

Exploring the Possibilities of Utility Models Patent Regime for Grassroots Innovations in India

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Patents are considered to be the most authoritative rights which incentivise the knowledge producer. However, the current patent system is criticised by many scholars for favouring the formal sector industries of the economy having a large market and resources for commercialising their innovations. Today there are many innovations which emerge from the informal economies of the low-income nations like India which consists mostly of imitation and adaptation of the existing technologies. Many of these innovations fall short of the strict patentability and non-obviousness criteria. Further, the costs associated with applying for the patents discourage many innovators from the informal sector to make use of these rights. The 'grassroots' innovations in India represent the informal sector innovations which have been developed by poor people at grassroots to provide solutions for their own problems. With a view to promote and foster grassroots innovations, this paper studies the potential of 'utility models' as a tool to protect the innovations in the informal economy of India. By analysing the patenting data of grassroots innovations in India and conducting interviews with the grassroots innovators, the study finds that the existing IPR regime in India fails to protect all the incremental and minor innovations emerging from its informal economy.

Keywords: Patents, utility models, informal sector innovations, grassroots innovations, Paris Convention, TRIPS Agreement, *Jugaad*, International Labour Organisation, Malaysian Foundation for Innovation, National Innovation Foundation, National IPR Policy

Intellectual property rights (IPR) are considered to be the major drivers of innovation in an industrialised world. The normative justifications for providing patents and other forms of IPR can be traced in the property theories of various philosophers like John Locke's theory of Ownership, Hegel's theory of Personality, and Utilitarianism theory of Bentham and J.S. Mill.¹ The proposition put forth by the advocates of IPR is that it encourages innovation and thus contributes towards economic progress of any nation. New ideas and knowledge are considered to be a source of economic growth and thus this knowledge should be protected. The means proposed to protect these innovations were in the form of property rights like patents and copyrights. These property rights give the knowledge producer a monopoly over their ideas for a limited period of time. The rationales and theories which propose to protect the new knowledge can be divided as market creation theory, patents as an incentive and motivation theory, entrepreneurial development theory, and information disclosure

theory.² It is argued that new knowledge if not protected, will lead to imitation and ultimately decrease the potential benefits a knowledge producer may earn over his creation. This will subsequently decrease their motivation in engaging in innovative activities.³

It can be argued that strong patent laws triggered innovations in the formal sector industries like pharmaceuticals, biotechnology, and chemicals. The firms in these industries invested their resources in R&D and exploited the market once the innovations were successful. This led them to recover all their costs and resources which were invested in R&D. Today informal sector of many low-income nations are also considered to be knowledge reservoirs as major economic activities are recorded there. The innovations which are generated in the informal sector are quite distinct from the formal sector in many ways.⁴ The informal sector innovations are done under a resource constraint condition and dependent upon the locally available resources.⁵ The informal sector innovations are not driven by R&D and consist of improvisations and adaptations of the existing

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technology. Thus, most of these innovations do not meet all the criteria for patentability under the current patent regime. Patent systems are often criticised with issues related to access to medicines⁶, appropriation of knowledge,⁷ rights of farmers⁸ but one issue in which patents are seldom critiqued is the access to the patent system itself which engenders inequity by preventing small and informal innovators from utilizing the benefits which are offered by these rights. It was assumed that IPR will motivate the individual innovators but somehow it was unable to do so.⁹ IPRs led to an increase in corporate research and the number of patents assigned to small and individual innovators decreased because they were either driven out of the race or absorbed into corporate research. Invention and innovation became more of a corporate affair and the power of research shifted from the individual innovators to large R&D units of corporations.¹⁰ The existing patent regimes are used for stalling rather than innovating new products.¹¹ Even if the small firms and innovators manage to patent their innovations the value derived from these rights are much less for them as compared to the bigger entities.¹²

The argument of this paper is that to order to provide certain legal protection in the form of property rights to individual and small innovators especially from the informal sector of the economy, low-income nations should consider devising an alternative system of property rights which can serve the purpose of these innovations. 'Utility models' is one such protection system which exists in many countries together with the standard patent regime to encourage innovations by providing them short-term protection, waiving off the requirement of non-obviousness, and simpler and cheaper procedure for applications.¹³ The utility models can be sustainable for innovations in the market economy and at the same time also help to identify the problems existing in the patent system.¹⁴

The paper begins by discussing about the characteristics and nature of the innovations in the informal sector of India and how they are different from the innovations which are generated in the formal sector of the economy. The paper later discusses the 'utility models' protection system which is implemented in many nations of the world to foster and protect innovations which do not meet the stricter inventive step requirements of the patent laws. The paper then proceeds towards the current patenting trends of the 'grassroots' innovations in India and

discusses whether the utility models can provide development, diffusion and protection of these innovations in the market.

