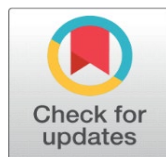
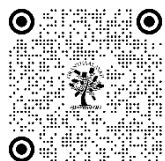


PATENT PORTFOLIO MANAGEMENT: ISSUES AND OPPORTUNITIES

Dr. Ashutosh Mishra ¹, Shruti Shukla ²

¹ Dean, National Law University, Sonipat

² JRF Research Scholar and Ph.D. Candidate at Faculty of Law, University of Delhi



DOI

[10.29121/shodhkosh.v4.i2.2023.2338](https://doi.org/10.29121/shodhkosh.v4.i2.2023.2338)

Funding: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Copyright: © 2023 The Author(s). This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).

With the license CC-BY, authors retain the copyright, allowing anyone to download, reuse, re-print, modify, distribute, and/or copy their contribution. The work must be properly attributed to its author.



ABSTRACT

Patent is a very assuring yet delicate right. The commercial monopoly it brings along with itself is strong enough to attract inventors and investors in creation of new inventions but the legal aspects of a patent needs smart and efficient management to protect the invention and make it capable enough for the grant of patent. This process is called patent portfolio management and goes hand in hand with each step of the product development. Being a commercial right, it is very important to package the patent attractively and smartly so that it not just protects itself from infringement but also appeals well to the relevant consumer market. This management can be done by patent portfolio managers who must carry knowledge of multiple disciplines like IP Analysis, Data Mining and IP Database Management with themselves. This is a new emerging field that holds great potential for new professional and also assists inventors in protecting their invention at every stage of product development. This paper explains the process and various phases of Patent Portfolio Management and the related aspects in detail and also the challenges involved.

Keywords: Ip Management, Patent Portfolio, Product Development, Ip Data Mining, Patent Landscape

1. INTRODUCTION

The concept of Intellectual Property evolved because people saw monetary benefits attached to the exploitation of this property. Monopoly was provided as an incentive to the patent holder once the person shares his invention with the society at large. This monopoly helps the inventor to enjoy the market solely without any exact competition for a period of 20 years. This give and take system is designed for the benefit of both, the customer as well as the patent holder. The other side of the picture is, that not all patents see the face of success. Not all patents are exploited in a manner as to bring back all the investments made for the invention. A lot of this depends upon not just how efficient the patent is in its working rather, on how well it is researched, presented, packaged and sold in the market. As the common marketing phrase “What is seen, is indeed sold” is thought to be the basis of sale and purchase in the open market, it is very important for an inventor to publicize his invention so well, that it attracts the eyes of buyers or investors who would want to invest into the exploitation of the patent in return of a share of profits. This is important because if patents remain unexploited, the spirit of invention among researchers would decrease as they would see no profits coming their way.

What is also important is that this is done in a proper time limit. i.e., before the invention actually hits the market. This process starts right when the product development starts. As patent is a time bound right, putting in efforts for its exploitation post the protection period is over would bring in no benefit for the patent holder. Also, the customer would also be deprived of experiencing an excellent product/invention that is worthy enough and acquired a patent.

This manner of presenting your patent well on the market table, is called “**Patent Portfolio Management**”. A proper management of patent portfolio is important to turn a right into a valuable asset that can give you returns and benefits even beyond

one's expectation. The importance of marketing and presenting the patent or invention well is no less than producing a beneficial invention. A simple invention, presented well could bring in profits for you whereas a very effective invention could not if it is not portrayed properly. Thus, it becomes very important for IP Attorney's and patent agents to firstly,

- 1) Draft their claims very well and with precision, and;
- 2) To present their patent like a package to the buyers, that attracts them to invest well and help the inventor in the exploitation of the patent.

