442 and the line of cases that followed the reasoning in this case.

3. An employee should be contrasted with a person working under a "contract for services," such as a consultant. This law does not apply to consultants and other contractors.

4. Note that "normal duties" and "duties specifically assigned" are mutually exclusive.

when the invention was made (whether in the course of normal duties or duties specifically assigned) and that there was a reasonable expectation that an invention might arise from the work.

The necessary evidence will include the contract of employment and any additional directions from the employer that may have specially assigned duties, such as documented appraisal targets,[5] but broader issues will also be considered. The actual duties of the employee, and the way in which those duties may have evolved over time will be examined carefully.[6] In *LIFFE v Pinkava*, the most recent Court of Appeal case focussed on this section, the majority of the judges held that the qualities of the employee are relevant when considering whether there is a reasonable expectation that an invention may be made, but there was an important dissenting judgment.[7]

As regards section 39(1)(b), the main case on the topic is *Harris' Patent*,[8] which is a first instance case in which it was found that the "extent and nature" of the special obligation will depend on the "status of the employee and the attendant duties and responsibilities of that status." The status of a managing director is contrasted with that of a sales manager, as the managing director's duties will "extend across the whole spectrum of the duties of the undertaking," whereas the duties of the sales manager will be more limited. This should be read in the light of the paragraph above. Note that section 39(1)(b) refers to "duties," not to "normal duties" as is the case with section 39(1)(a).

In any circumstances that are outside section 39(1), the invention will belong to the employee under section 39(2). Furthermore, under section 42(2), any attempt to widen the scope of the inventions that belong to the employer by contract is unenforceable, although this is subject to any duty of confidentiality that the employee may owe the employer. Note that section 42(2) covers attempts to broaden an employee's duties contractually, in a manner that goes beyond the employee's actual duties. Section 42 does not, however, prevent an employee from settling a claim for compensation in respect of a patent.

The above legislation only applies in the case of employees who, at the time they make an invention:

(i) Are mainly employed in the United Kingdom; or

(ii) Are not mainly employed anywhere or their place of employment cannot be determined, but their employer has a place of business in the United Kingdom to which they are attached, whether or not they are also attached elsewhere.

Compensation in Respect of Employee Inventions

As mentioned above, the law on employee compensation was changed with effect from 1st January 2005, so there are two parts to the section dealing with qualification for compensation in respect of inventions made both before and from that date.

Law in Respect of Inventions Made from 1st January 2005

Section 40(1) of the Patents Act provides that an employee may apply to the UK Patent Office[9] or to the court for compensation in respect of patented[10] employee inventions that are first owned by the employer, as described above. Any compensation payable is in addition to the employee's basic salary and other remuneration.

The Patent Office or court will award compensation if within the **prescribed period**:

- Having regard among other things to the size and nature of the employer's undertaking,[11] the invention or the patent for it (or the combination of both) is of **outstanding benefit** to the employer; and
- By reason of those facts it is just that the employee should be awarded compensation.

The meaning of "outstanding" is not defined. In one of the leading cases it was found that the word "denotes something special and requires the benefit to be more than substantial or good,"[12] and this has since been followed in another leading case.[13] "Benefit" is defined as "benefit in money or money's worth."[14] The prescribed period for making an application begins on the date of grant of the patent and ends one year after the patent ceases to have effect.[15] It may be possible to

5. *See LIFFE v Pinkava* [2007] EWCA Civ 217; [2007] R.P.C 30.

6. *See* also *LIFFE v Pinkava* above.

7. *See* note 6 above. Also, note that in the Court of Appeal each judge provides a separate judgment and the majority prevails.

8. [1985] R.P.C. 19

9. Technically, to the comptroller of patents.

10. For the purpose of sections 39 to 42 of the Patents act, a "patent" means a "patent or other protection" and includes patents and protection granted "in any other country or under any treaty or international convention." *See* section 43(4).

11. Note that this might be a group of companies, and it will need to be the same as the undertaking which the employee claims has benefited from the invention. *See Shanks v Unilever* [2014] R.P.C. 29 and [2017] EWCA Civ 2 (18th January 2017). Note also, as was the case in *Shanks v Unilever*, that this requirement to consider the size of the employer's undertaking may make it more difficult to prove outstanding benefit in a case against a large company or group.

12. *See Kelly and Chiu v GE Healthcare Ltd* [2009] R.P.C. 12.

13. *See Shanks v Unilever* above.

14. Section 43(7).

15. *See* Rule 91, which also contains provisions covering restoration and refusal.

extend this period, but extension is beyond the scope of this article.

Compensation is also available under section 40(2) in circumstances where the employee transfers ownership of his rights in the invention, or any patent or patent application, to the employer or grants an exclusive licence of to the employer. In this case, in order for the employee to make a successful claim, the benefit derived from the contractual arrangement[16] by the employee needs to be inadequate in relation to the benefit derived by the employer from the invention or patent or both. It is not possible to alter this right by contract.

Compensation is not available if there is a "relevant collective agreement" in force, which provides for payment of compensation, and that is applicable to both employees and inventions of the same description as are the subject of the application. A relevant collective agreement is one within the meaning of the Trade Union and Labour Relations (Consolidation) Act 1992 made by or on behalf of a trade union to which the employee belongs and by the employer or an employers' association to which the employer belongs.

Law in Respect of Inventions Made Before 1st January 2005

In respect of inventions made prior to 1st January 2005, employees can only claim compensation in circumstances where the *patent* (and not the invention or a combination of both invention and patent) is of outstanding benefit. Otherwise, the law is the same, but proving the benefit derived from the patent has been difficult; to date there has only been one successful case brought by an employee, and that case related to some exceptional circumstances. In the case of inventions made prior to 1st January 2005, section 41 (see below) is correspondingly narrow and relates only to the patent.

Quantifying Employee Compensation

Under section 41(1), the compensation is to "secure for the employee a fair share (having regard to all the circumstances) of the benefit which the *employer* has derived or may reasonably be expected to derive from:

a) The invention;[17]

b) The patent;

c) The assignment or grant of: (i) the property or any right in the invention; or (ii) the property in, or any right in or under, an application for the patent;[18] to a person connected with the employer.

In connection with (c) above, the benefit is that which could reasonably be expected to be derived by the employer from that person if they had not been connected.[19] So the analysis does not relate to subsequent transactions.

In the case of (a) and (b) above, the following will be taken into account:[20]

a) The nature of the employee's duties, his remuneration and the other advantages he derives or has derived from his employment or has derived in relation to the invention under the Patents Act.

b) The effort and skill which the employee has devoted to making the invention;

c) The effort and skill which any other person has devoted to making the invention jointly with the employee and the advice and other assistance contributed by any other employee who is not a joint inventor of the invention; and

d) The contribution made by the employer to the making, developing and working of the invention by the provision of advice, facilities and other assistance, by the provision of opportunities and by his managerial and commercial skill and activities.

In circumstances where the invention originally belonged to the employee, the following will also be taken into account:[21]

a) Conditions in any licence(s)

b) The extent to which the invention was made jointly by the employee with any other person; and

c) The contribution made by the employer to the making, developing and working of the invention (see (d) in the paragraph above).

Compensation under section 40 may be as a lump sum or periodical payments or both.[22] Even if an application for compensation is refused, the employee (or their successor in title) is still free to make a further application.[23] Where an order has been made, it may still be varied, discharged, or suspended and suspended provisions may be revived; in each case this applies to any of the provisions of the order.[24] ■

Available at Social Science Research Network (SSRN): *https://ssrn.com/abstract=2961887.*

16. The arrangement may include an assignment or grant or any ancillary contract.

17. Note that this does not apply in relation to inventions made before 1st January 2005.

18. Note that section 41(2) also refers to "a patent for the invention," which should most probably be read into this section.

19. *See* section 41(2).

20. *See* section 41(4).

21. *See* section 41(5).

22. *See* section 41(6).

23. *See* section 41(7).

24. *See* section 41(8).

Employee Inventions In The Netherlands

By Wouter Pors

Legal Basis and Private International Law

In The Netherlands, the rights of employees to an invention are governed by the Dutch Patent Act of 1995 (DPA), whereas otherwise the rights and obligations of employees are governed by the Dutch Civil Code. Only two provisions of the Patent Act, articles 12 and 14, specifically deal with the rights of employees.

As in most European countries, the vast majority of inventions is made by individuals who are working for a company. Those companies are the applicants of the patent, and as a consequence the patent rights are registered in the name of the company, not in the name of the actual inventor.

Article 12 DPA deals with three different situations: inventions made by employees, inventions made in the course of an internship as part of education (which will not be discussed further here) and inventions made by an employee of a university, an institution for higher vocational education or a research institution. In Dutch general employment law employees of universities and research institutions are subject to the same rules as employees in general. Most universities are organized under public law and as a consequence their employees are civil servants. There are however also privately owned universities which are fully financed by the government (except for contract research) and the employees of such private universities have an employment contract under the Dutch Civil Code. In practice however, the rights and obligations with regard to inventions are the same, as these are in the Patent Act, which doesn't discern between publicly and privately employed inventors.

Many inventors employed in The Netherlands have a foreign nationality, while on the other hand many inventors in The Netherlands work for foreign companies. Such foreign companies often have a Dutch subsidiary, in which case the inventor may be employed by that subsidiary, but even in that case the patent application is often filed by a foreign group company, such as an IP holding.

Under Dutch private international law, the employment of an employee of a public institution is governed by Dutch law.

For privately employed inventors the Rome I Regulation provides in article 8 section 2 that their employment is governed by the law of the country where they habitually carry out their work in performance of the contract.[1] The same rule is in article 60 of the European Patent Convention. This means that if an invention is made by an employee who is normally working within The Netherlands, Dutch law applies to the rights and obligations of the employee with regard to the invention. This therefore doesn't depend on the place where the actual invention is made. For instance, if an employee of a Korean company normally works in The Netherlands, but makes an invention during a short stay at the company's head office in Seoul, his rights are still governed by Dutch law. The same applies if he makes an invention while on vacation in the U.S.

If there is no place where the employee habitually carries out his work, the law of the country of the employer is applicable; under Rome I this applies even if that is not within the EU. However, if the law of another country is more closely connected, that law shall apply under article 8 section 4 Rome I. For instance, if the Korean employee of a Korean company has worked in Korea for 20 years and then is sent to The Netherlands for a single year, it is most likely that his rights and obligations with regards to an invention that he makes during his stay in The Netherlands are governed by Korean law.

Finally, article 8 section 1 of Rome I allows for a choice of law for employment contracts as provided in article 3 of Rome I, but this cannot deprive the employee of rights that could not have been excluded by contract under the law that would normally apply absent such a choice.[2]

Article 10:154 Dutch Civil Code provides that the Rome I Regulation shall be applied by analogy to contracts that do not fall within its scope. Thus, the Rome I Regulation, Dutch private international law and the EPC basically all have the same rules to determine the applicable substantive law, albeit that the EPC doesn't contain parallel provisions to the specific exceptions of article 8 section 1 and 4 Rome I.

Finally, it is important to realize that the Dutch Patent Act only applies to Dutch national patents, to the Dutch validations of granted European patents, to the "Dutch part" of European patent applications (under

1. Regulation (EC) No 593/2008 of the European Parliament and the Council of 17 June 2008 on the law applicable to contractual obligations.