Informal Sector and 'Grassroot' Innovations in India

The concept of the informal sector was first conceived by the British anthropologist Keith Hart.¹⁵ Since then the informal economy got huge attention from the scholars because of its vast size and impact. In the case of India, the International Labour Organisation (ILO) data revealed that around 80.9 per cent of the employment is in the informal sector and only 6.5 per cent in the formal sector.¹⁶ The informal economy produces about two – thirds of the country's GDP and has shown immense improvements in terms of productivity, wages and capital accumulation. The informal economy is very diverse and so are the knowledge sources within this economy which shapes the activities of the sector and the innovations within them. Innovations in the informal sector are not driven by R&D and are done under constraint conditions. Most of the innovations are imitation, improvisation and adaptation of the existing technologies.⁵ Due to lack of proper metrics for measuring these innovations, they are invisible to the outside world. It is also important to understand the features of innovations in the informal sector. The informal sector comprises of firms and entrepreneurs who have simple technologies and low capital. There are more of imitation and adaptation of technologies in the informal sector than original invention. The innovations in the informal sector are based on traditional knowledge and studies reveal that communities are agents of innovations rather than the individual innovator.⁵

The grassroots innovation movement was started in the 1990s under the aegis of the Honey Bee Network, an informal network of organisations and individuals comprising of farmers, innovators, scholars, entrepreneurs and policy makers in India.¹⁷ In the year 2001, National Innovation Foundation (NIF) was set up by the government of India to provide all kinds of institutional support to 'grassroots' innovations so that these innovations can be properly diffused in the market.

Grassroots innovations are defined as the bottom up innovations which are practical solutions to the problems of the people at grassroots.¹⁸ These innovations represent incremental and minor changes to the existing technologies. The innovators at the

grassroots sometimes make use of traditional knowledge of their community and the locally available resources to develop these innovations.⁴ The innovators, at the initial stage, do not receive any support from formal sector institutions for the development of these innovations. They have bare minimum fund and financial resources. Thus, the innovators work outside the realms of the formal sector, self-employed, finding and developing practical solutions to their own problems.¹⁹ Grassroots innovations are associated with sustainable livelihoods. The innovators at the grassroots are not driven by commercial motives rather they innovate to solve the problems faced by themselves, their families and communities.²⁰ The grassroots innovations are thus necessity led and scarcity induced which enhances the livelihood of the grassroots innovators.²¹

There have been many authors who have developed models for pro-poor innovated products and services in the informal sector of the economy.²² These innovative models are often referred in the academic literature as 'bottom of pyramid innovations', 'below the radar innovations', and 'emergent' innovations. Academic literature has also used words like frugal and *jugaad* to refer to these innovations.²³ However, all these are different in features from the grassroots innovations. *Jugaads* are quick fix solutions which do not have any long-term scalability and are neither sustainable.²² *Jugaad* has been defined as an 'innovative fix' and 'impoverished solutions' which is followed by Indians in their everyday lifestyle.²⁴ This labelling of grassroots innovations as '*jugaad*' is criticised by various scholars as it ignores the cultural context of these innovations and the use of traditional knowledge practices on one hand and dilutes the importance of the innovations by capturing only a small niche of innovations in the informal sector on the other hand.²⁵ Terms like frugal innovations, the bottom of pyramid innovations, below the radar innovations, on the other hand, are characterised as innovations which have world-class quality, scalability, affordable price and accessibility.²⁶ These innovations involve firms and companies in the formal sector of the economy wherein they develop products using lesser resources. Hence, frugal innovations can be defined as low cost and high-quality products which aim at emerging markets and create value for the underserved people. Here, the people at grassroots are the target consumers of the large corporations and businesses

who develop and conceive the innovations to create markets in the low-income economies of the world.¹⁷ Grassroots innovations, on the other hand, are conceived and developed by the people at the grassroots for themselves, and not for profit or mass consumption. Gupta refers it as 'by, for and at' model of innovation.²⁷ These innovations are not of high quality, but they are certainly cost-efficient, affordable and frugal in terms of resources used.²⁸

Utility Models: An alternative System of Intellectual Property Protection

The rationale for utility models is related to the argument that patents do not provide legal rights to all the innovations and discoveries which fall short of the inventive step requirements. The patent system provides protection to the innovations which fulfil certain criteria. In such a case the question is whether to leave all the innovations or discoveries which do not fulfil the given criteria unprotected or seek an alternative means of protection for these innovations. There are lesser forms of patents which exist in many countries of the world together with the patents. They are known by different names and in varying formats. 'Utility models' is a generic term which refers to such types of alternate intellectual property protections. Individually these types of patent systems are known as 'innovation patent' in Australia, 'utility innovation' in Malaysia, 'utility certificate' in France and 'short term patent' in Belgium.¹⁴ The utility models are known by different names in different countries, however, have some similar features like short-term protection, waiving off of the requirement of non-obviousness and inventive step, and simpler application procedure as compared to patents.²⁹ There are no substantive examination and very less maintenance and renewal fees than patents. There are some major points of difference too among the various utility models which are adopted in different countries. These are divided as the subject matter under protection, granting procedure, and the duration of protection made available.

