A European perspective on global patent workload

Talk of poor quality patents and flooding has become commonplace over recent years, but a closer look at the facts suggests that things are not as bad as they first seem. While patent offices do face serious challenges, major changes to the current system are not the answer

By **Ciarán McGinley**

There is much said about rising application numbers in the world's patent systems, especially at the three major patent offices – the USPTO, JPO and EPO. Some observers, such as Bruce Lehamn – writing in *IAM* – see this as an "alarming and harmful trend" ("Tackling the shadow over the international patent system", *IAM* issue 19, August/September 2006, pages 8-10). It is a trend that can push up pendency times as the major offices apparently struggle to cope.

At the same time, some voices are increasingly critical of the quality of the patent system; although it is not always clear what these voices really mean as quality means different things to different people. For example, one can read about concerns that the patent system is being flooded by so-called trivial patents. One can also read concerns about the scope of patents – their interference with research, their extension to human life via gene technology and their complex role in the software industry.

The negative attitude towards increasing application numbers is a puzzling phenomenon. A business professor once remarked to me that any other industry would be delighted by such growth. And while the patent system is not an industry as such, he has a point.

There is, in fact, a deep seated schizophrenia in society concerning the patent system.

On the one hand, society demands wealth and success. In today's knowledge economy, the route to succeed is through innovation. Society consequently pushes all aspects of innovation, its trade and its export at the macro and the micro level. In this world, more patent applications are seen by CEOs and governments alike as being a leading indicator for success.

On the other hand, society is very concerned about all these monopoly rights floating around. Are they deserved? Should they be granted at all? What is their real micro and macro-economic impact? Are open source type models not better? What about the poor and the sick? In this world, patents are seen as bad or, at the very least, something that must be restricted.

In policy terms, therefore, it all comes down to a question of balance; as was ever the case for the patent system. But before jumping to gloom and doom conclusions, before tinkering with the current balance, perhaps it might be useful to look at the facts.

Be very wary of numbers

When looking at application numbers, one has to be very careful. Averages can always deceive but beyond that, the patent system hides a very well designed bear trap of statistical illusion. All of which means that increasing application numbers, or filing numbers, tell you very little about what is happening.

It is first and foremost useful to distinguish between first filings and second filings. Broadly speaking, first filings are unique ideas that industry believes should be patented. Second filings represent a decision by industry that their first filing ideas should be patented geographically in a number of patent systems. In terms of signals to the market, first filings announce

ideas whereas second filings announce where those ideas should be protected; this, in turn, might give an indication of the potential target markets.

Once one has distinguished between first and second filings, it then becomes essential to convert filing numbers to the real workload to be received by a patent office. This is not a trivial exercise.

Growth in first filings – a mixed message

Increasingly, encouraged by legislative changes, industry makes first filings without asking for a search. The motives for industry vary but typically lie in the area of keeping options open. This is a very recent phenomenon. It did not really exist 15 years ago. As a result, one-third of first filings (ie, 6,000 per annum) made directly at the EPO today generate no work whatsoever. This discrepancy between first filings and real work occurs elsewhere, such as at the Danish and UK patent offices. In the United States, so-called provisional filings amount to more than 100,000 per annum.

So in Europe, the real workload figure to look at is not the number of first filings but rather the number of first filings with search requests.

Looking at Figure 1 we see a rather modest growth of around 2% per annum in the number of first filings in Europe. We also see that the vast majority of first filing work with searches in Europe is carried out by three patent offices: the UK, Germany and the EPO itself.

A different matter, however, is the so-called voluminosity of the incoming applications. During the same period, both the number of claims and the number of pages per application have shot up. Underlying driving forces are a mixture of full disclosure obligations passed down by various courts; an unnecessary export of US style drafting to Europe; a fee regime that is too lax; and the usual hide and seek behaviour of patent attorneys.

If we look beyond Europe, what we see is that the number of first filings in Japan is decreasing. At the same time the number of claims per application has increased. This is driven by changes in Japanese legislation which encourage applicants to bring together minor variations on a basic idea into the same patent application.

In China we see a major growth in first filings. According to Chinese officials, however, most are technically rather trivial and this also explains why so few are filed outside China. However, with so many new scientists and engineers entering the market, the Chinese potential is enormous and must lead, sooner or later, to a change in the post-war paradigm that more than 90% of global first filings came from the United States, Europe and Japan.

