

Taking the heat out of the global patent system

Global patent warming is real, not imaginary. And while it may suit some, for many others it will cause increasing problems. At the world's major patent offices, solutions are being sought. It could all mean that change is on the way

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What is global patent warming? If it exists, what is driving it and what can be done? Is it something that exists across the globe, in all patent systems, in all industrial sectors?

Well, the answer to the last question is probably not; but it does exist and it is widespread and it getting warmer.

But let us get back to the first question: what is global patent warming? The traditional answer is typically accompanied by nice statistical diagrams showing growth of patent filings, or the like, across the five largest patent offices with, maybe, PCT filings thrown in for good measure. Figure 1, produced by the European Patent Office, is a good example of such a diagram.

In terms of input, as my previous article in issue 23 of *IAM* (April/May 2007, pages 9 to 14) underlined in somewhat more detail, these statistics can be highly misleading. Figure 1 is very useful to explain workload growth in individual patent offices (including WIPO), but is less helpful to explain global patent warming. The presentation combines first and second filings, and therefore the same patent application could find itself in each of the six curves. Most people, however, would automatically tend to add all these filing figures together and then claim global patent warming in one form or another.

This is incorrect as the underlying data does not represent growth in potentially patentable ideas (ie, first filings).

Another approach to global patent warming is to look at increasing pendency times. Here, at least in Europe, the facts show that the very opposite is happening. Time to publication of a European patent has decreased from 49.2 months to 43.7 months. Time to first action (thanks to a redesign of the system and a re-prioritisation of resources) has decreased more spectacularly from 32 months to 23 months. But then to conclude that, at least in Europe, everything is fine would also be wrong. Europe, too, is seeing emerging global patent warming despite these trends – witness the fact that EPO stock levels, by any measure one chooses to take, are seriously increasing each year.

Understanding the maths

So what is really going on? Well, let's get back to basics. Across the globe, we have a set of systems that allow people who invent to have a monopoly for a limited time in exchange for sharing the secrets of their invention with society. These systems define what constitutes an invention and the boundaries of the temporary monopoly granted. They do so in different ways.

Some of these differences are profound, some less so.

Since the industrial age in the 19th century, driven by the great exhibitions, it has become necessary to allow inventors in one state to share their innovation with other states provided they have local monopoly protection. Mechanisms have been set up to allow them to do so (eg, the system of priority rights set up under the Paris Convention). The latest development has been that some states, for some parts of the procedure, have centralised activities

(eg, EPC in Europe and PCT globally).

The net effect of all this activity has been that patent offices have become bigger. And because of this, patent offices have had to recruit and train new staff. This, in turn, means that they have been taking longer to treat the workload of incoming applications. Against this background, automation, recruitment, redesign of the various patent processes and technical cooperation have meant that the work load has jumped in and out of control for a number of years. In short, patent offices are struggling.

We are now at a situation where reality is having increasing difficulty catching up with the underlying mathematics.

To illustrate the point, imagine one patent office dealing with 100 patentable applications per annum from its territory, no applications from abroad, stable recruitment, with a three-year pendency period. Such an office would have a stock of 300 patentable applications.

Imagine, on the other hand, six patent offices dealing each with 100 patentable applications per annum from their territory, that 40% of these applications go abroad and there is a five-year pendency period. Then each of these offices would have a stock of 1,500 patentable applications.

This is the simple maths.

It's getting hotter

If we move away from the simple maths and look at the underlying drivers, the first thing that jumps to the eye is globalisation. This is what most commentators tend to focus on. The numbers are readily available. The greatest growth for most patent offices has been trade related. Europe's patent

propensity as measured by the volume of first filings has slowly increased by just 1% per year since the 1990s. But the proportion of these first filings that European companies have sent to the EPO, the USPTO, Japan and so on has exploded since the 1980s. Europe now sends more than 40% of its annual 110,000 first filings to the United States.

