WHY DOES INDIA NEED TO URGENTLY INVEST IN ITS PATENTING ECOSYSTEM

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1. Context

1.1 An evolved Intellectual Property Rights regime is the basic requirement for a knowledge-based economy. Technological innovation and scientific research require a robust patenting system. India is seeing a surge in start-ups and unicorns, and an efficient IPR system will provide boost to this.

1.2 India aims to become a major player in innovative activities; however, we are far behind the global peers in this field. **Though there has been an increase in the number of patent applications filed in India in last few years, along with increase in the share of residents in the applications, this is very small compared to the global peers.** In 2020, number of patents granted in India was 26,361, merely 5% of China where 5.3 lakh patents were granted and 7.5% of US where 3.5 lakh patents were granted in the same year. Moreover, the time taken to grant patents in India is close to 3 times that of China and 2.5 times of US. In India, it takes about 58 months to dispose of a patent application, whereas the same takes 20 months in China and 21 months in US.

1.3 The major cause of this delay in processing the patent applications is the shortage of manpower in patent office in India. Manpower employed in Indian patent office is only around 860 (including both examiners and controllers) at end March 2022, as compared to 13704 of China and 8132 of US. A few years ago, some manpower was added, mostly at examiner level. This shifted most of the pendency from first examination at examiner level to the disposal level. As on 31st March 2022, there were 1.64 lakh pending applications at the controller level.

1.4 This note highlights such issues which ail India's patenting ecosystem. It also lists down immediate measures towards strengthening India's patenting ecosystem.

2. Where does India stand in terms of patenting

2.1 There has been gradual increase in the filing and granting of patents in India. The number of patents filed in India has gone up from 39,400 in 2010-11 to 45,444 in 2016-17 to 66,440 in 2021-22 and the patents granted in India has gone up from 7,509 to 9,847 to 30,074 during the same time period (Table 1). Further, the number of patents application are increasingly coming from Indian residents rather than MNCs. The share of Indian residents in total applications has more than doubled in the last decade. The share of residents in patent applications increased from 20% in 2010-11 to around 30% in 2016-17 and further to 44% in 2021-22. For the first time in the last 11 years, the domestic patent filing has surpassed the number of patents filed by non-Indians at Indian Patent office in last quarter (Q4) of 2021-2022. It is important to note that these improvements of last few years are largely due to the process reforms[1] undertaken in the last 5 years. Consequently, India's ranking in Global Innovation Index has climbed 35 ranks, from 81st in 2015-16 to 46th in 2021.

Table 1: Patent applications in India

	Indian	Non-Indian	Share of domestic applications
2016-2017	13,174	32,270	29.0
2017-2018	15,377	32,477	32.1
2018-2019	16,968	33,691	33.5
2019-2020	20,838	35,429	37.0
2020-2021	24,279	34,224	41.5
2021-2022 (Prov.)	29,514	36,926	44.4

Source: Office of the Controller General of Patents, Designs & Trademarks (CGPDTM)

2.2 This may seem like remarkable progress when compared over time, however India lags far behind its global peers. The number of patents applied and granted in India is still a fraction compared to patents granted in China, USA, Japan, and Korea. Number of patents filed in India is merely 3.8% of China and 9.5% of USA in 2020 (Table 2).

[1] Some of the key changes include online processing of forms, new timelines for disposal of applications, hearing of patenting cases through video-conferencing for speedy and contact-less proceedings, certain category of inventors applying for expedited of examination (like startups, small entities, Government departments) etc.

