



## **Patent FAQ:**

### **(Ecosystem Questions)**

#### 1. Why is IP the most sought-after property today?

In this age of high technology and innovation, start-ups as well as established businesses face unprecedented competition from within and from overseas (especially China). Anything one dreams of manufacturing, be it shoes, toys, or appliances can be made cheaper and better elsewhere. So, the main option left for a company for growth is to innovate. Patents are tools to protect that innovation. A company's growth, its stock value, and even its survival depends on innovation. They must either innovate or perish. Innovation need not be in exotic products, but it also includes processes (for cutting costs, for improving quality, for increasing efficiency) for a company. Therefore, innovation which results in intellectual property and its creators are most sought after today.

#### 1.1 Who are the leading countries in terms of IP creation (i.e., patent filings)?

As of 2020, China (1.5 million), USA (600K), Japan (288K), South Korea (226K) were the leading countries in patent applications (source: Google), India being a distant 7<sup>th</sup> at 56,000 patent applications needs to catch up without delay. Reasons are simple. Innovation and Patent filings spur economic growth, and if identified as a mission of national importance, “Indian Mind” can innovate like no one can – as is evident from the innovations since ancient times. This can be seen in Yoga, Meditation, Medicine, Education and more. Indian Mind lends itself to innovation so it’s only natural to leverage that in-built natural tendency.

#### 1.2 Why are countries giving priority to innovation & patent filings?

A nation's economic progress depends on the quality of jobs created. Data shows that startup companies create the most jobs. And for startup companies to succeed and be able to create quality jobs they must rely on innovation. Therefore, more innovation a company exhibits, the better are the chances of its success. The byproduct of innovation is intellectual property (IP). IP spurs sales, exports, and adds value to the company. Therefore, IP is the most valuable property a company – especially a start-up company- can have.



## 1.3 What is the difference between research and innovation?

In very simple terms, research is academic, and innovation is practical. For example, research on high-speed data for mobile phones is continuing (within the theoretical limits in communication theory (Shannon's law)), but to come up with a viable 5G standard for mobile data transfer for practical applications is innovation. For someone engaged in research, he or she must be cognizant of the immediate practical application of the research and apply innovative principles to bring it to market in a timely manner. Both are essential but innovation needs to be applied for a practical solution. As innovation of 5G is further refined, 6G will replace it and so on.

## 1.4 Where does India stand vis. gross number of patents filed compared to US, China, Singapore, South Korea, and Japan?

As of 2020, India stands at number 7 in the number of patents filed.

## 1.5 Where can one find the field-wise matrix of India's standing in patent filings compared to the said countries? (for example in: Pharma, Biotech, Green Energy, Semiconductors, etc.)?

US government (DARPA) and the US think tanks (e.g., RAND Corporation) study and annually publish the technological gaps by field comparing the US with other countries. The well-established Technological Gap Theory (Posner) states that a country that introduces new goods and products in the market have major economic benefits.

We believe, it would be essential to have such study done (yearly) and the results published for targeted innovation and as a tool for universities to prioritize and focus their research on a mission-mode.



## **(Policy Questions)**

2.1 How to cultivate an “innovator's mind”, in other words how to train more students into innovative thinking?

We believe that students predisposed to research can be trained in innovation. They need to be mentored, taken through case-studies (of valuable patents), put through practice, and trained to foresee product improvements, product trends in next 5 to 50 years, and they can be taught to think in innovative ways to provide market-ready solutions using examples.

Example: Current method of electric vehicle's battery charging is very rudimentary. There exists much opportunity to speed up battery charging, to innovate new battery chemistry, and to create automated (on the fly) battery swapping techniques. Today's students can be mentored and asked to game how the future vehicles would look like, how would they be powered, how would they be driven etc. and come up with a field of research based on innovation and patent filing.

**(Technical Questions)**

3. Once an individual has decided on a research subject, what tools does he or she have to see what prior art exists in that field and what area within it can be exploited for refinement & innovation?

Study of technical papers and prior patent search is available online (e.g. Google Patents Search Tool). And it must be consulted prior to engaging in any research field. But the main point to note is that even if a certain research area is extensively covered previously, if the student is so inclined, there always exists opportunity to further that research, refine it, and based on specific application, apply it innovatively for practical purposes.

Example:

Electric Brushless DC (BLDC) motors have been in use for the last 30 years. They are used nowadays in almost every appliance (such as in ceiling fans, refrigerators, and even in electric vehicles, etc.), and control of BLDC motors has been extensively studied with hundreds of patents filed by engineers and researchers. But there still exists much opportunity for breakthroughs to make them even more efficient, less noisy, and provide more torque per input power.

So one engaged in the control of BLDC need to study the prior art and then see where his or her innovative mind takes it.

