Article

From idea to patent – how project enters the market?

Richard Staszkiewicz1,\*, Jan Budziński2, Karol Kasperek3 and Stanisław Zagórski4

1 Warsaw University of Technology; richard.staszkiewicz.stud@pw.edu.pl

2 Affiliation 2; e-mail@e-mail.com

**\*** Correspondence: richard.staszkiewicz.stud@pw.edu.pl; Tel.: +48-881-932-622 (R.S.)

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**Abstract:** Where does a Polish engineering student patent? It is a frequently asked question among those, but due to its wide range, no synthesized step-by-step guidelines have been established yet. We have critically reviewed the subject literature and interviewed the Patent Attorney. The literature population consisted of 97 articles published in a 2010-2019 period. Results show the engineering students, for the most part, benefit more from patenting internationally in lieu of their nation. In consequence, their patents are strengthening the international character of the IT market.

**Keywords:** keyword 1; keyword 2; keyword 3 (List three to ten pertinent keywords specific to the article; yet reasonably common within the subject discipline.)

1. Introduction

The introduction should briefly place the study in a broad context and highlight why it is important. It should define the purpose of the work and its significance. The current state of the research field should be reviewed carefully and key publications cited. Please highlight controversial and diverging hypotheses when necessary. Finally, briefly mention the main aim of the work and highlight the principal conclusions. As far as possible, please keep the introduction comprehensible to scientists outside your particular field of research. References should be numbered in order of appearance and indicated by a numeral or numerals in square brackets, e.g., [1] or [2,3], or [4–6]. See the end of the document for further details on references.

H0 – Polish engineering student patent in Poland

2. Materials and Methods

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Interventive studies involving animals or humans, and other studies require ethical approval must list the authority that provided approval and the corresponding ethical approval code.

3. Results

3.1 Patenting in Poland

Differences between patents and copyright

Applying for a patent and registering your creation in the appropriate office is a very long and formal process, as opposed to copyright, which you gain as soon as you create something. You do not need to go public with your creation to have the copyright for it, in contrast to a patent, which is public by nature. Patents also require recurring payments to keep them registered and expire quicker. The main benefit you gain from registering at a patent office is greater protection than standard copyright.

What can be formally patented?

In Poland, you can apply for protection by the patent office in one of two categories. These are inventions and utility models. Utility models are derivative by nature. The main criteria are, essentially, making something that already exists better by expanding the functionality or making it easier to use. Inventions, on the other hand, need to be innovative. There aren’t strict rules as to what can be patented, due to the evolving nature of technology. There are three cornerstones, namely: (i) being new, (ii) being inventive and (iii) having the potential for commercial use.

The Polish Patent Office will also disqualify any applications that are purely abstract, meaning they do not have physical properties. Curiously, this is what makes patenting software impossible in Poland.

Patent application process

Before even starting the documentation process, you need to research the state of technology in the world. The patent office cannot give you protection for something that is too closely related to another patent. Once you’re certain that your creation is sufficiently inventive, you need to create the application. It needs to contain:

* an application containing at least the applicant's designation, the subject of the application and an application for a patent or protection right
* description of the invention / utility model revealing its essence
* protective claim(s)
* abbreviation of the description
* drawings (for the invention, if they are necessary for its understanding; for the utility model - obligatory).

Once your application is ready, you need to submit it to the Patent Office for review. After checking your application for all necessary elements, the Office will go through the following steps.

1. Assign a filing date
2. Classify the invention and prepare a report on the state of the art, as well as a preliminary evaluation of the application
3. Formally and legally examine the application. During this examination, the Office may request the applicant to complete the application or remedy the deficiencies, or else the proceedings will be discontinued
4. Further examine the application regarding the nature of the invention/utility model. If the application violates the regulations, The Office issues a decision to refuse to grant a patent
5. Announce the application of the invention in the Bulletin of the Patent Office immediately after the expiration of 18 months from the initial application date. The announcement may take place earlier at the request of the applicant
6. Substantive examination of the application. At this stage, the patentability or protection of the solution is examined. The substantive examination may end with the issuance of a decision to grant an exclusive right, a decision to refuse to grant this right or a decision to discontinue the procedure
7. In the case of issuing a decision on granting the right and paying the fee for protection, the right number is assigned, the granted right is entered into the patent register and it is announced in the Patent Office News. The Office issues a patent document

After all that, for the following 6 months anyone can dispute the patent rights. If your claim is upheld, you will need to pay recurring fees, increasing year by year, to keep your patent registered.