Table 2: Patent applications and grants in India, China and US

Year	China		United States of America		India	
	Filing	Grants	Filing	Grants	Filing	Grants
2016	13,38,503	4,04,208	6,05,571	3,03,049	45,444	9,847
2017	13,81,594	4,20,144	6,06,956	3,19,829	47,854	13,045
2018	15,42,002	4,32,147	5,97,141	3,07,759	50,659	15,283
2019	14,00,661	4,52,804	6,21,453	3,54,430	56,284	24,936
2020	14,97,159	5,30,127	5,97,172	3,51,993	56,771	26,361
2021	-	-	-	-	66,440	30,074

Source: World Intellectual Property organization (WIPO) and Office of the Controller General of Patents, Designs & Trademarks (CGPDTM) for India

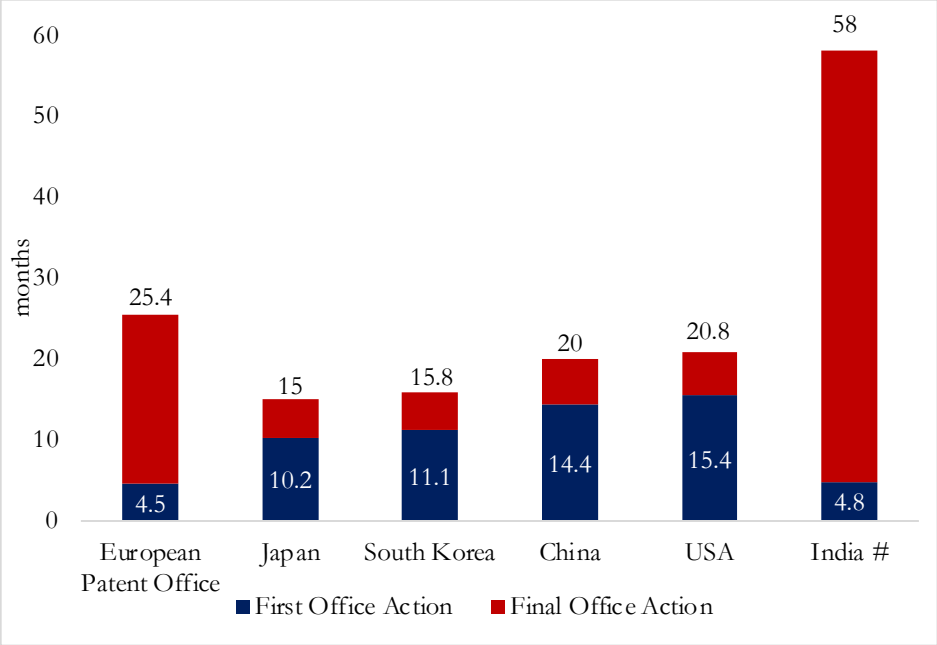
2.3 The National Intellectual Property Administration of the People's Republic of China (CNIPA) received close to 1.5 million patent applications in 2020. This is 2.5 times the amount received by the United States Patent and Trademark Office (USPTO). The USPTO – with 5,97,172 applications – ranked second, followed by the Japan Patent Office (JPO) (2,88,472), the Korean Intellectual Property Office (KIPO) (2,26,759) and the European Patent Office (EPO) (1,80,346). Together, the top five offices accounted for 85.1% of the applications in the world in 2020, which is 7.7 percentage points higher than their combined share in 2010. This is mainly due to strong growth in China, whose share of the world total more than doubled during this period, from 19.6% in 2010 to 45.7% in 2020. Within these offices, the share of residents and non-resident applications vary widely. For example, only one in ten applications received in China was by non-residents in 2020 whereas the share was 54.8% in European Patent Office, 54.9% for US.

2.4 Not only the scale of patenting activity in India is small, the time taken for processing a patent application in India is much higher as compared to its global peers. The Global best practice is disposal within 2 to 3 years, whereas in India, average time taken is just under 5 years and is up to 9 years in some categories like for biotech and will cross 10 years soon if the shortage of manpower issue is not addressed.