Coming to the United States, we see a different picture. National first filing numbers were reasonably stable between 1950 and 1990. But this changed in the 1990s and first filing numbers have been increasing strongly. The drivers are different and seem, for now, to be mostly unique to the United States patent system. In recent years, the USPTO has increased the scope of the patent system to software and business methods. US courts, at least during the 90s, automatically gave the benefit of the doubt to the decision of USPTO patent examiners. The Bayh-Dole Act has encouraged universities to retain patents from publicly funded research. US-based CEOs are playing an increasingly macho game of having the largest patent portfolio such that patent application volumes are more important than substance.

If the growth of first filings between regions is so different, then so too is the reaction of the various patent offices. Nowhere is this more visible than in the treatment of first filings.

Europe has elected to accelerate as much as possible all first filing processing. Without exception, in every European patent office and in every field of technology, first filings with search requests receive priority treatment and are completed on average within six months of reception (nine months is a maximum). In addition, the EPO has radically changed its procedures by retraining 4,500 staff, allowing it to integrate the substance of a first communication on patentability and novelty into the first filing procedure.

This prioritisation of resources has not occurred in other regions. The equivalent first action in the United States or Japan takes more than 20 months. So, while European pendency times are higher than in the US or Japan, prior art searches and first actions are significantly faster.

Growth in second filings – globalisation hits the patent system

Globalisation is the single biggest driver of second filing data. And here the PCT system kicks in with all its options.

I will spare the reader a myriad analysis and will stick to the basics. In simple terms, a PCT filing is nothing more than a cross in

a box. It is an act so trivial, and without cost, that it is automatic. It allows the applicant to keep open its options in terms of where it wants its application protected for as long as 31 months after the date of first filing. It is a no brainer – cross all the boxes – China, Japan, United States, Europe (to make it easy, this is a single box) and so on. Each patent office duly records this box as a separate filing. They may never see it, it may never arrive, but it is a filing. It is this statistic, above all else, that drives the impression that the patent system is being flooded.

But if we look at real cases and not filings, we see a different picture. Real cases are when an application enters a patent office as a second filing and the examiners in that office have to produce real work.

Figure 2 has not been published before. It considers cases, not filings, and it uses EPC states as a unit of analysis rather than the more typical EPO only approach.