2. Such as the compensation under article 12 sections 6 and 7 DPA.

article 74 EPC) and to Unitary Patents of which the applicant has his principle place of business, or another place of business (if his principle place of business is outside the EU) in The Netherlands at the date of filing of the European patent application (under article 7 Unitary Patent Regulation).[3]

Therefore, for Unitary Patents only, Dutch law can extend to up to 25 countries. Since Philips is the top applicant of European patents[4] and it seems inclined to use the Unitary Patent extensively, the Dutch Patent Act may govern lots of employees' rights. However, there is a big unsolved issue. If a German inventor is employed by Philips in Germany, normally German law would apply to his rights and obligations, but German law even in that case doesn't govern the Unitary Patent. Would this mean under article 8 section 4 Rome I that Dutch law would apply? Probably not, since that provision only refers to the connection between the employment contract and a country, not to the connection between a patent and a country (and in this example the employment law connection is clearly to Germany). This is an issue that ultimately needs to be resolved by the Court of Justice of the European Union, but it also shows that it is important to have proper provisions on employee's rights to inventions in employment contracts.

Apart from the Patent Act, the implementation of the Trade Secrets Directive, which is due by 9 June 2018, may also have some impact on employee inventions.[5] Article 1 section 3 under (b) of the Directive provides that in relation to the exercise of employee mobility, the Directive (and the protection awarded by it) shall not offer any ground for limiting employees' use of experience and skills honestly acquired in the normal course of their employment. This provision was inserted at quite a late stage of the legislative procedure and its meaning is not entirely clear. It seems to mean that experience and skills acquired by an employee can never constitute a trade secret owned by the employer. If an invention is the direct result of such experience and skills, it may qualify as use of that experience and skills. It is quite unclear whether that could have as an effect that the employee is then entitled to the invention. However, it seems that this provision doesn't require the Member States to change existing provisions in patent law.[6]

Dutch Law on Employee Entitlement

Article 12 DPA provides that an employee is entitled to the patent for an invention that he has made, unless the nature of his employment entails the use of the employee's special knowledge for the purposes of making inventions of the same kind as that to which the patent application relates, in which case the employer is entitled to the patent.

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This provision only relates to employees who have an employment contract as meant in article 7:610 Civil Code and to civil servants employed by the government or other public institutions.[7] It doesn't cover free lancers, self-employed workers or managers who don't have an employment contract (but for instance a management contract between their personal legal entity and the company).[8] For all of those, the contract with the company for whom they are working is decisive.[9] In the absence of any contractual provision, they themselves are entitled to the patents for the inventions which they have made. It is therefore important that companies realize that each such contract needs to have a specific provision on the rights to inventions, if the company wants to be able to patent such inventions itself. In those cases, the companies can't rely on statutory law, but have to deal with this in specific contracts. Of course, it will often also be possible to transfer the right to apply for a patent after an invention has been made, as many individuals will not be able to afford the costs of prosecution and enforcement, but this poses an additional risk and will probably be more expensive for the company then making arrangements when the relationship is entered into and well before any invention is made.

3. Regulation (EU) No 1257/2012 of the European Parliament and the Council of 17 December 2012 implementing enhanced cooperation in the area of the creation of unitary patent protection.

4. *http://documents.epo.org/projects/babylon/eponet.nsf/0/5D3BD1BD120859A9C12580D4005AD126/$File/Top_100_applicants_2016_en.xlsx*

5. Directive (EU) 2016/943 of the European Parliament and the Council of 8 June 2016 on the protection of undisclosed know-how and business information (trade secrets) against their unlawful acquisition, use and disclosure.

6. Since this is not an obligation in relation to which more far-reaching protection of trade secrets is not allowed under national law under article 1 section 1, second sentence, of the Trade Secrets Directive.

7. For civil servants this was confirmed in CRvB 8-7-2004, ECLI:NL:CRVB:2004:AQ2117, *Stichting NWO*.

8. Court of Appeal Arnhem 29-3-2011, ECLI:NL:GHARN:2011:BQ0581, *Dyna Music Systems v Forte,* paragraph 11. *See* also Huydecoper/Van der Kooij/ Van Nispen/Cohen, Industriële Eigendom 1, 2016, p. 300.

9. *See* for instance District Court The Hague 8-2-2017, ECLI:NL:RBDHA:2017:1107, *AIMM Therapeutics v Crucell Holland.*

For employees the criterion is whether the nature of the employment entails the use of the employee's special knowledge for the purposes of making inventions of the same kind as that to which the patent application relates, in which case the employer is entitled to the patent rights. It's not necessary that the main task of the employee is making inventions; it would be sufficient that this is part of his actual tasks.[10] However, this doesn't mean that the purpose of the employment should really be specifically making inventions; not many employments would have such a specific purpose and it wouldn't always be achievable. Rather, the legislator's intention was for the provision to cover all research & development employees.[11] If such an employee makes an invention in the technical field of his employment, his employer is entitled to the patent rights, regardless whether the invention was made at work, at home or for instance during holidays.

On the other hand, an employee who has no involvement with research and development, is entitled to the patent rights to the inventions that he makes, regardless whether he was pursuing an invention or whether he made the invention by accident. An example provided in literature is a mechanic working in a laboratory.[12] Of course, there may be a sliding scale between the two opposites. The District Court Leeuwarden has ruled that a "manager special products," who was not a scientist but did work as a liaison between a company and its customers and as such was involved in the translation of technical issues reported by customers into research projects to find solutions, was not entitled to the patent for the invention that he made by formulating the proper question for the researchers (which question contained the inventive step).[13] The nature of his employment meant that making such inventions could be part of it, and therefore the employer was entitled to the patent rights.

For universities, institutions for higher vocational education and research institutions, the rule in article 12 section 3 DPA is rather simple; the question merely is whether the employee is doing research, in which case his employer is entitled to the patent for any invention that he makes, regardless of whether this is in the field of technology in which he is employed. This has been criticized in literature,[14] but there are no initiatives to change the law, probably because the issue has been regulated in collective bargaining agreements.

It is allowed to provide other arrangements with regard to entitlement in a written agreement, such as an employment contract, a collective bargaining agreement or a specific agreement in relation to a specific project or invention. It is quite usual to have specific rules in collective bargaining agreements. Since universities are an important source of innovation and since they have quite detailed rules, I will discuss these as an example of how collective bargaining agreements may work.

If an employee has made an invention, but his employer has the right to apply for the patent or this right has been transferred to the employer, article 14 DPA stipulates that the employee is entitled to be mentioned as an inventor in the patent application, which right cannot be exclude by contract. However, not respecting this right doesn't affect the validity of the patent application.

Collective Bargaining Agreements: The University Example

The collective bargaining agreement for universities 2015-2016 (which still applies in 2017) contains an obligation to report any patentable inventions which an employee makes during or in connection with his employment.[15] The employee is obliged to transfer any rights to apply for a patent to the university at first request, against remuneration of the costs that he may have made in person in making the invention (and which were not already covered by the university), notwithstanding article 12 DPA. This only seems to relate to patent rights to which the university is not already entitled under article 12 section 3 DPA, meaning that the provision of the collective bargaining agreement would not apply to professors and other researchers at all. However, it seems rather unlikely that it was the intention to deprive the majority of university employees of the benefits of the collective bargaining agreement, so a purposeful construction of at least the financial provisions probably means that they apply both to the situation where the university is already entitled to the patent rights under the working of the DPA, as well as to the situation where the patent rights need to be transferred by the employee to the university. According to Rijlaarsdam, who wrote a doctor's thesis on the

10. District Court The Hague 23-11-1999, BIE 2000/22, *Lubo Screening & Recycling Systems v Swanink* and BIE 2000/23, *Akapp Elektro v Van Zijverden*.

11. Kamerstukken II 1992/1993, 22 604, nr. 16; Huydecoper/ Van der Kooij/ Van Nispen/Cohen, p. 298 and A. Rijlaarsdam, Octrooi en dienstbetrekking, 2005, p. 115–117.

12. Gielen, Kort begrip van het intellectuele eigendomsrecht, 2017, p. 60.

13. District Court Leeuwarden 30-10-2001, *Van der Sloot v IFE-Tebel Rechnologies*, not published.

14. A. Rijlaarsdam, Octrooi en dienstbetrekking, 2005 and Huydecoper/Van der Kooij/ Van Nispen/Cohen, p. 299.

15. *http://vsnu.nl/files/documenten/CAO/Januari%202016/CAO_NU%20ENG%20jan2016.pdf*, articles 1.20–1.23.

issue, the agreement intended to deviate from article 12 section 3 DPA in that the employee would initially always be entitled to the patent rights, but could be obliged to transfer these to the university.[16] I am not convinced that this is the true interpretation (as in my opinion article 12 section 3 DPA is quite clear), but I do think that the provisions on compensation and the other financial provisions are intended to cover all university employees.

The employee who is entitled to patent his invention can refuse to transfer his right to the university, in which case the university can claim all costs, including salaries, that were directly involved in the creation of the invention. The employee cannot exercise this right if the university claims that it has a substantial interest in obtaining the patent rights; in that case the patent rights need to be transferred to the university. This seems to be a balanced system. At first glance the financial consequences of refusing to transfer the rights may seem quite burdensome, but it has to be kept in mind that this relates to the public funding of universities, which is supposed to be for the benefit of education and research, not to create intellectual property rights for individuals. Besides, a professor or researcher who invokes the option to refuse a transfer of rights (if that supersedes article 12 section 3 DPA, which is unclear) will normally already have arranged for private funding for the exploitation of the patent. In fact, it is quite common for universities to spin off companies for the exploitation of certain inventions. Most universities have technology transfer offices and even incubators for that purpose. Normally there will be an agreement between the university and the spin-off company that clearly stipulates the patents to which the company is entitled. It is advisable to do that, in order to avoid discussions on the collision between article 12 DPA and the collective bargaining agreement for universities.

If the rights to apply for a patent are transferred to the university and subsequently exercised by the university, the employee is entitled to a reasonable compensation. The provision explicitly states that consideration shall be given to the financial interests of the employer in the assigned rights and to the circumstances under which the result was achieved, meaning that a choice has been made to base the compensation on the value of the invention.

The collective bargaining agreement for institutions of higher vocational education contains a much simpler provision, which only stipulates that the employer is entitled to the right to apply for a patent for inventions which the employee has made in the course of his employment. This provision is broader than article 12 section 3 DPA, as it is not limited to researchers. However, research is less common at institutions of higher vocational education than it is at universities and in practice the rule doesn't seem to lead to conflicts.

16. Rijlaarsdam, p.160-164. Rijlaarsdam was assistant professor at TU Delft, the largest Dutch technical university.

The Employee's Right to Compensation

Article 12 section 6 DPA governs the compensation to be paid to an employee in case the employer has the right to apply for the patent. Such compensation is only due if it cannot be deemed to already be part of the salary or of an allowance paid under the employment contract. The provision states that the amount of compensation is to be "related to the pecuniary importance of the invention and the circumstances under which it was made."

The Dutch Supreme Court has adopted a quite restrictive interpretation of article 12 section 6 DPA in its judgment in a case between Dutch research institution TNO and one of its employees.[17] The Supreme Court ruled that it is a principle of Dutch employment law that the agreed salary is a compensation for all types of performance, including in the case of article 12 section 1 DPA[18] doing research that can lead to inventions. Therefore it can generally be assumed that the agreed salary also constitutes compensation for missing out on the right to patents. Compensation is only due in the exceptional case that the salary cannot be deemed to constitute such compensation. This has to be established on the basis of the circumstances of the case at hand, such as the rank and position of the employee within the organisation of the employer, his salary and further employment conditions, the nature and (pecuniary) importance of the invention and the extent to which the employee contributed to the invention. This judgment means that the employee is only entitled to compensation in exceptional circumstances.

In an earlier case the Supreme Court had ruled that equity didn't require to base the compensation for the employee on the benefits that the company could obtain by exploiting the invention.[19] This has lead authors to consider that such compensation could also

17. Dutch Supreme Court 1-3-2002, ECLI:NL:HR:2002:AD7342, *TNO v Ter Meulen. See* also Dutch Supreme Court 27-5-1994, ECLI:NL:HR:1994:ZC1377, *Hupkens v Van Ginneken* (published in BIE 1995, p. 25 and IER 1994/20). This has also been explicitly accepted for civil servants by the highest administrative court, *see* CRvB 8-7-2004, ECLI:NL:CRVB:2004:AQ2117, Stichting NWO.

