

COSTS – AN ISSUE FOR WHOM

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In order to provide a concrete foundation for the workshop on patent costs, I thought it would be useful to deal with a real life invention, one that is simple but amply demonstrates the issues of managing or controlling costs. The costs I have estimated are in Canadian dollars and are based on the estimates provided by a commercially available software program “ Global Estimator” and experience in prosecuting cases from a Canadian firm. They are not intended to be an absolute guide but merely illustrative of a particular fact situation developed for discussion purposes.

BACKGROUND

The invention is a screwdriver, one that addresses the problem of the proliferation of different types of screwheads without the risk of losing the different bits. It does this by pivoting a number of blades to the handle and providing a lock to hold the blade in position. The blades that are not in use are stored in slots in the handle or can be used to provide extra leverage when tightening or loosening a screw. (The US Patent is 4,327,790)

This invention was brought to me by the owners of a small company who were looking to diversify their machine tool business into a retail area. They wanted to protect their idea so they could show it to potential customers, including large chain stores used to sourcing in low cost manufacturing areas. For such a simple device it may be surprising to consider the types of protection available and the relative costs.

PROTECTION AVAILABLE

Protection was clearly available by way of a patent at a projected cost of tens of thousands of dollars (we will look at the exact costs later).

Protection could also be obtained for the shape of the handle by way of design registration at a cost significantly less than patents. The trademark chosen for the product, “DURADRIVE”, could be protected by registration of the mark for a cost similar to that of the design registration, and the advertising material was entitled to copyright protection for no cost. In addition there turned out to be considerable know how in the technique for making one of the bits of the screwdriver.

The value or extent of the protection is also worth considering. Copyright of course provided very limited protection; the trademark was only as valuable as the distinctiveness acquired by the mark through commercial activity; the design prevented anyone imitating the shape but not from making similar devices of different shape; and

patents would protect the concept of multiple blades secured to the handle with a locking mechanism to hold the blade in place.

TYPE	COST	SCOPE
Patents	Tens of thousands	Conceptual
Design	Thousands	Specific shape
Trademark	Thousands + marketing \$	Specific name
Copyright	Nil	Narrow
Know-how	Nil	Personal

Clearly there is a link between cost and scope of protection. In the particular circumstances presented by the client, namely a concept for which a pre-production prototype existed but no marketing had been undertaken, the appropriate protection was by way of a patent. In fact we also filed registered designs as a precautionary measure.

For a small company with a speculative idea, cost is clearly an issue. A number of strategies are available that depend on the particular needs of the client. The professionals role is to use his/her knowledge of the patent systems to develop a strategy that is best suited to those needs. These strategies range from the “hustler” who needs a piece of paper called a patent that can be used to consummate the first deal available, to the “saint” who represents a well managed business with checks and balances. Various hybrids of these strategies exist that suit different circumstances, e.g. the university professor about to disclose, the start-up company hoping to attract financing and needing more than one patent application to do so, the company in the middle of a battle for market share in a recession who wants to keep his competitor in place and win the contract etc. etc.

Most clients opt for a strategy that provides low initial entry costs, flexibility to adjust the strategy as commercialisation occurs, and procrastination which is a major factor of decision making.

STRATEGY

A typical strategy of protection was adopted:-

1. An initial search to determine the patentability
2. An initial filing to establish a priority date
3. A review after one year of commercial interest, updating of the application and filing in other countries of interest.

This last step offered a number of alternatives and it may be useful to look at the costs incurred in each step and the alternatives in the final step.

PROSECUTION COSTS

1. Initial search

Fortunately we had access to the excellent manual search facilities in the USPTO and could have a search conducted by an independent searcher for approximately \$600. The instruction, analysis and report of the search would take 2 hours professional time (\$700) so the cost of the initial search would be about \$1300. Remember that this is relatively simple subject matter so the costs are at the low end of what might be expected. However it is also worth noting that much of the art located is not in computerised databases and the efficacy of a manual search for this type of subject matter would far outweigh a computer search.

2. Preparation of initial filing

There are two possibilities for initial filing, either an informal (provisional) application or a regular full application. Each has its merits given a particular circumstance but in either case the description of the invention must be as detailed as possible. Priority is only provided for what is disclosed, so an omission of a critical detail may jeopardise the subsequent protection available. The major difference between these is in the formal documents required and the need for claims. These require significant professional input so a provisional application tends to be cheaper.

