HIGHLIGHTS AND PERSPECTIVES ON THE FIRST THREE INTERNATIONAL SYMPOSIA ON REDUCING PATENT COSTS

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Abstract: This paper reviews and critiques various proposals for reducing and containing the costs of patenting internationally. The paper first reviews some data on patenting costs and then organizes the discussion around the different components of patenting costs: official fees, agent representation, translation, and litigation. The paper emphasizes that strategies to reduce patenting costs will involve international cooperation, information technologies, and fiscal reform vis-à-vis patent office operations.

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1. Introduction

During the past decade or so, much attention had focused on the divergent levels of patent *rights* across nations. Weak patent rights adversely affect the ability of inventors to appropriate the returns to their innovative investments. They also inhibit the economic growth of nations which depends on the stimulation of technological change. Much progress has been made with the conclusion of the *TRIPs (Trade-Related Aspects of Intellectual Property Rights) Agreement* to raise patent protection standards around the world. Recently, however, attention has shifted to the *costs* of obtaining patent rights. The realization is that laws protecting patent rights are of little service if those rights are not affordable.

Three international symposia have therefore been devoted to the subject of patent cost containment and reduction. The purpose of this paper is to review some of the proposals suggested and to provide some perspectives on the common themes and debates in the previous symposia. The object is to develop a framework for organizing and analyzing ideas on patent costs. The plan of this paper is as follows: the next section reviews some studies on the state of patent costs. The section following it discusses selected proposals for patent cost reduction. The last section provides an overall perspective on the strategies for patent cost reduction and containment. As will be emphasized, there is not only a *need* but also an improved *capacity* for reducing and containing patent costs. Efforts will depend on international cooperation, continued utilization of new technologies, and enhanced efficiencies in the fiscal management of patent offices.

2. State of Patent Costs

The first question to address is how costly it is to patent internationally. Is there a patent cost *crisis*? Recent commentaries[1] give the impression that there is and that high costs are discouraging patenting. This section reviews some previous studies of patenting costs. Unfortunately, as will be explained shortly, the studies are not all comparable and do not provide an index of patent costs (akin to a consumer price index (CPI)) that can be used to gauge trends in patenting costs. Nonetheless, several interesting insights emerge from these studies.

Few studies on patenting costs exist. Estimating patenting costs requires thorough and time-intensive surveys. While official fee schedules are publicly available, the costs of translation and patent agents can only be obtained by survey. Thus the few existing studies are the products of immense time and effort. They are not, however, all comparable since the surveys (i) were conducted at different points in time with different samples, (ii) use different models of patents, containing for example different page lengths, number of claims and drawings, and type of invention (mechanical or chemical); and (iii) adopt different perspectives (for example, from a U.S. or European patent applicant's point of view).

In some cases, these differences result in different rankings of global patenting costs. Helfgott (1993) who surveys 105 agents in 32 countries finds (for a U.S. inventor's mechanical patent, 20 pages in length, 10 claims, 2 drawings) that *attorney fees* in the U.S. are lower than those in the EPO[2] (before national stage), which are in turn lower than those in Japan. A FICPI (1994)

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[1] See, for example, Turpin (1999).

[2] Here, EPO refers to the average of 5 EPO designations.

survey finds the average attorney fees to be lower in the EPO[3] than in the U.S., and those in the U.S. to be lower than those in Japan. On *translation costs*, Helfgott (1993) and Berrier (1996) find Japan to have the highest translation costs (approximately $2800-$3000 US during the early 1990s). This is largely due to the dissimilarity between the Japanese language and those of other major patenting nations. EPO applicants also face large translation burdens due to the number of states involved. The surveys by SACEPO (1995) and CIPA (1997) find that the cost of translating a 20 page patent into the eight most commonly designated EPO states to be 15,200 DM (or $8085 US) and 14,195 DM (or $7550 US) respectively. These translation costs are approximately 40% of the total patenting costs (i.e. sum of translation, attorney, and official fees).

A FICPI report in the second symposium, however, estimates the translation burden in the EPO to be lower, namely less than 20% of the total patenting costs. Previous surveys work with the assumption that the average number of designations in the EPO is 8.3. This supposedly exaggerates the translation burden because many EPO applicants reside in one of these designations - if not in one of the six most commonly designated states. Hence not as many translations in total are required. This shows the importance of specifying the applicant from whose perspective the patenting costs are measured.

All of these studies - except for Berrier (1996) - focus on the costs of obtaining a patent grant, not maintaining it. Berrier (1996) provides a life-cycle view of patenting costs. The cost of applying for and maintaining till expiry a chemical patent (20 pages, 10 claims (except for Japan where 5 claims are assumed), and no drawings) in 52 countries is $472,414. This "cradle to grave" view of patenting costs also sheds light on how costly patent protection is. Nearly a third of the $472,414 is spent in the first 5 years. Japan is the most expensive destination (accounting for 8.5% of the total lifetime costs) and Hong Kong the cheapest (accounting for 0.2% of those costs). A few criticisms with Berrier's study are that since the payments are staggered over time, it would have been useful to compute the *present discounted value* of the patenting costs (as a $1 spent 10 years later is not equivalent to a $1 spent today). Moreover, not all patents are kept in force till maturity of protection. Many are abandoned within 10 years. Berrier's estimates also omit the cost (or expected cost) of enforcing patent rights (e.g. litigation costs).

What insights emerge from these cost surveys? First, the surveys provide an idea of how expensive international patenting can be. But none indicates whether the cost of patenting has increased dramatically over time. That is, no study compares the cost (or even lifetime costs) of patenting in say 1980 vs. 1999 (inflation-adjusted). To study trends in patenting costs, it is necessary to repeat the same survey for different time intervals. It would then be useful to develop an index of patenting costs. Constructing such an index raises several issues: what type of patent should be used for a *standardized* comparison (i.e. page length, number of claims (dependent and independent) and drawings)? How should patent costs be deflated: using a goods or capital price index? As the estimation of patenting costs is a relatively new endeavor, it will take time before such indexes can be constructed. Until then it is difficult to know the true underlying trend in patenting costs.