2.5 The time taken for first office action has reduced drastically over the last few years and is in fact even less than China and US now. However, the main

delays happen after that and hence, India lags far behind in terms of final processing. This time for final disposal had decreased from 64 months in 2017 to 42 months in 2020, however it has started to increase thereafter and now stands at 58 months due to huge shortage of manpower at controller level. Even though the average time taken for the first office action has reduced from 18 months in 2020 to 4.8 months now. In contrast, the average time taken for disposing off an application in China and US is 20 - 21 months, which is almost 1/3rd of time taken in India. The other 3 IP-5 offices, including European Patent office, Japan, South Korea also process the application in 25.4, 15 and 15.8 months respectively (Figure 1).

Figure 1: Average time taken by different patent offices



Source: WIPO for other countries and Office of the CGPDTM for India
Note: # Numbers for India is as of May 2022 and for other countries is for 2020

2.6 One major reason for delays is the lack of sufficient manpower in patent office. Though some additional workforce was added in the patent office in last few years (Table 3) specially at the examiner level, they are not sufficient to handle even the current workload and are miniscule when compared with China, US etc. (Figure 2). Since a greater number of people were added at examiner level, the time taken for first office action reduced and the pendency at the first stage reduced. However, there wasn't a commensurate increase in manpower at controller level, this merely shifted the applications to remain

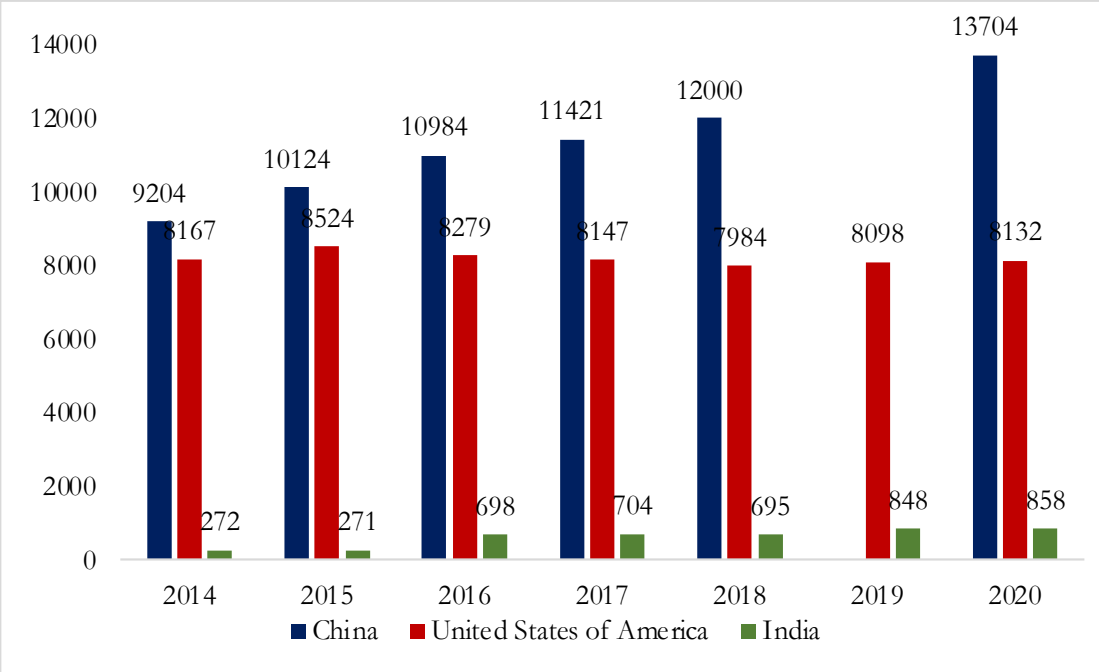
pending from the first examination level (which examiners handle) to the next stage.