The provisional application form of the USPTO indicates an average time of 8 hours to complete the application. If this “screwdriver” is a typical application for a provisional, which I believe it is, then the cost of the initial application would be \$2800. The government fees would be \$150 so the total cost of the initial application would be in the order of \$3000. This cost level is not unusual for straightforward mechanical applications but obviously is at the lower end of the range. Some companies with an active filing program require provisional applications to be completed from a fairly detailed invention disclosure for \$1500, other subject matters (particularly biotech and information technologies) are far more complicated and costs in the order of \$10,000 may be expected.

3. Foreign filing

There are two basic options for foreign filing, via the PCT or direct national filing. In this latter option there is the possibility of regional applications or national application.

a) The specification

In either case it is necessary to prepare the application for international filing by revising the description to cover new embodiments, if necessary; preparing claims and obtaining formal documents such as drawings, assignments and application forms. Typically this would incur costs similar to those in preparing the initial application i.e. \$3000. The preparation of claims is very time consuming, particularly in light of diverse practices brought about by decisions such as Festo where subsequent amendment is to be avoided at all costs, and the extra description of alternative embodiments necessary to avoid the

pitfalls of Article 123 of the EPC. Assume therefore that a further \$3000 is spent in revising the application. At this stage a total expenditure of approximately \$6000 has been incurred.

As a reference, some large multinational firms expect an application in the electronics area to be prepared for less than \$8000, similar firms in the telecommunications area expect a similar service for \$10,000 - \$12,000. Hence a cost of \$6000 is reasonable for this device.

b) To PCT or not to PCT, that is the question?

The PCT process is very popular with small firms looking to protect their device overseas. It is seen as keeping the options open and, as presently structured, providing additional information that allows risk management at a later date. For many companies however the size of the US market is paramount and therefore it is common to file a PCT application and a US application at the convention date. This has the added advantage of getting additional search information to assess patentability and early issue of the US patent.

i) Initial filing

The PCT filing costs are fairly uniform. There are additional costs incurred such as formal drawings. Usually the patent firm will charge a flat fee to cover the preparation of papers, file openings and the like. The set fee covers reminders sent to the client, advice on the appropriate strategy, implementation of that strategy and follow up documentation. To put this last part in context, I recently had to submit a cheque, a declaration and an assignment to the USPTO. This involved the completion of 9 forms and about one hour of my assistants time. Roll on the PLT.

Using the cost estimation program, the cost of filing applications under this strategy, over and above preparation costs, are :-

	Professional fees	Associate fees	Government fees	Disbursements
PCT	1200		2927	350
US	600	750	712	100
Total	1800	750	3639	450

If we keep a running total of costs and include third party costs, which I will deal with later, then, to date, the machine tool company would have spent approximately \$15,000 for the option of extending protection to most countries of the World.

ii) Initial Prosecution

Over the next twelve months the applicant will receive

- a PCT search report that must be evaluated,

- an information disclosure statement (IDS) that must be filed at three months from the filing date and when the PCT search is received,
- a US office action and
- a need to request preliminary examination.

The costs incurred during this phase will vary widely depending on the nature of the reports. However, generalising and rationalising, we could expect the PCT search report to take two hours to evaluate and report to the client (\$700), each of the IDS's will probably cost \$300 and the US office action to take six to eight hours to review and prepare a response. I base this figure, in part, on personal experience and on the constraints placed on service providers by the large companies. They typically require a response to be prepared for \$2500.

For the US application there will also be local agents, or Associates' fees. I assume that the local agent will operate on a "postbox" basis but if significant professional work is required the costs will be distributed differently between the professional and local agent. The costs for the next twelve months activities can be summarised as:-

	Professional fees	Associate Fees	Disbursements	Government fees
IDS (1)	300	100		
PCT Search	700			
IDS (2)	300	100		
U.S. OA.	2500	300		
DEMAND	250			2124
TOTAL	4050	500		2124

The total cost for the second 12 months is about \$7000 giving a total expenditure to date of \$22,000.

iii) Continued Prosecution.

