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Patent Consortia: Balance and Prospects

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Abstract: The paper summarizes the benefits and possible negative effects of patent consortia. It was identified that while patent consortia are a way of articulating industrial property, they are not per se conducive to access, distribution or technology transfer. It was also found that the literature considers the behaviors of the agents that make up the consortia and the degree of substitutability or complementarity of the patents included, as some of the factors that establish the advantages and disadvantages of these collaboration agreements.

Keyword: Patents, patent consortia, licenses, technology transfer, intellectual property management.

1. INTRODUCTION

During the last decades, the use of the systems of industrial property has had a great growth. An example of this is that between 2015 and 2014 the number of patent applications grew 7.8%, reaching in 2015 about 2.88 million applications. Requests for trademark registration were 8.4 million, growing 13.7% over the same period. For its part, the number of industrial designs submitted amounted to 1.4 million ([1]).

In this context, there is a proliferation of the number of patents granted and the rights associated with them. According to [2] this has consequences on the price of innovative products based on patents in force, since they must pay more for the licenses to use the patents used for their elaboration, or for transaction costs associated with bilateral agreements and Of licensing. This is because the costs of research, evaluation and negotiation increase as the number of owners is higher ([3], [4]). In this way, there is a risk of reducing incentives to inventors.

As one of the mechanisms to reduce the costs of acquisition and negotiation of licenses, and to increase legal certainty with respect to the use of standard technologies, patent pools (Patent pools in French and Patent Pool in English) arise. To “the participating owners to use joint patents and to offer a license to allow others to use those patents” ([5] p.4).

For [6], patent consortia are “an agreement of wills between two or more patent holders to license one or more of their patents to each other or to third parties” (page 64). In other words, patent owners leave their patents in common (they share their rights by reciprocal licensing - reciprocal licensing contracts) and propose a single license for potential users ([7]). This type of agreement is most often presented in the areas of human health, biotechnology, environment and ICT ([2], [8], [9]).

Patent and technological consortia have become so important in the context of industrial property that in 2014 and 2015 the European Commission issued regulations on the operation of technology transfer agreements, including patent consortia ([10], [4]).

In this scenario, the document seeks to identify the advantages and disadvantages of patent consortia for producers, consumers and society in general.

2. METHODOLOGY

In order to establish the advantages and disadvantages of patent consortia, a review of the literature was carried out, following the following protocol, following the scheme of systematic reviews: (i) identification of the field of study, subject and period to be analyzed; (ii) formulating the problem; (iii) definition of search criteria for information; (iv) selection of references and studies; (v) critical reading and risk assessment of bias in included studies; (vi) extraction of relevant information and data; (vii) analysis and synthesis of scientific evidence.

3. RESULTS AND DISCUSSION

The literature on patent pools identifies that there are no absolute advantages or disadvantages associated with these mechanisms for the pooling of property rights.

First, the benefits of patent pools could be grouped into three different levels: (i) between technology producers; (ii) between technology producers and consumers; (iii) for the company.

According to [11], the advantages of patent consortia are greater, if: there is coordination between the participants, there is articulation between their objectives and the actions implemented; And the patents included within the consortium are complementary and non-substitute technologies ([12]).

With respect to the benefits among the producers of technologies that are part of the consortium, a first element is the possibility to learn from the experiences of other companies without having to face the path of failures and successes that the older ones have had to face. In this way, creation is cumulative. A second element corresponds to the distribution of costs and efforts among the companies that are part of the consortium and that wish to investigate in the same technological sphere. In this way, risk and investment are shared, for the production of new products, which in many cases could correspond to the production of complementary goods. A third aspect is the reduction of transaction costs associated with the negotiation and acquisition of licenses, since separate agreements are not required, should any of the members of the patent consortium require to use the patents included in the patent consortium ([2]) for the production of other products.

Finally, given that property rights are shared and there is a wider set of information, patent conflicts between consortium members can be avoided and thus the blockage resulting from such conflicts ([5], [13]) (Table 1).

Table 1
Main advantages of patent consortia

<i>Ambit</i>	<i>Benefits</i>
Among the producers of technologies	<ul style="list-style-type: none"> • Collaboration with another company can be a means to make use of your experience without having to accumulate it internally. • Distribution of costs and efforts when two or more companies wish to research in the same technological area. • Coordination of the production of complementary goods, which is associated with the use and development of complementary and compatible technologies. • Reduction of the transaction costs associated with the negotiation and acquisition of licenses, since no separate agreements are required. • Can help resolve patent conflicts and the blockage that may arise from such conflicts.
Between technology producers and consumers	<ul style="list-style-type: none"> • Reduction of production costs of goods incorporating technology and recent innovations and therefore of prices. • Increased product compatibility (joint development of complementary assets) • Reduction of transaction costs associated with the location of all patent holders and individual negotiation with each owner. • Reduction of expenses due to litigation, since there is a lower risk of infringing a patent due to lack of knowledge of the existence of the patent.
For society	<ul style="list-style-type: none"> • Introduction of new technologies or products (cumulative innovation). • Promotion of the compatibility of different technologies. • Reduction of the tendency of owners of the patent right to demand higher rents, which leads to increase the demand and increase the use of the patent. • It can favor the diversified use of patented multi-purpose technologies. • Accelerate the innovation and the diffusion of technologies in emerging areas, in which there is a great density of patents in force. • Facilitates the transfer of technology, even between countries and allows for the availability of products (for example, medicines).