18. The judgment was in relation to article 10 Dutch Patent Act 1910, but the text of article 12 of the Dutch Patent Act 1995 is basically the same, although the wording is slightly different.

19. Dutch Supreme Court 27-5-1994, ECLI:NL:HR:1994:ZC1377, *Hupkens v Van Ginneken* (published in BIE 1995, p. 25 and IER 1994/20).

take the form of an additional employee allowance, as opposed to an amount that has a reasonable relationship to the value of the invention for the company.[20] Such allowances would then be rather low.

Article 12 section 7 DPA provides that any stipulation departing from section 6 shall be void. This is aimed to protect the interests of the employee, so it does not preclude provisions in employment contracts or collective bargaining agreements that allow for higher compensation for employees. The collective bargaining agreement for universities for instance generally provides that a reasonable compensation is due to the employee if the university exercises the patent rights on an invention made by the employee. If this indeed is intended to cover all university employees, it is a much more generous facility than what such employees would be entitled to under the Supreme Court case law.

Since the Dutch law on employee compensation is quite restrictive, certainly when compared to foreign law such as German law,[21] and it has been made even more restrictive in the Dutch Supreme Court case law, there is very little case law on the amount of compensation due. Such compensation is rarely granted and the scarce case law doesn't allow for a meaningful statistical analysis.

Conclusion

The Dutch law on employee compensation for inventions generally applies to employees who normally perform their work in The Netherlands. If the employee's work is on research and development, the default situation under the Dutch Patent Act is that the employer is entitled to the ensuing patent rights, but this may be decided differently in individual employment contracts or in collective bargaining agreements. The compensation to which employees are entitled under the Dutch Patent Act is rather low and in most cases even absent. As such, that might be good news for the employers. However, it might also be rather disappointing for the individual employee, who doesn't feel motivated to devote all his efforts to developing patentable inventions.

Companies should be well aware of these features of Dutch patent law and they should consider what the best solution for their situation would be. Fortunately, the law allows for enough flexibility to take care of this issue in employment contracts, which for these reasons are just as important as licences. This offers good options to implement company policies without real legal obstacles. ■

Available at Social Science Research Network (SSRN): *https://ssrn.com/abstract=2961889.*

20. Huydecoper/Van der Kooij/ Van Nispen/Cohen, p. 302.

21. Rijlaarsdam has made an extensive comparison between the Dutch and the German system in his doctoral thesis, p. 15–111.

The Scoop from Europe: Europe Takes On FRAND Licensing—Again

By Patricia Cappuyns and Jozefien Vanherpe

Almost two years ago, on 16 July 2015, Europe's highest court, the European Court of Justice (CJEU), handed down its much anticipated judgment in the widely publicized *Huawei/ZTE* saga regarding standards-essential patents (SEPs).[1] The question put before the Court was in what circumstances a SEP owner may seek injunctive relief against an alleged patent infringer without violating EU competition law. Instead of painting a crystal-clear picture, the CJEU's decision left a number of questions unanswered. This resulted in differing national court interpretations. We discuss two long-running FRAND disputes in more detail and focus especially on the recent UK High Court Decision in the *Unwired Planet/Huawei* case. Furthermore, on 10 April 2017, the European Commission released a roadmap in which it disclosed its aim of establishing a predictable and proportionate framework for FRAND licensing of SEPs.

With this "Scoop from Europe," we delve into the issue of FRAND licensing in Europe for the third time already, and the debate is far from over.

Background

In previous columns, we already reported extensively on the long-running dispute between Huawei and ZTE as well as the state of the law on FRAND licensing in Europe. Readers are invited to refer back to the editions of *LES Global News*[2] of March 2015 and *les Nouvelles*[3] of September 2015. For the sake of clarity, we repeat the main relevant elements below.

Standards-essential patents or SEPs are patents that cannot be avoided by a company who wishes to produce a standard-compliant product (bar certain exceptions, for example when the standardized feature is optional). This gives the owner of an SEP a very powerful, possibly dominant, position with a great potential for abuse within the meaning of Article 102 TFEU.[4]

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In order to limit the potential for abuse, companies that have declared a patent as potentially essential to a technical standard are generally subject to a FRAND commitment. This commitment entails that the SEP owner agrees to license its SEP out to any party who wishes to implement the technical standard on terms that are Fair, Reasonable and Non-Discriminatory. The FRAND requirement is largely understood to limit to some extent the SEP owner's right to seek injunctive relief against the standard implementer, since otherwise the SEP owner could "hold up" the standard implementer and prevent it from commercializing standard-compliant products on the basis of one single SEP. This would be unfair, since each technical standard is populated by hundreds or even thousands of SEPs, and the importance of one single SEP for the standardized technology as a whole may be quite limited.

While this principle was largely undisputed, considerable disagreement remained as to how limited the SEP owner's right to injunctive relief is and under what conditions a request for injunctive relief (or a fortiori a recall of products) could be considered abusive.

CJEU: *Huawei/ZTE* (16 July 2015)

In the dispute between Huawei Technologies and ZTE, Huawei was the SEP owner. Huawei brought a patent infringement action against ZTE before a German court, requesting an injunction as well as other remedies. The German court referred a number of questions to the CJEU, asking under what conditions a patentee is entitled to injunctive relief on the basis of an SEP encumbered by a FRAND commitment.

In its judgment of 16 July 2015, the CJEU walked a tightrope, seeking to strike a balance between the aim of securing free competition and the interests of the IP rights holder. While acknowledging that the exercise of an intellectual property right may only constitute a violation of Article 102 TFEU in exceptional circumstances, the CJEU stressed that SEPs encumbered by a

1. CJEU, Judgment of 16 July 2015 in Case C 170/13 between *Huawei Technologies Co. Ltd and ZTE Corp.*, ZTE Deutschland GmbH, ECLI:EU:C:2015:477.

2. Available through log-in at *https://www.lesi.org/global-news.*

3. Available through log-in at *https://www.lesi.org/les-nouvelles.*

4. Article 102 TFEU, paragraph 1: *"Any abuse by one or more undertakings of a dominant position within the internal market or in a substantial part of it shall be prohibited as incompatible with the internal market in so far as it may affect trade between Member States."*

FRAND commitment merit special attention. Indeed, in such a case, third parties may legitimately expect that the patentee will grant access to the patented technology on such FRAND terms, leading to a possible abuse of a dominant position in the event the patentee refuses to do so.

The CJEU then went on to establish a number of conditions, with which the patentee needs to comply before bringing an action for injunctive relief against a (potential) infringer. Firstly, the patentee needs to contact the infringer, indicating in detail how the SEP in question has been (or is threatening to be) infringed. Once the alleged infringer has indicated its willingness to conclude a FRAND license, the SEP owner needs to present a specific, written FRAND offer, to which the alleged infringer must then respond, diligently and in good faith. If a counteroffer is made and rejected, the alleged infringer may only use the patented technology after having provided appropriate security. If the parties cannot agree on FRAND terms, these may be determined by an independent third party. Lastly, the alleged infringer must always remain free to challenge the validity and/or infringement of the SEP(s) in question. As a result, the balance of power in patent licensing negotiations clearly shifted to the (potential) licensee. The CJEU *Huawei/ZTE* was therefore considered by many to be a resounding victory for the European Commission.

It appears that ZTE and Huawei have in the meantime quietly settled their dispute since the CJEU's judgment in 2015. While neither ZTE nor Huawei have explicitly confirmed this, the patent community in Germany seems certain of this fact.[5]

While the CJEU's judgment provided some much-needed clarity, many issues remained unresolved. Indeed, it is unsure what should happen when the parties cannot reach an agreement at all or when the SEP owner is only prepared to offer a portfolio license for all its SEPs combined, or a worldwide rather than a country-by-country license. Additionally, the question remains how to determine whether an SEP owner is dominant. Finally, arguably the most important question remains unanswered: what exactly constitutes FRAND terms and conditions?

As a result, national court interpretations on the implementation of FRAND terms have diverged. By way of illustration, we will discuss two legal sagas concerning the application of the FRAND standard. As will become clear, the final word on the implementation of this concept has not been said.

5. *See* in this regard *e.g.* C. HARMSEN and M. FÄHNDRICH, "Patentstreit des Jahrzehnts: Huawei und ZTE vergleichen sich offenbar stillund leise," 6 March 2017, *http://www.juve.de/*.

Germany: *Sisvel/Haier* (31 March 2017)

*Sisvel/Haie*r was the first case to analyse the issue following the judgment of the CJEU in the *Huawei/ZTE* case.[6] SEP owner Sisvel sought injunctive relief from the German courts against Haier after license negotiations, begun in 2012, broke down. At first instance, the "Landgericht" Düsseldorf decided that Haier, the potential licensee, had not fulfilled its duties under the principles set forth by the CJEU.[7] In particular, the court held that Haier had not provided security immediately following the rejection by Sisvel of Haier's initial counteroffer. On 3 November 2015, the Landgericht Düsseldorf therefore granted an injunction. However, by preliminary judgment of 13 January 2016, the appellate court ("Oberlandesgericht" Düsseldorf) took a different view, referring to the sequential nature of the parties' obligations.[8] In summary, the court held that Haier's obligation to provide security would have been triggered only by Sisvel's fulfilment of its obligation to offer a license on FRAND terms. Before ruling that Haier failed to fulfil its obligations, the court had to assess whether Sisvel's initial offer was FRAND in the first place. The Oberlandesgericht Düsseldorf therefore granted a preliminary stay of enforcement of the injunction granted at first instance, pending the appeal proceedings.

In addition, the Oberlandesgericht, scheduled two hearings for the substantive review of the first instance decision at the end of 2016/early 2017. The patent and competition law community in Germany eagerly awaited the Oberlandesgericht Düsseldorf's substantive decision, which was expected to establish for the first time in Europe some clear ground rules on how exactly to compute a FRAND royalty. However, on 30 March 2017, the experts were disappointed.[9] After

6. There are a number of other interesting disputes which have been brought before the German courts in the course of the last few years, such as *Saint Lawrence Communications. GmbH v. Deutsche Telekom*, Landgericht Mannheim 2 O 106/14; NTT DoCoMo v. DoCoMo v. HTC Germany, 7 O 66/15, 29 January 2016; 7 O 99/15, 19 February 2016; 7 O 100/15, 6 June 2016; and *Saint Lawrence Communications v. Vodafone*, Landgericht Düsseldorf 4a O 73/14, 4a O126/14, 4a O 127/14, 4a O 128/14, 4a O 129/14, 4a O 130/14, 31 March 2016. However, a detailed analysis of these cases falls outside the scope of this article.

7. *Sisvel Wireless Patent Portfolio v. Qingdao Haier Group*, Landgericht Düsseldorf 4a O 93/14 and 4a O 144/14, 3 November 2015.

8. *Sisvel Wireless Patent Portfolio v. Qingdao Haier Group*, Oberlandesgericht Düsseldorf 15 U 65/15 and I-15 U 66/15, 13 January 2016.

9. See M. SCHEFFLER, C. SCHUMACHER and ULRIKE VOß, "Grundsatzprocess um FRAND-Lizenzen: Haier verteidigt sich mit Gulde gegen Sisvel," 4 April 2017, *http://www.juve.de/*.

ruling that the SEP owner's patents were valid and infringed, the Oberlandesgericht nonetheless refused to grant an injunction against Haier, instead ordering Haier to pay damages and to render specific sales information.[10] For now, Haier may therefore continue to sell its smartphones and tablets in Germany. The Oberlandesgericht did not determine the appropriate royalty rate for FRAND terms. An appeal to the German Federal Court of Justice ("Bundesgerichtshof") is expected. The Bundesgerichtshof would thereby be presented with the opportunity to revisit its *Orange Book*[11] decision, which already dates from 2009 and which is generally considered to have been overruled by the CJEU's Huawei/ZTE judgment.

