Taking an Independent Inventor’s Inventions to the Market - Challenges and Issues

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The road of the independent inventor in India is ridden with challenges. The lack of an ‘innovative ecosystem’, funding, knowledge and awareness, often leaves the inventor without the chance to realize his potential. There needs to be a combined effort from both the Government and the private sector to invest more resources to create an environment that is conducive for the inventor. The costs incurred by the inventor on his attempt to acquire a patent are all exorbitant and unreachable. Rural India is often considered as a hotbed of innovation, where the inhabitants do not wait for the market to respond to their demands, but find innovative methods to meet their needs. Unfortunately, these geniuses are not able to take their inventions to the market and reap their benefits, nor the people enjoy from their inventions. This article explores the urgent need to revamp the approach taken by both private and public sector in the face of autonomous inventors in India, in favour of positive action to exploit their future potential. Further, it elaborates on the patent due diligence process along with citing case studies to strengthen the argument for a change in approach taken both by and towards the independent inventor.

Keywords: Cost, independent inventor, innovation in India, patent due diligence, grass root inventions

The individual inventor is a dying breed. Apart from the many societal stereotypes that condemn the inventor as an eccentric and social outcast, there are numerous challenges faced by him. The fundamental challenge for an independent inventor in India is the lack of an innovation ecosystem in India. This problem is exacerbated by the lack of systemic inclination to invest resources for the growth of this field and lack of governmental intervention, leaving it ridden with problems such as lack of information and understanding of the patenting process, near absence of funds available for product development, etc. This article aims to elaborate on these challenges that the unaided inventor faces and needs to account for in his quest to protect and commercialize his intellectual property.

Unaffordable Costs: Application Procedure

Although the difference between an individual and a MNC is recognized and reflected in the statutory fees for filing a patent application in India, the cumulative costs for obtaining a patent in as many jurisdictions as possible and then subsequently maintaining it could easily mount to several lakhs of rupees and this does not even include patent attorney/agent fees. This is beyond the reach of most of the individual inventors. For example, in India, the basic costs for filing a patent application for a ‘natural person’ is Rs 1,000 (this excludes additional charges incurred with extra pages, claims, extensions etc.). This application cost is topped with a first examination fee ranging from Rs 2,500- 3,500. These are the costs incurred before the patent is granted in India. Once it is granted, the individual has to maintain the patent in the Register of patents and to do so the costs may range up to Rs 48,000 for the term of the patent.

For an inventor who wishes to seek protection of his inventions in multiple jurisdictions or at least in leading jurisdictions (such as US, EU and Japan) which offer him greatest protection and the biggest chance to commercialize/license his patent, he may do so by making individual filings in each of the interested countries on the same day as the Indian filing or file an international Patent Cooperation Treaty (PCT) application or Convention applications (under Paris Convention route) on the basis of his priority application in India to maximize protection in several jurisdictions. The costs for filing an International PCT

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application is approximately USD 1500, not to mention the search fees, prosecution related fees and eventual entry into the designated states. Recently the European Union leaders struck a deal to create a single unified patent which may help in reducing the costs that were incurred earlier. Previously, an inventor had to seek patent protection in individual EU countries which would cost on an average up to 20,000 Euro for each country.

In India, the patent application process is not only a very lengthy process, but also one that is rather complicated. The application in itself requires a great degree of techno-legal expertise. There are several requirements under the patent law which a patent application needs to comply with in order to proceed to issuance. First of all, the invention itself has to be considered a ‘patentable’ subject matter. Secondly, the invention has to be novel and non-obvious over the existing prior art or in other words has to disclose a ‘technical advance’ over the prior art. In addition, there is a written description requirement, the enablement requirement, the best mode requirement and so on and so forth. Clearly, an inventor who is not skilled in the art of patent drafting may not be able to understand and/or comply with these requirements. Hiring a patent attorney/agent therefore becomes compulsory. This is an expensive exercise globally and from the perspective of the grass root inventor who has limited access to finances, attorney costs may be equivalent to or more than the costs of creating the invention or the prototype itself. Thus, oftentimes, the inventor drops the entire prospect of filing for a patent application.

