

# AI Robots Running Your IP Renewal Strategy

by Jeff Goodwin

## Executive Summary

Companies have seen their IP portfolios grow significantly since the 1990s, but with a growing portfolio comes growing costs, both in prosecution and renewal fees. As the cost to maintain a portfolio continues to grow, companies need to start thinking smarter and more strategically about their portfolio and begin determining what qualifies as important IP (i.e., IP that provides value and ROI). What makes a patent valuable can vary between companies, which may be why there isn't a solution on the market to assist in IP renewal strategies. Where one company values a patent that protects a product, another may value IP with high licensing value and opportunity. Now there are IP management solutions on the market, but these solutions do just that, allow you to manage your IP; they don't help you value and determine which patents you should renew or not. Though these IP management tools do make paying renewal and maintenance fees a lot easier, many have automatic payments, so you never have to see the money leave. So, what is your IP renewal strategy? With growing IP portfolios, how can one reign in the costs and make their portfolio more valuable?

## Background

### *The Growth of the IP Portfolio*

In the early 1990s, we saw an acceleration of IP filings as companies raced to the patent offices around the world. In many regions, filing rates continue to increase but in other regions they have begun to plateau or even decline. This is most likely due to the fact that many companies are thinking smarter about filing IP and focusing more on quality rather than quantity<sup>1</sup>. Furthermore, as companies have increased filings year after year, they've seen their portfolios grow and with that comes growing costs. Companies are now thinking smarter about renewals and filings.

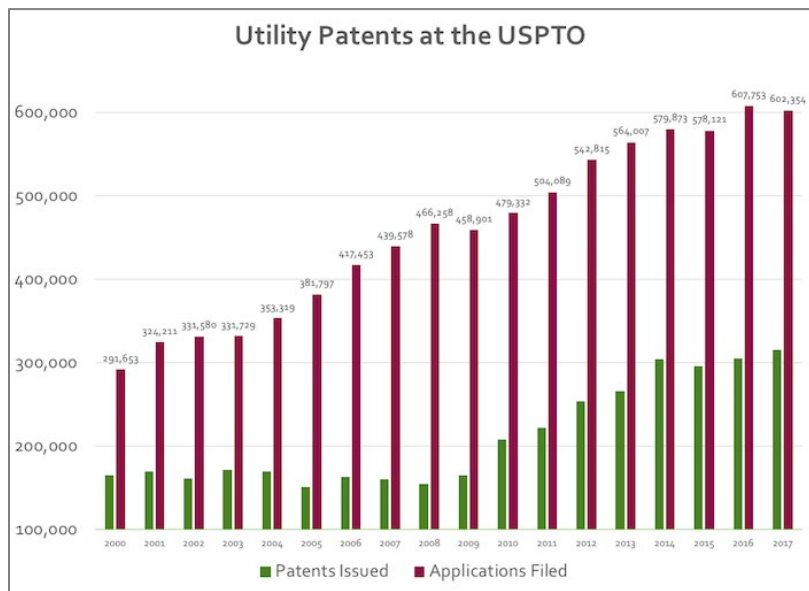


Figure 1 Why Fewer Patent Applications are Being Filed- Retrieved from IPWatchDog

Additionally, in developing a cost-effective “renewal strategy” for managing a patent portfolio, it can be difficult to balance protecting a company’s core technology with minimizing unnecessary expenses. Maintenance fees paid over the lifetime of a patent can cost two to four times the cost of filing, searching, examination, and issue

<sup>1</sup> Ciccatelli, A. G. (2011, April 11). Why Fewer Patent Applications are Being Filed. Retrieved from IPWatchDog: <https://www.ipwatchdog.com/2018/04/11/fewer-patent-applications-filed/id=94436/>

fees combined. In 2018, almost half of the USPTO's revenue (i.e., \$1.4 billion) was from maintenance fees alone.<sup>2</sup> And, as it becomes easier to enforce patents outside the United States, a multinational filing strategy has become the norm for any company that wishes to manufacture or sell products abroad. In 2018, U.S. applicants filed around 230,000 patent applications abroad even as the USPTO saw a slight decrease of 1.2% in their application filings. Meanwhile, the China patent office has seen a sharp rise in patent filings since the early 2000s and, in 2018, received 46.4% of all patent applications filed worldwide.<sup>3</sup>

Identifying patents in a portfolio essential to the company's core technology is the key to a cost-effective IP renewal strategy. Also important is identifying the countries in which the company's products are manufactured or sold. Companies can reduce their patent portfolio costs by selling or abandoning unnecessary IP.