It is also difficult to make cross-country comparisons of patenting costs based on the results of existing surveys. Again, there is no standard patent to hold constant across regions (in terms of

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[3] The average of 8.3 designations; that is, the sum of attorney fees from prosecution before the EPO *plus* validation divided by 8.3.

length of application, depth of technology, and breadth of claims). Another factor that is not held constant is the market size of destinations. Most surveys compare the EPO, US, and Japan. But how many EPO designations would it take to make the EPO market comparable to that of the U.S. or Japan? The figure of 8.3 designations (often used) refers to the average number of designations in an EPO application, not to a "critical" market size. It would be useful to compare the costs of patenting across similar market sizes. The issue then is defining appropriate market size: should population be used, Gross Domestic Product (GDP), or per-capita GDP?

Despite the difficulties of making temporal and cross-sectional comparisons of costs, there are two senses in which patenting costs have risen recently. First, even if the cost of some "representative" patent application has been stable over time, the fact is that more such patent applications are being filed - or need to be filed. Before the increased globalization of the world economy, national filings might have been adequate for most firms. But in the current economically interdependent world, firms increasingly require and seek global patent protection. In this case, the rise in patenting costs is driven not by changes in the "price" of patenting, but by patenting needs. Secondly, it need not be the "price" of a patent application (or the fee structure) that is of concern, but the *non-price* factors that are costly or burdensome; for example, *regulations* (that require excessive paperwork and formalities, and that vary across countries), *procedures* (that involve repetitive searches and examinations, decentralized filing and payments), and *time* to process and examine patent applications.

Finally, future surveys could incorporate at least two further elements. The first is some set of estimates of the value of patenting.[4] The reason is that what eventually determines patenting are not the costs of patenting, but the net benefits (the benefits in excess of these costs). Since many of the surveys warn that high patenting costs discourage patenting (and possibly research and development (R&D) as well), it is worth reminding that the expected value or reward to patenting (profits, royalties, and license fees) is also an important consideration. Otherwise, even the lifetime patenting cost figure of $472,414 in and of itself conveys little or no information. It is high relative to what? Presumably the value of having patent protection in 52 countries is comparatively higher. Focusing solely on costs also misses some plausible cause-effect relationships. Certainly costs can independently change patenting propensity, but it is also possible (in the current knowledge-based global economy) that the value of patenting has increased. This increases the demand for patenting, which in turn drives up the cost of patenting.

Another element to incorporate is the cost of enforcing a patent. The net benefit of patenting depends also on the *quality of enforcement*. A $1 (or 1 DM) need not buy the same quality of protection in different countries. This is where litigation costs come in. The investment put into obtaining a patent may be frustrated by prohibitively high costs of enforcing one's rights and obtaining damages. None of the surveys reviewed here provide estimates of litigation costs. The first symposia mentioned informally some cost figures, namely that in the U.S. and U.K., the litigation costs in a typical case could be as high as $2 million (US). Future surveys could therefore incorporate litigation costs as well as estimates of the probability of litigation over a patent lifetime.

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[4] There is a growing literature in economics estimating the value of patent rights. The estimates, however, are indirect, based on renewal fee data and on the idea that the decision to renew reveals the underlying value of a patent. See Pakes and Simpson (1989) for an example.

3. Proposals for Patent Cost Reduction

This section reviews some proposals to reduce or contain the costs of patenting. The reviews are neither exhaustive nor conclusive, but rather give a sense of the options, the structure of the solutions proposed, and some directions for further exploration. The proposals are grouped according to how they affect the components of patenting costs:

- Official Fees
  - -- Filing and Renewal
  - -- Search and Exam
- Agent Fees
- Translation Costs
- Litigation Costs

Thus *costs* are largely from the perspective of the patent applicant, to whom the costs of procuring, maintaining, and enforcing patent rights are of prime interest. Patenting costs, though, can also be described from other perspectives, for instance from that of the patent office (in terms of the costs of examining and granting patents), of patent agents (in providing patent services), courts (in conducting hearings), or of the government (in providing and protecting patent rights). Nonetheless, it is the *user* of the patent system (the applicant) that was the focus of the symposia. Of course factors affecting the costs and operations of the patent offices, court systems, patent agents, and government policies vis-a-vis patent rights, can have an impact on the patenting costs of applicants, and where they do, they shall be evaluated from the perspective of the patent applicants.

The discussion will point out some of the advantages and disadvantages of the ideas proposed, as well as point out the region(s) to which the proposals are addressed, for example, the U.S., Europe, Japan, or other. While the proposals are grouped according to how they affect the components of patenting costs, it is also important to note that some proposals affect more than one component. The discussions below will emphasis where that is the case.

A. Official Fees

There are several "official-related" fees, including the basic (filing) fee, renewal fees, search and examination fees, and designation fees (where applicable). Moreover, certain statutory as well as procedural formalities also have an impact on the official fees incurred.

Thus far, some progress has been made in the area of fee reductions. The EPO has reduced its filing and search fees, and has allowed designation fees to be deferred. National offices (like the USPTO and the Canadian Patent Office) have also reduced filing fees; WIPO has also reduced its fees for the PCT. These fee reductions have met with support in the previous symposia. Participants, however, agreed in the desirability of further reductions, where possible.

I. Filing and Renewal Fees

a) Budgetary Issues

One proposal is to **reduce the entry fee** (i.e. the basic filing fee). Lower up-front fees would especially help applicants who have inventions with good commercial prospects but who are financially constrained from applying. Eventually the successful applicants will have to bear renewal fees. Thus an advantage of low entry fees is that it largely postpones patenting costs till applicants are successful, or when uncertainty about whether a patent will be granted is resolved.

