The Patent System as Instrument to incentivize Research and Development and enable Fair Distribution of R&D Results to Humanity

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1. Patents as Currency in Global Trade

About ten years ago, the context of "patents and currency" first has been mentioned, by various authors, like former Chief Judge Randall R. Rader (CAFC) and the author of this presentation, in public speeches, international conferences on commercialization of intellectual property rights (IPRs), and the like. The original "story" has been approximately like this: Licenses, under patents of demand, like allowing/enabling the production of highly desired pharmaceuticals, cannot be paid by currencies like USD, EUR, or the like anymore, rather the "only" currency accepted by potential licensors are cross-licenses. In other words, the right "currency" to pay for licenses sought for, in many cases, are licenses under own patents. In this context, patents as such are not the currency, rather the exclusivity rights granted by patents.

Beyond the aforementioned importance of licenses as currency in cross-licensing arrangements, patents are also, of course, after appropriate valuation, giving patents and patent portfolios a monetary value, a commodity in trade themselves. Recently, huge "packages" of patents, i.e. whole patent portfolios, have been traded e.g. between companies in the smart-phone and software business, with the aim of monetarization on the value of such patents and patent portfolios, respectively, by either enabling or avoiding litigation, the latter, again, by cross-licensing.

In the following, the various ways in which patents can be used, and are used, as currency of modern training, will be discussed.

2. Patents as business instruments

2.1. Use of patents for incentivising R&D

Without patents, guaranteeing to their owners, for a limited period of time, exclusivity in a certain technical field, parties would not have an incentive to invest in R&D, since there would be no reasonable expectation of a certain profit to be achieved after R&D has been successful. The patent system, ideally, erects a "fence" around self-created innovations, so that those can no longer be used by third parties for free. This gives a competitive advantage which can be transformed into higher profit margings, and also can be a basis for other kinds of commercial use. As a consequence, investment is steered into R&D instead of e.g. buying real estate.

2.2. Use of patents for price differentiation

Whilst the aforementioned incentive as given by patents is essential to create innovative products, giving a higher profit margin in trade, another possibility given by the patent system is to establish a possibility for geographical price differentiation. This gives the opportunity to sell goods in certain countries, like in OECD countries, at a rather high price, giving the necessary incentive of a higher profit margin to the investor into R&D, and on the other hand gives the possibility to sell products at much lower prices in e.g. least developed countries, provided, of course, that only national exhaustion of patents is granted. The increasing number of countries assuming international exhaustion of patents are creating a problem insofar, to be discussed, using pharma as paradigm, below.

2.3. Use of patents for litigation.

A first use of patents, of course, is to exercise their "unfriendly character", namely by enforcing them against competitors in order to enjoy a competitive advantage for the own goods and services. Basically, this possibility to exclude others from the use of patented

technologies is the basis for other, more friendly uses of patents as described below, in one or the other manner.

2.4. Use of patents for licensing

On the friendly side of the character of patents, in licensing, patents are used to give the possibility to use protected technologies to others, at least partially. From the side of the licensee, this gives access to technologies, from the side of the licensor, such licensing can create new markets, e.g. in otherwise not accessible territories.

2.5. Use of patents for cross-licensing

As already mentioned under 1., the most important currency to obtain licenses under highly desired patents of third parties consists of licenses under own patents. One of the main driving forces for the creation of huge patent portfolios in certain areas of technology, like with regard to recording video/audio recording techniques and/or in telecommunication, is to have a currency available for counter-attacking in case of litigation, and, last but not least, to come to cross-licensing arrangements of sometimes rather sophisticated nature.

2.6. Use of patents for creating/opening/closing technologies

Particularly pooling of patents, with appropriate cross-licensing agreements, furthermore containing obligations for licensing to third parties under fair, reasonable and non-discriminatory conditions (so-called FRAND-licensing), gives the possibility to define technical standards, i.e. a mobile phone world in which mobile phones can talk with each other, by reasonable use of patents of many parties. A specific problem insofar are essential patents in standards, of course, as will be discussed furthermore in this paper.