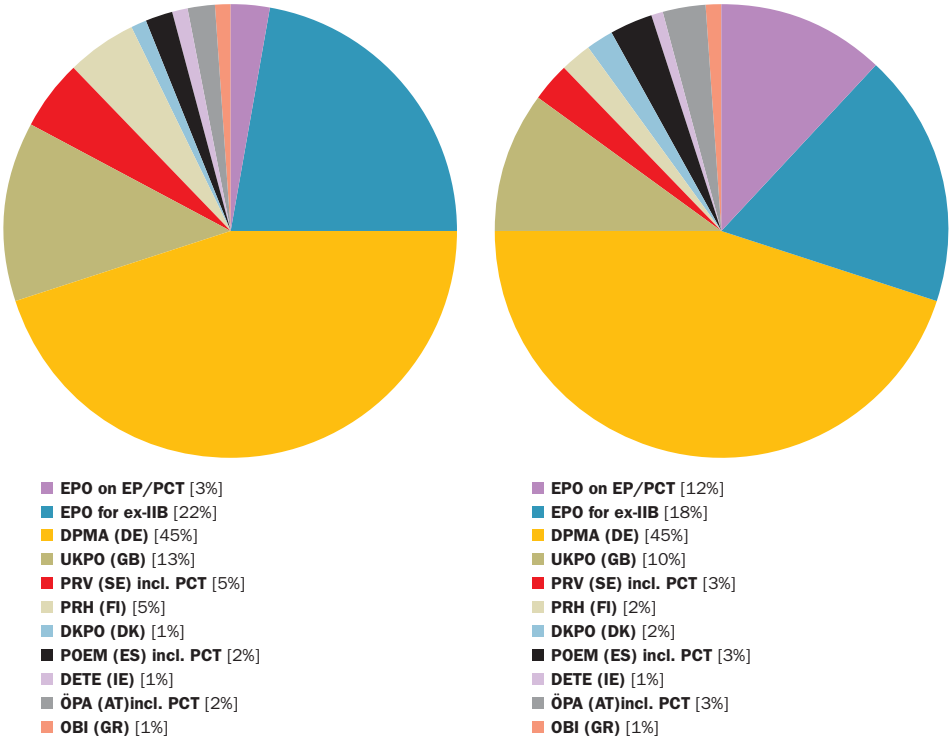
Second filings workload in Europe

In exporting patent rights, European applicants still make more use of direct national procedures, rather than using the PCT route. The split is 55/45. For European applicants, patent protection in the US is requested twice more frequently than in Japan. Due to the general European policy prioritising first filing work, European applicants almost always come to the USPTO and the JPO with prior art searches and, increasingly, with first written opinions on patentability and novelty.

In terms of importing patent rights, incoming workload arrives both at the EPO and nationally. Cost elasticity (re: translation costs) plays a role. The UK, French and German patent offices still receive some 11,000 applications per annum from Japan and the United States. The EPO receives 57,000, most of which are going, or have been, through PCT procedures. Applications from the US are twice as high than from Japan. Most applications arriving in Europe do not have prior art searches.

The reform of PCT Chapter II, led by the EPO, has resulted in this procedure becoming significantly less relevant, thereby releasing 200 man-years of examiner capacity at the EPO for other activities. As a result, PCT workload at the EPO now represents only 25% of total workload, down from 40% just a few years earlier. The outlook is equally

Figure 1. First filings in Europe with search requests, 1995 v 2005



positive as the EPO expects PCT workload to be stable at around this proportion, thereby allowing it to focus on first filing, regional phase and European examination work.

China, India and South Korea are, for now, relatively small in terms of real EPO workload. Together they represent just 3%. Their potential is very significant but, from such a small base, growth rates would have to be staggering to be able to destabilise the patent system in Europe.

Second filings workload in Japan

In exporting patent rights, Japanese applicants have a very strong preference to use national procedures, rather than the PCT. The current split is 80/20, although the Japanese government is actively trying to change this. Patent protection in the US is requested twice as frequently as in Europe.

This means Japanese second filings rarely have a prior art search upon export. I am grateful to Shinjiro Ono ("Cooperation the key to reducing pendency times", *IAM*, August/September 2006, pages 11-13) for placing a number on this situation. He claims that less than 10% of Japanese applications had received a search by the JPO before the office of second filing had started its work.

In terms of importing patent rights, incoming workload is very small compared to the Japanese national workload. Applications from Europe and United States arrive in equal measure; 70% of applications come via the PCT route. In summary, applications arriving in Japan are almost always accompanied by a prior art search. The Japanese Patent Office is therefore primarily concerned with updating searches looking at Japanese language documents.

Japan finds itself in a similar position to the EPO regarding applications from China, India and South Korea. Due to regional proximity, volumes are more important but their overall relationship to total JPO workload is similar.

Second filings workload in the United States

In exporting patent rights, American applicants prefer to use PCT procedures, rather than making second filings directly. The current split is 60/40. Patent protection in Europe is requested twice as frequently as in Japan.

In terms of importing patent rights to the United States, it is here that we see where some of the talk of flooding is originating. Incoming workload is large compared to US national workload. Around 75% of applications (89,000 per annum) from Europe and Japan arrive directly at the USPTO just 12 months after the first filing in the region of origin. These applications have been already searched in Europe; some may have been searched in Japan. However, the prior art searches are not yet in the public domain. The remaining applications arrive via PCT.

The USPTO is also confronted with significant volumes from China, India and South Korea. These volumes are important and their overall relationship to total USPTO workload is higher than in Japan and Europe.

What is the reason behind this massive export of patent applications to the United States? Is the US market so attractive? Perhaps, but the real reason may lie elsewhere.

US courts (under the *Hilmer* doctrine) refuse to acknowledge unpublished prior art in foreign languages. This encourages foreign applicants to file as quickly as possible directly at the USPTO. And despite changes to the law in the wake of TRIPs, another encouragement for early foreign filings to the USPTO is the US first to invent system, which still has an inherent bias meaning 'first to invent, here!'.

Another driving force is the extraterritorial impact the USPTO has when it grants software and business method patents. In an interconnected internet world, software patents granted in one key jurisdiction will have a global impact. Foreign applicants are therefore encouraged to get in on the act or suffer the business consequences, even if their applications would be refused in Europe or Japan.