Table 3: Manpower in Office of Controller General of Patents, Designs & Trade Marks

Year	Examiners	Controllers
2015-16	132	139
2016-17	564	134
2017-18	572	132
2018-19	449	246
2019-20	601	247
2020-21	611	247
2021-22	611	247

Source: Office of CGPDTM

Figure 2: Human resources in patent office



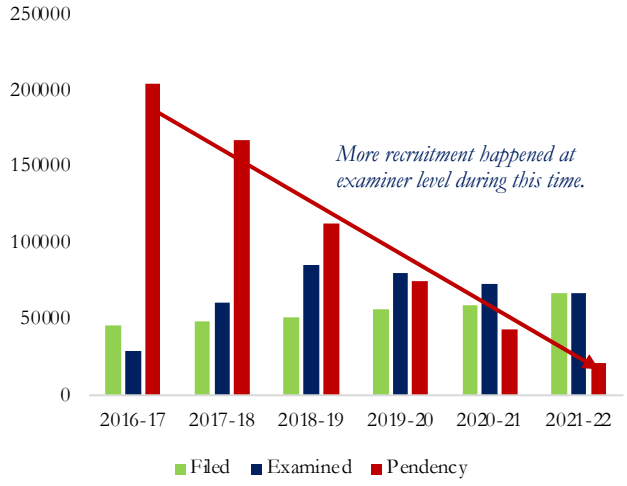
Source: WIPO for China and US; Office of CGPDTM for India
Note: The number for China is not available for 2019.
In India, the manpower indicates sum of examiners and controllers.

2.7 This was also noted by the Parliamentary Standing Committee on Commerce's Review of Intellectual Property Rights Regime in India (2021). The Committee also notes with concern that the increase in the number of examiners does not commensurate with the increase in the number of applications.

2.8 In 2016-17, more than 2 lakh applications were pending at first examination level. Gradually, pendency reduced at the first examination level (examiner level) with more examiners available. However, there is still a severe shortage of manpower at controller level, hence there was a buildup of pendency at controller level. Not having a commensurate increase at the controller level lead to mere shifting of pendency from first examination stage to next stage. There are approximately 1.64 lakh applications pending at controller level as on end March 2022 for which preliminary examination has already been done, up from 40 thousand in March 2017 (Figure 3).

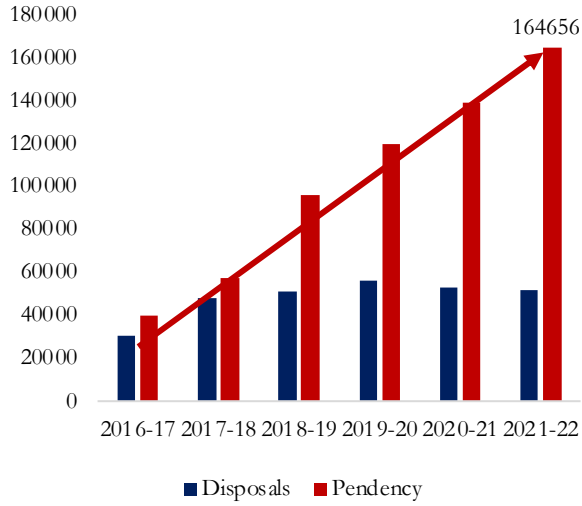
Figure 3: Pendency in patent office

At examiner level
First Examination Level



Source: Office of CGPDTM
Note: Pendency means unexamined applications

At controller level
Final Examination (Disposal) Level



Source: Office of CGPDTM
Note: Pendency at this stage means Preliminary Examined but pending for final examination and disposal