**Difficulties in Taking the Invention to the Market**

Even assuming that the inventor incurs the costs associated with obtaining the patent and is ultimately successful in obtaining a patent, merely having a patent in hand is in itself of no value to the inventor. To get the most out of his creation, he needs to commercialize the patent and the technology disclosed in the patent. He needs to create a business out of it. For this, the inventor needs access to capital, labour and skilled expertise to take his invention to the market. Depending on the technical area of the invention, product commercialization costs may run into several crores of rupees. Keeping in mind his limited financial capabilities, this may not be easy. His best bet may very well be to license this patent to a big player which has ready resources and expertise at its disposal.

On the other end of the spectrum, companies often show reluctance to invest in these proposals. This may be due to a variety of reasons. On one hand, big companies may doubt the genuineness of the inventor and the workability of the invention. On the other, individual inventors who suspect infringement of their patent by a company may though issue a cease and desist notice yet may stand a less chance to succeed in commercializing the invention, without a court order restraining the concerned company from utilizing such patent. The response to such a cease and desist letter is fairly standard: (i) that the patent is invalid and that (ii) the company is not infringing or utilizing the claimed invention in the patent.

Another big setback for an individual inventor in India would be the lack of technology focused venture funds who will provide seed money for the inventor. There are also not many intellectual property brokerage firms or government agencies which would serve as a platform for a willing licensor/licensee, assignor/assignee to meet and collaborate.

**What Needs to be done?: Expert Opinion**

There is no lack of inventions in India. Padmashree Dr Anil K Gupta, a pioneer in rural innovation, describes the Indian predicament as ‘a desertified ecosystem’. He stresses on the urgent need to set up angel funds for the sole benefit of the independent inventors. Dr Gupta criticizes the National Innovation Council for not setting up product development or testing and calibration funds, despite his repeated efforts and suggestions in relations to the same. With the exception of Small Industries Development Bank of India (SIDBI), there are no other sources of funding for this sector. The Planning Commission must adopt a more sympathetic approach towards the grass root inventor. Institutions such as the Department of Science and Technology (DST) should allocate more of their institutional resources to this sector. Dr Gupta further suggested setting up of knowledge networks, where an inventor can access multiple expertise and counseling from different industrial sectors at one doorstep. This would reduce his transactional cost and thus would increase the utility of his invention. ‘Everyone is too comfortable in their commercial position; they lack hunger’, argues Dr Gupta. Lawyers, patent agents and investors all need to be incentivized to change their attitudes. Dr Gupta suggested offering them an equity share in the patent as well as subsidizing venture capital funds that are invested in high risk start up innovations.
At the National Institute for Intellectual Property Management (NIIPM), Nagpur, a representative argued, ‘The inventor has brains, not money’. NIIPM offers a beginners program course of two to five days for a fee of Rs 1,000 per day. This course introduces the inventor to basics of intellectual property law so that they can draft their patent application themselves. Further, there is a running Patent Information System which archives registered patents from across the world. The inventor thus can conduct a prior art search to analyse the novelty of his invention.

The National Innovation Foundation (NIF) and affiliated organizations such as Honeybee Network and Grassroots Innovation Augmentation Network (GIAN) regularly organize Shodh Yatras, which are expeditions that seek to identify innovations in rural India and advise innovators through every step of the process viz. from filing application to marketing the finished product. The DST has set up a Patent Facility Centre which offers patent search facilities through Indian and International databases. It also hires a panel of attorneys drawn from all over the country to help in patenting activities, along with experts to conduct awareness workshops. ASSOCHAM, a body that provides a platform between industry and Government dialogue, in collaboration with the Government organizes workshops dealing with awareness and training on various patent related aspects especially focusing on individual inventors / SMEs in various cities of the country, not limiting itself to the main metropolitan areas. Such efforts are noble and therefore should be complemented as they are the steps definitely in the right direction and have the potential to mitigate the root of the problem which is the quintessential lack of awareness and the poor innovation ecosystem in India.