WIPO defines utility models as "an exclusive right granted for an invention, which allows the right holder to prevent others from commercially using the protected invention, without his authorization, for a limited period. In its basic definition, which may vary from one country (where such protection is available) to another, a utility model is similar to a patent. In fact, utility models are sometimes referred to as "petty

patents" or "innovation patents."³⁰ Article 1(2) of the Paris Convention recognises utility models as an object of industrial property together with patents. The TRIPS Agreement, on the other hand, requires all the countries to maintain minimum substantive standards for all the intellectual property regimes but do not explicitly mention any second-tier patent system, leaving it on the member countries to formulate it for themselves. Article 2(1) of TRIPS, however, allows the member nations to adopt more extensive protection which is required in their law and comply with Article 1(2) of Paris Convention.³¹

There are about 70 countries in the world which have some form of utility models protection for the innovations.³¹ Policy makers, jurists and legislators have often referred to this model as a second-tier patent system. The supporters of this system consider it relatively important for the nations which are seeking to develop their technological capacities. Boztosun has discussed the various pros and cons for such alternate patent system in his paper.³² He argues that such patent systems can contribute to the creation and promotion of domestic and indigenous technology base and also help to familiarise the local industry with intellectual property rights. These rights can also help promoting research in the form of simple, practical and useful solutions. The knowledge archive can be expanded to the potential innovators through disclosure and also to enhance diffusion of such innovations. The alternate system of the patent can help to ease the burden on patent authorities which are already flooded with applications. Some points put forth as to why such kind of utility models can be good for innovative developing countries is also available in the literature.³³ The first is that this form of protection may allow artisans to protect their innovations which do not meet the stricter patentability criteria of novelty and inventive step of the patent law. Second, the role of small innovators and local artisans can be enlarged in economic development and help them to stay in the business as they are threatened by new and sophisticated technologies. Third, they also act as a spur to an enhanced level of innovation. Fourthly, these are much easier and cheaper to acquire than the patents. Last, they might also become a database on all the innovation activity and also the experience in the management of technology. The availability of utility models in South East Asian nations along with weak IPRs encouraged technological learning and allowed local absorption of foreign innovations by

encouraging adaptations and imitation of technology by local firms.¹⁴

The utility models are said to be advantageous for the small and medium enterprises (SMEs) in the less industrialised nations of the world. This is because SMEs have a presence in the industries where copying of ideas and designs is prevalent and cumulative innovation is the law. In less industrialised nations of the world, SMEs account for more of breakthrough innovations and incremental innovations than MNCs and hence the need to gauge the types of inventions produced by them and whether the current patent regime is suitable for these innovations is very necessary. Most of the innovations which emerge from the informal sector and SMEs are incremental innovations which have less degree of inventiveness and hence utility models maybe highly useful for the protection of such innovations. The cost factor is also one reason as to why many innovators from SMEs inhibit using the patent systems. The second-tier patent systems like utility models are ideal for them in terms of costs. The coexistence of utility models along with patents can also provide an opportunity to identify the problems present in the patent systems and provide cure against the ills of the monopoly granted by intellectual property rights on new technology.¹³

The risks associated with the utility models are no less. There are certain problems too associated with these models which could be more prone to abuse than the patent systems. Since the model recommends a lowering of criteria and no appropriate patent examination system in place, utility models may produce excessive patent litigations.³⁴ Another risk associated with this model is the inappropriate use of such models by big market players as a means to avoid the strict patentability criteria of the patent system and hence make the SMEs hard to compete. It is also argued that an attractive utility model which offers the same protection like patents can lure the innovators towards incremental innovations and thus deter researches which lead to major breakthroughs. Hence, the utility models systems needs to be properly enforced to prevent these undesired consequences. The basic difference between utility models and patent system is presented in Table 1.