It is essential for the Patent Attorney's and Agents that they involve smart business practices and marketing tools in managing the patent portfolio pretty well. Also, this process needs to be done back to forth as well, i.e., This is not a procedure that can be done in isolation, instead this is something that has to be integrated along with the product development right from the phase of initial idea conception to similar invention search, its research and up to advance product development. Also, at the time of introducing the product into the market as well as its commercialization. It can be said that the patent portfolio takes birth together with the idea of the product or invention and dies together with it. Not just this results in risk reduction but is also economically viable.¹ The research paper explains the entire lifecycle of a patent portfolio and how its management can be done. It also explains in detail what all tools and utilities are required, related domain knowledge and how the process can be integrated at organisational level. This management can help the patent, achieve its true potential and economically gets the benefits that its creators conceived for it.

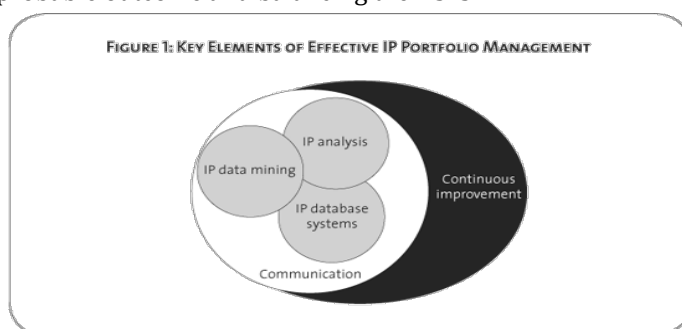
2. ROLE OF A PATENT PROFESSIONAL

Patents are linked with not just academic world but also legal world that gives it life. After legal approval only a patent can proceed for commercial exploitation. Patent Professionals need to help the inventors to protect and legally enrich their patents so that their chances of successfully getting the patent right strengthens. The pace with which technology and competition is advancing competition in global environment, a need arises to manage patent processes more efficiently to increase efficiency and to expand a competitive advantage in the marketplace.

To make the process effective, there is a need to deploy appropriate and useful techniques and tools and progressions that are prevalent in the competitive business world. These tools are very helpful in recording the minutest detail of the stages of the innovation other important facts. These tools also help in finding the prospect markets and judging the future possibilities of the product. These tools are:

- Various software and databases for the process of data mining, information gathering and storage. This is important to record the whole process which is very much helpful in case somebody challenges the validity or ownership of the patent.
- The need for new and updated softwares that can help with data collection and its analysis. Data is the heart and blood of any research. Data can make or break your entire research. Thus, it is very much essential to choose the data collection tools wisely.
- Program management methodologies. There are several tools that manage each and every stage of the program. Also, they let you know in advance what the next step should be.
- Effective communication across technical, professional, and legal companions. It is important to communicate across the domain and be aware of what is being developed in your domain in the other part of the world. Patent is an exclusive right and is granted on the condition of absolute novelty globally. If the inventor is not aware of the global developments and invents something that has already been created, he would not get the patent.

All this management is needed so that the portfolio is more effective and is continuously improved. This is done with the objective to predict the probable outcome and balancing the risks.



¹ Jeremy Burdon, IP Portfolio Management: Negotiating the Information Labyrinth, ip handbook of best practices, <http://www.iphandbook.org/handbook/ch12/p04/>.

3. INTELLECTUAL PROPERTY PORTFOLIO MANAGEMENT: THE WORK PRODUCT

Whenever an organization works towards the creation of a product over which they in future plans to assert their IP right, there exists a need for them to very carefully and cautiously plan, collect the data, complete the different phases of its analysis and execute all the steps of product development accordingly. When looked at the overall process, the tools involved might seem to be similar; However, there are significant differences in the scope and depth of patent searches, as well as the analysis and dissemination of IP data, based on the intended outcome. Tactical decisions often require more narrowly focused searches, typically centered on specific product specifications within well-understood competitive environments. On the other hand, strategic decision-making demands a more comprehensive approach, involving broader patent searches, the use of multiple analytical frameworks, and diverse information delivery mechanisms to ensure that the generated IP data is both accurate and relevant for long-term planning. This broader perspective is essential for capturing the complexities of the competitive landscape and guiding high-level decision-making.²

Successful management of intellectual property requires a **unique combination of skills**. Portfolio managers or IPM teams require **extensive technical knowledge and skill, deep business insight, clear communication skills, and a comprehensive understanding of domestic and foreign patent rules and regulations and measures**. Advanced patent search and analysis tools are essential for efficiently gathering and examining vast amounts of patent information. These tools enable organizations to conduct detailed patent searches, identify relevant patents, and analyze trends, innovations, and competitive positioning within a specific industry. They can filter through complex patent data, assess patent validity, and even identify potential infringement risks or opportunities for licensing.