3. What needs to be done?

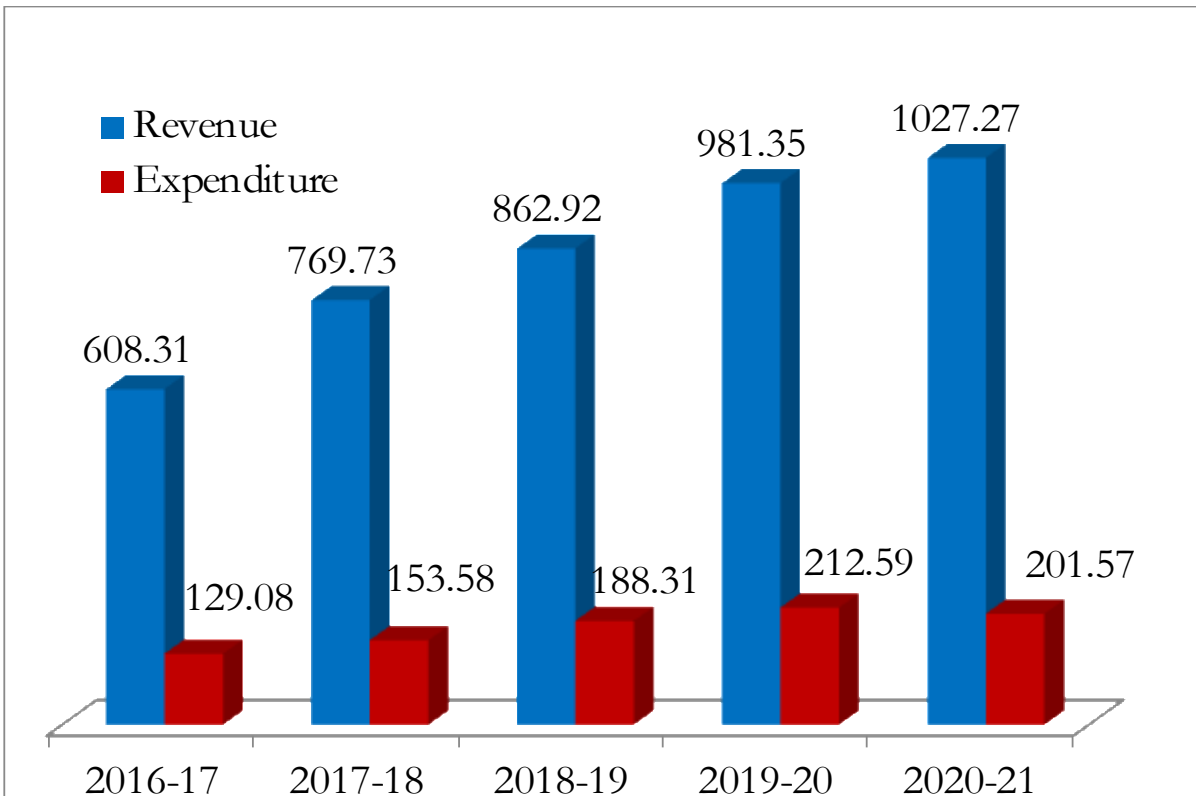
(A) Increase the manpower

3.1. **First of all, there is a need to immediately sanction additional 300 posts at the controller level to clear the current backlog of 1.64 lakh applications (which have already undergone preliminary examination) as on end March 2022. Merely redistributing the existing manpower will not address the issue. Further, 2000 additional persons should be added in the patent office in the next 3 years.** This will be required to be able to compete with our global peers in terms of scale of patent applications and time taken to process them. A short

certificate course (like a diploma of 6 months) may be developed in collaboration with some academic institutions like IITs etc. and people who have done this course may be hired for the role of examiners on contractual basis. In addition to this, there is a need to build the career path of the employees in the patent office to attract good talent to the patent office. In this regard, there is a need to revisit the modified Flexible Compensation Scheme. The Department of Science and Technology and DoPT has already given concurrence, the final nod was not given by department of Expenditure.