Consequences of infringing on a patent

The patent office will not monitor the market for possible infringements. The patent holder must do so themselves. In case such an infringement occurs, a lawsuit needs to be carried out. The patent holder can request several causes of action, including, but not limited to:

* Immediately stopping the other party from infringing on the patent and making sure that does not happen again
* Requesting the profits made by the other party using the patent to be handed over
* Compensating the patent holder for the damage caused

Of course, multiple of these can be requested in a single proceeding.

3.2 Patenting Internationally

There are many ways to patent your original ideas. Most people who want to patent their creations do so only in their own country. Most Poles protect their ideas only on a Polish scale, but they do not know the advantages of publishing them on an international scale. The most famous international patent law is PCT[[1]](#footnote-1), which covers over 150 countries around the world, including Poland.

Why would a Pole patent internationally?

One of the reasons why Poles should protect their patents abroad is to fully secure their property interests. If a person submitting their idea to the patent office obtains the exclusive right to it, no one in the countries where it is announced will be able to use it for their own purposes. This would give the owner the opportunity to fully use their own idea and earn on it while the patent protection is in effect. Another reason for international patenting is the possible lower total cost of the entire operation. In the PCT procedure, the notification is automatically searched and processed, which allows for faster determination of the scope of protection against higher costs. Initially, the entire application is more expensive, but thanks to the simplification of the procedure, the final cost can be much lower.

Differences between patent rights

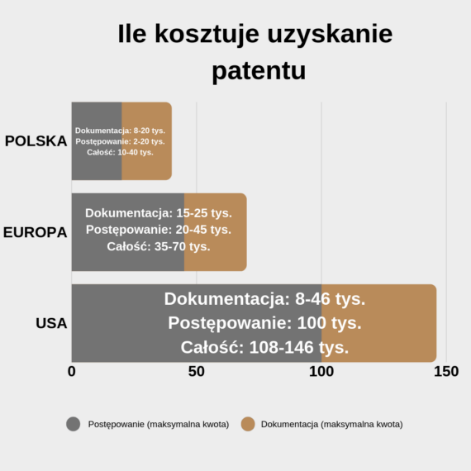
All countries have their own separate procedure for checking and publishing a patent in their territory. For example, let’s compare patent rights in Poland, the United States and Europe. Each of them has its own Patent Office, which issues a certificate of possession. However, there is a difference between each of these entities, including the price of the patent and the procedure for obtaining it. By far the most expensive patent route is the one in the United States, while Poland is one of the cheaper ones that can be found elsewhere in the world (see the chart opposite). The main difference between these entities is the path that the patent must travel from submitting the application to issuing the declaration. In the United States, due to the numerous legal complexities and possible revocations, the time to obtain a patent can come out to be very long. On the other hand, in Poland and Europe, this procedure is simpler, faster, and reduces the number of times in the relevant courts to a minimum.

Chart 1

https://jvwf.pl/ile-kosztuje-uzyskanie-patentu/

Patent and The Internet

As we know, the Internet is already common almost all over the world. The wide availability of patent databases has changed the possibilities of companies and the market. A global network makes it easier to sell and buy patent rights, which improves the operation of many corporations. The widespread availability of a large amount of innovations that were once very expensive and difficult to access for low-income companies can bridge the gap between them and huge corporations. The Internet can also ease the burden on national and international patent authorities by making it easier to find and check the innovation of a given project. The web is not only a treasure trove of already discovered things, but it can also help generate new ideas and projects that help us develop our world and that can be patented. This requires us to be able to use the Internet properly.

Conclusion

International patenting gives enormous privileges and profits. Anyone willing to spend their time and money on such a patent should be paid back in far-reaching prospects. Remember that your innovative ideas should be protected as much as possible.

3.3 Patent & Market

Patent & Market

Several companies competing within the same industry may find themselves in need to utilize similar technologies in order to create their product. Those technologies would most likely fall under the same patent. Whoever owned that crucial patent would reap the benefits of licensing rights to using that technology to interested companies. That phenomenon gives patents a real market value in the current day and age, making them a profitable asset to a company that owns them.