Entry fee reductions, however, raise a number of concerns. The first is that the volume of patent filings would increase, particularly of marginal inventions (or inventions of questionable merit). The increased workload and burden on patent office resources are likely to impose a cost on all applicants in the form of an increase in patent pendency (or prosecution time) or a reduction in the quality of service. The longer it takes a patent application to be prosecuted, the owners of more valuable inventions may drop out of the process, while owners of less valuable inventions apply due to the lower entry fee. Thus an entry fee reduction may cause not only the *volume* of filings to increase, but the *composition* to shift towards a greater proportion of marginal filings. The increased workload is also likely to create pressure to expand resources (e.g. hire more examiners).

Hence a related concern is whether an entry fee reduction would put a strain on patent office budgets and affect patent office activities (such as examination, publication, hiring, and training) adversely. Would **renewal fees** need to be increased to finance the entry fee reductions? While a patent office collects less revenue per application (with a lower entry fee), its overall revenues will rise (or fall) according to whether the *percentage* increase in patent applications more than (or less than) compensates for the *percentage* decrease in the filing fee. Revenues will rise in situations where the demand for patenting is very fee sensitive (or 'price-elastic'). An entry fee cut might be self-financing in those situations. However, this assumes no changes in the costs of patent offices. To the extent that there is an increase in the volume of patent filings, the operation costs of patent offices will increase (as there are more applications to process), and thus the profits (or surpluses) of patent offices may decrease. Moreover, to the extent that an increase in patent prosecution time discourages the filing of high value patents, or shifts the composition of applications to more marginal patents, the future stream of renewal fee income may be lower. If operation costs rise (and profits fall) significantly, there will be pressure to increase renewal fees.[5]

To the extent that the lower entry fees do necessitate a rise in renewal fees, the 'successful' patent applicants may be seen to subsidize the 'unsuccessful' applicants. The burdens on patent office resources and on 'successful' applicants may, however, be eased if patent offices can credibly maintain and enforce high patentability criteria. This should discourage applications with weak

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[5] Of course, it will also be necessary to consider the effects of changes in renewal fees on the number of renewals and revenues from renewals. If the demand for renewals is also fee-sensitive, renewal fee revenues may decrease with a rise in fees. However, it is likely that the demand for renewals is not as fee-sensitive as it is sensitive to the income generated from the patent right. At this point, only scenarios can be suggested, as few studies exist on the demand for patents and renewals and their revenue implications.

inventive steps or limited industrial applicability. Even if the entry fee is low, marginal applicants would not find it profitable to incur that fee to apply for a patent if there exists a near certain probability of rejection. High patentability criteria also work to preempt litigation by reducing the odds of granting an invalid patent.

If, however, the object of reducing entry fees is to encourage applications from financially constrained inventors with patentable inventions, an *alternative* policy is to try to target that group, by providing 'discounts' for small inventors (those most likely to be discouraged by high patenting costs). Hence some have proposed **reduced fees for small-medium enterprises (SMEs)**. Indeed the USPTO and the Canadian patent office provide for special reduced rates for small entities. WIPO has a similar policy of providing 75% discounts on certain fees for inventors who are nationals of poorer nations (those whose per capita income is below $3,000 U.S.).

The discussion so far has focused on the question of financing entry fee reductions: for example, would renewal fees need to be raised or are fee cuts self-financing? Alternatively, to the extent that patent offices earn surpluses - and many of the major offices do - fee reductions may be financed by those surpluses. In other words, fees could be set so that patent offices break even, or set so as to be commensurate with the costs of services. In the case of WIPO and the EPO, the surpluses are used to fund various activities, such as training, seminars, technical assistance projects, and promotional ventures. In the USPTO, **surpluses are diverted** to national treasuries. In other words, the U.S. Federal government consolidates patent office accounts with those of other Federal government departments and agencies.

A related issue concerns the **"distribution key"** governing the distribution of patent renewal income between the EPO and the national offices of its Contracting States. Currently, the national offices *actually* retain 50% of the renewal fees from EPO patents, which exceeds their *statutory* share of 25%. Moreover, these renewal fee revenues of national offices are also, in some cases, *diverted* to the general government funds of the Contracting States.

From a "macro" view, the consolidation of the accounts of all government branches has the advantage of making the government's overall borrowing needs, if any, smaller than the situation where individual branches were responsible for financing their own deficits. Moreover, an individual branch may run a surplus in one period and a deficit in another (depending on fluctuations in user fee revenues). Consolidation thus enables an individual branch to keep its expenses "smooth" over time. However, from a "micro" view, consolidation has the disadvantage that patent applicants or patentees end up subsidizing the activities of other branches of government. In effect, patent applicants are faced with a situation of **double taxation**; that is, part of the fees that patent applicants pay goes to pay for the patent office services rendered, while the rest goes to pay for other fiscal expenditures (such as space, defense, education, social services, and so forth). Thus, if it were not for patent fee diversion to general government funds, patent applicants might enjoy lower fees.

Defenders of consolidated government accounts might take the view that surpluses should be used for society as a whole, to finance public goods that benefit society widely, including the patenting sector. For example, government spending on education, research and development, and law enforcement in general, should indirectly, if not directly, produce benefits for the patent system in terms of preparing future inventors and providing an environment conducive to innovation. Critics would take the view that such general spending inefficiently targets the patenting sector. Why not use patent office surpluses to fund activities that directly and more immediately benefit the

patent system, such as training and hiring, investments in technology, and information provision?

In the case of the EPO and WIPO, there is a similar call for surpluses to be used either to reduce fees or to fund activities that *directly* impinge on patenting, such as examination. There were questions as to whether the EPO should even be funding the training of patent attorneys outside member states. An argument in favor of such spending is that it may create business for the EPO and its practitioners. Moreover, increasing the awareness and importance of patent rights in less developed economies, where intellectual property rights tend to be lax, should ultimately benefit European patent holders. Investments which help develop patent regimes around the world tend to have characteristics of international public goods, in that a country which does not contribute to the worldwide effort may nonetheless "free ride" on the reduced imitation risks around the world. This explains why it may make sense for international organizations like WIPO and the EPO at large to undertake investments which have international "spillover" benefits.