Utility Models in Different Countries: A Brief Analysis

Germany is one of the first nations to pass a law on the utility models and has gained immense popularity

Table 1 — Difference between patents and utility models

Basis of difference	Patent system	Utility models
Cost	Cost to obtain and maintain patent is high	Cost to obtain and maintain a patent under utility model is cheaper
Subject matter	Both products and processes	Only products; and mainly technical and mechanical innovations
Examination procedure	Substantive examination is required	No examination required (in some countries required for enforcing infringements)
Novelty	Required	Required
Level of inventiveness	High level of inventiveness required; Only new and substantial improvement of inventions can be protected	Low level of inventiveness required, all marginal improvements of inventions can be protected
Time to grant	Time consuming, at least 7-10 years (in case of India)	Granted within 6-12 months in all the countries following utility models
Term of protection	20 years from the time of grant	7 – 15 years

Source: Own compilation

among the innovators there. The rationale was to provide a cheap and fast tool for protecting the incremental and small scale innovations from the SMEs while at the same time also releasing the Patent Office from the burden of examining patent applications.³⁵ The patent statistics reveals that today, nearly half the inventors file patents and Utility Models simultaneously in Germany for their inventions just in case the corresponding patent applications failed. Though statistical data on utility model protection in Germany shows that there is a continuous decline of applications for the utility models, this system is an integral part of the German patent regime.³⁶ The second-tier patent seems to function more as a strategic tool for protecting innovations until a patent has been granted.

Australia is one of the leading nations of the world that introduced a second-tier patent system to supplement its existing patent regime. The utility models in Australia are known as ‘innovation patents’ and the current Australian patent system provides protection for both standard and the ‘innovation’ patents.³⁷ The patent statistics of Australia reveals that there is a gradual increase in both standard and innovation patent applications since 2001.³⁸ A vast majority of the innovations patents in Australia are granted to Australian applicants and only 1 out of 6 innovation patents are granted to foreign applicants. The innovation patent system in Australia has been used by less knowledge-intensive industries and SMEs and has served the interests of the domestic innovators.³¹ Nevertheless, there have also been concerns over the abuses of the innovation patent system. One of the primary concerns is that some applicants use this system for tactical purposes rather than for protecting small or lower level inventions.

Japan passed a law for utility models in 1905 to complement the patent system. The model was considered perfect for the SMEs in the country but since the 1980s there were considerable decline in filing the utility models.³⁹ The Japanese government then amended the law and decreased the protection term. The legal uncertainty caused by this rule of no examinations made the utility models less attractive for business and many firms were not happy with the shorter period of protection. The decline in number of applications for utility models in Japan since the 1980s is also attributed to its innovation culture that focused on incremental innovations till the 1980s that later reversed to more radical innovations.

China provides a protection of 5 – 10 years for patents on utility models. In China from 1994 to 2003 about two – fifths of the total patent applications were utility models. Scholars have argued that utility models system in China has played an encouraging role in fostering innovations and promoting the development of S&T.⁴⁰ The utility models patent system is very popular among the domestic users in general and individual innovators in particular in securing protection for their investments.³⁹ It is also to be noted that utility models were granted to the local inventors in China for patented inventions which were granted overseas. One explanation of this trend is that utility models have been put in good use by the small and local enterprises. Another way to explain this trend is that counterfeiters have also made use of this law to protect the modified version of their innovations. This resulted in behaviour where the utility models owner threatened the true inventors with legal action for either beginning or expanding their commercial activities in China. This makes a strong case for the universal novelty to be applied

while granting of utility models. There have also been concerns over the quantity versus quality discrepancy in the area of patents. It is argued that the system has produced huge numbers of useless and worthless rights.³⁵ Moreover, as patent applications and grants increased in China, the requests for invalidation and re-examination also increased. It is estimated that 95 percent of cases for invalidation are filed for patent rights for utility models and more than 60 percent of these requests have ended in the invalidation of the granted right.³⁵

Malaysia has a two-tier patent system under which a utility model can be granted if innovation is new and capable of industrial application. There are 1222 applications for utility models between 1986 and 2003. It has been observed that from the applications for utility models between the years 1999 and 2003, 65.8 percent applications came from individual innovators while rest came from companies and institutions. Boztosun writes that the application statistics of the same time period for the regular patents tells that only 3.8 percent came from individuals and 96.2 percent came from companies.¹⁴ The author concludes that though these statistics might suggest that for individual inventor utility models is more accessible than the patent system, but the number of applications from individual inventor for utility models is substantially lower which was 329 compared to the number of patent applications from individual inventors which were 1102. It is argued that though the utility models system seems to have a place in the patent system of the country but it does not offer any cheap or quick alternative to the patent protection. The reduced costs of obtaining utility models and the lower thresholds for protection may be attractive but the long examination period and limitation to one claim only makes it quite unattractive in practice.⁴¹ Taiwan, Province of China, has made use of utility models applications heavily as the 98 percent of businesses are SMEs with a diverse R&D capability. Hence it is argued that the innovators prefer this type of patent as they are rapidly granted.