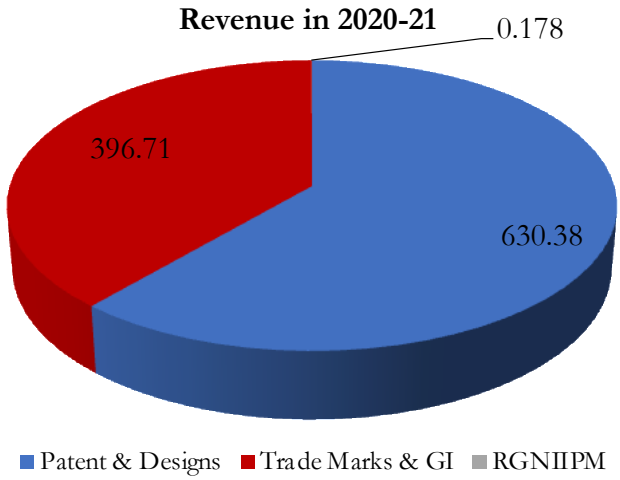
3.2. It is important to note that the patent office is a cash positive organisation and adding more manpower in patent office will be revenue positive for government (Figure 5). Bulk of the revenue of the Indian patent office is received from the patents (Figure 6).

Figure 5: Revenue and expenditure in Indian patent Office



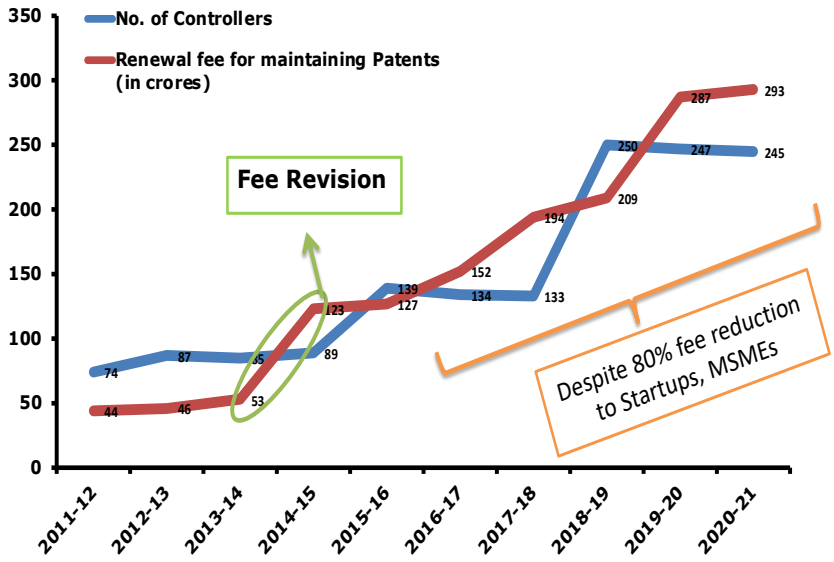
Source: Office of CGPDTM
Note: Figures in Rs crore

Figure 6: Revenue in Indian patent office



Source: CGPDTM
Note: Figures in Rs crore

Figure 7: Number of controllers and renewal fee for patents



Source: Based on Annual Reports of CGPTDM
Note: Fee revision here indicates the increase in patent fees

3.3. The increase in manpower is seen to have a positive association with revenue generated. For instance, increase in controllers means more

applications could be processed and hence the patent office received higher renewal fee for maintaining patents (Figure 7).

(B). Other things that need to be done

(i) Bring in utility model of patents

3.4. A utility patent is a special form of patent right granted by a state to an inventor for a fixed time period where the eligibility requirements are less stringent, and the term of protection is shorter and are these cheaper to acquire as well. These are essentially "jugaad" kind of innovations done by amateur inventors. It secures protection for small innovations, which does not require the strict novelty and invention condition as required by patent law. This helps spur innovation, specifically for individual & small-scale innovators. Various countries in the world use this model.

3.5. A new legislation granting protection to incremental innovation thorough utility models should be brought about in India. This will give a push to idea of Atal Innovation Mission by rewarding the innovating the innovation done in Atal Tinkering Labs, Atal Incubation Centers. India is already a hub of start-ups and has large number of small-scale enterprises, and this utility patents will promote innovation in this category. Moreover, since getting patents is expensive, these utility patents will serve as an alternate option.