Within the EPO, the subject of the distribution key is also of relevance to patenting fees. Because national offices retain a greater than statutory share of the renewal fee income from EPO patents, they are able to keep their procedural fees low; at the same time, EPO fees are high because they receive a smaller than statutory share of those revenues. Thus shifting the distribution key may simply reallocate fees between phases (EPO and national). However, the distribution of renewal fee income is not only between the EPO and the national offices. To the extent that national renewal fee income is diverted to national treasuries, the amount that is diverted could be viewed as partly, if not wholly, the EPO's share. EPO patent holders are in effect subsidizing other national fiscal expenditures. Thus, without affecting the national offices' *effective* take of the renewal fee income, it is possible to raise EPO's take (by discontinuing national fee diversion) and thereby pass some of these gains on to EPO applicants in the form of lower EPO procedural fees.

b) Technologies

Internet tools offer ways to improve the efficiency and productivity of patent filing and processing. The JPO now accepts electronically filed patent applications, and WIPO and the EPO have engaged in a joint venture which produced the *Easy* software which can be used to file PCT and EPO applications electronically. **Electronic filing** saves costs by eliminating paperwork and reducing the storage costs of hardcopy information. Furthermore, with electronic filing, **designation fees** for EPO and PCT applications may be reduced or eliminated altogether, as less paper is involved. In other words, copies of the application and other documents may be transmitted to the designated States electronically as well.

c) Formalities

Formalities and regulations also affect official fee burdens. Harmonization of formalities and procedural requirements is of course a subject of the ongoing negotiations on the *Patent Law Treaty*. Many of the ideas raised in the symposia dovetail well with this Treaty. The proposals below concern ways to reduce patenting costs arising from claim fees and ways to ease procedural burdens on applicants, particularly when they face divergent requirements across countries.

First, on the subject of claim fees, one difficulty that international patent applicants face is

that certain patent offices use different concepts of **unity of invention**. Under U.S. practice, independent claims are allowed in one patent application provided they are in the same *technical* class. In Europe, they are allowed in one application if they comprise a common *inventive* concept. The PCT practice is also based on unifying independent claims under an "inventive" concept. Because U.S. practice differs from rest of the world, foreign applicants in the U.S. are forced to modify their applications by eliminating certain claims and filing "divisional" applications. By adopting the PCT unity of invention concept, the U.S. would contribute to the reduction in international patenting costs by enabling applicants to work with a more standardized application.

Even if the independent claims fall under a unified concept of invention, the costs of a patent application - and the examination burden - rise with the number of claims. Moreover, in the case where applications must be translated, the translation costs also rise with the number of claims. While applicants do not want to risk getting narrower patent protection than they deserve by including fewer claims, a more focused application should help keep costs down without sacrificing the scope of protection that is legally and technically warranted. As an incentive, surcharges and fee structures should be designed to encourage applicants to make an "economical" number of claims. Alternatively, or in addition, encouraging the writing of "multiple dependent claims" would also help contain costs arising from claim fees. Applicants would have greater incentive to do so if national offices were to reduce their fees for multiple dependent claims.

Finally, on the subject of claim fees, in certain countries (such as Japan and S. Korea), renewal fees are a function of the number of claims in a patent. The previous symposia have debated the justification for this. While the number of claims affects the examination burden, it does not affect the renewal of patents. As the cost of renewing a patent does not depend on the number of claims, neither therefore should the fee. On the other hand, patents with more claims have a broader scope of protection and hence possibly command a larger market. Thus a renewal fee which varies with the number of claims could be viewed as a progressive income tax, and a fee that does not vary with claims as a regressive tax.

Next, on the subject of burdensome regulations, applicants feel particularly burdened by requirements such as the certification and notarization of documents like power of attorney, assignments, and change of name and address. Moreover, in the U.S., the **Information Disclosure Statement (IDS)** requirement is seen as burdensome, as is the need to take **Inventors' Oaths and Declarations**. In Canada, applicants need to produce a title evidence at the time of filing, and in Mexico applicants require signatures to be authenticated.

The proposed PLT is designed to streamline the formality requirements of patent offices for the filing and renewing of patents. The recently drafted PLT has provisions which prohibit the notarization or certification of signatures or of changes in name, ownership, or address, unless national offices have reason to doubt the veracity. National offices would also be prohibited from requiring certified copies of priority documents, where the priority of an earlier application is claimed, unless it was filed in a different national office; nor can national offices require a translation of any priority document unless the validity of the priority claim is needed to determine patentability. The PLT also has provisions to permit any representative the right to practice before different national offices and to have an address for service in different nations. National offices must also not mandate that representatives are required for the filing of translations or the payment of renewal fees. While the proposed PLT does make some advances in simplifying rules and procedures, the

question is whether those advances are enough to make a significant impact on patent cost reduction.

II. Proposals Relating to Other Official Fees (Search, Examination, and Designation)

General agreement was expressed in the previous symposia that it is inefficient for searches and examinations to be repeated in different patent offices for the same international patent application. It would be ideal if a uniform global search and examination could be conducted per application. But general agreement was expressed that there are numerous obstacles to search and exam reciprocity owing to the fact that substantive laws (governing priority, prior art, patentability and so forth) differ across countries and that the classification of search databases differs across offices (the USPTO is based on a structural classification, while the EPO on a functional one).

Thus barring the harmonization of substantive laws and systems, the second best policy is to facilitate the sharing of search databases and exchange of information about patent examination results. This involves not only the will to share and exchange information, but also the capacity. Hence information technology systems were much discussed in the previous symposia. Much progress has been made in adopting and improving the compatibility of information technologies in the trilateral offices and WIPO.

The proposals relating to the reduction in search and examination costs are of two kinds. The first is to recommend direct cuts in search and examination fees, along the lines suggested in reducing filing fees. The object would be to set fees more closely to the actual cost of a service. The second set of proposals seeks ways to reduce the cost of service itself. This is where the sharing of databases and improvements in technology come in.

First, greater room for direct **cuts in search and examination fees** would exist if the surpluses of patent offices were not diverted to general government funds. Patent offices (like the EPO) could use the surpluses retained to lower search and examination fees.