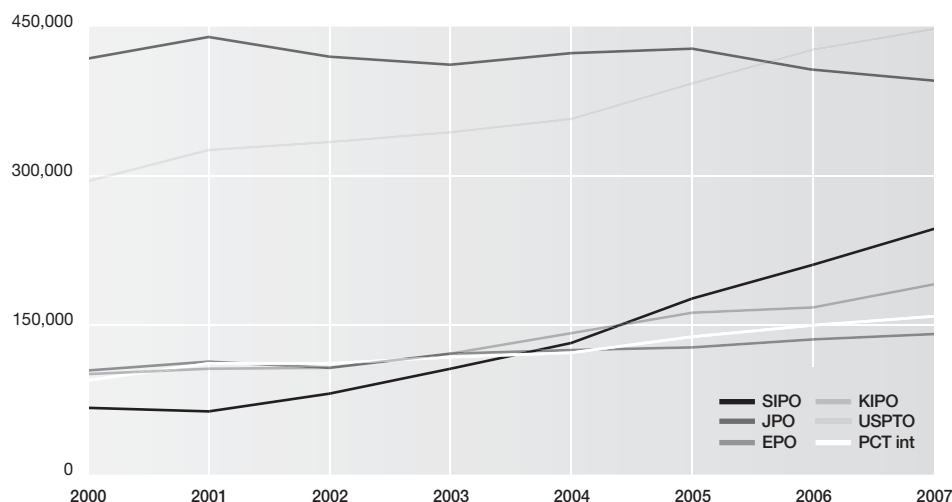
Trade, therefore, is the dominant driver behind globalisation. But it is not the only one. New economies, such as China's, entering world markets are fast expanding their patent propensity, while various patent systems have expanded their scope into areas such as software and business methods. Less desirable behaviours have also emerged to fuel global growth in patent filing; for example, macho CEO behaviour that involves boasting to markets that patent application volumes can be a proxy measure for added-value innovation.

There is also the complex maths of consequences. Patent offices try to catch up with reality. As public services, they find it difficult (some say impossible) to anticipate. Patent offices react to growth, as opposed to anticipating it. This leads to recruitment and training delays. In turn, this leads to higher pendency times and volumes. Pendency is further aggravated by some otherwise very useful centralising mechanisms, such as the PCT. A force that is equally powerful in generating additional pendency comes from applicants seeking to exploit or distort weaknesses in the system, such as using delay as a deliberate strategy.

On balance, complex maths makes pendency volumes higher. In truth, the patent system is permanently flooded by pending applications. The magnitude of this flooding is such that the volume of patents pending is probably greater than the volume of patents granted and still valid. In some industrial sectors, the ratio of pending patents to patents in force is completely distorted and will remain so for the foreseeable future.

Finally, to add fire to an already warm situation, property boundaries have become increasingly vague or woolly across the patent systems. Some patent systems have more problems than others, but global interdependency means that these problems are duly shared across the patent systems of the world. To illustrate this boundary problem I could cite the examples of incoming applications being drafted in special ways; rules established to safeguard rights being used differently; non-unity and divisional applications; deferred examination; continuation-in-part

Figure 1. Development of patent filings across the globe



applications and, last but by no means least, the emergence of patenting in useful arts that do not readily lend themselves to clear intellectual property boundaries.

So incoming volumes are increasing per patent office due to globalisation driven by patent propensity and trade. Pendency volumes are also increasing, pretty much independently of what has been happening to pendency times in the different offices. Finally, woolly boundaries are widespread, not just between granted patents but especially among pending applications.

It is becoming too much, the system is gradually becoming much warmer. It may not be warm everywhere (yet). It may not be warm in all industrial sectors (yet). But it is definitely temperate.