In the next 12 months, i.e. the third year, the costs start to increase significantly. However, by this time there should be sufficient indication of commercial interest to determine if this investment is justified. During this time, the applicant will, typically,

- receive a written opinion from the PCT IPEA
- respond to the written opinion
- receive the written report from the IPEA
- receive a further office action from the US
- proceed to national filing via PCT
- obtain allowance and issue the US patent.

The substantive work in this process is the response to the written opinion and the response to the second US office action. In the ideal World these would be the same but the reality is that they will not. The Examiners will probably rely on different art and on

different arguments necessitating the preparation of two different responses. Each of those is likely to incur similar cost, so we will use the standardised charge of \$2500 for each.

The Issue and Printing fees are self explanatory except that there is now a wrinkle in the simple payment of the fee. The patent term adjustment provided under the AIPA must be checked. To do this properly requires a complete review of the file, calculating dates at each step. To suggest this would only take an hour is being optimistic. Many firms are not making this check unless requested by the applicant but the potential liability for a successful invention is huge. If profits of \$1 million /day are being realised then a miscalculation of one or two days can be significant. I have not included a fee for this but as a general point it should be noted that legislators should realise that the introduction of complex measures such as these can only result in increased cost.

The choice of countries for national entry will depend on the nature of the invention and the geographic range of the applicant. Because of the reservations made under Article 45(2) of the PCT nearly all applications proceed through the EPO for European protection. One of the factors that influences the choice of country is the language used for patent prosecution where there are alternative countries on the wish list. Selection of different countries with a common language can reduce the cost a factor often overlooked. A little knowledge of geography and culture can pay big dividends.

By way of example I have selected a filing program consisting of Australia, Brazil, EPO, and Japan as well as the US application already filed. There is no particular reason for these countries except a general feel on the part of the applicant that these are the major markets. Australia is of interest because it is cheap and he would like to visit there, Brazil is chosen because his Uncle lives there. The EPO designates France, Germany, UK, Spain, Portugal and Italy although the applicant probably only has a real interest in France Germany and UK based on market projections. The others are chosen because he is advised that there is opposition there to the EU directive on standardisation of screwhead configurations and so his device may become a cult item.

I will not belabour the cost computation except to note that I will assume that each country requires one substantive response to an office action and that the balance is formal in nature.

Looking at each country in turn in summary the program indicates an initial cost of filing for the selected program of Australia \$2062; Brazil \$2,528; EPO \$3,713; Japan \$3991.

Summarising the costs for the third year we have:-

	Professional fees	Associate Fees	Disbursements	Government fees
Response to WO	2500			
Response to US	2500	300		
US Issue fees	300	360		1025

Australia	600	1152		232
Brazil	600	1481	295	74
EPO	600	2800		1600
Japan	600	2304	757	252
TOTAL	7700	8397	1052	3183

The total cost for the third year is \$20, 332 giving an aggregate total to date of \$44,000.

iii) National Entry

Thereafter each country will proceed in its own manner. I have set out the anticipated costs for each country assuming a response to a substantive office action will, on average be required and that some local input is expected.

Australia

	Professional fees	Local Agent fees	Disbursements	Government
Examination	2500	500		240
Grant	200	328		
Total	2700	828		240
Annuities				10,851

Brazil

	Professional fees	Local Agent fees	Disbursements	Government
Examination	2500	1100	295	210
Grant	200	640		51
Total	2700	1740	295	261
Annuities				21,292

EPO

	Professional fees	Local Agent fees	Disbursements	Government
Examination	2500	1100		
Grant	200	1100	360	993
Total	2700	2200	360	993
Annuities				1651

Japan

	Professional fees	Local Agent fees	Disbursements	Government

Examination	2500	1200	700	1130
Grant	200	299		665
Total	2700	1499	700	1795
Annuities				23942

The cost of prosecuting after filing national entries therefore is in the order of \$ 22,322, excluding annuities and the validation of the European Patent..

The national validation of the granted EPC patent in the selected countries provides additional costs which total \$12,840 broken down as follows. The heading “disbursements” is the translation costs that have caused such a heated debate in Europe. Relative to other fees they are not that significant, admittedly for a relatively compact but not unusual application. They can be prorated for longer applications than the four pages that made up this example.