Secondly, the costs of search and examination could be reduced if patent offices better pooled their resources and examination results. The cost savings from search and examination could then be passed on to patent applicants in the form of lower search and examination fees. Since mutual recognition of search and examination results has to be precluded for the time being, policymakers should resort to some *intermediate* steps. For instance, on search, there are at least two things national offices can do: (i) allow access to each other's search databases, and/or (ii) create a **common search database** (and make appropriate arrangements for cost sharing). Neither option requires mutual recognition of search results as a precondition.

On examination, intermediate measures that patent offices can take is to build on the results of a previous exam, rather than discount them altogether, and conduct additional examinations as necessary to ensure that local laws and requirements are met. A second idea is a **concurrent search and examination**, where examiners from multiple offices (for example, the Trilateral offices) conduct an examination of a patent application cooperatively; examiners could confer with one another (or perhaps divide the workload). Again, the process allows patent offices to share the benefits of reduced overhead search and examination costs and duplication of effort, *without* any

obligation that they accept one another's search and examination results.[6]

Finally, another proposal for rationalizing search and examination costs in the EPO is to **consolidate search and examination**. The EPO has been the only office where search and examination occur separately and where three examiners are required to conduct an examination of a patent application. Some have argued that it is economical to conduct a one-shot search and examination and to utilize one examiner. Others argue that it is not cost effective to proceed with a case that the search phase finds to be weak, and that the utilization of three examiners is an integral feature of EPO diversity. (It should be noted that the EPO has recently tried combining search and examination through its BEST project.)

B. Agent Fees

Agent fees can be high due to a number of factors such as the limited supply of agents or patent attorneys, regulations which restrict representation in different patent jurisdictions, and the cost of revising and resubmitting patent applications.

Some nations appear to have a limited supply of patent agents or representatives, such as Japan and China. For this reason, agent fees in these two countries are a relatively larger proportion of total patenting costs, as compared to those in the US and EPO. Consequently, a proposal here would be to expand the **supply of eligible agents** into the patent agent business, particularly those who can handle international applications.

Another proposal is to allow **extensive legal representation**; that is, allow a legal representative to represent her client before several patent offices. It is costly for applicants to hire a new local representative in each of the countries in which they seek patent protection. A related proposal is that it would be cost effective for applicants to have an **Address for Service** in a single country, rather than in multiple destinations. (These proposals especially concern the EPO, where several local representatives and addresses need to be employed during the validation stage, and where representatives are often needed for filing translations or paying annuities.) That mutual recognition of the qualifications of legal representatives can be feasible is exemplified in the case of Australia and New Zealand. Both countries allow patent attorneys of the other to practice before their patent offices.

Extensive legal representation may well work so long as the procedures are routine (for example, filing patent applications, validating patents, paying annuities, and so forth). However, in certain circumstances, having local representatives may be more advantageous, as they would be more familiar with the domestic system. The idea of extensive legal representation also meets with resistance because of the possibility that local agents may lose some business.

For the EPO, an alternative to having multiple local representatives is to provide a system of **centralized filing** for procedural tasks, such as the payment of annuities, the filing of translations, and validations. Centralized filing at the EPO removes many repetitive procedures that would otherwise have to be carried out at different national offices. Centralized filing helps reduce the risk of missing time limits to file in national offices during validation, and helps reduce agent fees.

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[6] Selective trial efforts have been taking place in the trilateral offices. Positive feedback from patent users may encourage the trilateral offices to carry out these efforts on a larger scale.

Finally, another way to reduce agent fees is to minimize the need to revise and resubmit patent applications. Clients are charged for the rewriting of applications. Revision costs can be reduced by **better preparing applications** initially. Better preparation may include eliminating vague claims or claims that are too broad. In those cases, the application would most likely be rejected and the interested client would need to revise and resubmit. To assist applicants to prepare better applications before approaching an attorney (and begin incurring charges), the patent offices could provide guidelines and materials (through their web sites, for example) to help interested persons assemble their own patent applications. Applicants then use up less attorney time to fine tune their applications.

C. Translation Fees

Translations play two critical roles in international patenting. First, the translated patent document must clearly disclose information to the *relevant public*. This has two purposes: first, to benefit future innovators who may build on the new inventive knowledge; and secondly, to inform third parties of the owner's legal intellectual territory. Poorly translated documents function poorly as a technology transfer device and legal document. Secondly, the translated patent application must be clear to the examiner. Poorly translated applications may lead to errors in the determination of patentability and scope.

In considering ways to reduce translation costs, it would be useful to separate price and quantity; that is, the translation fees themselves versus the amount of material to translate (or the translation needs). Some might view the fee part to be reasonable (competitively determined), while the translation requirements (due to laws and practices) to be unreasonable.[7] The proposals discussed here pertain to both kinds of translation costs.

Before proceeding, it is worth putting some things into perspective. First, in the EPO, patent translations are seldom considered, and even when they are, they are usually consulted many years after filing or grant. According to statistics from the first symposium, the consultation rate in 1994 was less than 2% for many regions.[8] What this suggests is that most third parties relied on

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[7] Indeed, the author did an informal check of his own, calling up a random sample of ten translation companies in the Washington, D.C. area. (The *Yellow Pages* actually lists several pages of translation companies, and so it is difficult to imagine any price collusion.) One of the companies surveyed indicated that it does translation work for the USPTO. Overall, the rates "appeared" competitive. The cost of translating a patent document from English to French, German, or Spanish ranges from 20 to 22 cents per word, from English to Dutch 22 to 25 cents per word, and from English to Japanese, Korean, or Chinese 30 to 35 cents per word. One company offered to match the rate of any other company. Each company indicated that it could translate a 30 page patent document from English into all seven languages mentioned above in two weeks, but would of course like to be given more time. For a "rush" fee, some of them indicated that they could do the job in 7 business days. Of course, this survey is extremely informal, and may not reflect the market conditions in other U.S. cities, or for that matter, in cities in other countries.