3.6. Thus, there is a case for bringing in utility patent model in India- which should be much cheaper than patents, provided at a much faster pace and has less stringent criteria for innovation/invention. Again, this can only work after additional manpower is put in office, so that the introduction of utility patents does not result in further strain on the existing system.

(ii) Fixing timelines of various steps of the process

3.7. Currently, there are no fixed timelines for various steps of the office actions that need to be undertaken**.** Lack of timelines for each step leads to various issues. For instance, Section 25(1) of the Patents Act 1970 provides that a pre-grant opposition can be filed by any person opposing the patent at any

time after the application for patent has been published and before grant. There is no fixed time frame for this, leading to build-ups and delays. This provision is in some cases used by people for making frivolous complaints which keeps delaying the process[2]. Instead, there is a need to have fixed timeline like maybe in the case of US.

3.8. US Special 301 report (from last various years) notes that "Patent applicants continue to confront costly and time-consuming pre- and post-grant oppositions, long waiting periods to receive patent approval, and excessive reporting requirements." Though it is important to note that this can only work after adequate manpower has been added. An illustrative stepwise timeline is given below (Table 4).

Table 4: Suggested timelines for the patent grant process

Steps	Suggested timelines
Once an application is filed, the time provided for request for publication is 18 months. After that the following steps have to be taken by the patent office.	
Reference to an examiner and issue First Examination report	6 months
Time given by applicant to give responses after FER has been issued	3 months
Controller must notify and conduct a hearing to determine the validity of responses to the FER and any outstanding objections which may not have been adequately addressed by the applicant.	3 months
Any written submissions requested from applicant by controller	15 days from hearing
Pre-grant opposition window	6 months from publication
Controller to notify applicant of objections	Should happen immediately
Preparing submissions and evidence by both applicant and party opposing the patent	3 months

[2] https://www.mondaq.com/india/patent/1092108/frivolous-pre-grant-oppositions-ipab39s-order-provides-guidelines-on-dealing-with-frivolous-pre-grant-oppositions

Opposition hearing	2 months from submission of all pleadings by parties
Opposition Hearing Decision	1 month
Grant: The patent is granted and published once (i) all FER responses are accepted and (ii) no pre-grant oppositions are pending	1 month from completion of all proceedings

(iii) Streamlining few steps of the administrative process

3.9. There are some administrative steps of patent application process, like formal examination which is mostly rule based and is the examination on legal aspects such as whether application was filed on time, compliance of timelines for different forms, fees etc. Some of these can be outsourced to a third party (like has been done in the case of passport office) or at least automated so that the examiners and controllers can focus on the core technical work.

4. Conclusion

4.1 It is fairly clear that India is lagging far behind its global peers in its performance in patenting ecosystem. There is an urgent need to invest in patent system in India. **In this regard, the first step that needs to be undertaken urgently is create 300 additional posts, mostly at controller level to clear the backlog of 1.64 lakh applications (at end March 2022). Further, 2000 people combined at both examiner and controller level need to be added to cater to the growing demand and compete with global peers in the next 3 years.** A short certificate course (like a 6-month diploma) may be developed in collaboration with some technical institutions and people who have done this course may be hired regularly for the role of examiners on contractual basis. This expansion must not be delayed on financial grounds as it will self-financing. The Indian Patent Office is a revenue positive organization with revenue much higher than expenditure.

4.2 Apart from increasing the manpower, there are few other things that can be done as well to improve the patenting ecosystem in India. First is the

introduction of the utility model of patents to promote innovation done by small innovators, MSMEs etc. This will give a push to idea of Atal Innovation Mission by rewarding the innovating the innovation done in Atal Tinkering Labs, Atal Incubation Centers. Apart from this, there is a need to simplify the application process- by fixing time for various stages of the process, outsourcing some part of administrative process like checking of whether fees have been paid etc. and use of automation in the process.

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