Efforts Worldwide: Independent Inventor as an Asset

On the world platform, at the United States Patent and Trademark Office (USPTO), there is a specialized section devoted to independent inventors. This cell provides a broad range of material covering all aspects of the patent process. Further, the USPTO has bimonthly publications such as the ‘Inventors Eye’ and ‘Inventors Beware’ that publish concerns exclusively associated with the independent inventor community. Evidently, the independent inventor community is extremely active and unified, and often lobbies with lawmakers and launches grass root campaigns. Inventors are encouraged to file their applications themselves (Pro Se). The America Invents Act encourages the USPTO to ‘work with and support intellectual property law associations across the country in establishment of pro bono programs designed to assist financially under sourced independent inventors and small businesses.’ The first of such a program was launched in June 2011 and five more are to be opened in the current year, 2012. There is also a national pro bono Task Force which includes the majority of IP law associations, USPTO members and others. They assist in creating and designing new programs to encourage and nurture inventors in the country so that, ‘no worthy innovation is left undiscovered’.

The United Kingdom’s Intellectual Property Office (IPO) is not far behind and it recently employed schemes such as a new online business advisor training tool that gives information needed by agents so that they can help businesses and independent inventors to protect the value of their innovations. Also, UK offers free intellectual property audits to small and medium sized firms to help protect their intellectual property and grow their business. Existing mediation and dispute resolution schemes are encouraged to avoid potentially costly legal cases. In the words of Baroness Wilcox, ‘The intellectual property of small and medium sized businesses is vital to their future economic growth and success. Their innovative ideas and creations can be worth billions of pounds so it is essential that we provide them with the support they need to protect and enforce their rights.’ The IPO is also in the process of producing plans to improve the accessibility of the IP system to smaller companies.

Diligence before Commercialization

In order to have strong footing on the ground before commercializing an invention, an inventor should consider conducting some diligence. Patent due diligence is an assessment tool that exposes the strengths and weaknesses of a patent portfolio. The reason why strengths and weaknesses are both part of such an exercise is because a properly conducted patent due diligence reflects light on one or more of timelines – adhered or missed, strength of patent portfolio – scope of protection, remaining term of patents, licenses granted / taken, feasibility of working out the invention, etc. The study is thus elaborate and requires highly experienced personnel who are not only well-versed with business risks but also technology to interpret and analyse the patent portfolio. However, patent portfolio of SMEs or
individuals is small as opposed to big players and therefore due diligence of a small portfolio may not be a costly proposition while strongly recommended as it helps in ascertaining the individual’s position before entering negotiations with various parties.

The course that inventors can take to commercialize their patents can be varied – some may wish to build a business around the products and secure their innovations in the form of patents, others may devise a business model that is watertight and customized to implement their innovations without any patent protection, yet others may publish their innovations as for them publicity considerations may outweigh economic considerations or transfer such knowledge to organizations with need and resources for effective implementation of their innovations. While the non-IP focused approaches may yield short term benefits and returns, there is not much that the individual inventor / SME can do in case of spurious copying of the technology. In an exemplary case study demonstrating the above point, Dr Milind V Rane developed a Matrix Heat Recovery Unit (MHRU) as a freelance consultant. The said unit was designed to recover heat in the form of steam, hot water or hot thermic fluid from hot gases and/or vapours from engines, gensets, boilers or furnaces. The inventive step of the invention was the combination of at least two sets of heat transfer passages encapsulated in a conducting matrix, wherein one of the sets carries hot gases and the heat recovery fluid passes through the other set.\(^1\) Dr Rane discussed his invention with M/s Unidyne Energy Environment Systems Pvt Ltd based in Mumbai operating in same technology space. After successful demonstration, Dr Rane signed a Memorandum of Understanding (MoU) with Unidyne to manufacture and sell the above machines. In addition, the parties agreed that an exclusive license was granted to Unidyne till the time royalty payments were made as per the schedule and also patent filing costs would be borne by the company though the patent would be in the name of Dr Rane. Dr Rane filed a patent application for the invention in India in 1999 and obtained a patent grant of the same. However, given that Dr Rane had not filed his patent application outside India, he realized that the benefits he can reap are limited and that he cannot prevent copying of his invention in other jurisdictions. To ensure that he does not land in any similar situation, Dr Rane filed his subsequent patent applications in all leading jurisdictions of his interest and illustrated with some initial diligence taken by an inventor, IP can be a necessary and effective tool for enforcing ones rights.