	Professional fees	Local Agent fees	Disbursements	Government
France	600	1088	176	49
Germany	600	914	170	208
Italy	600	1093	448	61
Portugal	600	1717	448	121
Spain	600	1254	384	327
UK	600	782		
TOTAL	3600	6848	1626	766

The translation costs in Portugal could be saved by using the Brazilian translation, assuming the text is the same and has not had to be revised extensively for the idiosyncrasies of European practice, another factor of customised practice that has a direct effect on costs.

It would seem from the above that the Government is not receiving very much revenue from its efforts but the table does not include annuity fees. These are shared with the EPO but are not insignificant.

France	12,590
Germany	23,525
Italy	18,585
Portugal	11,917
Spain	14,131
UK	13,277
TOTAL	94,025

The aggregate cost for obtaining patents for this screwdriver, excluding annuities, has now reached about \$80,000 over the course of several years. This is in the same order of magnitude as the FICPI cost survey conducted in 1993 which showed the cost of similar geographic protection based on actual files was about \$65,000. There is therefore some validity to the assumptions made.

We can try to summarise the costs by country, split between professional and government revenue streams and by the time at which these costs are incurred to evaluate cash flow requirements, a significant factor for any growing company.

BREAKDOWN BY COUNTRY

COUNTRY	PROF	GOV	ANNUITY
Initial	4,100	150	
Update	3,000		
PCT	5,700	5,763	
US	8,410	1,737	10,771
Australia	5,280	472	10,851
Brazil	7,111	335	21,292
EPO	8,660	2,593	1,651
Japan	8,920	2,047	23,942
France	1,864	49	12,590
Germany	1,684	208	23,525
Italy	2,141	61	18,585
Portugal	2,765	121	11,917
Spain	2,238	327	14,131
UK	1,382		13,277
Total	63,255	13,863	162,532

BREAKDOWN BY TIME

YEAR	COST
0	4,250
1	17,625
2	20,332
3	8,764
4	13,558
5	12,840

Some observations are in order. A major cost that has been included is duplication of responses to office actions. If full faith and credit is given to the PCT examination, a reduction of 4 responses would be attained and a cost saving of \$10,000.

The costs are directly influenced by the local requirement, both statutory and case law derived, and in fact by timing. The profession has no option to respond to these to protect its clients interests and costs are necessarily increased.

Finally, the level of costs are high, even for a developed country, and are probably out of reach for innovators in developing countries.

There is clearly a need for alternative strategies.

c) Alternative filing strategies

The above scenario assumes that use is made of the PCT. However by going straight to the national phase there will be a reduction in cost. There will of course be a saving in at least part of the PCT fees, although not all, as I have assumed that the EPO is the search and examination authority for the above example. The PCT fees of \$5763 will be saved but the EPO fees will increase by approximately \$2000 according to my software. There will also be a saving in the preparation of the second IDS and in responding to the Written Opinion. Again not all those costs will be saved as it is more likely that an additional office action will be received from the EPO in due course. It seems likely that a net saving of between \$6000 and \$7000 would be realised by not proceeding via the PCT. There will however be an impact on the cash flow by losing the deferral of fees available under the PCT.

I believe the typical applicant finds the extra costs of using the PCT worthwhile, provided the value is retained in the PCT system. If an effective search is performed within the existing time frame then this has value in permitting the additional art to be dealt with during the US prosecution. A delay in that search may mean that the US prosecution proceeds to allowance, only to be repeated when the new art is found in the PCT search. Similarly, an effective examination can give a good opportunity as to the likely scope of protection that will be obtained, particularly in borderline cases before expending further funds. These two risk management tools make the extra investment in the PCT case worthwhile. However if the value is no longer there then the PCT will lose its popularity.

d) Non EPO direct filing

The direct filing of applications in the countries where protection ultimately will be required may seem a high risk and poor management but a review of the costs shows it may be beneficial. Taking the same list of countries we end up with a net cost of \$55,719 for all countries or \$44,670 for only those countries we really must have, i.e. dropping the optional European countries of Italy, Spain and Portugal.