A final driving force may be the current imbalance between the relative ease of having a patent granted by the USPTO and the willingness of US courts to uphold these decisions. Faced with this reality, many foreign applicants have been forced to seek protection in the United States to reduce their patent risk exposure. However, depending on the verdict in the *KSR v Teleflex* case, which the Supreme Court is expected to deliver any day now (but had not at the time of publication), we could see a much more rigorous application of inventive step by the USPTO.

Growth is wanted? Growth is good?

What is behind these facts? What conclusions can be drawn?

For first filings the main driving forces are R&D investment, me-too behaviour and education. Globally, ever increasing resources in R&D are being dedicated by both governments and businesses. We also see a very significant global increase in the

number of qualified scientists and engineers, particularly from the mega-populous China and India.

For second filings, globalisation is the main driving force. Viewed another way, one might be tempted to say that TRIPs is working, even if its US pharmaceutical founding fathers had a slightly different concept in mind.

For both types of filings, the emergence of patents as a financial asset is a significant driver. The ever greater proportion of company value attributable to intangible assets has driven many to seek ways to render transparent the real sources of a company's wealth. All across the financial world we see evidence of an emerging market in ideas. Patent auctions, patent trolls and patent insurance at Lloyds are already with us. But more is on the horizon as International Accountancy Standards now allow patent valuation as does the Basel II agreement in the banking sector.

These financial forces will simultaneously stimulate filings and, hopefully, restrict them. The restriction will arise as the use of patents as a financial asset will create a new demand for timely rigour and due diligence in the patent system itself. It is safe to assume that venture capitalists and post-Enron stock markets will not appreciate CEOs printing patents to increase company value and will accordingly demand quality before quantity.

This is a very impressive list of drivers. If one looks carefully, under normal circumstances, most of them would be seen by mainstream society as being positive, ie, good. Taking drastic measures to curtail any of these drivers at source is, therefore, neither realistic nor required.

Indeed, I would argue that from a societal viewpoint, putting aside the political schizophrenia, the conclusion must be that the main driving forces behind increasing workload in the patent system are both desired and desirable. And, in any event, one should be careful not to oversimplify that reported increase in the first place.

On balance, therefore, first filings will grow at a modest pace in Japan and Europe. A much accelerated pace will be seen in China and India, both in quantity and in quality. Across the globe, second filings will continue to grow. In the United States, the outlook for all types of filings is much more dependent on the evolving behaviour of the courts and ongoing efforts to reform the patent system.

The growing interdependency of patent offices

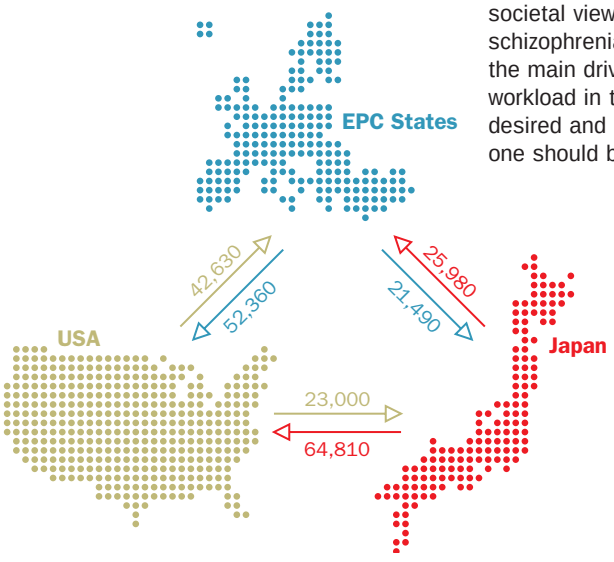
Faced with this likely scenario, although one can imagine others, how can patent offices best react? One lesson from the analysis of second filing growth is the ever greater interdependency between patent offices – the export of US style claims, the extra-territorial effect of changing patent scope in one legislation and the increasing volumes of second filings that (may) have been treated by another office all point in this direction.

This interdependency is complex and leads in some circumstances to undesired results. The unforeseen impact of the *Hilmer* doctrine in the United States is an example. Another example is the Japanese policy to allow deferred examination, which creates the unexpected situation that the first patent office to deliver a prior art search on a Japanese application is often European. A final example is the EPO's decision temporarily to limit its PCT search competence in the fields of biotech and telecommunications (limitation discontinued in 2004) and business methods (limitation ongoing) which resulted in a sudden increase of PCT workload at the USPTO.