### *Patent Renewal Fees*

A patent maintenance or renewal fee is a payment made to a specific country's patent office to maintain a granted patent in force. Most countries require renewal fees every year; the United States schedules fees at the 3.5, 7.5- and 11.5-year marks.

Since renewal fees increase over the life of a patent, the cost of maintaining a patent portfolio will increase as the patents mature. Maintaining patents in multiple jurisdictions outside the US can compound costs. Examples of fees by companies are shown in Appendix A.

## AI IP Renewal Tool

### *AI IP Renewal Calculators*

When dealing with a small patent portfolio, i.e., anywhere between one and ten patents, there may be time and resources available to closely scrutinize each patent and develop a strategy for its practice, enforcement, sale, abandonment, etc. In these cases, where most of, if not all, the portfolio is core to the business, AI can facilitate this process but shouldn't be considered a replacement for a good attorney or patent strategist. But this kind of case-by-case human analysis doesn't scale. When a patent portfolio begins to grow past the single digits, the chance that high-paid human employees are wasting time and resources analyzing low-value patents increases. In companies with a robust patent portfolio that spans various technical fields, AI-based renewal strategy becomes the optimal method of managing increasing costs while protecting valuable or core IP.

How would an AI know when a patent is worth the renewal costs? Luckily for humanity, AI doesn't have to start from scratch. Companies like ipCG have metrics by which we can estimate the value and cost of a patent. Some of these metrics are easy for a simple computer to handle, for example, the renewal costs and due dates. Other metrics require more nuance, like litigation value or licensing value, but an AI can create a good estimate of these values by looking at historical data on the litigation or licensing value of similar patents. Finding correlations, for example, between the field of the patent, its age, keywords, number of citations, or any other metric and value, is something that AI is much more efficient at than most humans. No AI or human can guarantee there won't be any error in this analysis, some patents may be unrenewed that had significant value, others might be renewed and never create any value. However, the AI module makes it easy to keep track of when these errors in judgment happen and correct them going forward (it also doesn't try to make excuses, which some humans might do when forced to self-critique).

In order to get a better picture of the value of a good renewal strategy, and therefore the AI that can craft that strategy, it is important to look at real data. An empirical study found that about [54% of all patentees pay all the renewal fees on a patent](#). This would mean that even if every single patent was renewed, somewhere between

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<sup>2</sup> "United States Patent and Trademark Office FY 2018 Performance and Accountability Report," pg 35 – USPTO <https://www.youtube.com/watch?v=rk5UGM8wvIo&list=PLWeSqYlpxKDhJcfu6SO0FmUFsnCM-qRRK&index=13&t=0s>

<sup>3</sup> WIPO (2019). World Intellectual Property Indicators 2019. Geneva: World Intellectual Property Organization <https://www.wipo.int/publications/en/details.jsp?id=4464>

40% -50% of all patents are renewed for the entire term of the patent and never make any money. [Current renewal fees on a patent are more than \\$10K in the US alone](#). Renewal fees are paid for each country in which the patent is filed. For international patents, maintenance fees can easily climb to six digits over the life of the patent. The largest patent holder in the U.S. currently is [Samsung](#), with around 75,000 active patents. If the above numbers are to be believed, then Samsung has around 30,000 to 35,000 worthless patents that will be renewed for their entire term, which is around a third of a billion dollars in maintenance fees in the U.S. alone. The number of man-hours it takes to evaluate an individual patent varies but should probably be no less than at least one hour. This means that to conduct this analysis for Samsung, it would take around 75,000 man-hours, which would mean paying roughly 33 full-time employees for a year. Daunting, but not insurmountable for a large company. The problem becomes insurmountable when you include the fact that maintenance fees are not linear, but increase over time. It may be worth keeping a patent for the first eight years of its term, but not the next four. This compounded with a changing market, new R&D that uses old patents, and new patents, means that this renewal analysis needs to be updated. An AI, however, can be constantly run and can make updates in real-time, and the only costs are data storage and electricity costs. Even if a company wanted to be extra cautious and have a human look at the patents of which the AI was unsure, the costs are an order of magnitude smaller than the cost of a fully analog analysis. Samsung was used as an extreme example, but even when there are only 100 patents in a portfolio and thus 100 man-hours of human work to be done, an AI can still cut costs if the AI is not restrictively expensive.