The empirical evidences and experiences of the countries having a second-tier protection system for patents suggests that there are pros and cons in this system as well. The rationale for a second-tier protection is to provide an IP which is relatively inexpensive, quick and easy to obtain for the innovations which have low inventiveness or commercial life. Most individual innovators and SMEs have limited financial resources they are unable

to invest their time and money in IPR protection. Hence, the utility models should be designed in such a way that companies and corporations, as well as individual innovators, can take advantage of the system for their minor and incremental innovations.

Grassroots Innovations in Different Nations

There are many studies which have traced evidence of innovations in the informal sector of different parts of the world especially in the context of global south.⁴² One of them is the study detailing the activities of Kenyan *jua kali* or the informal sector as extraordinarily rich but it has not given attention to the use of intellectual property.⁴³ An important study to raise the issue of IPR for the informal sectors innovations of Africa is by Juma and Ojwang.⁴⁴ It has explored the issue of appropriation of innovations emerging in the Kenyan informal economy. They propose *sui generis* systems which are tailored to the needs of the informal sector actors. Some of the studies of appropriation of innovations in practice are also detailed in the edited book by Kraemer-Mbula & Wunsch-Vincent (2016).⁴⁵ The authors studying the role of formal IP in the Kenyan informal metalworking sector observed that the metalworkers were mostly using the informal appropriation mechanisms such as secrecy and those who showed interest in formal IP mechanisms were interested in trademarks or utility patents. Some of the respondents in their study expressed dissatisfaction with the formal IP systems.⁴⁶ Another study on the South African personal care product manufacturers, the authors found that most of the innovations developed were incremental in nature and showed some significant improvement. However, in their study, the use of formal IPR was very limited and use of informal means such as secrecy, division of duties were also present.⁴⁷ The role of appropriation mechanisms for the traditional medicine in the Africa is also studied where the author finds that healers do not rely much on the formal IPRs.³⁵

The findings of the various studies in the African countries on the role of intellectual property for innovators working outside the formal economy are:⁴⁸

- (i) Existing formal IP like patenting may be irrelevant to innovators in the informal economy.
- (ii) The innovations which are developed in the informal economy may not meet the criteria for formal IP registration.
- (iii) Financial, educational and other accessibility barriers may be present.

(iv) The current institutions might not be receptive to the inventions which emerge from the informal economy.

Like other emerging nations, the innovation systems in China have also been supportive of the formal innovations. Still, a 2005 statistic quoted in a study shows that 65 percent of the patent applications in China came from the individual folks in non-service sector.⁴⁹ Similarly, the study of Zhang and Mahadevia has shown that there is increasing evidence of patents which are granted to individuals, likely to be grassroots innovators, outside the formal sector which forms a major proportion of total number of patents granted.⁶⁴ Their study cites the examples of Cangzhou city of Hebei province where out of total 800 patent applications in the year 2008, 300 were filed by small-scale farmers. Similarly, in the Handan County of Hebei province, 55 out of the total 230 patents were applied by the farmers. Their paper lists the case of Hua County, where only 14 out of total 288 patents granted belonged to the service sector. The number of patent applications from small-scale farmers and individual innovators has increased in China since 2005 due to the government policy of offering financial support to the patent applicants. There are civil society organisations like Association of Inventors in China which have been successful in not only getting the innovations patented but also commercialised.

Malaysia has also focussed on the innovative potential of its informal sector. The *Yayasan Inovasi Malaysia* or Malaysian Foundation for Innovation (YIM) which was established in the year 2008 under the aegis of Ministry of Science, Technology and Innovation to organise and implement specific programs dealing with the innovations at the grassroots level in Malaysia, especially among the youth, women and civil society organisations. The foundation has initiated various programs for scouting and maintaining a database on grassroots innovations in Malaysia which has been inspired from the works of Honey Bee Network in India. An OECD report on boosting intellectual property system in Malaysia highlights the activities of YIM.⁵⁰ They have been able to scout the 54 innovative products, out of which, 20 were selected for intellectual property protection mainly for the trademarks and design rights. The necessary institutional support and funding for IP registrations were provided by YIM. Since the innovations scouted and selected for intellectual property by YIM were not very advanced, the support

didn't allow the grassroots innovators to fully commercialise their innovations and accrue economic benefits out of it.