3. Patents and "goods of need" – pharma as an example

It is universally accepted as desirable that medicines for all sorts of conceivable diseases, currently known and yet to be investigated, should be available everywhere and at affordable prices.

It is obvious that an incentive system is required which encourages investors, such as large pharmaceutical companies, to dedicate funds to the development of new drugs. Such an incentive system must enable such investors, at least in a given geographical region, for example in a selected number of OECD countries or even in all OECD countries, to earn enough profit - thanks to an at least partially privileged position - from the sale and/or licensing of such new medical products that the investment produces a return. Otherwise, these medicines which should be available everywhere to everyone, would not even be invented in the first place and thus would not be available at all.

At the same time, it has been generally acknowledged at least since the Doha round of reforms to the TRIPS agreement, that medicines should not only be developed but offered in all countries, even the very poorest, at locally affordable prices. According to TRIPS, a drug is not considered available, if it is too expensive to buy.

Hence, a "system" is required which on the one side ensures, through the "investment protection" mentioned above, that sufficient profits can be generated once a drug has been developed, at least, for instance, in OECD countries but which also offers the opportunity of selling the medicine in question in less developed, or "poor", countries at considerably reduced prices. If the patent system did not already exist, it would need to be invented in order to meet the above requirements in an ideal manner.

However, the international patent system can only perform the above function if it can be used, not only to provide the patent holder with a monopoly position for a certain period of time, for instance in the OECD countries. The patent must also be able to prevent, in cases where the patented medicine is sold in "poor" countries, these considerably lower-priced

products flowing back into the OECD "high-price territory", by way of re-importing. Otherwise, in the above example, the price structure in the OECD countries would be destroyed with the result that there would no longer be sufficient incentive for pharmaceutical companies to invest in the development of new drugs. In other words: The modern patent system is only able to perform the role intended in this model if it safeguards price differentiation in the way described above.

The patent system could certainly perform its "dual" role if the general principle of national exhaustion of patent rights were observed. This would mean that a patent holder could utilise his patents in the OECD countries, such as Germany, to prevent drugs placed on the market in poorer countries by him or with his consent, by a licensee for instance, from being re-imported into Germany or the other selected OECD countries.

In the case of international patent exhaustion, however, the patent system is not in a position to fulfil this role as the medicines which have been placed on the market with the permission of the patent holder, for example by a licensee, in poorer countries can no longer be prevented from being re-imported, for example into Germany.

The dilemma is that the proponents of an international exhaustion of patents justifiably argue at this point that the inventor or his legal successor may only be rewarded by the patent system once. This has occurred when the patent protected product, such as a drug, was placed on the market for the first time. There are, according to such proponents, no grounds for patents being used, after a medicine has been sold in one country, to hinder the free trade of such medicines across the borders of any country in the world and in so doing, in cases where a license may be required for such "parallel imports", be able to profit twice.

The author first proposed a modified system of national exhaustion of patents, in particular for medicinal products on the occasion of the "9th Seminar on Intellectual Property at the Institute of European Studies of Macao (IIESM)", on 25 June 2008, which was published under the title, "Price Differentiation and the Conundrum of Exhaustion Principles" in Christine Godt (ed.), "Differential Pricing of Pharmaceuticals inside Europe - Exploring

Compulsory Licenses and Exhaustion for Access to Patented Essential Medicines", Nomos Verlag, Baden-Baden, 2010, pages 125-131 (ISBN 978-3-8329-4280-9), (similar principles as these for medicinal products could be developed and apply in the case of other "desirable" technologies, for instance in the area of "green technology"). The above proposal of the author is as follows:

As a rule, the principle of international exhaustion of patents would apply. However, if the patent holder of a patent-protected product in a given developing country, or the like, i.e. a "poor" country, sold his product below a certain threshold price, he would be entitled to use his patent or patents in certain OECD countries to prevent re-imports. The threshold price may be set approximately as follows:

$$\text{OECD price} \times \frac{\text{GDP per capita in country of sale}}{\text{average GDP per capita in OECD countries}}$$

Example: If the GDP (Gross Domestic Product) per capita in the country of sale was equal to 1% of the average GDP per capita in the OECD countries, the above-mentioned factor would be 0.01. In other words, the patent holder would only be able to enjoy national exhaustion, that is, he could only prevent re-imports into an OECD country if he sells the drug in the poorer country at a price, in the example at hand, equal to 1% of that in the OECD countries.