In addition to search tools, robust IP database systems are needed to manage the comprehensive records related to intellectual property. The use of which is to record each and every stage of product development, the related stakeholders, the technology behind the product or invention, even the literature referred to, the claims that would be asserted later, the scope of invention and financial aspects as well. By maintaining this information in a centralized and accessible system, organizations can streamline their IP management processes, track the status of patent portfolios, and make informed decisions regarding IP strategy, commercialization, and risk management. When incorporated in the organizations working framework, these softwares and databases tend to enrich and increase the organization's capacity to protect its soft rights in relation to the invention that would help securing immense monetary benefits in future at the phase of patent's commercial exploitation. The table below highlights the diverse range and complexity of IP analysis that IP management professionals are required to research and provide:³

Tasks	Definition, Opportunity and Complication
Scanning Technologies	A broad review of patent and non-patent literature is conducted to identify current technology trends, which is crucial from the moment an invention is conceived, as it supports effective technology brainstorming.
Current Patents (Granted or Published)	Very important to frame your claim and drafting effective patent application.
Licensing / Business growth IP support	Securing the assessment of the patent's capacity to license with similar or interested business partners. Updating related products and market players and how the invention would downgrade their existing product and will increase chances for its own commercial usage. Does the product hold the capacity for replacement of the existing technology?
Patent Development/ Patentability Checks	A focused IP search and data analysis is conducted to identify technologies that are similar, overlapping, or identical. This involves reviewing the full specifications of issued patents worldwide, making it an almost impossible task due to its extensive scope.
Patent Landscape	Intellectual Property over a product cannot exist in seclusion and does attract similar technologies and domains in positive as well as negative manner. The detailed knowledge and plan of execution for all the possible scenarios is called as a Patent's Landscape and needs to be designed in advance.
Infringement	As earlier discussed, a patent cannot exist in seclusion. Thus, it should be very carefully observed and the patent claims should be designed and drafted in such a manner that they cover the broadest possible scope but not limiting or infringing anyone else's IP Right. After all attracting infringement cases is the last thing a patent holder would want.

4. BUILDING AN EFFECTIVE PORTFOLIO

The process of building an effective and smart portfolio starts even before the conception of an invention. This is the very reason why a patent search is performed. As patent is an exclusive negative right, no two people can enjoy the same privileges. Thus, what ground already exists is the basic know how essential to build upon your castle over it. Thus, the steps of building an effective portfolio can be:⁴

- 1) Know the already available technologies and patents** in the market before planning your invention. The inventor needs to have in-depth knowledge of the available prior art. This would help you in framing effective claims. Thus, the IPM team should certainly have a technological expert for this task.
- 2) Keep defensive strategies ready for your patent.** If you are the inventor of an invention then you are the person who knows what works and what doesn't work. More important is knowing "What may work". This category of claims that might

² Eric Curtin, Patent Portfolio Management, <https://www.slideshare.net/FinancialPoise/patent-portfolio-management-series-patent-best-practices-insiders-advice-for-inhouse-counsel>, accessed on: 07th April 19, 09:30 am.

³ Supra 1 at Page 1

⁴ Ron Carson, Get your assets in gear: aligning IP strategy and business strategy, https://www.wipo.int/export/sites/www/sme/en/documents/pdf/ip_business_strategy.pdf (accessed on: 06th April 2019)

work but did not work for your patent are the once from which you will get competitive market tomorrow. Thus, it is extremely vital to play defensive and equip your IPM team with these details so that they can be prepared in advance.