As illustrated by Figure 2, global patent warming truly exists in those places where globalisation, pendency and woolly boundaries coincide. In the interest of balance, and as a possible way to develop solutions, if anyone of these three factors is absent, and on a local or sectorial basis this may well be the case, then there is no warming effect. For example; if it were possible to reduce the level of woolly boundaries significantly, including those in pending applications, then the global patent system would be a lot cooler. Similarly, if globalisation flattened out, then the lead times in the system would probably have the opportunity to catch up, thereby reducing the impact of both pendency and woolly boundaries. Finally, if pendency volumes were very small, then the different actors in the system could probably cope with the effects of globalisation and woolly boundaries.

So, to summarise, it is the combination of three factors that leads to global patent warming. In mathematical terms, global patent warming is equal to globalisation multiplied by pendency multiplied by woolly boundaries. And the sad fact is that there are more than enough patent systems and/or industrial sectors where this unhelpful constellation does exist. And where it does, the patent system is overheated.

This overheating is generating two environmental consequences – uncertainty and risk.

High volumes, high pendency and woolly boundaries are fertile ground for all kinds of wonderful behaviour. Some of this is planned and some of it is opportunistic. As one observer recently reported, the intentions of patent sharks are unclear to themselves until an opportunity arises. One person's risk is another's opportunity.

To keep to the metaphor of global patent warming, ice caps are melting leading to permanent flooding with sharks lurking beneath the surface feeding on uncertain boundaries.

And ?

With all this going on, the obvious question is: and now what? How can we change this picture? How can it be made to function differently?

If one listens around, it is clear that there are many taboos which are being broken. Ideas that previously would be impossible to mention in polite company are being discussed in corridors, over coffee and even more publicly.

There would appear to be four major strategic directions within which different stakeholders are thinking. To give them titles they are:

- Merging the islands.
- Raising the bar.
- Shining a light.
- Building a better mousetrap.

Merging the islands

On one end of the merger framework is better cooperation between patent offices through simply sharing information. At the other end of the merger framework is federalism; this means, for example, accepting each other's decisions. Ultimately, such a strategic direction is not so much about making the different patent systems better – it is about making them one.

This is a difficult strategic direction to take. The arguments can get quite heated – one can sometimes witness this during discussions among EPO member states. Even if the political goal is federalism – can we get there without taking certain interim steps? And if federalism is not the political goal – how can we pursue the strategic direction while keeping control of the final outcome?

From where I sit, the current state is clear: the main global patent offices are partners; they will increasingly cooperate.

In the United States, the line is drawn at exchanging and making maximum use of each other's work, but falls short of substantive recognition. China has also defended this line. In Europe, the majority of countries also draw the line in the same place. As usual in Europe, there are always one or two outliers who do not feel that attached to the mainland and they join Japan in being somewhat more federalist, albeit with certain nuances.

So we can expect to see increasing levels of work sharing, increasing alignment of the

timing of outputs of different steps in the patent process and increasing sharing of knowledge and decisions.

Raising the bar

One end of this strategy is simply to make the application of existing rules stricter and more rigorous. At the other end, patent offices are looking at granting less than they would today.

Also here, if the political goal is to redefine the boundaries of patent protection and to raise the bar, can we get there without taking certain other steps? The answer, at least in Europe, is no. And so Europe has an aggressive agenda to pursue all aspects of this strategic direction. There are three main aspects to this:

First, create a better *status quo* by establishing quality standards across all European patent offices and by tightening up current practice.

Second, it is the intention of the EPO to fine-tune certain entry and process rules, and to remove (or limit) opportunities for abuse such that sharper boundaries are established earlier on in the procedure.

Third, and this may take longer, it is the intention of the EPO to raise the bar itself by making the man skilled in the art somewhat more modern, having greater immediate access to knowledge, more used to working in multi-disciplinary teams and endowed with a little bit more common sense.

Shine a light

The purpose of this strategy is to create certainty in the area of pending applications. In essence, the strategy of shining a light accepts the current patent systems as they are and tries to work inside this framework to create greater certainty. The strategy shines a light on what is happening. What has been flooded? What lurks under the water surface? What will emerge from the deep?

One end of this strategy is to make information about uncertainty available. At the other end, patent offices would actively prioritise and create certainty.