A similar solution could be implemented for particularly cheap licensing rates, for example for "green technology", where technology is exported to "poor" countries from OECD countries in order to make Art. 7 and Art. 11 TRIPS more balanced.

The interested reader is referred to the paper "Price Differentiation and the Conundrum of Exhaustion Principles", with further references therein, in C. Godt, ibid.

4. The role of patents in standards – access to technology in e.g. cyber world

When building and using technical standards, so-called "essential patents" play a key role. Those are patents which cannot be avoided if one wishes to build/use/distribute etc. devices, e.g. mobile phones, which correspond to the standard and, in case of e.g. mobile phones, can talk with each other.

The courts of the world are trying to solve the aforementioned problem by making it necessary, for competition law reasons, that essential patents in standards, i.e. those patents which cannot be avoided, have to be and are, respectively, licensed to "everyone", not only to the members of a patent pool, but also to newcomers, at fair, reasonable, and non-discriminatory conditions. The ways in which such FRAND licensing can be realized, if necessary by compulsory licensing, are under heavy discussion and consideration by competition authorities and courts all over the world, and in particular in Europe and U.S.A..

In this context, one should consider in countries like e.g. Germany, where licenses of rights can be registered upon request by patentees, whether the registration of such declarations by owners of essential patents in standards should not be made obligatory, together with the public declaration/obligation of such patentees not to withdraw any such declaration, once it has been registered at a patent office.

5. Valuation of patents

5.1. How to put a price-tag at a patent

The determination of the monetary value of patents has been widely discussed for about twenty years, meanwhile. Various methods are available, but apparently the relief –from-royalties, i.e. income-method, like it is used since many decades to determine the value of inventions according to the scheme for calculating employees' inventions under German employees' invention law, is the best-used and best-known method.

5.2. Valued patents and their use in M&A

When companies are valued with the aim of being sold or being purchased, but also in case of merger of companies, it is of essential importance that the monetary value of the patents, in the widest sense, as owned by the respective companies is determined. Typically, such value is not shown in the balance sheet of the companies involved, because of the generally applied principle of prohibition of activation of self-created intellectual property, so that valuation methods as discussed under 2.1. above must be used. Only after the appropriate valuation of patents and patent portfolios of the "candidates" for M&A in question, an appropriate balancing of still remaining differences by direct/indirect monetary instruments is possible.

5.3. The use of valued patents for joint venturing

When creating a joint venture between e.g. two partners, one of which does not own anything than a patent, the other one doesn't own anything than money, simply spoken, one may/can proceed as follows: Assuming, a 50:50 joint venture is aimed at first the monetary value of the patent in question on one side is determinated, then the same amount in "money" from the other partner is added into the joint venture, balancing the valued patent, whereafter such money not necessary for the capitalization of the joint venture can be withdrawn and would be in equal parts given to the owner of the patent on one side and the "injector" of the money on the other side. This is the very simple principle, which is widely used and can be duly modified, mutatis mutandis.

5.4. Valued patents and their uses as collaterals/securities

After patents have been duly valued, using a preferably internationally accepted standardized method for patent valuation, such patents are solid instruments for securization. More and more banks, worldwide, accept such patents as securities, i.e. in a similar manner as otherwise e.g. real estate would be used as collateral, and a respective credit line can be made available to companies owning patents of this kind in due course.

6. Conclusion

The question as raised at the beginning of this paper, namely whether patents are the new currency of modern trading, can be fully confirmed. Patents are used as a currency in modern trading in various forms, whether as commodities/goods as such, or in a more indirect manner, making use of the exclusivity granted by patents in friendlier, unfriendlier, and also very creative manners.

At least, one can say that the patent system would have to be invented in order to e.g. creating and making available at locally affordable prices pharmaceuticals worldwide, if it would not already exist.

Encl.:
19 transparencies