- 3) **Don't forget the offence:** This means that the patent holder should always be ready to compete with similar technologies by trying to maximise his own patent scope. For those with sufficient funds, the easiest way is through strategic acquisitions. But for a typical company, the acquisition may not be possible, and an organic native approach is required. Collect engineers and brainstorm ideas, design as much as possible around your technology, or get the same results in different ways. Then apply for patents for these solutions as much as possible.
- 4) **Promote team work and updating sessions among the team, including the decision maker:** In many innovative startups, a single individual often oversees and directs the company's technology, possessing in-depth knowledge of key technical aspects and determining which inventions should be patented. However, as the company grows, this centralized approach can hinder patent development and overlook important technological advancements. Thus, all the members of the technological team should be properly updated and should actively participate in the brainstorming sessions.
- 5) **Keep the Portfolio updated at all times:** At many instances it can happen that a particular information or fact may slip out from a person's mind and it might cost you losing the battle altogether even if you were leading it at once. Thus, it is very important that the portfolio should be properly updated with all the findings, established and probable that would help you in quick look upon and proper study of your scope. Also, it might be possible that old employees of your company leave and new ones come. In such a case, an updated portfolio would keep the older brains alive and will help kindling and guiding the new ones.

5. INCLUSIVE INNOVATION MANAGEMENT⁵

'Phased Gate Innovation Management' is a method utilized by medium to large technology companies to manage new technologies. This process offers a structured framework for evaluating conceptual ideas and early-stage concepts, creating a "funnel" that helps mitigate investment risks. Figure 2 depicts the phased development process for (A) product development and (B) research and development initiatives. At the conclusion of each phase, various input and output factors are examined, and risks related to technical status, business impact, market conditions, and financial health are assessed. This has to be ensured and then only the product development can proceed further⁶

This portfolio for any particular patent has to be designed at a quick pace, yet very carefully and must be done prior to, at the time of and even after completion of each phase. The data analysis process related to the patent should be documented very carefully so that at later stages of patent applications, relevant proofs can be submitted. This process, if done properly reduces the risk up to a great extent and also secures the invention from further infringement. IP offices of various jurisdictions offer the facility for effective patent search⁷.

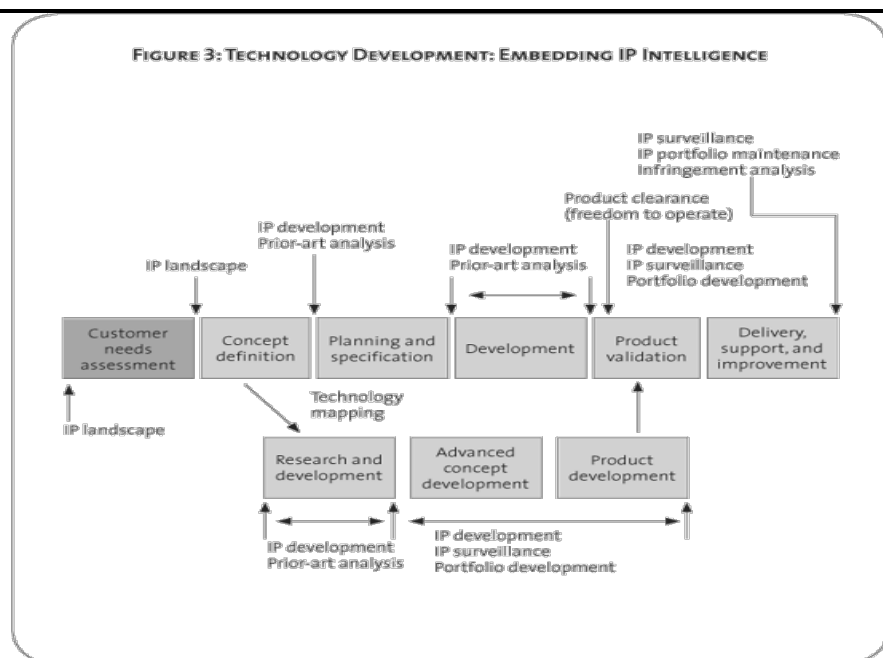
Most of the inventors mostly solos ones are under the misconception that the process of IP management or creation of its portfolio is something that comes into picture after the product development is complete. This misconception has costed a lot to even some of the brightest inventors. The devotion with which they work towards creating a technology or product which can revolutionize the related market goes all in vain just by that one literature or thought that remains undocumented or that one more time done patent search that if had been done earlier might have saved years of hard work. Thus, taking the help of a patent professional becomes extremely important who can guide the inventor over how to keep the IP right secured right from the conception of idea to research and till the product launch too. IP portfolio management, in today's era of competition is very essential for securing IP Rights⁸. The phased gate technology has been depicted in Figure 3 underneath and explains the process of IP portfolio management in detail.