For the time being, this is an emerging strategy. More and more, different stakeholders are becoming aware that pendency is not just about timeliness, but is also about volumes and the ratio of patents pending versus those in force. We are still a little distant from a common realisation that the elephant in the room regarding uncertain boundaries is with ungranted rather than with granted patents, but I am sure that we will get there.

So what kind of concrete actions could

be imagined under the strategic direction of shining a light? The strategic line moves from informing about uncertainty through to sharing insight about the uncertainty that exists, and ends at a decision to promote certainty proactively. One can imagine patent offices creating greater transparency to specific stakeholders about what is happening in the patent process. One can also imagine patent offices, singly or jointly, targeting patent application hot spots.

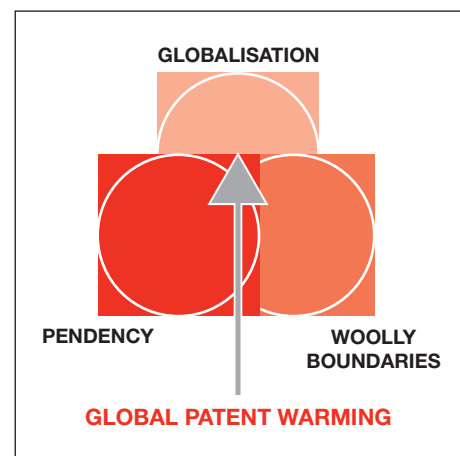
One of the more interesting debates that a shining a light strategy could open up would be the possibility for patent offices themselves, with or without input from interested parties and probably only in specific industrial sectors, to accelerate treatment of groups of pending applications thereby *de facto* deferring others: a debate that will give a different twist to the usual circular discussions about introducing systematic deferred examination. *Quo vadis* first in first out in such a world?

To conclude, the strategy of shine a light is emerging. It is being increasingly discussed and we will see more of it.

Invent a better mousetrap

The final strategic direction is to invent a better mousetrap. Mousetrap is used here in the figurative sense derived from a popular quote ascribed to the 19th century American essayist and poet Ralph Waldo Emerson (1803-1882), a shortened version of which reads: "Build a better mousetrap, and the world will beat a path to your door." While the literary correctness of the quote could never be fully established, "mousetrap approach" has become a commonplace expression in English referring to the ability

Figure 2. Visualising global patent warming



to improve a concept or design without changing its original purpose. It is by no means intended to convey any derogatory meaning about patents and/or the patenting process.

The purpose of this strategic direction is to redesign, reconfigure or streamline the workflow. So whereas merging the islands was about making the different patent systems one, inventing a better mousetrap is about making them function better as a process.

One end of this strategy is simply to make the current system better. However, this smacks too much of business as usual – the emerging insider view is that it will not be enough. At the other end, patent offices across the globe would co-produce certain key steps in the intellectual property rights process that are fit for purpose in their own regions. In between, reconfiguration could create a situation whereby current distorting incentives (fees, rules ...) are removed and positive incentives are created.

There are many angles to inventing a better mousetrap. Singly and jointly, they would have an impact on each of the three elements driving global patent warming. Two specific concrete actions are worthy of special mention.

The first is co-production. Just like the gas turbine industry, major development costs and risks can no longer be borne by one company or institution. The USPTO has recently installed an in-house electronic filing, scanning and workflow system with the help of the EPO. The system installed was based on the EPO's own in-house system – Phoenix. What is important to note is that both the EPO and the USPTO had experienced major project failures for similar systems before Phoenix was finally developed and ironed out by the EPO. The financial cost, human resources and talent required, when properly calculated, were enormous.

As a consequence, a recent meeting in Washington DC among the world's five largest patent offices concluded that much more cooperation and co-production is required. A number of so-called Foundation Projects were explored. The list is an interesting one. It contains common documentation databases, common classification and common support tools. It also contains common access to results, common training policies and a common approach to search strategies.

Such foundation projects, if and when they are implemented, would create a global co-production of patent grant processes on

a platform of shared tools, methods, skills and knowledge.