[8] See International Symposium ..., Vol. 1, pg. 64. The consultation rate is the number of requests for inspection or copies of translations as a percentage of the stock of translations that were

documents published in a foreign language soon after filing. Since slightly more than 70% of EPO applications were filed in English, the documents were consulted in a language most understood. The implication is that it is effectively the language of the examination that is more important to the interpretation of patent rights than the language into which the patent is finally translated. This last point is buttressed by the fact that actual deliberation before the EPO has to be in one of the three official languages (English, French, and German). Hence translations into non-official EPO languages are not needed as far as examination goes.

These practical considerations must, however, be balanced against cultural considerations. Language and heritage cannot, for many nations, be compromised for economic convenience. It should be appreciated that requiring nations to do otherwise infringes on their sovereignty.

As before, cost reduction should not come at the expense of quality. This is especially the case with translations of legal documents. The translated documents will be the basis for legal actions (to assess validity or existence of prior user rights). An advantage of a patent agent handling translations of legal documents - as opposed to a discount translation company - is that the attorney or agent (on behalf of the applicant) has a vested interest in accurate translations.

It was also mentioned earlier that fee reductions could have the side effect of encouraging an increase in the volume of marginal filings. Unlike basic (entry) fee reductions, a reduction in translation costs is not likely to produce such effects. First, translations tend to take place later in the application process; secondly, there is likely to be a *selection bias*: international patent applications tend to be for inventions of relatively high value. Given the cost of obtaining global patent protection, investors tend to be more selective when choosing which inventions to file abroad.

Most, if not all, of the following proposals relate to the EPO, not surprisingly because EPO patents involve multiple designations. But translation costs and burdens exist for other kinds of filings; for example, PCT filings or direct (national route) filings in a foreign office. The measures discussed in the context of the EPO are applicable to other contexts, such as foreign filings in the U.S. or JPO. But there were no explicit discussions as to how the US or Japanese authorities would react to foreigners submitting partial or deferred translations - the kinds of solutions proposed for the EPO.

The **"Package Solution"** requires three things from patent applicants: i. an *enhanced abstract* upon publication (which is translated into the languages of those States that have been designated); ii. translated *claims* upon grant; and iii. translated *specification* prior to enforcement. This solution would cut down on the material to be translated and would result in earlier information provision (through the enhanced abstract). There were some logistical issues such as who would draft the enhanced abstract: whether the applicant, agent, or an outsourced party (e.g. Derwent). The Package Solution did not meet with unanimous support of the Administrative Council of the EPO, but discussions are ongoing. Some argued that the abbreviated version may not provide a sufficient *enabling disclosure*, allowing someone skilled in the art to carry out the invention. Others have argued that the claims and specification are inseparable (that the claims cannot be construed without the whole text). The solution may lack clarity to third parties, who may inadvertently infringe. Greater future litigation may then result.

The **Compact Solution** offers applicants the option of voluntarily shortening the description

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filed.

and/or claims. The specification is to be shortened at the end of the prosecution procedure (where portions that are not pertinent are deleted). Again translation costs are reduced as there is less to translate, but there is concern that certain omitted detail may later prove legally useful. Also, if the patent document is too compact, third parties may not be able to distinguish "equivalency" fully; that is, the doctrine of equivalents may be more difficult to apply.

The **Official Languages Solution** requires translation only if the application is not in one of the three official EPO languages. This proposal is a practical one in that, as mentioned earlier, prosecution before the EPO must take place in one of those languages, not in the official languages of the other EPO member states. Applicants from Asia, Eastern Europe, or Africa, still have to translate when applying in the EPO, but not into as many European languages.

The original **Community Patent Convention Proposal (CPC)** was (i) to limit translation requirements to patent claims and (ii) to translate the patent specification when the patentee needed protection. (Translating in the CPC was thought to be especially burdensome because the patent has to be translated into the languages of all the Contracting State regardless of whether an applicant wishes to have protection in a particular State. By definition, the CPC patent is unitary across states: there is no concept of selective designation.) The revised 1989 CPC proposal still requires the translation of the specification, but the failure to file in a member State would result in the patent not taking effect in that state. (This creates an exception to the unitary character of the CPC patent.) Any deferred translation (till the patentee wants to enforce) must have provisions for intermediary rights, if any. The arrangement here would be that if the patentee translates within 3 months from grant, she can get *full* compensation from third parties who use the invention; if between 3 months after grant and 3 years from grant, she can get *reasonable* compensation; and if more than 3 years after grant, the prior user may continue to use the invention *without* compensating the patent holder.

Another cost saving measure is the **Translation On Demand** proposal, which requires a patent to be translated if requested by a third party. An issue to resolve is who should pay for the translation: applicant, third party, or the national office (using its retained renewal fee income)?

Finally, just as official fees have been lowered due to technological innovations, translation costs can also be reduced with the development of **Computer-Aided Translations**. Computer-assisted mechanisms for translations should make the process of translation itself less costly and reduce the price of translation services, but manual (human) verification would still be vital. The key word is "aided" translations, not automated.

Other proposals discussed in previous sections also have implications for translation costs. For example, if applicants can manage fewer independent claims, the translation burden is less. It will also be less if burdensome regulations can be eased, for instance the requirement that **Convention Priority Documents** be translated.

D. Litigation Costs

The previous symposia focused particularly on the high costs of litigation in the U.S. and to some extent in the U.K. The following proposals suggest limiting discovery and jury trials (particularly in the U.S.); introducing specialized patent courts, alternative dispute resolution mechanisms, and case management (in countries without them); harmonizing certain laws with those in the rest of the world (for example, early publication and first-to-file in the U.S.); and reforming

procedures concerning 'damages' determination and patent reexamination in the U.S.

Discovery is costly, particularly in the U.S. and U.K. Suggestions were made in the previous symposia to limit discovery to truly relevant documents (however easier said than done). Suggestions also included the need for *sanctions* against abuses of discovery as 'strategic' weapons, and for *incentives* to get parties to reveal their cases fully at an early stage, to achieve a settlement or resolution, and thereby cut down on discovery. While limiting discovery to reduce litigation costs is considered a 'plus,' the negative side is that discovery may be vital in situations where infringement is difficult to prove (e.g. process inventions).