⁵ Supra 5 at Page 5

⁶ Jeremy Burdon, IP Portfolio Management: Negotiating the Information Labyrinth, ip handbook of best practices, <http://www.iphandbook.org/handbook/ch12/p04/>.

⁷ Valuing Intellectual Property Assets, https://www.wipo.int/sme/en/value_ip_assets/, accessed on 01-11-2021, 21:53 pm

⁸ Supra at 1



6. SOUND PORTFOLIO MANAGEMENT²

Although the task of building a patent portfolio is ongoing, achieving a critical mass of assets makes it equally essential to manage the portfolio strategically. If not effectively overseen, a patent portfolio can not only fail to produce revenue but also deplete the company's financial resources.

- 1) **Know the portfolio well:** An effective portfolio would do no good for the company if the person dealing with the invention are not well versed with the portfolio. Many a times, a company holds innumerable number of patents and over the time it happens that the company loses it hold over the same. Thus, it is very important not only to keep the portfolio updated, rather, to know it well. This would help in preventing litigations and also preventing infringement.
- 2) **Alter your portfolio:** Avoiding or removing a wrong information from the portfolio is as important as keeping correct facts intact. Also, if the portfolio faces litigation, this becomes even more important, because that is the time when you actually realise what is relevant and what was a false belief. Also, for a multi-national company, the number of patents might be in hundreds or even more, thus, a reliable database and a prune portfolio becomes very essential.
- 3) **Monetize your Portfolio:** A portfolio is maintained always to market your product well in the marked, thus, a portfolio should always be updated according to the market needs. Also, as the monopoly is for a limited period, continuous efforts should be made in direction of selling and licensing your product. A market expert would help in understanding the demands and available competition in the market.

7. CHALLENGES/ISSUES IN PATENT PORTFOLIO ASSESSMENT AND MEASUREMENT

Managing a Patent Portfolio is naturally a cross functional and multidisciplinary stream:

Maintaining an efficient portfolio touches the domains of Finance, Legal, Product Development (technological), Marketing, R&D, Risk Management and many other streams. Thus, it is not possible for all organizations to have a "Chief Innovation Officer" or central role to manage strategy and the diverse stakeholders. Also, the sole or independent inventors might not have the leisure to hire a complete team of professional who could manage all such aspects related to a patent life cycle. Also, not much help is available from the government to look over all these aspects.

IPR is a negative right, which complicates valuation and assessment of the right. How does one determine the value of PREVENTING other competitors from exploiting your rights? Similarly, IP has a completely un-transparent marketplace and the accounting practices around valuation of IP are woefully inadequate (e.g., internally-generated IP does not fall to the balance sheet)

⁹Michael Gulliford, Building Patent Success In The New Innovation System, <http://www.ipwatchdog.com/2015/10/25/building-patent-success-in-the-new-innovation-ecosystem/id=62670/> accessed at: 06th April 2019, 18:30 pm

Docketing: A docketing system enables companies to ensure they are taking timely and appropriate actions. However, it does not clarify whether these activities are genuinely necessary. For example, a company with hundreds of patents may be wasting significant annual resources by maintaining patents that are not utilized in its core business operations.