So what can be inferred from this is, any innovation which has the potential of translating into a niche product and meets demand of the market should after well research – prior art, market and infrastructure – be protected as patents. Seeking a patent for an invention is in itself not an easy affair. From finding a good patent lawyer to managing costs involved to running around is a cumbersome task for an individual or an SME. But the advantages one gets in the form of patent rights massage out those concerns.

As a subsequent step to owning a patent or a patent portfolio, commercialization follows. An SME or individual seeking to commercialize the invention for which patents are sought may do so in a number of ways – work the invention himself, assign his rights or license his rights. In the former case, the inventor may work the invention using his own working capital or seek angel funding. Whether it is angel funding or assignment or license, any entity interested in the patent portfolio would conduct a due diligence to understand the portfolio’s strength or weakness. In all fairness, it is advisable that even the patentee has a due diligence report to negotiate his position better.

Some of the must-do investigations in a typical due diligence report are the following:

1. **Purpose of due diligence** – it is important to clearly set the purpose of the exercise. Whether the due diligence is conducted by an inventor / SME or interested third party, unless the purpose of exercise is clearly defined, the end product may be unproductive and the exercise futile.

2. **List of all patent publications (granted / pending)** – Information on all patent publications whether granted or pending should be provided. Also, if the patent publications have been filed outside India, a list of such publications with bibliographic details should be provided. This detail is important for both the parties as it is important to know the number of patent publications held, jurisdictions in which rights have been applied for, remaining term of granted patent and the like before any negotiations are commenced. While the SME / inventor has a number to support their case, the interested party conducts due diligence based upon such publications.
Status of patent publications – The status should include whether the application is a pending publication, pending examination or granted. In addition, if the patent is granted, the report should mention whether renewal fee is paid or the date on which it is due. This in my experience is one area where most of the SMEs / inventors are in for a surprise. More so, when patent filings are in multiple countries, as different countries have different timelines for renewal fee payment, procedural timelines like filing of examination requests, sealing fees etc. In case there is any discrepancy, the SMEs / inventors can take steps to rectify the same and negotiate with an enforceable portfolio in hand. With regards to this information being vital for the interested party, they at the initial stage have a clear picture of patents in force / pending / lapsed rather than figuring this out at valuation stage or worse after having paid for something that does not exist.

Ownership – In the list, against each publication, name of assignee should be reflected. In case the patent is reassigned for example, from an inventor to a company or intra-company or inter-company, etc, such assignments should be mentioned. Further, a check in the database of the respective country should be conducted to ascertain that such change is duly recorded. It is a common mistake made by SMEs/inventors to not give much regard to this information. In fact, having this and above information meticulously maintained adds to the strength of the patent portfolio and provides an edge to the party during negotiation. For third parties, it is imperative to know this as a patent whose owner is reflected as the inventor / SME is actually reassigned to another company. Such mistakes can cost heavily to the third parties.

List of invention disclosures in pipeline – It is always an encouraging sign for an interested party to invest in a portfolio that is being continuously upgraded. In addition to the patent filings, a list of invention disclosures that are considered for seeking patent protection should be included in the analysis under non-disclosure agreements. This step is especially valuable for inventors / SMEs and projects a positive image of the organization about their innovative capabilities. From a third parties perspective, it may translate to acquiring a patent portfolio that can be worked on its own, does not require licenses from other patent holders or fairly evolving.

Agreements – Given that small organizations tend to file patent applications in the name of inventors (due to various benefits including costs), it is important to check agreements that the organization has in place with respect to IP like confidentiality, non-disclosure etc. Attention should be paid on the ownership provisions and provisions relating to royalty etc in case of commercialization by the company.