UK: *United Planet/Huawei* (5 April 2017)

The Oberlandesgericht Düsseldorf was therefore not the first to provide a substantive ruling on the adequate and proportionate level of a FRAND royalty. Instead, Mr. Justice Colin Birss of the UK High Court of Justice did the honors in a 165-page judgment in the *United Planet/Huawei* case of 5 April 2017.

While Huawei was the SEP owner in its dispute with ZTE, it was the standard implementer in its patent battle with Unwired Planet. In 2013, Unwired Planet acquired over 2,000 patents from Ericsson. Soon after, in March 2014, Unwired Planet initiated infringement proceedings against Huawei, Samsung and Google.[12] This case revolves around six patents concerning mobile phone technology, five of which have SEP status.

In an early stage of the litigation, Birss J of the UK High Court of Justice decided to divide the case into a series of five technical trials on the validity and alleged infringement of the patents, followed by a non-technical trial concerning competition law issues and FRAND licensing in particular. Until now, all parties had secured minor victories in the technical trials at first instance, with two patents being upheld as valid and infringed[13] and another two being held invalid for obviousness.[14] Appeals were lodged against all of these UK High Court decisions, following which it was agreed to suspend further technical trials. The non-technical trial on competition law issues started in October 2016.[15]

In the course of the proceedings, both Huawei and Samsung (the latter before having settled the case in the Summer of 2016) had indicated that they were willing to take a license if the patents were proven to be valid and infringed. However, the parties disagreed on what exactly constitutes a FRAND license. Unwired Planet had presented the alleged infringers with the possibility of acquiring a worldwide portfolio license on all of its relevant SEPs, while Huawei was only willing to take a license for particular SEPs found to be valid and infringed, for specific territories. Countless offers and counteroffers were made, but the parties were unable to come to an agreement. Two of the issues which were not explicitly tackled in the *Huawei/ZTE* judgment of the CJEU—what to do if the parties cannot reach an agreement and how to handle the issue of portfolio licenses versus per-country licenses—rose to the surface, making the *Unwired Planet/Huawei* an ideal test case.

The main questions before the court were (i) the appropriate level for a FRAND royalty for the SEPs owned by Unwired Planet, (ii) whether Unwired Planet violated Article 102 TFEU by failing to adhere to the requirements set forth in the CJEU *Huawei/ZTE* judgment and (iii) whether the court should grant Huawei an injunction. In summary, Birss J held that Unwired Planet did not act in breach of Article 102 TFEU. Unless Huawei agrees to enter into a worldwide license for Unwired Planet's entire patent portfolio, Unwired Planet will be granted an injunction in relation to the two SEP patents that have already been found valid and infringed.[16]

The following elements of Birss J's decision merit special attention:

- None of the parties' offers were considered FRAND by Birss J. To the contrary, Birss J held that the SEP portfolio was undervalued by Huawei and overestimated by Unwired Planet.

10. *Sisvel Wireless Patent Portfolio v. Qingdao Haier Group*, Oberlandesgericht Düsseldorf 15 U 65/15 and I-15 U 66/15, 30 March 2017. Disclaimer: at the time this column was written, the judgment was not yet publicly available, so the authors have relied on press releases instead.

11. *Orange-Book-Standard*, Bundesgerichtshof Germany KZR 39/06, 6 May 2009.

12. In the summer of 2015, Google and Unwired Planet settled with respect to the five SEPs. One year later, Samsung settled with Unwired Planet and Ericsson, as a result of which proceedings against Samsung ended.

13. UK High Court of Justice Decision dated 23 November 2015, *Unwired Planet International Ltd v Huawei Technologies Ltd*, Samsung Electronics Co Ltd and others, [2015] EWHC 336 (Pat), regarding EP (UK) 2 229 744 and UK High Court of Justice Decision dated 22 March 2016, *Unwired Planet International Ltd v Huawei Technologies Ltd*, Samsung Electronics Co Ltd and others, [2016] EWHC 576 (Pat), regarding EP (UK) 1 230 818.

14. UK High Court of Justice Decision dated 29 January 2016, *Unwired Planet International Ltd v Huawei Technologies Ltd*, Samsung Electronics Co Ltd and others, [2016]EWHC 94 (Pat), regarding EP (UK) 2 119 287 and EP (UK) 2 485 514.

15. Interestingly, another case regarding FRAND licensing was due to go to trial in the UK in early 2016, namely the widely published *Vringo/ZTE* case. However, in December 2015, the parties brought their dispute to an end by way of a 21.5 million US dollar global settlement.

16. Notably, it was clarified that a formal decision on the injunction would follow once Unwired Planet has drawn up a full set of the terms of the worldwide license incorporating the decisions made in the judgment.

- Birss J held that a FRAND undertaking, made by an SEP owner to ETSI (the "European Telecommunications Standards Institute"), is a legally enforceable obligation, justiciable in an English court of law. Interestingly, Birss J distinguished the FRAND undertaking from the boundaries set by European competition law. In practice, this means that a rate may be non-compliant with the FRAND requirement, but still in line with European competition law. Mr. Justice Birss further held that FRAND refers not only to the terms of the license, but also to the process by which it is negotiated. In other words, as long as the parties negotiate in a FRAND way, the offers themselves that are exchanged during the negotiation do not necessarily have to be FRAND, as long as the finally agreed terms are FRAND.
- According to Birss J, there is only one set of FRAND license terms in a specific set of circumstances. This implies that there is always a (sometimes theoretical) possibility for the parties to come to a FRAND arrangement, but it makes it more difficult to pinpoint exactly what the FRAND arrangement is.
- As mentioned above, Unwired Planet offered Huawei a worldwide license under the asserted SEPs. Huawei considered this offer to be unreasonable. Birss J disagreed, observing *inter alia* that the vast majority of SEP licenses is concluded on a worldwide basis and that both parties are global players, thus excluding the desirability of a country-by-country approach. Put simply, in Birss J's view, FRAND means "worldwide."

Birss J then went on to determine the appropriate FRAND rate under the circumstances at issue. At the outset, Birss J ruled that an appropriate way to determine a FRAND royalty is to determine a benchmark rate, governed by the value of the SEP owner's portfolio. In this regard, counting patents is inevitable. The benchmark may then be adjusted, as appropriate. A helpful tool in determining a FRAND rate may be the use of comparable licenses, when available.

In the course of the proceedings, Unwired Planet and Huawei both put forward methods to calculate the total number of SEPs relevant to various ETSI standards as well as the shares therein owned by Unwired Planet. Ultimately, Birss J chose Huawei's method as the simpler and more transparent one and used this to reach a conclusion. After having set benchmark FRAND rates for the different aspects of Unwired Planet's SEP portfolio (4G/3G/2G), Birss J adjusted these rates slightly downwards (influenced by the facts of the case) in order to reach a worldwide FRAND rate.

The UK High Court of Justice's decision in the *Unwired Planet/Huawei* case will undoubtedly influence national courts confronted with disputes regarding global SEP licensing disputes going forward. However, some of the viewpoints taken by Birss J, such as the existence of a single FRAND rate in a specific case, may prove to be somewhat controversial.

The Commission's Roadmap and Possible Future Commission Endeavours (10 April 2017)

On 10 April 2017, spurred on by the recent judgments in the field of FRAND licensing, the European Commission released a Roadmap entitled "Standard Essential Patents for a European digitalised economy." In this Roadmap, aimed at informing stakeholders and allowing them to participate in the Commissions consultation activities, the Commission expresses its wish to establish a balanced, more predictable framework for SEPs, in a bid to boost competitiveness and to help achieve the goals of the Digital Single Market (DSM).[17] In particular, the Commission refers to the global advent of the Internet of Things (IoT) and the need to help EU industries in utilising all of the opportunities the IoT offers. In this regard, the Commission focuses on the need to create a level playing-field and to secure interoperability between IoT applications.

In its Communication of 19 April 2016, the Commission had already referred to the need for balance in the SEP framework and indicated that there was room for policy measures in this regard.[18] Other European institutions rapidly followed suit, emphasising the importance of SEPs and FRAND licensing.[19]

The Commission's initiative aims to tackle three main problems. Firstly, the Commission notes that it is very difficult for potential licensees to identify and ver-

17. *See https://ec.europa.eu/commission/priorities/digital-single-market_en.*

18. European Commission, Communication "Digitising European Industry. Reaping the full benefits of a Digital Single Market," COM(2016/180), 19 April 2016, *http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52016DC0180&from=EN.*

19. European Parliament Resolution of 26 May 2016 on the Single Market Strategy, P8_TA(2016/0237, *http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+TA+P8-TA-2016-0237+0+DOC+PDF+V0//EN*; Draft Council conclusions on the "Digital Single Market Technologies and Public Services Modernisation" package of 17 May 2016, *http://data.consilium.europa.eu/doc/document/ST-8735-2016-INIT/en/pdf*; Opinion of the European Economic and Social Committee on the 'Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions—ICT Standardisation Priorities for the Digital Single Market,' COM(2016) 176 final, Pb. C 28 December 2016, n° 487, 92.

ify relevant SEPs. Secondly, a proper valuation of SEPs has also proved challenging. Thirdly, the Commission rightly points out that, while the CJEU judgment in *Huawei/ZTE* provides a general framework for FRAND enforcement, many practical questions still remain unanswered. The uncertainty resulting from the current incomplete nature of the SEP framework could deter IoT businesses from entering the SEP space, something that the Commission wishes to avoid at all costs.

How does the Commission aim to remedy these issues? In the Roadmap, the Commission reveals its intention to issue best practice recommendations to increase transparency on SEP exposure, as well as guidance on the boundaries of FRAND and, finally, guidance complementing existing jurisprudence on enforcement in areas such as portfolio licensing and alternative dispute resolution. A Commission Communication on this topic could therefore be on the horizon.

Conclusion

The current framework on SEPs and FRAND licensing is far from complete. While the CJEU offered general principles on the subject in its *Huawei/ZTE* judgment, practitioners charged with the task of implementing the FRAND standard in licensing negotiation processes are still faced with a lot of uncertainty. While national courts attempt to fill in the existing gaps in the framework, they interpret and implement the *Huawei/ZTE* judgment in differing ways. The lack of legal certainty that this entails may lead to high procedural and other costs, for licensors and (potential) licensees alike. If the opportunities offered by the IoT are to be fully grasped, the EU institutions will have to intervene. Fortunately, harmonisation in SEP licensing is firmly on the European Commission's agenda. For better or worse, the FRAND saga is to be continued. ■

Available at Social Science Research Network (SSRN): *https://ssrn.com/abstract=2961890.*

Recent U.S. Court Decisions And Developments Affecting Licensing

By John Paul and D. Brian Kacedon

1. **Reliability of Damages Expert Reports**
   Forward citation analysis, settlement Agreements, preference for lump sum payments.
2. **Induced Infringement**
   Requirement of active encouragement that results in direct infringement.
3. **Willful Infringement**
   Infringer not entitled to a reasonable profit from future infringing sales.
4. **Appeals of PTO Invalidity Decisions**
   No standing based on unsubstantiated allegations of injury to licensing opportunities.
5. **Anticompetitive Licensing Practices**
   FTC sues Qualcomm in cell phone semiconductor market.
6. **Inequitable Conduct**
   Requirement of investigating intention to abandon.
7. **Appeal of PTO Validity Decision**
   Covenant-not-to-sue results in dismissal.
8. **Most-Favored-Licensee Provision**
   Effect on later-acquired patents.
9. **Waiver of Attorney-Client Privilege**
   Legal advice during acquisitions and licensing negotiations.
10. **Avoiding Validity Challenges at the Patent Office**
    Sovereign immunity of research institutions at state universities.
11. **Laches Defense of "Unreasonable Delay"**
    Not allowed for patent infringement suits brought within six-year limitation period.