Other proposals have called for **limits on jury trial**. Although in practice a small percentage of patent cases are decided by a jury trial, once a case proceeds to one, it is costly.[9] In the U.S., however, the case of *Markman vs. Westview Instruments* (over a dry-cleaning inventory patent) sets a precedent which limits the role of the jury.[10] Patent litigators consequently may be able to resolve cases early and thus keep litigation costs down. In particular, litigators can request a *Markman* "claim construction" hearing. The idea is that patent infringement is a two-step process: i. construction of claim and ii. determination of whether some product or process infringes that claim. The significance of the *Markman* case is that this first step - claim construction - is a matter of law (the exclusive province of the court), and determining what the claims mean virtually decides the case. Hence, patent cases may be increasingly resolved through pre-trial motions by judges. Juries become less needed.

A *Markman* hearing may also mean less need for discovery. Claim construction is based on "intrinsic" evidence (i.e. the claims themselves, patent specification, prior art, and prosecution history), rather than "extrinsic" evidence (expert testimony, testimony of patentees, third parties, and secondary documents). Extrinsic evidence (and discovery to obtain them) is needed when the meaning of claims cannot be construed by intrinsic evidence alone. Thus the adoption of *Markman* type hearings in other countries may be a useful means for reducing patent litigation costs.

The symposia have also discussed the establishment of **Specialized Patent Courts** as a way to reduce the costs arising from complex patent trials. Currently the U.S. has a semi-specialized court to hear appeals (i.e. *Court of Appeals of the Federal Circuit (CAFC)*), but does not have specialized patent courts or judges. A specialized court exists in the U.K. called the *Patent County Court (PCC)*, a small claimants court for disputes between smaller entities. The (PCC) has more streamlined proceedings and strict time limits. A specialized patent court could also be useful in the European region. The EPO currently does not provide for a common appelate body. Judicial authorities in the Contracting States render their own interpretations of European patent law. As a result, some inconsistencies may arise in the interpretations of that law across those States. Greater consistency may be achieved if a European patent court existed which could hear appeals from national courts.

Another way to reduce litigation costs is to resort to **Alternative Dispute Resolutions**

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[9] Parr (1998), though, finds that the percentage of jury trials increased during the 1990s. Roughly 40-50% of all patent cases heard in the 1990s were jury trials, up from 20% or so during the 1980s.

[10] The following details are from C. R. Ottenweller (1997).

(ADR). In the U.S., non-profit organizations and court-sponsored programs exist to mediate or arbitrate patent disputes. The *International Chamber of Commerce (ICC)* and WIPO provide ADR forums. Litigation costs can also be contained with a practice known as **Case Management**. The idea is to expedite adjudication with predetermined timetables. Canada introduced case management procedures in 1998 (through new *Federal Court of Canada* rules) which set strict time limits, compulsory pre-trial conferences, and compulsory settlement discussions. While it is desirable to reduce the length of proceedings to save costs, the time limits should ensure that there is sufficient time for investigation and discovery.

ADR and Case Management are useful suggestions for countries at large. But for the U.S. specifically, some have suggested that it should harmonize at least two features of its patent system with those of the rest of the world. The first is to have **early publication of patent applications** (say, 18 months after filing). Non-U.S. applicants have expressed concern that searching for prior art can sometimes be incomplete because of U.S. policy on secrecy till grant. As a result, patent offices outside the U.S. are unaware of prior art that is in the 'pipeline.' Early publication may enable third parties to avoid duplicative research and development of technologies that are in the pipeline, and avoid future litigation by not investing in technologies which may infringe on pending applications. A second suggestion has been that the U.S. should adopt the **First-to-File** system for determining priority. There is a large literature on this debate. Suffice it here to say that the first-to-file system would obviate the need for costly interference proceedings in the U.S. The difficulty is there that is great opposition to this idea in the U.S. and an end to the first-to-invent system is not foreseeable. In practice, though, interference proceedings occur in less than 0.1% of filings and the vast majority of inventors in the U.S. obtain priority by being first to file. This could mean either that it is not necessary to change the system or that a change should not be so difficult. Defenders of keeping the first-to-invent system as is would argue that it protects the small inventor who does not have the resources to file first and needs time to garner those resources.[11] (This particular resource disadvantage may be a reason for providing lower fees to small entities.)

Finally, some procedural changes that were recommended were, first, to separate the determination of **Infringement and Damages Award** in the U.S. The argument is that this saves costs because the party bringing litigation undertakes heavy expense to prepare an analysis of damages *even* before infringement, if any, is found. A second proposal is to reform the **re-examination process** at the USPTO. Currently, the U.S. lacks an "inter partes" opposition procedure in the USPTO. As a result, third parties can only contest validity by pursuing this issue in court, which is costly. The U.S. Congress is therefore currently reviewing a bill to permit increased third party participation in the USPTO's re-examination procedures. The rationale for this is that if *validity* were determined in USPTO proceedings, there would be no need to use the court's time and resources to determine validity.

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[11] In a recent case concerning a patent for a key eye laser surgery technology, one of the disputes is that the individual who was the *first to file* fraudulently took the idea of someone who was *first to invent*. The alleged first to invent is an academic who states that he was unable to apply for a patent and afford an attorney because his research funding had dried up. See the *Wall Street Journal*, 26th May, 1999, p. A1.

4. Perspectives

This concluding section pulls together some common threads underlying the proposals and discussions. Three things will be emphasized: i. the *need* to reduce patenting costs; ii. the *capacity* to reduce patenting costs; iii. the *tradeoffs* to consider in reducing patenting costs.