### *AI IP Renewal Chaser*

The best AI would automatically manage your portfolio behind the scenes. But to be honest, most AI isn't to the level of accuracy that it should be trusted without oversight (and even if it were, most people wouldn't anyway). The AI IP Renewal Chaser (AIRC) walks you through the analysis step-by-step to make sure you agree with its methods and decisions. Figure 2 & 3 show a simplified example.

The renewal decision tree represented in Figure 2 is one example of a straight-forward flowchart that users can follow to see how the logic of the AI would work. Some of these metrics (i.e., core vs non-core) may be entered by the user, learned by the AI from user input, or determined by the AI entirely on its own. The order of and which metrics are used will differ from company to company as each company will have a different view and perspective of IP. The example below first looks at the age of the patent or application and the remaining total left in maintenance or renewal fees. Most jurisdictions have maintenance fees that increase over time, so some companies may consider looking more closely at IP at certain periods in their life to determine if the patent will provide more return than its total cost. In the U.S., there are no more maintenance fees after year 11.5, so any patent older than 11.5 years would automatically be kept, as there shouldn't be any additional costs associated with the patent.

If there are still maintenance fees required, additional criteria are evaluated as shown in the example. For example, is the patent map to a product or service or is it core to the business? IP that doesn't cover a product would be of little value and may be considered abandoned. But depending on your metric, the IP may still have value even though it doesn't map to a product or isn't core to the business. For example, does it hold litigation or licensing value? Some companies leverage non-core IP in licensing as another business and line of revenue.

There may be any number of metrics that could be considered and analyzed to help manage IP renewal. Some other metrics one might consider include patent strength (score), revenue associated with the patented product, or whether there are alternative technologies that have replaced the patented technology.

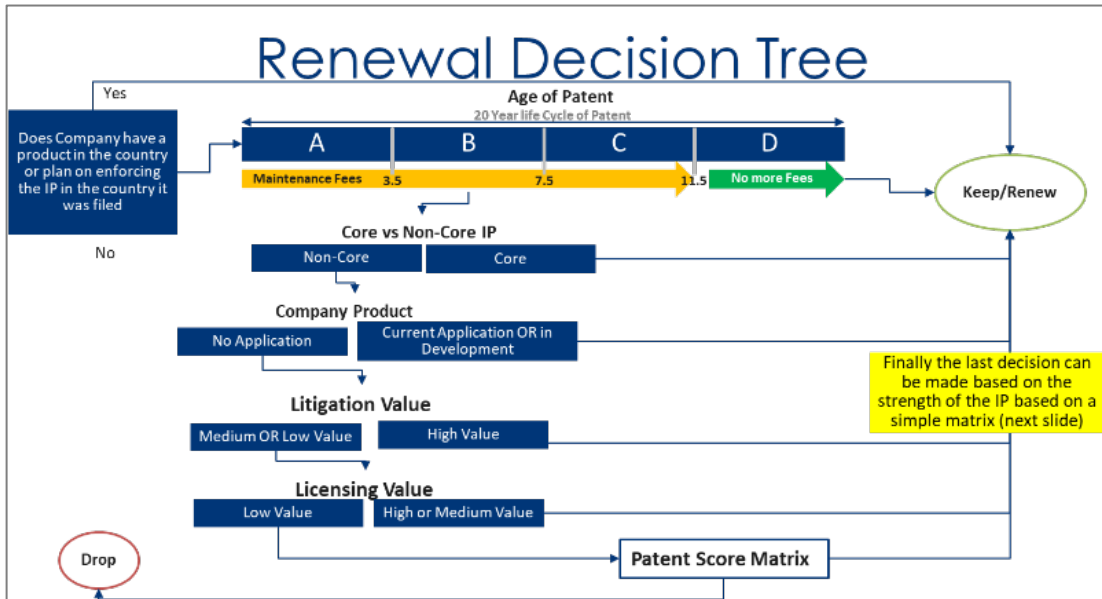


Figure 2 - Renewal Decision Tree

Alternative to a decision tree or in conjunction with a decision tree, matrices can be leveraged for less linear (renewed/drop) decisions. The example above uses a matrix for determining if a patent should be renewed or dropped depending on the age and score of the patent, as shown in the figure below. Specifically, after all the immediate yes or no questions have been answered, a more robust analysis is run on the patents that require it. These “maybe renew” patents are then scored based on some algorithm (likely a proprietary algorithm) which is compared against other metrics (e.g., term years remaining) in order to determine if the patent should be renewed. This part of the process would likely be open to adjustment by the user or AI or both to better suit the needs of the individual company. Some companies may choose to automatically drop patents that score below some threshold, keep patents above another threshold, and send the patents in between to a review team. Others may choose a system where all patents are kept but the lowest scoring is dropped first as the budget is cut or when new patents are granted. Continuously updating the AI on the actual value obtained from a company’s patents, the revenue streams of the company, and existing company renewal strategy will begin to tailor the AIRC to the specific needs of that company.