Comcast v. Sprint

1. Court Permits Evidence from Damages Expert that Relies on Forward Citation Analysis, Comparable Settlement Agreements, and Preference for Lump Sum Agreements

Determining the right amount of damages in patent infringement cases often involves complex analyses provided by damages experts. When requested, courts will exclude an expert's report or testimony where it is unreliable. A District Court in Pennsylvania recently denied the litigants' requests to exclude each other's expert reports for determining reasonable royalty damages. According to the court, the license agreements and the experts' methods for calculating damages were reliable for the purposes they cited.

Background

Damages for patent infringement are typically based a reasonable royalty for the infringer's use of the patented technology. In most cases, the litigants submit evidence of a an appropriate royalty by using experts who review and testify on factors relevant to the reasonable royalty, including rates paid by licensees for patents comparable to the patent in suit and the portion of profits that should be credited to the invention rather than non-patented elements of the product. Once a party submits its expert's report on a reasonable royalty, the other party may challenge that report and ask the court to exclude it from the case if the expert's methods or the data the expert relies on are unreliable.

In *Comcast v. Sprint*, Comcast and Sprint each accused the other of infringing their respective text-messaging (SMS) and multimedia messaging (MMS) patents. Both parties filed expert reports to support the reasonable royalty damages they were claimed they were entitled to for the other party's infringement, and both parties challenged the reliability of the other experts' report.

In particular, Comcast argued that the method Sprint's expert used to estimate the value of an asserted patent was discredited by a recent case and publication. Specifically, Comcast criticized the use by Sprint's expert of a "forward citation analysis," which "is a method of estimating the value of a particular patent based on the number of times the patent is cited by later patents." Comcast also argued that the circumstances of the license agreements that Sprint's expert cited were not comparable to the patent or the dispute at issue. Thus, the expert could not rely on those agreements to establish the value of a reasonable royalty or that Comcast favored a lump-sum agreement. For its part, Sprint argued that Comcast's expert report was unreliable because it used an improper method to determine the value attributable to the infringing features of the accused products.

The *Comcast* Decision

The court denied both parties' requests to exclude the other party's expert report. Reviewing Comcast's argument that a "forward citation analysis" was an unreliable method to estimate the value of an asserted patent, the court found that the case Comcast cited did not actually discredit the method, and that other cases, publications, and studies had endorsed the method since the 1990s. The court held that a single academic paper was not sufficient to rebut decades of literature supporting the method used by Sprint's expert.

Next, the court addressed Comcast's argument that Sprint's expert improperly relied on a licensing agree-

ment between Sprint and another company because the agreement was a settlement agreement, and therefore not comparable to a voluntary hypothetical negotiation. The court disagreed with Comcast, finding many similarities between the Sprint agreement and a hypothetical negotiation—the patents were technologically similar, the agreement involved a lump-sum payment, and it involved a non-exclusive license agreement.

Finally, the court addressed Comcast's argument that Sprint's expert report should be excluded because it cited three Comcast license agreements to show that Comcast preferred lump-sum licenses to running royalties. Comcast argued that the license agreements cited by Sprint's expert were not comparable to a hypothetical negotiation to license the asserted patent. The court disagreed with Comcast again, stating that Sprint's expert report appropriately cited the Comcast licenses for the limited purpose of showing that Comcast favored a lump-sum license agreement. After addressing each of the arguments against Sprint's damages expert report, the court denied Comcast's request.

The court went on to address Sprint's argument against Comcast's expert report. Sprint argued that Comcast's expert report was unreliable because counting the components, features, or the lines of code involving the infringing features of the accused products was not a reliable method of determining the value attributable to the asserted patent. The court disagreed, stating that there was more than one reliable method for estimating a reasonable royalty, and that Sprint presented one method and Comcast proposed another.

Strategy and Conclusion

This case illustrates that courts are willing to allow litigants to use of different types of evidence—including forward citation analysis, settlement agreements, and preference for lump sum agreements—in determining reasonable royalty damages as long as the methodology applied is sufficiently reliable. Litigants can draw broadly from the types of evidence to submit to prove a reasonable royalty and should carefully consider the reliability of the methodologies and evidence they rely on in arguing damages issues and that the methodology and evidence is appropriately comparable to the situation in the case being litigated.

Further Information

The decision in *Comcast Cable Communications LLC, v. Sprint Communications Company, LP* can be found here: *https://tinyurl.com/mxjy8dw.*

Power Integrations v. Fairchild

2. Induced Infringement Requires Active Encouragement that Results in Direct Infringement

To prove induced infringement a patent owner must show the accused infringer actively encouraged infringement, knowing that the acts they induced constituted patent infringement, and their encouraging acts actually resulted in direct patent infringement. Although inducement may be proven via circumstantial evidence, such as advertisements and user manuals, it must be found to have actually occurred.

In *Power Integrations, Inc. v. Fairchild Semiconductor Int'l, Inc.*, the Federal Circuit considered whether proof of induced infringement requires proof that the encouragement of infringement was successfully communicated to the direct infringer and actually resulted in direct infringement.

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Background

Fairchild and Power Integrations are competitors in the market for controller chips used in power supplies for various electronic devices, such as cellphones, laptops, and televisions. Power Integrations sued Fairchild for directly and indirectly infringing some of its power supply patents. Fairchild filed counterclaims against Power Integrations asserting a set of its own power supply patents. After considering the evidence at trial, a jury found both parties liable for infringing at least some of the other's asserted patents.

On appeal, among other issues raised by both parties, Fairchild argued that (1) the jury's verdict should be vacated because the jury was improperly instructed that Fairchild may be liable for inducing infringement merely by taking steps to assist or encourage infringement to occur, "regardless of whether the encouragement succeeded, or was even received," and (2) Fairchild could not be liable for induced infringement of U.S. patents because it lacked the required specific intent to bring about infringement in the United States; it sold the accused controller chips to foreign distributors and therefore it had no knowledge of whether the accused controller chips would ultimately end up in the United States and infringe U.S. Patents.

The *Power Integrations v. Fairchild* Decision

The Federal Circuit agreed with Fairchild that the jury was improperly instructed and concluded that to be liable for induced infringement, Fairchild needed to successfully induce a third party to infringe. The court noted that according to a 2011 Supreme Court decision, the word "induce" means "to lean on; to influence; to prevail on; to move to persuasion." It then reasoned that each of these definitions require successful communication between the alleged inducer and the third-party direct infringer. And it noted that earlier Federal Circuit precedent stated that to prevail on a claim of inducement, patent owners need to show that an accused induced infringer's "actions led to direct infringement."

Having found that precedent requires actual inducement, and that the district court's instructions gave

the jury an incorrect understanding on this requirement, the court vacated the jury's finding of induced infringement.

The court next considered Fairchild's alternative argument that it could not be liable for induced infringement because it only sells the accused controller chips to foreign distributors with no knowledge of whether they will ultimately end up in the United States.

There was no dispute that products containing Fairchild's chips were in fact imported into the United States. Power Integrations introduced as evidence three representative products containing Fairchild chips that it purchased in the United States—an HP printer, an Acer laptop and a Samsung laptop.

However, Fairchild claimed there was no evidence that it encouraged its accused chips to be incorporated into products bound for the U.S. with the specific intent to induce infringement. The court disagreed, noting that Fairchild was involved in activities related to the use of its products in the U.S.: Fairfield designed its products to meet certain U.S. energy standards, provided demonstration boards containing the infringing chips to customers and potential customers in the United States, and maintained a technical support center in the United States that provided support to customers based in the United States.

The court also rejected Fairchild's argument that Power Integrations was required to establish a nexus between Fairchild's inducement and the particular infringing products sold by HP, Acer, and Samsung products. According to the court, established law allows induced infringement to be based on circumstantial evidence of inducement, such as advertisements and user manuals directed to a class of direct infringers, without direct proof that any individual third-party direct infringer was actually persuaded to infringe by such materials. Accordingly, the court found that the representative acts of direct infringement were sufficient to allow a jury to find that Fairchild had induced its customers to infringe as a class. The court therefore remanded for further proceedings on the issue.

Strategy and Conclusion

To prove induced infringement a patent owner must show (1) the accused infringer actively encouraged infringement, knowing that the acts they induced constituted patent infringement, and (2) their encouraging acts actually resulted in direct patent infringement. Although inducement may be proven by circumstantial evidence such as advertisements and user manuals, it must be found to have actually occurred.

Further information

The *Power Integrations v. Fairchild* decision is available here: *https://tinyurl.com/n8vbxyl.*

Arctic Cat Inc. v. Bombardier Recreational Products, Inc.

3. Willful Infringer Is Not Entitled to a Reasonable Profit from Future Infringing Sales—Ongoing Royalty Rate May Substantially Exceed Past Infringement Royalty Rate

A Florida court awarded an ongoing royalty rate for future infringement that was twice the royalty rate awarded by the jury for past infringement and noted that an ongoing infringer should not expect an ongoing royalty rate to be set low simply to allow the infringer to make a reasonable profit.

A court will only enjoin infringers from continuing to sell infringing projects if the patent owners can show, among other things, they have been irreparably harmed by the infringement. Therefore, in many cases, after a final verdict finding a patent valid and infringed, infringers can continue selling infringing products if they pay an ongoing royalty for the infringing products.

Recently, in *Arctic Cat Inc. v. Bombardier Recreational Products, Inc.*, after a final judgment of infringement, the court determined the amount of the ongoing royalty rate was twice the royalty rate awarded by the jury for past infringement.

Background

Arctic Cat brought a patent suit against Bombardier in the Southern District of Florida alleging infringement of patents related to steering technology for jet propulsion personal watercraft.

After prevailing at trial, Arctic Cat filed post-trial motions for supplemental damages, post-judgment ongoing royalty, and periodic accounting through the expiration the patents. The court issued an order awarding nearly $1.5 million in supplemental damages. The court also determined that because Bombardier planned to continue manufacturing and selling infringing personal watercrafts incorporating Arctic Cat's patented steering technology, Artic Cat was entitled to an ongoing royalty.

The court ordered the parties to negotiate an appropriate ongoing royalty rate, setting the floor for negotiations at $102.54 per unit (equal to the reasonable royalty rate determined by the jury for past damages). Because the parties could not agree to an ongoing royalty rate in mediation, the court was required to determine the appropriate ongoing royalty.

Arctic Cat argued that the ongoing royalty rate should be equal to the profit that Bombardier derives from each of the infringing product sales, which it calculated to be $205.08 per infringing unit. Bombardier argued that the original royalty rate determined by the jury was appropriate, and that a willful infringer should be entitled to derive a profit from its post-judgment infringing sales, and that Arctic Cat's proposed rate would foreclose Bombardier from making any profit.

The *Arctic Cat* Decision

In determining an appropriate ongoing royalty for future sales, courts often use the jury's damages award for past damages as a starting point and then account for any changes in the parties' bargaining positions and resulting changes in economic circumstances after the verdict.

In the *Arctic Cat* case, the court considered the *Georgia Pacific* factors—a well-known set of 16 factors used by courts to determine reasonable royalty damages, and ultimately determined that Arctic Cat's requested ongoing royalty of twice the amount determined by the jury ($205.08 per unit) was appropriate.

Many *Georgia Pacific* factors favored Arctic Cat, such as its better bargaining position after the verdict *(Georgia Pacific* factor 5*)*, royalty award received *(Georgia Pacific* factor 11), commercial success of its steering device *(Georgia Pacific* factor 8*)*, and Bombardier's failure to utilize its non-infringing alternative *(Georgia Pacific* factor 9*)*.

The court rejected Bombardier's argument that it should be entitled to make a reasonable profit. It noted the purpose of an ongoing royalty is to reduce a party's incentive to infringe, and in any event, Bombardier was in a position to set prices for its products and free to pass any increased costs to the consumer.