With such interdependency, one should be very careful not to panic and clutch at straws. Policy makers need to look at, and to deal with, the root causes of their difficulties, and not simply treat the symptoms. One should also avoid coming up with unnecessary new procedures that add no intrinsic value as such, but merely add complexity to what is an already unnecessarily complex process.

Without the interdependency, patent offices in Europe, China and Japan would probably be able to cope satisfactorily with the predicted growth. The problems at the USPTO are more of a concern. Useful and constructive cooperation will have positive benefits for patent offices and users alike. It is, therefore, essential for all global patent offices that, in addition to a whole host of largely local action points, global strategies

Figure 2. 2005 patent work flows between the tri-lateral regions



are developed that create a win-win situation between the large offices.

What to do?

The economy has to come first. If positive economic drivers increase patent applications, then it is not for those in the patent system to seek ways to throttle the increase.

Pendency times are important. Pendency targets, such as the three year Paris Criteria in Europe, must be respected provided one bears in mind the quasi-automatic 19-month delay borne by second filing offices created by applicants opting for the PCT route. Offering applicants and third parties the means to accelerate patent processing is justified. But offering economic actors the means unilaterally to slow down the processing of specific patent processing distorts the system and distorts the markets. As the maxim goes – justice delayed is justice denied, to someone.

But patent offices should not be managed myopically. Quality must come first. However, the quality of timeliness as measured by pendency is based only on granted patents. Other quality aspects are just as important, such as the process time to first action, the combined withdrawal and refusal rate, inventive step, search thoroughness, consistency and legal certainty. It is, after all, the role of the patent system to award monopolies to real innovations and to weed out the rest.

At the moment, two global strategies can make a realistic and useful contribution to dealing effectively with the ongoing increase in patent applications.

The first is to make greater use of work carried out by the first filing authority. For examiners in the second filing authority, this implies that this work exists, that it is made available, that it is available at the right time and that it is a useful input for the work they must do. It is not so trivial to fulfil these conditions as it might appear, but initial experience that the EPO currently has with some national offices in Europe seems to show that it is doable. The applicant is involved insofar as its permission is required for one office to inform another about unpublished prior art results.

The second global strategy is to update and to enhance the role of the person skilled in the art. The thinking behind this strategy is that those skilled in the art have access today to very different, and very powerful, information tools compared to their hypothetical counterpart of the 1960s. What was not obvious 40 years ago would be standard practice today. And yet, internal guidelines in all the major patent offices (upheld by various court decisions), describing the behaviour of the person skilled in the art have remained largely unchanged. It is as if the internet does not exist in today's R&D laboratories. Adopting such a strategy would indirectly increase the level of inventive step practised in different patent offices across the world and would reduce incentives to file trivial patents. This, in turn, would strengthen the patent system.

These strategies may not appeal to those who prefer to spend endless hours discussing new laws and new procedures, but they are practical and they can work. Above all, they maintain the balance between the rights of the innovator versus those of society and sovereign states. In my view, the global patent system is not yet sufficiently mature to allow one region to transfer its sovereign right to grant monopolies to another region. On the bright side, implementing the practical reality of increasing interdependence will gradually force patent systems to harmonise in a way that would not happen at the diplomatic table.

I would like to stress, however, that these global strategies are complementary to difficult actions at the local level. The USPTO will continue to have workload problems unless it tackles the basic paradox that measures intended to help US applicants have ended up stimulating a counter-reaction that is over populating the US system with (potential) patent rights. Furthermore, both the JPO and the USPTO need to reconsider the priority they give to first actions on first filings.

As to what has to be done in Europe, the establishment of a properly functioning and cooperative European patent network is a priority. In this way, the quality of pre-filing and first filing prior art searches should increase, thereby helping second filing offices across Europe (and beyond) to make greater use of this early work. The EPO itself needs to focus much more sharply on managing its examination workload while ensuring that urgent, time constrained procedures remain under control.

To conclude, the global patent system is challenged by the increase in workload. This increase is driven by policies that society merely wants. It is therefore the duty of those who play a role in managing the system to take the necessary steps and to allocate the necessary resources to cope with the increase. ■

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