3.1 What kind of documentation needs to be maintained during the research phase?

It is standard practice for someone engaged in research to maintain a logbook. The logbook should include dated entries of what idea is being tried, what are the results of specific experiments, where are the patent opportunities being considered, etc. The logbook is also expected to include with whom a certain idea was discussed, at what date, and what was the outcome of discussion etc.

3.2 What is the criteria for a co-inventor if multiple students are working on a research project?

Even though there are no hard and fast rules pertaining to who must be included as a co-inventor, generally anyone knowledgeable in the field with whom the innovative idea was discussed must be included as a co-inventor.

3.3 When to consider filing for an international patent?

In case of doubt about the countries in which one wishes to seek patent protection, the best strategy is to file an International PCT application. This gives the applicant 30 months to decide in which countries they wish to patent their invention without losing the priority date for their innovation and is also a cost-effective strategy.

3.4 What are different categories of patents that the researcher should be aware of?

In India:

Based on Priority Claim: Ordinary, Conventional, National PCT

Based on content: Provisional patent, or Complete patent

Based on Unity of Invention: Divisional patent, Addition patent

(Source: Google)

3.5 How to differentiate between a patent with multiple claims and an invention with multiple patents?

Almost all patents have multiple claims:

Example: if some has patented a new car (whatever it may be) a patent claim list



may include a) how it starts b) how it stops, c) how it is driven

But if the research area is wide enough that results in multiple products, then it would be prudent to file multiple design patents even if they have common claims.

Example: if someone has invented a hand-cranked gear mechanism then he / she can file multiple patents like a hand-cranked juice extractor, a hand-cranked vegetable slicer, etc.

3.6 What are the rules regarding patent filing once the core idea is made public (to press, to investors, or to customers)

Usually, once a core patent idea is discussed with anyone, the inventor has one year to file a patent. Thus, it is essential to have dated logbook entries regarding the genesis and development of the said invention, the date of discussion of the patent idea and so on.

### **(Techno-legal Questions)**

4. What is the process for filing a patent and how much should the researcher know about the patent writing style and patent illustrations (drawings) style?

The researcher would benefit greatly if he or she learns the language and format of patent application as well as the drawing style required for a patent application. If a third party (agent) is filing a patent, the agent will find it easier to understand the details of the innovation and it will also save time (and thus costs) while preparing the patent.

4.1 How can the researcher learn the possibilities of multiple claims on a patent disclosure? Alternatively, how can the researcher know when to file multiple patents?

Almost all patents have multiple claims:

Example: if some has patented a new car (whatever it may be) a patent claim list may include a) how it starts b) how it stops, c) how it is driven

But if the research area is wide enough that results in multiple products, then it would be prudent to file multiple design patents even if they have common claims.

Example: if someone has invented a hand-cranked gear mechanism then he / she can file multiple patents like a hand-cranked juice extractor, a hand-cranked vegetable slicer, etc.

## 4.2 When can a patent disclosure qualify for a “Patent Pending” tag?

As soon as a patent is filed (and no patent refusal notice is received) one can claim a “patent pending” tag on his innovation.

## 4.3 What check list should be verified to increase the chance of a successful patent filing?

As a bare minimum the following should be checked:

- Accuracy of drawings
- Number of drawings as described
- Number of claims
- Accuracy of description
- Search for Prior Art
- Basics such as spelling of names etc.

## **(Technical Questions)**

6. How can a researcher know if his subject area has high probability of receiving a patent?

Usually when a research area has potential for technological advancement that impacts real world applications, or one that results in a real-world product, has a high probability of getting a patent.

For example: A window curtain may not result in a patent, but a curtain that repels mosquitoes may result in a patent.



6.1 Should the WeGo Library Foundation help fine-tune the research area so that it will result in patents of value?

Yes.

**(Techno-legal Questions)**

7. What checklist should be used by the researcher prior to filing a patent?

To be Downloaded by WeGoLibrary.com under the contact section of the website.

7.1 What to anticipate while the patent is being prosecuted?

How to respond to objections (third party and Office Actions by The Patent Office)

How to improve the description to allow grant of patents

How to file continuations and divisional application of the patent if the previous one had errors

**(Ecosystem Questions)**

8. What should start-ups consider about their particular IP and patents before approaching an investor?

While engaged with an investor, start-ups should focus on core innovation and not on patents per se. This is the basic marketing strategy.

Hypothetical example, instead of telling the investor:

“My robot invention has 5 patents”

It would be prudent to say:

“I have an innovative robot that understands sign language (core innovation), and it can be very useful for deaf and dumb people. We also received 5 patents on this development.”

“I have an innovative robot that understands sign language (core innovation), and it can be very useful for deaf-dumb people. We also received 5 patents on this development.”