Strategy and Conclusion

This case shows that an ongoing infringer should not expect an ongoing royalty rate to be set low simply to allow the infringer to make a reasonable profit, and that the ongoing royalty rate for future infringement may substantially exceed the royalty rate for past infringement determined by the jury.

Further Information

The *Arctic Cat* opinion can be found here: *https://tinyurl.com/ksh6m9p.*

Phigenix, Inc. v. ImmunoGen, Inc.

4. PTO Invalidity Decisions Cannot Be Appealed as a Matter of Right: Unsubstantiated Allegations of Injury to Licensing Opportunities Are Insufficient to Confer Standing for Federal Circuit Appeal

Constitutional standing requirements to bring an action in a federal court do not necessarily apply when bringing an action before an administrative agency like the Patent and Trademark Office's Patent Trial and Appeal Board ("PTAB"). As a result, while a validity challenge may be brought at the PTAB, an adverse decision by the PTAB may not necessarily be appealed to a federal court unless those constitutional standing requirements are met. In *Phigenix, Inc. v. ImmunoGen, Inc.*, the appellant's allegations of injury, based on hypothetical licensing revenues expected if it had won its invalidity challenge at the PTAB, were found to be too hypothetical to adequately show actual injury necessary to establish standing.

The Federal Circuit found a company that challenged the validity of a patent in a proceeding at the U.S. Patent and Trademark Office Patent Trial and Appeal Board could not appeal an adverse decision of the PTO Board upholding the validity of the patent. The Court dismissed the appeal in *Phigenix, Inc. v. ImmunoGen, Inc.*, finding the challenger did not sufficiently substantiate its claimed licensing injuries and therefore did not meet its standing burden of showing actual or imminent injury necessary to bring an appeal in federal court.

Background

ImmunoGen provided a worldwide exclusive patent license to Genentech, Inc., under which Genentech produces the breast cancer drug Kadcyla®™.

Phigenix does not manufacture any products, but claimed to have an extensive intellectual property portfolio including a patent covering Genentech's activities related to Kadcyla and, thus, the subject matter of ImmunoGen's patent.

Phigenix attempted to license its patent to Genentech, but when Genentech refused, Phigenix sought to invalidate the claims of ImmunoGen's patent by petitioning for inter partes review ("IPR") at the U.S. Patent and Trademark Office's Patent Trial and Appeal Board ("PTAB").

After the PTAB rejected Phigenix's challenges, Phigenix appealed the PTAB's decision to the Federal Circuit.

The *Phigenix* Decision

The requirements imposed by the U.S. Constitution to bring an action in a federal court do not necessarily apply when bringing an action before an administrative agency. But an appellant must meet those constitutional requirements to have a federal court review a decision of an administrative agency.

To meet the "irreducible constitutional minimum" of Article III standing, an appellant must have (1) suffered an injury in fact, (2) that is fairly traceable to the conduct of the appellee, and (3) that is likely to be redressed by a favorable judicial decision. As to the injury-in-fact requirement, the appellant must show that an injury is both concrete and particularized, such that the injury either actually existed at the time of the suit, or was imminent.

For the first time since its inception, the Federal Circuit, in *Phigenix, Inc. v. ImmunoGen, Inc.*, set forth the legal standards for demonstrating standing in an appeal from a decision of the U.S. Patent and Trademark Office. Applying these standards, the Federal Circuit ruled that Phigenix did not raise sufficient facts to show that it was actually injured, or that it will be injured imminently.

Phigenix relied principally upon declarations from its experts and an attorney's letter stating that ImmunoGen's patent was causing it to lose licensing opportunities on its patent. According to Phigenix, if ImmunoGen's patent were invalidated, Phigenix would receive at least a portion of the millions of dollars in licensing revenue being received by ImmunoGen. The court considered Phigenix's showing on this alleged licensing injury to be too conclusory and hypothetical, but noted that Phigenix perhaps could have showed standing if it actually licensed its patent to the same parties to which ImmunoGen licensed its patent such that invalidation of ImmunoGen's patent might actually increase Phigenix's revenues.

The court also rejected Phigenix's reliance on Section 141(c) of the Patent Act, which states that a party "who is dissatisfied with the final written decision of

the [PTAB] ... may appeal the [PTAB]'s decision only to the … Federal Circuit." Although § 141(c) provides a statutory basis for appeal from the PTAB to the Federal Circuit, the constitutional requirements of standing must also be met. The court looked to the Supreme Court's decision in *Cuozzo Speed Techs., LLC v. Lee,* which explicitly observed that a party may initiate an IPR at the PTAB and yet still lack constitutional standing to sue in federal court.

Having found that Phigenix failed to adequately substantiate its allegations of injury, the Federal Circuit dismissed the appeal for lack of standing.

Strategy and Conclusion

This case demonstrates that a losing party at the PTAB may not always have standing to appeal the PTAB's final decision to the Federal Circuit. While standing is self-evident when the losing party is the target of a litigation action by the winning party, in other situations, the losing party must adequately show actual or imminent injury to establish standing.

Further Information

The *Phigenix* decision is found here:

https://tinyurl.com/kbrdgdr

FTC v. Qualcomm

5. Federal Trade Commission Sues Qualcomm for Anticompetitive Licensing Practices in Cell Phone Semiconductor Market

The Federal Trade Commission filed a complaint on January 17 in Federal district court, alleging that Qualcomm engaged in anticompetitive licensing practices by agreeing to license baseband processor chip patents—essential to technical standards such as GSM, CDMA, and LTE—on fair, reasonable, and non-discriminatory terms, and then (1) refusing to license competitors and (2) requiring customers to license the patents before selling them any of these baseband processor chips.

The Federal Trade Commission filed a complaint against Qualcomm in Federal district court, accusing it of using anticompetitive practices to maintain a monopoly of the supply of critical cell phone components. The FTC alleged that Qualcomm's practices resulted in a tax on its competitors' sales, reduced competitors' ability and incentive to innovate, and raised prices for cell phone consumers.

Background

Qualcomm leads the industry in supplying baseband processors to cellphone manufacturers. Baseband processors are semiconductor devices, or "chips," that allow cellphones to communicate with the cellular networks. The telecommunications industry, like many other industries, uses standard-setting organizations to create technology standards, allowing industry participants that would otherwise compete with each other to instead collaborate in evaluating and selecting technologies for standardization. Qualcomm owns patents that have been deemed standard essential patents in the telecommunications industry.

In exchange for participating in the standard-setting, where their patented technology was selected as part of the standard, Qualcomm agreed to license its standard essential patents in the telecommunications industry on fair, reasonable, and non-discriminatory (FRAND) terms, but later engaged in licensing practices that prompted an FTC investigation. At the end of its investigation, the FTC voted 2-1 to pursue a complaint against Qualcomm, which it filed on January 17, 2017 in the U.S. District Court for the Northern District of California.

The Complaint

The complaint alleges that Qualcomm engaged in a number of anticompetitive practices to maintain its dominant industry position and to weaken its competitors. Specifically, the FTC alleged that Qualcomm's "no license, no chips" policy forces its customers to agree to unfair licensing terms. Under Qualcomm's "no license, no chips" policy, Qualcomm will not supply its chips unless the cellphone manufacturer accepts Qualcomm's license terms, including royalties that the cellphone manufacturer must pay Qualcomm on the phones they make, even if they use a competitor's chips instead of Qualcomm's.

The complaint further alleges that this policy amounts to a tax on the use of competitors' processors—that cell phone manufacturers are forced to agree to these terms because if they lost their supply of Qualcomm chips, they would be unable to make phones that could connect to key cellular networks. According to the complaint, the "no license, no chips" policy and its resulting tax hurts competition, impedes innovation, and results in increased costs passed on to the consumer.

With respect to the royalty amount, the complaint notes that cell phone manufacturers would have several grounds for challenging the royalty as not complying with Qualcomm's agreement to license on FRAND terms. For example, the complaint lists evidence that (1) Qualcomm's royalties are disproportionately high compared to the value contributed by the patented features to cellular connectivity, (2) the royalty is based on a percentage of the price of the whole cell phone even though cell phones offer many features other than cellular connectivity, (3) Qualcomm's standard royalty price has not fallen even though many of the patents have expired, and (4) Qualcomm has required cell phone manufacturers to grant cross licenses, sometimes with pass-through rights.

The complaint alleges that because of the "no license, no chips" policy explained above, cell phone manufacturers cannot challenge the royalty as non-FRAND because of the risk that Qualcomm would not supply them chips needed for commercial viability of their products in the marketplace.

The complaint also alleges that despite agreeing to license its standard-essential patents on FRAND terms to everyone, Qualcomm has consistently refused to

grant licenses to competing suppliers. This prevents its competitors from making chips that use the technology covered by Qualcomm's standard essential patents. If competitor suppliers could make the chips with the patented technology, Qualcomm would not be able to effectively tax its competitors' sales via patent license terms with cell phone manufacturers.

The complaint also alleges that Qualcomm entered into an agreement with Apple to be Apple's sole supplier in exchange for a partial royalty reduction to Apple under the Qualcomm patents, resulting in billions of dollars in conditional rebates from Qualcomm to Apple between 2011 and 2016. The FTC alleges that these agreements effectively foreclosed Qualcomm's competitors from developing a business to supply chips to Apple.

The FTC seeks an injunction to prevent Qualcomm from continuing its allegedly anticompetitive actions and to take any steps necessary to restore competitive conditions.

Strategy and Conclusion

It will be interesting to see whether the positions taken by the FTC in the Qualcomm case will continue under the Trump administration, and whether the FTC will file more cases for anticompetitive licensing practices.

Of note, less than 10 days after the FTC filed its complaint against Qualcomm, President Trump elevated Maureen K. Ohlhausen to be acting chair of the FCC. Ms. Ohlhausen was the sole dissenting Commissioner in the Commission's 2-1 decision to file the Qualcomm complaint.

Furthermore, Commissioner Ohlhausen so strongly disagreed with the Commission's decision that she broke her practice of not writing dissenting statements and described the action against Qualcomm as based on a "flawed legal theory…that lacks economic and evidentiary support, that was brought on the eve of a new presidential administration, and that, by its mere issuance, will undermine U.S. intellectual property rights in Asia and worldwide."

Further Information

The *FTC v. Qualcomm* complaint can be found here: *https://tinyurl.com/lkou4bh*

3D Medical Imaging Systems, LLC v. Visage Imaging, Inc.

6. Inequitable Conduct Results from Trying to Revive a Lapsed Patent Without Investigating if It Was Intentionally Abandoned

A patent owner attempted to revive a lapsed patent on the basis that the previous patent owner had unintentionally allowed the patent to expire. A court found him guilty of inequitable conduct because he did not investigate whether the previous patent owner allowed the patent to lapse intentionally or unintentionally. As a result, his attempts to enforce the patent were dismissed.

Patents expire unless the owner pays periodic maintenance fees to the Patent and Trademark Office. The patent may be revived if the owner establishes that the delayed payment was "unintentional." In *3D Medical Imaging Systems, LLC v. Visage Imaging, Inc. et al,* a Georgia court considered whether a patent owner committed inequitable conduct by certifying, without knowledge of the circumstances leading to the lapsed payment, that the lapse was unintentional.

Background

Faced with financial pressures, IMS decided to forego payment of a maintenance fee and let their patent expire. After IMS later declared bankruptcy, MedFlex and its owner, Maurice Bailey, acquired the rights to IMS's patent. Mr. Bailey petitioned the PTO to revive the patent, representing that the failure to pay the maintenance fee was "unintentional," and based on his representation, the PTO reinstated the patent.

Meanwhile, Mr. Bailey and MedFlex assigned the patent rights to 3D Medical Imaging Systems, who then sued Visage for infringement. Visage moved the court for summary judgment in its favor on the basis that Mr. Bailey's representation to the PTO that the delay in the failure to pay the maintenance fee for the '655 was "unintentional" constituted inequitable conduct rendering the patent unenforceable.