Methodology

The research seeks to explore the access of patent systems to the grassroots innovations in India. Since grassroots innovators are mostly found in the interiors and hinterlands of India, there are many difficulties in meeting them personally. However, there are few limited opportunities, both *in-situ* and *ex-situ*, for the researchers to meet them like award functions, *shodhyatra*, and other conferences organised by NIF and personal visit to innovators' workshop. The innovator of the cotton stripper machine was interviewed at his workshop. While other innovators of sugarcane juice extractor, onion transplanter were interviewed at an award function held in New Delhi. We also collected data from some of the grassroots innovators like innovators of biomass gasifier, bullet *shanti*, multicrop thresher and few other innovations for which patents have been filed through telephonic semi-structured interviews. Information from all these different means of qualitative interviews was supplemented with secondary literature on grassroots innovations and utility models. NIF officials dealing with intellectual property management of the grassroots innovations were interviewed for the purpose of this study and to know about their views regarding the patenting of grassroots innovations. The data regarding grassroots innovations for which patents are filed were collected through secondary means like the annual reports and publications of NIF which maintains the complete database of grassroots innovations in India.

Patenting Grassroot Innovations in India

There are different types of grassroots innovations which are scouted by the NIF. Some of them are technological but some cultural innovations to restore artistic designs, paintings and folklores are also scouted. This scouting is done through different means like national campaigns involving *shodhyatra* (research journey) walks done in villages located in the interiors and geographically and economically marginalised areas of India. Similarly, the innovations are received by NIF through the Honey Bee Network, artisan networks, and electronic submissions. Apart from these, the innovations done by teachers and students are also scouted and recognised by the NIF through various award functions and projects. It is worth noting here that not all innovations which are

scouted by the NIF are patent worthy i.e. fulfilling the threshold of patents. Hence, the intellectual property management team of the NIF receives innovations from the sectors like engineering, health, agriculture and veterinary fields. The main specificity of these grassroots innovations is the degree of novelty. The innovations in the fields of engineering, agriculture forms most of the innovations for which patents are filed. They then engage in conducting their prior art searches, drafting and filing of the patent applications. The patents are filed to stop any kind of misappropriation of the grassroots innovations.

Grassroots innovations in India have to follow the same requirements and application procedures as other innovations and inventions which are generated in the formal sector. There was no alternative patent regime or any other incentives for the informal sector innovators to file patents for their innovations in the country until India passed its first National IPR Policy on 11 May 2016 with an aim of sustaining and promoting entrepreneurship in the country. One of the primary objectives of the policy is to generate awareness of IPR among the masses. The policy also proposes several incentives for the knowledge producers within its informal economy. The policy is committed towards reaching out to the “less visible IP generators especially in the rural areas” and also makes sure that necessary steps are undertaken to “to devise mechanisms so that benefits of the IPR regime reach all inventors, especially SMEs, start-ups and grassroots innovators”. The Indian IPR Policy (2016) proposes to provide the benefits of patents to the innovators in the informal sector by introducing the support systems which will reduce its transaction costs linked to the creation of intellectual property. Furthermore, the policy aims to promote grassroots innovations by supporting their commercialisation process. The policy fails to acknowledge the fact that most of the innovations in the informal sector are minor and incremental. Hence, even if there is support for filing the applications and less patent fees from the grassroots innovators, the strict patentability criteria like the subject matter and level of inventiveness will exclude most of the grassroots innovators to reap any “benefits” of the patent regime. If the government is serious about protecting the innovations which generate within the informal economy, then it is necessary to do away with some of the patentability criteria and the substantive examinations. The first draft of the National IPR Policy which was released in December, 2014, talked about having an alternative

system of protections like utility models for the grassroots innovations. However, the final IPR Policy (2016) excluded the utility models for some reasons and went with providing incentives and support mechanisms to promote and foster the grassroots innovations.

The patents for grassroots innovations in India are filed by NIF on behalf of the innovators. Providing intellectual property protection to the grassroots innovators is one of the primary activities of the NIF. There is a dedicated patent cell of NIF for this purpose. The patents are filed by NIF not only in India but also in the US. NIF spends huge money every year for the intellectual property management of the grassroots innovations. The amount which is spent on the IPR related activities of grassroots innovators has increased since 2005-06 and was highest in the year 2009-10 (Fig.1).

The money spent by NIF on IPR related activities is mostly for the payment of fees of the patent attorneys which are hired to file and draft the patent applications for the grassroots innovations. The complete specifications, first examination report and provisional specifications are filed by the renowned patent firms which are located in the cities of Delhi, Mumbai, Chennai and Kolkata. These firms charge high fees for the drafting of applications for patents. Since this amount is paid by NIF the grassroots innovators are able to get patents filed for their innovations, otherwise, the hefty sum charged by these intellectual property law firms cannot be afforded by the grassroots innovators.