	professional	local	disbursements	government	Total
US	6,200	1,510		1,737	
Australia	3,300	1,980		472	
Brazil	3,300	3,221	0	335	
Japan	3,300	3,803	1,817	2,047	
France	1,600	1,888	351	616	
Germany	600	844	341	83	
Italy	600	1,329	448	301	
Portugal	800	2,009	448	379	
Spain	800	2,281	384	1270	
UK	3,100	1,771		454	
Total	23,600	20,636	3,789	7,694	55,719
partial filing	21,400	15,017	2,509	5,744	44,670

Thus rather than \$77,000 we have obtained the same protection for \$55,000, a saving of \$22,000. This can be attributed to the selection of non-examining countries, reduced examination in others and deferred examination in Germany which takes it outside the time frame being considered.. The downside of course is that a significant proportion of that will be incurred at the anniversary of the initial filing rather than deferred to the national entry under the PCT. The other downside of course is that the extra search may not be available to assist in the US application, although with judicious selection of countries, such as the UK, an ISA quality search can be made available very early on. This strategy works for applicants with a good knowledge of the market, a clear idea of their strategic interests and cash in the bank! It is not only for SME's, many large companies successfully employ this strategy to their overall benefit.

e) Non unity of invention

Before leaving the question of prosecution costs, some other practical issues should be considered. The above example assumes that there is no objection on unity of invention. However if there was for example a method of inserting the pins in the handle of the screwdriver and the claims to the locking mechanism, then a unity objection could be raised. The effect of this is to double the above costs, including all the annuities making this a \$500,000 project. I question whether the stricter interpretation of unity and a single independent claim per category is really in the benefit of the applicant. It certainly makes the direct filing route more attractive as such objections may not be raised in non examining countries. This effect could easily be cured with assessing a second examination fee without adversely impacting third parties.

f) Updated Commercial embodiments.

A similar situation arises with respect to further improvements that occur during the life of the patent application. This occurred in this situation where a second embodiment having a flashlight incorporated in to the handle was developed during the convention year. If this had happened after the convention year, in the US it would be possible to file a Continuation-in-Part application, elsewhere, possibly with the exception of Australia, a whole new application would have to be filed. Why? If the situation had occurred in the convention year the new embodiment would have been added, what is the problem with other times upon payment of appropriate search and examination fees.

NON PROSECUTION COSTS

I have concentrated so far on the costs of acquiring patents but there are other costs inherent in the patent system that impact both the applicant and the third party. There are the costs of avoidance and the costs of enforcement.

1. Vetting of New Products.

Whilst the clients were interested in protecting their development, they were also interested in making and selling it. Had another patent existed and been in force that covered the device they would have been infringing that patent and either forced to take a license, if available, or cease production. To avoid this situation it is necessary to conduct a patent clearance or right to use search and many large companies require this before a product is released to mitigate risk.

The right to use search is conducted by reviewing each patent that has issued in the last twenty years in the area of concern and determining if its claims cover or could be considered to cover the product being sold. As you can imagine this is a laborious exercise but is the only effective way of evaluating the risk. The right to use searches that I have conducted have concerned US patents and to some extent Canadian patents where the database of issued patents is well organised by subject matter. To the best of my knowledge a similar search in Europe would be difficult to perform but I have no recent knowledge of that. Clearly it is necessary to have available the copy of the patent as issued and organised in a finely divided classification system based on the invention claimed.

To conduct a search of this nature for the screwdriver that we are using as an example would cost about \$10,000. This would identify potential risks and conduct a first level triage on those patents to see how great a problem this is. If a real risk is identified then a further investigation is conducted with a view to either design around or invalidate the patent. A proper evaluation of the patent requires a study of the file history because of the doctrine of file wrapper estoppel and this adds to the cost simply because of the size and complexity of some of the files.

Where a significant infringement risk exists it is necessary to obtain an opinion of competent Counsel to avoid a finding of willful infringement in the US and possibly triple damages. The Counsel's opinion will cost in the order of \$15,000 typically but is considered a reasonable insurance policy. You can see that fees of \$30,000 upwards are quickly attained where a real risk is identified.