The *3D Medical* Decision

Inequitable conduct exists when a patent owner (1) misrepresents or omits information material to patentability, and (2) did so with specific intent to mislead or deceive the PTO. Through that lens, the Court analyzed Mr. Bailey's representation regarding the "unintentionally" delayed maintenance fee paid for the '655 patent.

First, the Court found that Mr. Bailey did mispresent information to the PTO, and that the information was material to patentability. Mr. Bailey testified that he did not investigate why IMS let the '655 patent expire, yet certified to the PTO that IMS did not intend to let the patent expire. The court found this statement material to patentability because the patent would have expired for failing to pay the maintenance fees.

Second, the Court found that Mr. Bailey intended to deceive the PTO, even though the Court had no direct evidence to that effect. Absent direct evidence, courts can infer an intent to deceive the PTO when it is the single most reasonable inference that can be drawn from the available evidence. Here, the court found that the only reason for Mr. Bailey to have misrepresented that IMS's failure to pay the maintenance fee was unintentional was to cause the PTO to reinstate his newly acquired patent.

Strategy and Conclusion

This case shows the value of investigating the status and related issues for patents to be acquired, especially when they are being acquired in bankruptcy or other distressed sale conditions. In particular, it is helpful to investigate whether any of the patents have expired,

and if so, whether the patents can be reinstated without any showing about why they were abandoned. If it is necessary to show the patents were unintentionally abandoned, then further investigation is required to determine the reasons for abandonment and related facts and whether the patent is likely to be reinstated for those reasons.

Further Information

The *3D Medical* decision is available here: *https://tinyurl.com/lvs2htv*

PPG Industries, Inc. v. Valspar Sourcing, Inc.

7. Appeal of PTO Validity Decision Dismissed in Light of Patent Owner's Unilateral Covenant Not to Sue the Appellant

Adverse decisions by the U.S. Patent Office may not be appealed to a federal court unless the appellant meets constitutional standing requirements by demonstrating that it suffered actual or imminent threat of harm. In *PPG Industries, Inc. v. Valspar Sourcing, Inc.*, the Federal Circuit held that although a patent owner never directly threatened to assert two patents, a competitor had standing to appeal the PTO's validity decisions of the patents. But in light of the patent owner's covenant not to sue the competitor for infringing the patents, the court found the appeals moot and dismissed the competitor's appeals.

In order for a patent challenger to appeal a decision of the U.S. Patent Office's Patent Trials and Appeals Board (PTAB) rejecting that challenge to a patent's validity, the Federal Circuit requires the challenger to demonstrate that it meets the requirements of the U.S. Constitution to appear in federal court. Specifically, the challenger must show that it faces an actual or imminent injury. In *PPG Industries, Inc. v. Valspar Sourcing, Inc.*, the Federal Circuit found that a patent challenger faced with an adverse decision of the PTAB met these requirements even though the patent owner never directly threatened to assert the patents against the appellant. But the Federal Circuit went on to vacate the PTAB's decisions and dismiss the appeals, finding them moot in light of the patent owner's unilateral covenant not to sue the challenger or its customers for infringing the patents in question.

Background

PPG Industries appealed the PTAB's adverse decisions from reexamination of two Valspar patents related to commercial beverage can-interior coatings. Because standing is evaluated at the time an appeal is filed in federal court, Valspar argued that PPG could not establish any actual or imminent injury because Valspar never directly threatened to assert the patents in question against PPG.

Valspar waited until six months after PPG appealed the PTAB's decisions to bring a lawsuit accusing PPG of infringing four of its other closely-related patents. After PPG appealed the PTAB's validity decisions, Valspar also promised not to sue PPG or its customers for infringing the reexamined patents. Valspar argued that PPG's appeal was moot in light of its covenant not to sue.

PPG argued that the relevant time to analyze PPG's standing was when it appealed the PTAB's validity decisions, which was prior to Valspar's covenant not to sue and at a time when it faced a threat of imminent injury. Specifically, at that time, PPG had developed and commercially launched a beverage can-interior coating product. And while Valspar never directly threatened to assert the patents against PPG, it had threatened PPG's customers. Therefore, PPG argued, it had standing to appeal the PTAB's validity decisions in federal court to eliminate the potential risk they presented to PPG's R&D and commercial activities.

The *PPG* Decision

The Federal Circuit found that PPG demonstrated a particularized and concrete interest in the patents, and therefore did have standing to appeal the PTAB's validity decisions. PPG had a legitimate concern that the manufacture and sale of its can-interior coating product would draw an infringement action by Valspar. And PPG's concern proved valid since Valspar did subsequently file a patent infringement action against PPG, accusing it of infringing four other closely related patents.

Although it had standing to appeal the PTAB's validity decisions, however, the court went on to find that PPG's appeals were moot in light of Valspar's covenant not to sue PPG or its customers for infringing the patents at issue. Valspar's covenant not to sue PPG or its customers for infringing the patents in question eliminated the parties' legal interest in the outcome of the appeal. Therefore the court vacated the PTAB's ruling and dismissed the appeals.

Strategy and Conclusion

This case demonstrates that standing to appeal a PTAB validity decision may exist even if the patent owner does not directly threaten or accuse a party of infringement. But a patent owner can moot such a challenge on appeal by providing a covenant not to sue.

Further Information

The *PPG* opinion can be found here: *https://tinyurl.com/kr97ern*.

Wi-LAN USA, Inc. v. Ericsson, Inc.

8. Later-Acquired Patents Did Not Trigger Most-Favored-Licensee Provision

The Federal Circuit found a license agreement's "most-favored licensee" provision, that could be triggered by assertion of patents that were otherwise not addressed in the remainder of the license agreement, only applied to patents owned by the licensor at the time of the agreement and provided a future license only to such patents that triggered the provision.

Licensees sometimes attempt to obtain "most-favored-licensee" provisions to avoid the disadvantage of having a subsequent licensee get better terms or a greater scope of rights. Such a provision is intended to allow the

original licensee access to those more favorable terms or that greater scope of rights if certain conditions are later met.

In *Wi-LAN USA, Inc. v. Ericsson, Inc.,* the Federal Circuit considered whether the most-favored-licensee provision of a patent license agreement created a license under patents later acquired by the licensor that did not trigger the provision.

Background

Wi-LAN and Ericsson entered into an Agreement providing a license to certain identified patents, and a most-favored licensee provision (MFL) under which Wi-LAN granted Ericsson a non-exclusive license to "patents not already addressed under this Agreement and which are infringed or alleged to be infringed by" products using one of two wireless industry standards.

Subsequently, Wi-LAN sued Ericsson in the Southern District of Florida for infringing wireless communication patents that Wi-LAN acquired after the execution of the Agreement.

Ericsson moved for summary judgment against Wi-LAN, arguing that the MFL provision entitled it to a license under the patents subsequently acquired by Wi-LAN. The district court agreed with Ericsson and granted summary judgment in its favor. On appeal, however, the Federal Circuit disagreed with Ericsson and held that the MFL provision only applied to patents owned or controlled by Wi-LAN as of the effective date of the Agreement.

On remand to the district court, Ericsson continued to argue that the MFL provision granted it a license under the patents Wi-LAN subsequently acquired and asserted. Specifically, Ericsson argued that the Agreement's MFL provision was triggered by Wi-LAN's assertion of an unrelated patent that it owned at the time it executed the agreement with Ericsson against certain third parties based on products using the industry standard technology referenced in the MFL provision. Once triggered, Ericsson argued that the MFL entitled it to the terms of any future license not only for this unrelated patent but also to any other patents covering that industry standard technology including the patents Wi-LAN subsequently acquired and was asserting against Ericsson.

Applying the Federal Circuit's finding that the MFL provision only applied to patents owned or controlled by Wi-LAN as of the effective date of the Agreement, the district court found that the MFL provision did not apply to the newly-acquired patents being asserted by Wi-LAN against Ericsson.

The *Wi-LAN* Decision by the Federal Circuit

On appeal for the second time, the Federal Circuit interpreted the MFL provision as limited to the patent that triggered the MFL provision and that the MFL provision could only be triggered by assertion of patents owned or controlled by Wi-LAN at the time the Agreement was executed. The majority opinion found the MFL provision related to the "licensing of patents not already addressed" under the Agreement that are infringed or alleged to be infringed. It also concluded that the MFL provision discussed the rights extended to Ericsson in terms of those patents rather than products including the industry standard technology. Therefore, it rejected Ericsson's proposed interpretation that the MFL provision was based on the scope of rights granted on such products.

A concurring opinion offered a different interpretation, finding the MFL provision to be defined in terms of products that incorporate technology that meets one of the two recited industry standards, and not in terms of patents. Nonetheless, because the accused products do not use such technology, the concurring opinion agreed that the MFL provision did not apply to bar Wi-LAN's infringement suit.

Strategy and Conclusion

This case illustrates issues that may arise from most-favored licensee provisions and how the scope of future licenses is defined under those provisions.

Further Information

The *Wi-LAN* decision can be found here:
https://tinyurl.com/m7sehcr.

Crane Sec. Techs., Inc. v. Rolling Optics, AB

9. Legal Advice on Patent Strength and Enforceability May Be Shared During Acquisitions and Licensing Negotiations Without Waiving Attorney-Client Privilege

Under the "common-interest doctrine," attorney-client communications regarding patent strength, prosecution, licensing, and enforceability may remain privileged from discovery during litigation even when shared between companies involved in negotiating an exclusive patent license or acquisition of the patents.

Confidential attorney-client communications can be privileged and withheld from discovery unless they lose confidentiality by being disclosed to a third party. But under the "common-interest doctrine," such communications remain privileged from discovery if the third party shares a substantially identical interest in the purpose of the legal communication.

In the patent infringement litigation *Crane Sec. Techs., Inc. v. Rolling Optics*, *AB*, the patent owner, Crane, refused to produce several requested documents relating to the prosecution, licensing, and purchase of the asserted patents, claiming they were privileged attorney-client communications.

The accused infringer, Rolling Optics, asked the court to require Crane to produce the documents, arguing that the requested documents were not privileged because they involved communications with a third party, Nanoventions.

The District of Massachusetts court disagreed, finding that the documents were protected by the common-interest doctrine because the purpose of the

communications reflected by the documents was to seek and render legal advice regarding the strength and enforceability of the asserted patents.

Background

Nanoventions developed and patented technology on optical systems that project moving synthetic images used as an anti-counterfeiting feature on currency. Crane became interested in obtaining rights to Nanoventions' technology before the technology was patented and entered into a non-disclosure agreement with Nanoventions to explore obtaining rights to the technology and to facilitate legal advice concerning patenting the technology and patent prosecution. Once the patents issued, Crane and Nanoventions negotiated and entered a license agreement, making Crane the exclusive licensee.

Crane and Nanoventions later entered into a second non-disclosure agreement for the purpose of discussing the strength and enforceability of the patents and negotiating Crane's purchase of the patents. At that time, Crane's outside counsel engaged the financial services firm, Brown Brothers Harriman & Co., to provide legal advice to Crane regarding the purchase.

Crane subsequently purchased the patents by acquiring Visual Physics, a subsidiary of Nanoventions. During a patent litigation between Crane and Rolling Optics, Crane refused to produce several documents, arguing they were covered by the attorney-client privilege. Rolling Optics asked the court to require Crane to produce the documents that it withheld, including: (1) communications and documents exchanged between Crane and Nanoventions dated prior to the license agreement; (2) communications and documents exchanged between Crane and Nanoventions dated from the license agreement until the time Crane purchased the patents; and (3) communications between Crane and Brown Brothers.