Spreadsheets: Spreadsheets are often used in managing the shortcomings of a docket system, companies use spreadsheet to manage additional data related to Intellectual Property. However, these are prone to error, problematic in sharing and may duplicate the data when used in conjunction with the docket system. This could cost the companies, millions of dollars.

Shared Directories: Shared directories are employed to mitigate the issues associated with using spreadsheets. However, maintaining the information stored in these directories demands substantial effort to ensure that the data remains up-to-date, and it introduces new challenges related to version control. While shared directories can serve as a convenient repository for various pieces of information, they are significantly constrained in their ability to manage the crucial relationships between intellectual property assets and business objectives.

Standalone Databases: Some organizations have sought to implement database programs as a means of overcoming the limitations inherent in spreadsheets and shared directories. However, these databases often lack the necessary infrastructure for effective data sharing within a distributed workforce. Additionally, they require substantial IT resources and custom programming, which can lead to significant costs associated with modifications as the business undergoes changes and growth. Consequently, the adaptability of these database solutions is frequently limited, posing challenges for organizations striving for efficiency in data management and collaboration.

Irrespective of all these challenges, the process of patent portfolio management is very much essential in contemporary times. Without this the possibility of producing a strong, credible, unique invention that contains all the essential ingredients of a patent i.e. novelty, inventive step and industrial application is nearly impossible.

8. CONCLUSION

The process of innovation and managing innovation is no more a separate job in today's date. If a person is planning an invention, he needs to start managing his work from the very beginning itself. A properly managed invention profile would help the inventor at all the stages, i.e. product designing, presentation, litigation, licensing, acquisition/mergers, and also while closing it. Thus, Patent Portfolio Management is not something that can be avoided if you want to enjoy the market monopoly. Along with this, the market now demands professionals to be trained in multidisciplinary streams, i.e. technology, management, database search and also possessing good communication skills. A company that can afford to, should have a team of professionals who should continuously work upon all the aspects and phases of product development lifecycle. These days we see the patent firms hiring a graduate who has knowledge of both, the technology and the Law.

Various IIT's are having their own IP management team that is dedicatedly guiding the inventors about this process. IIT Khadakpur, India; has its own school for Intellectual Property and the faculties are regularly launching courses on Intellectual Property along with the government for free. This is being done to ensure proper dissemination of knowledge about this field. The government now a days understands the importance of technology and what value a patent holds for the nation. In 1980's, somewhere around 90 percent of assets of any company used to be physical assets and 10 percent intellectual. Now the data is 180 degrees reversed. Now, 90 percent of assets are turning out to be intellectual or non-physical assets. This data is sufficient for even a lay man to understand the importance of a process that manages the creation of these assets. The Patent Portfolio management is no longer a task to be performed by the inventor in addition to doing his invention, but is a necessity that goes hand in hand with the invention. There are immense opportunities available that might be harnessed maintaining an effective and impressive patent portfolio.

Any need is not created in one day itself. Before it arises, there are several instances and incidents that makes the people feel the gap that exists in the legal and procedural framework. These gaps have costed many inventors by losing their patents. Patent portfolio management is not just a new emerging field but a necessity for inventors in today's era. The amount of online publication that is happening at a global level, needs extensive literature search for any patent and also the documentation of the same. The companies and organisations involved in research and development and product development need to integrate the patent portfolio management process in their basic structure and product development framework. This involves incorporating of software and databases. Investing in good patent professionals having knowledge of all technical and legal aspects. Giving training to the existing inventors and incorporating a novel working style. By integrating strategic and rights protection based on a broad, high-quality patent portfolio, successful integration of this model can turn innovation into value. It would be very interesting for any researcher to witness the developments in near future in this field. This is also a promising field for any professional who wish to create a career in this field. The researcher strongly believes that this field has only witnessed the initial rays and the dawn in the field is still to break.