Inventorship – Typically, small setups due to their size and low awareness of IP issues tend to cause harm to them by discussing the invention with third parties, especially friends. As part of due diligence, the team of innovators should be probed in detail to understand the extent and date on which the invention has been disclosed to the third party, if any. This is vital as there may be chances of third party claiming rights or anyone opposing it at a later stage.

Processes – An inspection of the processes relating to innovation identification to patent filings, namely, from conception to commercialization should be conducted. This provides an insight to the seriousness given to IP and gaps that exist in the entire process. This would work tremendously in favour of inventor / SME as it illustrates that all steps that are required to either protect the IP or enforce the IP have been performed.

Validity – For the patent publications that are alive / maintained, a validity search is advisable. On one hand, the SME / inventor may negotiate a better deal with patent validity report in hand, the third party can rest on the fact that it is not investing in something that should not have been awarded a patent for.

Licenses – For each of the patent publications, inbound / outbound licenses should be specified along with details of the licensor/licensee. Further, the license agreements should be vetted to understand the extent of rights imparted to the licensee or rights gained.

Litigation – Any pending patent litigation or a threat thereof should be taken into account.

Ease of workability – For any party which is interested in acquiring the patent portfolio, an important consideration is whether the patent can be worked without taking license from other right
holders. In case to work an invention licenses from other patent holders are required or a number of alternates are existing in the market, valuation of such patents is low and such information is vital at the time of negotiation.

While the above pointers are advisable in a due diligence exercise, the report can be customized to meet the objectives specified. In fact, if a patent relates to a niche technology or discloses invention that addresses need of a market, if duly maintained, it can fetch great returns to the inventor. In one of such instance, Gordon Gould researched upon a technology known as laser (light amplification by stimulated emission of radiation). While conducting his research, he maintained a lab-book that recorded his research. The lab-book dated back to 1957. However, two renowned scientists, Charles Townes and Arthur Schawlow, who were also working on laser research filed for US patent for similar technology. In 1959, Gould filed a patent application on laser technology by then the two scientists had already applied for a patent. The two scientists were granted a patent by the USPTO. Gould along with Technical Research Group (TRG) litigated for his rights as the first inventor of the technology. After fighting for decades, he was able to prove that the said patent was too general and did not illustrate the invention. Finally, Gould received a patent granted for laser technology, a technology that touches our lives significantly.

Another exemplary patent success illustration is a leading telecommunication technology – frequency hopping – invented by Hollywood actress, Hedy Lamarr and composer George Antheil. They filed an application for a patent and received a US Patent No. 2,292,387 for their invention. The idea ignited their minds while synchronizing multiple pianos and thought that if radio waves are synchronized properly; they could be used to transmit information. To develop this further and procure information on patenting, they approached National Inventor’s Council (NIC) for advice which helped them develop the idea to an invention and apply for patent. Though they made no money while the patent was alive, however, Wi-LAN Inc, for an undisclosed amount of stock, acquired a 49 percent claim to the patent from Lamarr in 1999. In addition to this, Lamarr received a Pioneer Award from the Electronic Frontier Foundation in 1997 for her contributions to the field of spread-spectrum technology.

This case is especially intriguing as it illustrates that some initial foresight and diligence by an inventor can reward him to no extent. Yet another success story worth pondering is the photocopying patent success. Chester Carlson, a physics graduate, had invented a photocopying machine as an alternative to making multiple copies of documents manually. He filed a patent application in US in the year 1939 and was awarded a patent in 1942. He approached giants like IBM, GE etc for manufacturing such machines. However, his attempts were unsuccessful. Carlson did not give up and continued his efforts which finally crystallized to Haloid Company, renamed later as Xerox, taking license from him to make the machine.

Conclusion
The examples cited above corroborate the fact that if an invention has the potential to address / simplify an existing problem, then even though an individual or SME seeks patent protection, it is bound to reap benefits for the patent applicant. Certainly, the road may be rough and long for the patent applicant being an SME / inventor but is certain to fetch returns, and at the end may reaffirm an old saying – ‘All’s well that ends well’.

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References