The firms in the formal sector can easily afford the money charged by the patent attorneys as they are well capable of commercialising and diffusing their products in the market and thus reap the fruits of patents. However, the same is not the case with the grassroots innovators. One of the innovators we questioned for this study told us that while the patents for his earlier innovation, a Biomass Gasifier, was filed easily by NIF but it would be difficult for him to file any patents on his own. This is because one of the

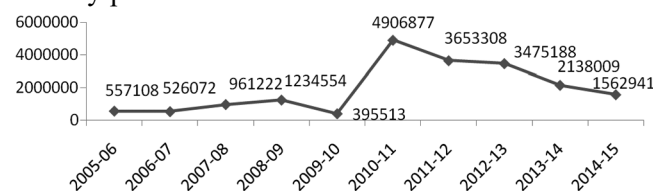


Fig. 1 — Expenditure incurred by NIF from 2005-06 to 2014-15 on IPR related activities (in Rs.) Source: Own compilation; NIF Annual Reports, 2005-2015

intellectual property firms which contacted the innovator asked for a fee of Rs 300,000 to get him patents for his other innovations. This sum was unaffordable by the innovator to pay from his capital. The patenting process is not only expensive and time-consuming but also complex and difficult for a simple and naïve innovator to understand.

Till 2017, NIF has filed about 927 patent applications in India, out of which 45 of these patents have been granted. NIF has also filed for 8 patents in United States Patent and Trademark Office, out of which 5 have been granted. Apart from patents, other IPRs which were filed by NIF included 21 design registrations, ten trademark applications and 58 applications for plant varieties under PPV&FRA (Fig. 2).

NIF has a database of more than 2,25,000 innovations, ideas and traditional knowledge practices by people at the grassroots. So far, the patent filing has been done for less than 0.5 percent of these innovations. This means most of these technological innovations are marginal improvements of existing products and small incremental innovations which fails to meet the strict patentability criteria required for a standard patent. Hence, in such a scenario an alternative second-tier patent system would be highly beneficial to foster these innovations. If utility models are able to secure protection for even 20 to 30 per cent of these innovations it would be an achievement and boost for the informal economy as these innovations are designed by the people at grassroots who are a better fit to the local problems and need. Therefore, utility models can address their problems often ignored by the formal sector.

Patent filing and its grant is a very long process and it takes at least 7 to 10 years on an average for getting a patent grant in India. The grassroots innovations for which patents have been filed are in different stages. Out of the 707 applications which have been filed in India for patenting the grassroots innovations since August 2015, only 11 of them have been granted. There are five applications for which patents have

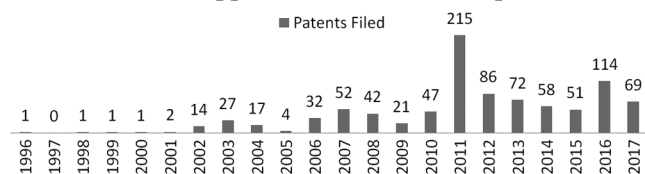


Fig. 2 — Patent applications for grassroots innovations filed by NIF Source: Own compilation; National Innovation Foundation, <http://nif.org.in/ipr>

been withdrawn while 29 applications have been abandoned. For 381 applications filed, the First Examination Report (FER) is awaited while there are eight applications for which FER has been received. For 16 applications the Response to FER has been filed while for 1 application the first hearing has been held. Complete Specification and Provisional Specifications have been filed for 125 and 42 applications respectively whereas 10 applications are pending and 1 has not been published. For 78 patent applications, there was no concrete information as to their present status was available (Fig. 3).

Grassroots innovations as discussed are incremental innovations developed by the innovators to solve their own problems and that of their family and community. The current patent system which is followed in India as per the provisions of the TRIPS Agreement has strict patentability criteria and requires an innovation to undergo through substantive examinations before a patent is granted. These examinations are a very lengthy process and require the drafting of certain patent applications and filing of forms. Though the IPR Policy 2016 proposes to speed up the granting of patents in India, it is yet to be seen how it will clear the massive backlog of applications at the patent offices. The grassroots innovators we questioned for the study revealed that this whole patenting process is very confusing for them to understand and hence they do not involve themselves with it. The whole patenting procedure is undertaken by the NIF and the grassroots innovators only have to sign the documents. Most of the respondents in the study were not interested in knowing or learning the patenting procedure as it was too complex for them to understand.