The situation in other countries is perhaps not as difficult in view of the lack of punitive damages but nevertheless the cost of clearing a product from potential infringement during its design stage is a small part of the development cost of the product, and a much smaller part of the recall and redesign cost after a successful infringement action.

The proliferation of patents with enforceable rights does of course add to this burden. Patents that have issued with ambiguous claims or claims that are broad but use terminology not found in the specification, or claims using jargon all become a serious concern. They simply cannot be ignored and an attempt has to be made to evaluate them and advise the client. This is in addition to attempting to apply a standard of equivalents and dealing with the interpretation of "means" claims.

A key factor therefore in this exercise is the quality of examination that has been conducted. A thorough search, a proper evaluation of the art and insistence on clarity of the claim language removes many of the problem areas. Also desirable is some harmonisation on standards of claim interpretation. Potentially each of these evaluations is done in a number of different countries, each with their own peculiarities. The cost associated with that is staggering and dwarfs the cost of acquiring the patent in the first place. Looked at from another perspective, a portfolio of several hundred patents in a particular area "facilitates" the licensing activity of the patentee through the application of simple economics. It is cheaper to license than to evaluate.

Equally important is the maintenance of records in an easily retrievable manner that can be quickly reviewed and evaluated with readily accessible tools. This is also the responsibility of the granting office and lack of such material should not be overlooked as a cost factor.

2. Enforcement

The purpose of obtaining a patent is to exclude others from making the product without your permission. Ultimately, if someone refuses to respect those rights it is necessary to enforce the patents. At this time the costs previously considered become insignificant, at least in the US and in many other parts of the World.

A US patent litigation may cost \$2-4 million for each side, expended over a two or three year period. That excludes executive time and damages that may be awarded. Costs in Europe can also be high with the UK being the highest I believe. The mere threat of such expenditure can bring reason or fear to the defendant.

An extensive discussion of the costs associated with litigation is beyond the scope of this discussion, except to note it exists and to note that the Offices have a role to play in minimising the litigious matters. It is usually only the grey areas that get litigated so quality of examination is again paramount. Again the proliferation of patents of dubious scope and validity, obtained at minimal cost and subsequently threatened against legitimate interests will lonely bring the whole system in to disrepute.

A quasi litigation cost typically associated with patent prosecution is opposition by third parties to the grant of the patent. There are two types of cost associated with this, the cost of participating in the opposition and the opportunity costs to the patentee.

Participation in the opposition is not cheap but is not of the order of a full blown litigation. Properly run it can be considered an efficient way of sorting out the grey areas that might otherwise exist. An expenditure of \$25,000 from start to finish for a simple opposition in the EPO seems to be typical with more complicated proceedings involving oral proceedings perhaps doubling the cost. Considering the market that is being dealt with this does not seem unreasonable.

Perhaps of greater concern is the opportunity cost to the Patentee. Theoretically the filing of a post grant opposition should not affect the ability to enforce the patent. In reality however Courts are reluctant to duplicate the efforts of the EPO and will stay an action in some countries. A prolonged opposition and subsequent appeal can therefore deprive the patentee of his market niche and of revenues he might otherwise receive during the course of the opposition. For new companies this loss of revenue could be fatal and a delay of several years while the patent rights are determined is unacceptable. It provides too much potential for mischief and too little downside for the opponent.

CONCLUSIONS

Patents are not cheap but they are useful. The costs can be and need to be managed as with any other process. The provision of flexible and varied patent systems distributed between international, regional and national bodies is necessary to meet the needs of all types of innovators. Quality of examination can affect the significant costs that can be incurred after grant and that are of much greater magnitude to the prosecution costs.

Some final thoughts. We have discussed costs in the tens of thousands of dollars, \$80,000 for exclusivity in a large part of the industrialised World for a twenty year period. In comparison, a luxury car such as a BMW 5 series costs about the same, a full page advertisement for one day in Canada's national newspaper costs in excess of \$40,000 and a 30 second TV ad during the Superbowl would pay for a US patent litigation.

Judge Luckhern of the Administrative Court of the ITC gave a talk at the FICPI/APAA Symposium in March. He commented that, having seen the way patents are scrutinised, dissected and the resources brought to bear to prove or disprove the meaning of a particular word, we the patent prosecutors are vastly underpaid. I tend to agree with him!