Earlier a distinction was made between patenting costs and patenting needs. Even if the relevant prices (fee schedules, translation fees, and so forth) have not changed much, the *needs* have. The first kind of need is the need for international patent protection. This has grown for at least two reasons: one, firms are increasingly developing global patenting strategies, as driven and facilitated by the internationalization of production, R&D, marketing, and finance, and by expanding world markets and freer trade. Secondly, more countries are joining the international patenting community - particularly the emerging markets of Eastern Europe. Soon, more developing nations will join the PCT. Therefore, applicants from more nations will be applying for patents and more nations (designations) will be sought - or need to be sought - for patent protection. These two factors suggest an increased demand for international patenting. The second kind of need is the need to meet procedural, statutory, and other requirements. For instance, should all of these nations (or designations) impose different fee schedules, procedural and statutory requirements (particularly over translation and legal representation), the transactions cost burden on international patent applicants will be enormous. Both the increased demand for patenting and increased requirements per patent imply increased patenting expenditures and burdens. For these and other reasons, the need to reduce patenting costs has become more pressing.

Fortunately, the *capacity* for the international patenting system to accommodate these developments and contain or reduce patenting costs is quite strong. This viewpoint rests on three sources of strength: (i) institutional capacity; (ii) technological capacity; and (iii) fiscal capacity.

First, many of the patent cost reduction solutions require *international cooperation* (e.g., concurrent search and examination, a common search database, and harmonization of statutes and formalities). International cooperation helps to reduce the duplication of work and effort, and to provide international sanction for various measures involving reciprocity (e.g. legal representation), enforcement, mediation, and arbitration. International cooperation also provides the means for reaching compromises; for example, one authority could change a formality requirement in exchange for another changing its translation requirement. The capacity to carry out internationally coordinated solutions is present through existing institutions, such as the Trilateral offices, WIPO, and WTO. Patent offices and international organizations have already collaborated immensely to date on many important agreements and treaties, such as the PCT, TRIPS, and the ongoing PLT.

Secondly, *technological advances* make possible today what could not be conceived of a few years ago. Given the information technologies, database management systems, and sophisticated search engines that are available, the capacity exists to conduct international searches and examinations more cost effectively, to reduce translation costs (using machine-aided devices), and to carry out procedural cost reforms (such as implementing centralized filing or electronic filing).

Thirdly, the capacity to reduce patenting costs also exists through *better fiscal management of patent office surpluses*. Currently, patent offices generate surpluses. Instead of diverting those surpluses to general government funds, those surpluses could be used to carry out the various patent cost reduction measures; for example, to finance fee cuts or improve the efficiency of patent offices

(and thereby reduce the costs of their services). The efficiency of patent offices can be enhanced if the surpluses were used for training and hiring examiners, investing in new technologies or infrastructure, strengthening classification systems, and improving information provision.

Discussions of enhancing the efficiency of patent offices should also include pricing issues. A recent report by the USGAO (1997) finds that USPTO fees are not commensurate with costs. The reason for concern is that the divergence of fees and costs is a major source of operational inefficiency within an organization. To the extent that fees exceed (fall short of) the costs of service, patent office services and resources would be underutilized (overutilized). The report finds, for example, that the largest fees are collected at the back-end of the patent application process while most of the costs are incurred by the patent office at the front end. As a result, the patent office does not recover costs from the unsuccessful applicants or from the roughly 40% of applicants who abandon their applications. Also, fees do not differ according to the complexity of the invention (so that applicants of more complex inventions do not pay for the higher patent pendency they generate). Likewise, applicants who create delays in the system by filing incomplete and inaccurate applications do not pay for the added costs they generate, and hence have little or no incentive to take into account the costs they impose on others through their actions. Thus a useful goal for patent offices would be to align their fees and costs; however, to do so requires that they have the cost data. To get the cost data, they would need the appropriate cost accounting system.[12]

A related idea (to improve cost efficiency) is to convert patent offices into government corporations. Proponents argue that patent offices have the characteristics of "business" enterprises (i.e. provide "rivalrous" and "excludable" services and depend on user fees for those services), and as public corporations they would become more "balance sheet" conscious, and autonomous over spending and revenue decisions. This same autonomy has opponents concerned that the corporation might make policy changes outside government (legislative) channels; for example, change patenting rules which the legislature might not have previously approved. Opponents also point out that the patent offices are not a business to the degree that they perform an adjudicatory function (granting and allocating property rights).

To summarize, the need and capacity to reduce patenting costs exist. However, pursuing patent cost reduction does entail certain *tradeoffs* that are worth recounting. Throughout it was emphasized that patent cost reduction should not come at the expense of 'quality' and 'legality.' For instance, on quality, lower fees are likely to increase the volume of patent filings (including marginal inventions) and thus increase the burden on patent office resources and prosecution times. Lower fees may also require increases in back-end maintenance fees to cover the increased front-end operation costs, or as mentioned earlier, reduce incentives to file complete and accurate applications. Increased patent prosecution times may in turn have adverse revenue consequences: to the extent that the increased workload results in patent grants being delayed or not materializing, patent offices forgo future maintenance fees. Furthermore, if cuts in search and exam fees were to result in poorer quality searches and examinations, future problems will be created, such as instances of invalidity, infringement, and litigation. The gains made earlier in the patenting process will then be lost at the

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[12] The USPTO has recently undertaken an internal cost accounting survey. Since a cost accounting system could be of benefit to several patent offices, developing such a system might be an area for international cooperation as well.

later stages.

Another factor is that relaxing procedural or statutory rules for the sake of reducing patent costs must not in turn create legal difficulties. Those rules exist for a reason, and while it is desirable to ease rules on oaths, declarations, signatures, and so forth, adequate care must be taken against fraudulent assignments, for instance. Reducing translation burdens is also desirable but must again not come at the expense of legal problems, as might arise if reduced translation requirements (such as shortened specifications) create legal and technical ambiguity.

The patent cost reduction proposals should collectively work to reduce and contain costs. The focus must be on feasible (pragmatic) solutions, not idealistic ones; for instance, neither complete reciprocity in search and examination nor complete harmonization of procedures and statutes should at this point be expected. The idea is to choose the optimal policies in a second best environment.

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