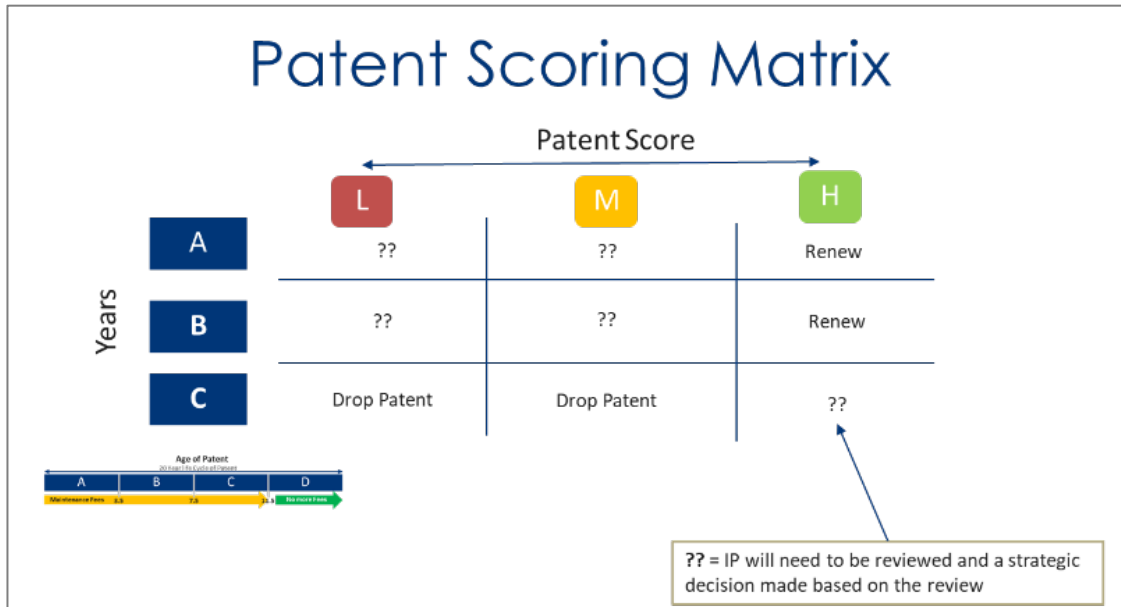


Figure 3 - Example of an Patent Scoring Matrix

On top of a fully automated, real-time, and adjustable renewal strategy, a good AI IP renewal tool will also keep the parties that need this report informed, such as a CFO or IP team leader. Notifications would be automatically generated, either periodically or in response to changes. This is especially critical when maintenance fees are set to be due soon. Different countries use different schemes for when fees are due, and the due dates are sometimes dependent on the date the patent was filed or granted. So, it would be the most practical to schedule these notifications individually for each patent based on its fee due date. This task is simple for an AI.

### Where are these AI IP Renewal Tools?

Many companies outsource their patent renewal to third parties or use software to automate payments. Integrating IP strategy into a fee payment service would provide a more cost-effective way of managing a patent portfolio.

Though there are many software options on the market that provide IP management and automated payment solutions, they don't provide any strategic insights or recommendations into whether a patent is of value to the company and should be renewed or not.

### Customized Renewal Strategy

The major shortcoming of current IP management software is the fact that they don't provide a customized strategic approach to IP renewal. IP management software provides automated and easy ways to schedule, calculate, and pay fees, but they don't give you any strategic insight into the value of a patent and if it is even worth the cost to continue to maintain. Some of the components exist in these IP management tools, but they've been designed for broader implementation rather than customizable implementation to your company's IP renewal needs and values.

For companies with small portfolios and limited financial resources, it may make the most sense to manage patent rights in-house. However, as the portfolio size increases and patent rights extend to multiple jurisdictions, this can become administratively burdensome and costly. Large IP management systems are expensive, so where do you turn?

**Tags/Keywords:** IP Strategy, IP Renewal Strategy, IP Maintenance Strategy, Patent Renewal Strategy, Patent Maintenance Strategy