Market value of a patent

When calculating the actual market value of a given asset, one has to take a determined approach. There are a number of methods of patent valuation, with the most common being the economic-analysis method. There are three approaches to the method mentioned above: market, income, and cost.[[2]](#footnote-2)[[3]](#footnote-3)

The market approach derives the value of a patent from establishing values of similar patents or parented products currently present on an open market. What makes other assets similar differs depending on industry, however most common characteristics involve market share or a potential thereof, as well as the growth prospects for products utilizing the patented invention.

The income approach takes on predicting the future impact of implementing the patented product. The value of the patent is calculated based on the cash flow the product brings with its usage, whether it be in the form of additional revenue to the company or cost savings, that the usage of the invention will help achieve.

The cost approach determines the value of the patent to be equivalent to its replacement cost or the amount of money necessary to create an asset resulting in a product of identical use. When calculating the value one must take into consideration the additional expenses, risks, such as lost sales, and other economic effects induced by resorting to alternative technology.

Main patent holders across the globe

Presently companies assert as many patents of their new inventions as they are able to, in order to deter other businesses from using that technology, thus hindering their development. Largest companies in the world currently possess tens of thousands of patent families across the globe.

**Table 1.**

5 leading patent holders in the world as of January 2, 2020[[4]](#footnote-4)

|  |  |  |
| --- | --- | --- |
| Rank | Owner | Active Patent Families |
| 1 | Samsung Electronics Co Ltd | 76,638 |
| 2 | International Business Machines Corp | 37,304 |
| 3 | Canon Inc | 35,724 |
| 4 | General Electric Co | 30,010 |
| 5 | Microsoft Corp | 29,824 |

A device of many patents

Smartphones are a ubiquitous, irreplaceable device in the daily lives of billions of people. This unbelievably complex invention provides its users with a wide array of uses, from browsing the Internet, through listening to music, to paying with it as though it were a credit card. However, the smartphone isn’t subject to a single patent. In reality, it’s much, much more – RPX, a patent risk solving company, once estimated that about 250,000 U.S patents could be applied to a smartphone[[5]](#footnote-5). What that estimation creates is a major issue that tech companies have to deal with daily. Many patents being issued at the same may overlap with one another, company to company, which could prove to be a detrimental issue when resolving patent breach claims emerging from multiple companies having obtained almost identical patents.











4. Discussion

Authors should discuss the results and how they can be interpreted in perspective of previous studies and of the working hypotheses. The findings and their implications should be discussed in the broadest context possible. Future research directions may also be highlighted.

5. Conclusions

This section is not mandatory, but can be added to the manuscript if the discussion is unusually long or complex.

6. Patents

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**Supplementary Materials:** The following are available online at www.mdpi.com/xxx/s1, Figure S1: title, Table S1: title, Video S1: title.

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Appendix A

The appendix is an optional section that can contain details and data supplemental to the main text. For example, explanations of experimental details that would disrupt the flow of the main text, but nonetheless remain crucial to understanding and reproducing the research shown; figures of replicates for experiments of which representative data is shown in the main text can be added here if brief, or as Supplementary data. Mathematical proofs of results not central to the paper can be added as an appendix.

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References

References must be numbered in order of appearance in the text (including citations in tables and legends) and listed individually at the end of the manuscript. We recommend preparing the references with a bibliography software package, such as EndNote, ReferenceManager or Zotero to avoid typing mistakes and duplicated references. Include the digital object identifier (DOI) for all references where available.

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1. PCT – (Patent Cooperation Treaty) International convention on patent cooperation [↑](#footnote-ref-1)
2. https://www.investopedia.com/articles/fundamental-analysis/09/valuing-patent.asp#valuing-a-patent [↑](#footnote-ref-2)
3. https://www.americanbar.org/groups/intellectual\_property\_law/publications/landslide/2015-16/september-october/what-s-it-worth-principles-patent-valuation/ [↑](#footnote-ref-3)
4. https://www.ificlaims.com/rankings-global-assets.htm [↑](#footnote-ref-4)
5. https://www.patentprogress.org/systemic-problems/too-many-patents/ [↑](#footnote-ref-5)