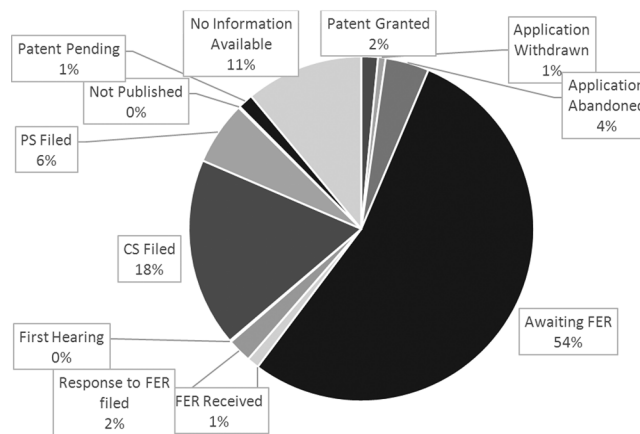


Fig. 3 — Status of grassroots innovation patents filed in India Source: Own compilation; National Innovation Foundation, <http://nif.org.in/ipr>

An average grassroots innovator is unaware of the patent systems. They are made aware of the patents by NIF. The innovations which are patentable and meet the criteria of patentability are selected by the NIF officials after prior art searches, novelty criteria and long-term usage. Since the patent granting procedure is long, patents are applied for only those products which could have long usage and durability. The fees along with all the forms for patents are paid by NIF. NIF, as discussed before, has hired many intellectual property firms in various cities of India which drafts all the applications for the patents. These firms charge high fees for drafting the patent applications. Hence the costs for applying the patents are very high for these grassroots innovations.

It is important in the case of India that the patent system is made more accessible for these informal sector grassroots innovators. Patents are considered to be the first step toward successful commercialisation. These innovations are developed by people who understand their problems better than the formal sector who are trying to come up with the products to meet their needs. The bottom up approach is needed to diffuse these grassroots innovations in the market. Hence, it is required that the patent procedure should be made simple and requirements for substantive examinations be waived off.

If providing an alternative protection mechanism to the minor innovations of the informal sector is one side of the coin, then there is also another side of the story which says that providing intellectual property to these minor innovations could be counterproductive. This is because the innovators in the informal sector are motivated intrinsically. Extrinsic incentives like patents decrease their long-term motivation.⁴ This clearly shows that it is not the lure of monetary incentives which drives the grassroots innovators. Also, these innovations are good examples of an open innovation system, where knowledge is disseminated continuously and also improved upon by the masses. This is the form of innovation which has been practised for years in India and providing any form of property rights would be to build fences around them which could hamper the knowledge dissemination in the informal sector. If any alternative regime is to be developed to cater specifically to the incremental and novel innovations of the informal sector, it is important to first understand the informal economy in a better way. Innovations in the informal economy are

also centred on the communities and clusters and not individual innovators. Hence proposing a system which is inventor centric is again very disputable.

Conclusion

Patents were developed to incentivise the innovator for his creativity. The current patent regime engenders innovation only by favouring the formal sector of the economy. Innovations are always identified with laboratories, R&D companies, scientists and large industries. Farmers, local entrepreneurs, and artisans have also made an immense contribution through their practise, skills and innovative methods despite being prone to piracy and lack of reward system.

In the context of India where almost 81 percent of the economy is informal, the existing patent regime is full of costs and uncertainties. The lengthy procedure, the patentability criteria, examination formalities, and fees have made it very difficult for the creative grassroots innovators to get their innovations patented. The grassroots innovations scouted and documented by the NIF have significant inventive merits but most of them do not fulfil the strict patentability criteria under TRIPS despite providing immense technical and economic benefits to the innovators. If such grassroots innovations are properly assessed and scrutinised on the basis of their benefits and merits to the rural and bottom of the pyramid communities, then these innovations make a strong case towards being transformed into successful products and technologies. Since patents are considered to be the first step towards successful commercialisation, an effective and extensive patent system needs to be in place which can protect the grassroots innovations and incentivise the innovator.

A second-tier patent system has worked wonders in many countries, but it is also true that utility models have not been successful in other countries. Hence, India could think towards developing a model which can cater to the needs of its informal sector. If property rights like patents is the only means available to protect the creativity of the individual, then a country like India needs to develop a patent system which is not only inexpensive but also simple and easy for small individual innovators to comprehend. The innovators in the informal sector need to be assured of a cheaper and more feasible way to protect their innovations that could promote and encourage these innovations and also give impetus to the local market.

The utility models as a second-tier patent system may have worked in many countries but it should not be outrightly accepted or rejected for the Indian context. The pros and cons of the utility models need to be analysed critically. If the model is implemented with necessary safeguards and has the possibility of doing wonders for the individual innovators working outside the boundaries of formal sectors, then it is worth taking the risk as it could foster inclusive growth.

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