The *Crane* Decision

The court noted that communications between parties negotiating an exclusive patent license are protected under the common-interest doctrine because they share a legal interest of the strength and enforceability of the patent, even though the communications also have a commercial purpose. The court also noted that an attorney may disclose confidential communications to a third party without waiving the attorney-client privilege if that third party's assistance is "nearly indispensable" in facilitating attorney-client communications.

Against this framework, the Court determined that the documents between Crane and Nanoventions dated prior to the license agreement were privileged and that the privilege was not waived. The Court recognized that most of the communications in question were between the inventor and Nanoventions' patent counsel, between the inventor and Crane's patent counsel, or between Nanoventions' patent counsel and Crane's patent counsel. Additionally, all the communications concerned legal advice relating to the prosecution of the patents. Thus, as a potential licensee and the patent owner, the parties shared a common legal interest of successfully prosecuting the patent applications. The court also found that Crane and Nanoventions entered into a mutual confidentiality agreement and were negotiating an exclusive license agreement, thus demonstrating that Crane and Nanoventions were working together to obtain strong patents, and had an expectation that their communications would remain confidential.

The Court also found that documents between Crane and Nanoventions dated from the license agreement until the time Crane purchased the patents were privileged because they involved seeking or discussing legal advice. The Court determined that the communications between Crane and Nanoventions in furtherance of Crane's purchase of the patents were protected under the common-interest doctrine because they concerned the strength and enforceability of the patents and were primarily for a legal purpose. Additionally, the Court noted that communications involving non-lawyers may still be protected under the common-interest doctrine if they seek or discuss legal advice. For example, legal advice sent by a legal assistant on behalf of an attorney was protected, as well as communications between the executives of Crane and Nanoventions regarding the legal advice obtained from Crane's attorney regarding the strength of the patents.

Lastly, the Court found that communications between Crane and Brown Brothers were privileged. In strict confidence, Crane's outside counsel communicated with Brown Brothers regarding the agreements necessary to accomplish the complex acquisition of Visual Physics in order to facilitate the provision of legal advice to Crane. The Court found that the parties intended the communications to be confidential, and the nature of the communication was legal, not business. Additionally, the court found that Brown Brother's role was necessary and nearly indispensable for Crane's outside counsel to render advice to Crane regarding significant corporate transactions like the purchase of Visual Physics.

Strategy and Conclusion

This case demonstrates how courts use the community-interest doctrine to protect documents provided to third parties containing legal advice on the strength and enforceability of patents sought to be licensed or acquired by those third parties.

Further Information

The *Crane* opinion can be found here: *https://tinyurl.com/k3b5xf9.*

Federal Maritime Commission v. South Carolina State Ports Authority

10. Sovereign Immunity May Allow Research Institutions at State Universities to Avoid Patent Validity Challenges at the Patent Office

The Patent Trial and Appeal Board determined that

a state's sovereign immunity provided by the Eleventh Amendment barred an inter partes review proceeding from being instituted against a research foundation of a state university that had not waived its sovereign immunity.

Covidien petitioned the Patent Office to review the validity of a patent owned by the University of Florida Research Foundation Inc. under the Patent Office's inter partes review procedures. The Patent Trial and Appeal Board dismissed the petitions, finding that the Research Foundation, as an arm of the State of Florida, could assert Florida's sovereign immunity defense.

Background

The University of Florida Research Foundation Inc. filed an action against Covidien LP in a Florida court alleging breach of a license contract between the parties involving a U.S. Patent. Covidien then separately filed three petitions before the Patent Trial and Appeal Board seeking inter partes review of the patent. The Research Foundation, arguing that it was an arm of the State of Florida, filed a motion to dismiss Covidien's petition on the basis of the Research Foundation's Eleventh Amendment sovereign immunity rights.

The *Covidien* Decision

In evaluating the Research Institute's claim to sovereign immunity, the Board began its analysis by explaining that the Supreme Court has broadly interpreted the sovereign immunity principle of the Eleventh Amendment to preclude states from being subject to certain adjudicative administrative proceedings. The Board then considered whether the Supreme Court's ruling in *Federal Maritime Commission v. South Carolina State Ports Authority*, that state sovereign immunity barred the adjudication of complaints filed by a private party against a non-consenting state, applied to inter partes review proceedings before the Patent Office. The Board concluded that sovereign immunity barred the institution of an inter partes review against a state that has not waived sovereign immunity, because inter partes review proceedings were sufficiently similar to civil litigation that the Framers of the Constitution would have thought the states possessed immunity from such proceedings.

The Board concluded that the Research Foundation qualified as an arm of the State of Florida that could assert sovereign immunity as a defense to Covidien's inter partes review petitions because it was a direct-support organization of the University of Florida responsible for the licensing patents and collecting royalties on its behalf and the State of Florida exercised sufficient control over the Research Foundation.

Strategy and Conclusion

This case illustrates how courts determine whether state instrumentalities like research institutions of state universities may avoid patent validity challenges under the inter partes review procedures at the Patent Office due to the Eleventh Amendment defense of state sovereign immunity.

Further Information

The *Covidien* decision can be found here: *https://tinyurl.com/kpo94nm.*

SCA Hygiene Products Aktiebolag v. First Quality Baby Products, LLC

11. No Laches Defense of "Unreasonable Delay" for Patent Infringement Suits Brought within Six-Year Limitation Period

The U.S. Supreme Court found that patent infringement claims brought within the six-year statute of limitations may not be barred for unreasonable delay under the equitable defense of laches.

In *SCA Hygiene Products Aktiebolag v. First Quality Baby Products, LLC*, the U.S. Supreme Court found that a laches defense for unreasonable delay in suing for patent infringement may not be used in cases filed within the six-year statute of limitations period for recovering damages. The Court considered its prior decision in *Petrella*, which limited the laches defense in copyright cases; the general principle that laches did not apply when Congress set forth a statute of limitations for a claim; and whether the federal courts had established a consensus that a different rule applies for patent cases.

Background

In 2003, SCA accused First Quality of patent infringement. First Quality responded that SCA's patent was invalid based on one of First Quality's own patents. When SCA did not respond further, First Quality proceeded to develop and market its products.

In 2004, without notifying First Quality, SCA filed a reexamination of its patent based on First Quality's patent, and the Patent Office confirmed SCA's claims as patentable in 2007.

In 2010, SCA sued First Quality for patent infringement. First Quality moved for summary judgment on laches and equitable estoppel, which the district court granted.

When SCA appealed the decision, the Federal Circuit heard the case en banc, affirmed the laches finding, and vacated the equitable estoppel finding.

SCA then asked the Supreme Court to review the laches holding.

The *SCA Hygiene* Decision

The Supreme Court reversed, holding that laches cannot be asserted as a defense against patent damages claims where the infringement occurred within the six-year statute of limitations period prescribed by U.S. law.

In reaching this conclusion, the Court compared the Patent Act's statute of limitations to the Copyright Act's statute of limitations that it previously discussed in its earlier decision in *Petrella* on the laches defense in a copyright case.

The Court explained that statutes of limitations are enactments by Congress that "speak directly to the is-

sue of timeliness" and that overriding those timeliness determinations by applying laches is "beyond the Judiciary's power." The Court further explained that laches serves as an equitable "gap-filling" doctrine, but "where there is a statute of limitations, there is no gap to fill" and laches cannot be invoked. The Court determined that, while not identical, the Patent invoked. The Court determined that, while not identical, the Patent Act's statute of limitations was sufficiently similar to the Copyright Act's that the reasoning of *Petrella* applies.

Next, the Court considered First Quality's attempts to distinguish *Petrella*. It rejected First Quality's argument that the Patent Act did not have a "true statute of limitations" because § 286 set a backward-looking period for recovering damages, rather than a forward-looking time bar from when the claim was discovered. The Court found this argument unpersuasive, noting that the Copyright Act's statute of limitations was "a three-year look-back limitations period" similar to the Patent Act. It also explained that, although some statutes of limitations include the "discovery rule" advocated by First Quality, "that is not a universal feature of statutes of limitations." Moreover, the Court explained that *Petrella* did not determine whether the Copyright Act includes a discovery rule and, therefore, *Petrella* could not be distinguished on that basis.

The Court addressed the position that the Patent Act codified the prior precedent of applying laches to damages claims by stating the general principle that laches cannot be invoked to bar a damages claim within the statute of limitations and then proceeding to determine whether there was a prior patent-specific rule to the contrary that would have been codified.

The Court then examined the historical case law to determine whether there was a judicial consensus that created a patent-specific rule, but found no such consensus. Looking to three different time periods, the Court determined that many of the cases relied on by the Federal Circuit and First Quality did not directly address the issue of laches in the damages context, but rather dealt with them for other equitable remedies.

For the cases that did hold laches was a viable defense to damages claims within the limitations period, the Court found there were "too few to establish a settled national consensus" to override the general rule. And, after the Patent Act was established, the handful of court of appeals cases finding laches was a viable defense "does not constitute a settled, uniform practice of applying laches to damages claims." As a result, the Court was not persuaded that Congress intended the Patent Act to incorporate a rule different from the general rule that laches does not apply to damages suffered within a statute of limitations period.

Finally, although the Court held that laches could not be applied, it observed that other doctrines, such as equitable estoppel, protect against patent owners who induce potential infringers to invest in infringing products prior to bringing suit.

Justice Breyer's Dissent

Justice Breyer would have held that laches could be applied within the damages period because laches is a gap-filling doctrine and "there remains a 'gap' to fill" in the Patent Act. He noted that the Patent Act does not set forth a period during which a patent owner can file its suit. Instead, according to Justice Breyer, a patent owner can sue any number of years after discovering the infringement, but can only recover for the previous six years of damages.

Justice Breyer determined that this creates a "gap" because a patent owner might know of potential infringement but can wait more than a decade while the accused infringer invests and becomes "locked-in" to the potentially-infringing technology. At that point, the patent owner could sue, recovering damages for the previous six years of infringement and then continue recovering until the patent expires. Justice Breyer found that this was the kind of "gap" and prejudicial delay that laches was intended to prevent.

Turning to the case law, Justice Breyer would have determined that there was a patent-specific rule that laches could bar damages claims within the statute of limitations period. He disagreed with the majority that the historical equity cases did not apply because most patent cases were brought in courts of equity before they were merged with law courts, and during that time there was a statute of limitations for damages that could be precluded by laches.

Moreover, he noted that "dozens" of cases from "every federal appeals court" determined that laches could be a defense against damages claims within the statute of limitations, which constituted a settled consensus that was incorporated into the Patent Act. Last, he found the majority's explanation that there were "too few" cases to establish a settled consensus unpersuasive, because the majority looked at isolated time periods rather than the body of case law as a whole. Justice Breyer likened the majority's ruling to being a "close" 9-0 loss in baseball because each inning was lost by only one run.

In summary, Justice Breyer dissented because he believed that the prior case law established a settled rule in patent cases.

Strategy and Conclusion

Patent owners will now not be pressed to file lawsuits for patent infringement based on a concern that they may be accused of unreasonable delay in asserting their claims. Whether this results in more settlements of claims without litigation or other consequences will remain to be seen.

Further information

The *SCA Hygiene* opinion can be found here: *https://tinyurl.com/lc5szay.*

Available at Social Science Research Network (SSRN): *https://ssrn.com/abstract=2961891.*

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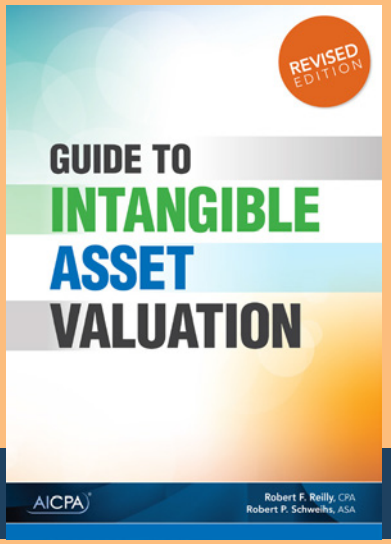

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