Source: Own elaboration from [6], [2], [5], [13], [14], [3], [12], [15].

However, the potential risks of patent pools can be analyzed at four different levels: (i) between technology producers who are members of the same consortium; (ii) between producers of member technologies and non-members of the consortium; (iii) between technology producers and consumers; (iv) for society (Table 2).

[2], [3] and [16] have identified that potential negative effects among the producers of consortium technologies are related to the existence of a “stowaway” signature benefiting from the dynamics of the consortium without the patent Significant or has no incentive to innovate, with the risk of abuse. Related to the above, is the difficulty to monitor the behavior of a partner, as the number of companies that are part of the consortium is greater.

While disputes between members of a consortium are expected to be reduced, disputes between competitors/commercial partners, or former consortium members, may arise due to joint patents or exploitation of the consortium. Precisely, an element that can promote conflict between the members of the consortium, is associated with the distribution of royalties, since it is necessary to determine the proportion that each of the patents that are in the consortium should receive.

Another element to consider is the possible increase in the number of patents associated with an invention, through patents divided, which could at some point make the licensing and distribution of royalties within the consortium a little more difficult. Split patents could also lead to patches or patent trolls.

In relation to the difficulties that may occur between producers of member technologies and non-members of the consortium, it is necessary to consider possible sources of barriers to entry. Among them are that the power of the members of the consortium on the market prevents other companies that are not consortium, propose better alternatives; That the development of complementary assets limited to the technologies of the members of the consortium would lead to the exclusion of other undertakings or a captive market situation ([16], [6]).

The inclusion of patents that are not necessary in a patent consortium is discussed by several authors. Some consider that this can increase royalties artificially ([17]). Others like [18] and [19] claim that if there is at least one essential patent within the consortium, the introduction of trivial or non-essential patents does not increase royalties, on the contrary it can reduce yields, having more patents in Which split the consortium’s income.

Consumers may be negatively affected by possible price controls on the part of the consortium firms, which may seek to maximize their revenues at the expense of purchasers, especially when patents on consortium technologies Are substitutes and not complementary.

From a different perspective, consumers may be deprived of new and better technologies, as consortium members may have less incentive to innovate, given the possibility of controlling prices or captive markets, or maximizing Rent a technology before introducing a new one.

Associated with the development of complementary products and technologies, a buyer who acquires all the products developed by the consortium may have to pay higher monetary and learning costs when trying to switch to another technology.

Finally, the damages to society are related as will be seen below with conduct against free competition, such as price control; The disincentives of firms to invest in R & D, which can translate into lower levels of innovation or less product availability, associated with the non-introduction of improved versions of technologies that would have been available due to the effect of competition, Which could be explained by possible collusion to slow down the introduction of new technologies or abuse of collective dominance.

Table 2
Potential negative effects of patent consortia

<i>Ambit</i>	<i>Effects</i>
Among the producers of technologies belonging to the consortium	<ul style="list-style-type: none"> • Risk of abusive use (stowaway). • Transfer of risks and moral hazard. • Difficulty monitoring a partner’s behavior. • Increased litigation costs that may arise between competitors/commercial partners. • Increase in the number of patents associated with an invention (through split patents). • Conflict between the members of the consortium, derived from the distribution of royalties. • It is difficult to agree on the individual value of each of the patents that will be part of the consortium.
Among the producers of member and non-member technologies of the consortium	<ul style="list-style-type: none"> • The power of the members of the consortium on the market can prevent other companies that are not part of it from proposing better alternatives. • The development of complementary assets limited to the technologies of the members of the consortium may lead to the exclusion of other companies. • Risk of market captivity.
Between technology producers and consumers	<ul style="list-style-type: none"> • Price control and search for revenue maximization at the expense of consumers, mainly when patents of the consortium’s technologies are substitutes and not complementary. • Consumers may be deprived of new and better technologies, as members have less incentive to innovate, given the possibility of price controls. • Increased switching costs to other technology. • Inclusion of non-essential patents in consortia.
For society	<ul style="list-style-type: none"> • Price control behavior. • It can reduce the commitment of participating companies to R & D investment. • Postpone the introduction of improved versions of technologies that would have been available due to the competition effect (possible collusion to slow the introduction of new technologies) • Possibility of offering inferior technologies to consumers. • Risk of market captivity. • Abuse of position of collective dominance. • Invalid patents can be protected in order to prevent certain technology from reaching the public domain.

Source: Elaboration from [6], [2], [5], [20], [13], [3], [16], [21], [22], [23] and [24].

4. CONCLUSION

This paper evaluated the advantages and disadvantages of its implementation, for technology producers, consumers and society. Likewise, they showed the elements that can lead to a patent consortium failing.

Patent consortia per se do not produce positive or negative impacts on the welfare of society, they are the behaviors of the agents that make them up; The degree of substitutability or complementarity of the patents included and the legislation of the country in which they are found, the factors that influence competition and establish the advantages and disadvantages of these collaboration agreements.

Among the possible areas of research associated with the consortia is the analysis of economic and legal incentives within the framework of national economies, which lead to the creation of patent consortia; How to find a balance between cooperation, competition and innovation; And impact assessments of patent consortia at the national and regional levels.

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