A second action worthy of note under the heading of inventing a better mousetrap is to redesign the fee system. There seems to be a general sense that having cost covering procedural fees could be one appropriate reaction to global patent warming. But how does this work?

One of the more frequent objections to this action is that asking for cost covering procedural fees would reduce the propensity to patent, especially among SMEs. There is a point here. The example of French practice shows that governments will always look for ways to subsidise first filings as a basic part of their innovation policy. The EPO charges the French government an indexed cost covering procedural fee for carrying out French national first filing search opinion work. The French government in turn uses national renewal fee income to reduce drastically the cost to the French applicant.

With this experience in mind, it is questionable whether full cost coverage of procedural fees could be hailed as a means to reduce the global propensity to patent. It could, however, be used as a policy to address second filing levels. More importantly, it could be used to influence behaviour.

The starting point is the rather obvious economic statement that behaviour is influenced by costs. Costs include fees. There is some evidence to suggest that fee levels on their own do also influence behaviour. Generally, one can say that low fee levels can be seen as an incentive for certain types of behaviour and high fee levels as a disincentive. Sometimes the incentive offered by fee levels combines with rules to reinforce a particular behaviour. Examples that could be cited are poor initial drafting; abuse of divisional mechanisms; delay tactics; strategic patenting (ie, filing with no intention of obtaining a grant) and systematic opposition. These examples directly contribute to global patent warming by creating uncertain boundaries and increasing pendency. Insofar as full-cost coverage of procedural fees can influence this behaviour, it will have a positive impact.

Overall, just like shining a light, invent a better mousetrap is only just emerging. It has many facets. But it is being increasingly discussed and we will see more of it.

A final word

To conclude, it is getting rather hot around here. Global patent warming exists. There

are three multipliers: globalisation driven by propensity and trade; pendency, both in time and volume; and woolly boundaries, both among pending applications and granted patents.

There are strategies that may help – merging the islands (up to a point), raising the bar, shining a light and inventing a better mousetrap.

But will any of these strategies be implemented, effectively and on time? The cost of doing nothing can be attractive. The very metaphor global patent warming suggests an element of despair, of helplessness. But does that make it impossible to deal with? Tell that to Al Gore; he would not agree.

The same applies in the patent system. Global inaction on this issue is one of the major drivers behind the emergence of some of the scenarios developed by the EPO. We can have a green scenario whereby the patent system is replaced by open innovation models. We can have a red scenario, whereby different states set up regional patent system fortresses in order to protect themselves against the hordes. We can have a grey scenario, whereby the intellectual property bubble is finally burst by the financial sector. So, just like with real global warming, doing nothing has a price, and some people will find that price rather attractive. But for the eco-system as a whole, or in our case the IPO system, the attractiveness is not so obvious.

From my own perspective, there is an increasing awareness across the leadership of major patent offices that action is

required. The strategy of raising the bar is very explicit inside the European Patent Organisation – a major project with this title and scope is well underway.

In general some strategies, or aspects thereof, are much easier to implement than others. Traditionally, the biggest consideration has been whether the various practical elements for a given policy are under the control, or direct influence, of a patent office management team. This is changing.

Awareness of the difficulties has been encouraged by serious public debate backed up by strategic reviews in Europe (eg, European Commission consultation process, the EPO strategy debate and the EPO scenarios project), Japan and the United States. As a consequence, there seems to be a growing willingness among patent office management teams to put serious energy into more fundamental, but controversial, issues. A further consequence is to be found in a renewed energy for large-scale, inter-patent office cooperation: we see this in things such as the development of the Foundation Projects. This willingness, in turn, may lead to some practical breakthroughs that support the strategies of merging the islands (at least the initial steps) and inventing a better mousetrap. Finally, growing public and political awareness about the importance of pendency volumes and woolly boundaries may bring the necessary courage to all stakeholders to shine a light on what is happening.

Watch this space. **iam**