From an antitrust perspective, the rationale behind the requirement of an "ex-ante" disclosure of patents in the context of a standard-setting process is founded on the need to promote competition on the basis of technological and economic convenience, rather than on positions of power retained by the holder of an essential standard-related technology "ex post". A different solution would end up into the very same "hold-up" deadlock, should the patentee refuse to adhere to reasonable and open licensing terms, which the pool is finally committed to avoid. Besides, pursuing a policy of transparency as regards possibly relevant patents and the applicable licensing terms would enable competition among alternative specifications, eligible to be eventually incorporated into a standard, based on technical merits and more advantageous licensing conditions, eventually also considering suitable technologies freely available in the public domain. Accordingly, companies are going to be encouraged to compete more openly by promptly disclosing relevant technical assets and by proposing licensing terms likely to make their specifications more attractive for inclusion into a standard, where the final selection will finally reflect a thoroughly informed choice.

As far as the licensing terms adopted with regard to third parties to the pool are concerned, the Guidelines make a distinction and focus their attention on pools having a dominant position on the market, where "royalties and other licensing terms should be fair and non-discriminatory and licences should be non-exclusive".[376] The Guidelines explain that: "These requirements are necessary to ensure that the pool is open and does not lead to foreclosure and other anticompetitive effects on down stream markets. These requirements, however, do not preclude different royalties for different uses. It is in general not considered restrictive of competition to apply different royalty rates to different product markets, whereas there should be no discrimination within product markets. In particular, the treatment of licensees should not depend on whether they are licensors or not. The Commission will therefore take into account whether licensors are also subject to royalty obligations".[377]

III. Assessment of Individual Restraints: Non-Compete, Grant-Back and Non-Challenge Clauses

1. General Principles

There are three main clauses that are likely to be found with a certain frequency in the context of pooling agreements and that present a high level risk of distorting competition and ultimately hampering innovation:[378]

376 Guidelines, *supra*, fn. 299, sect. 4 "Technology pools", para. 226.

377 *Id.,* para. 226.

378 For an overview of the competitive impact of individual restraints most commonly found in technology transfer licensing agreement, more in general, see i.a.: Anderman S., "The New EC Competition Law Framework for Technology Transfer and IP Licensing", In: Drexl J.

- Non-compete clauses are banned by the Guidelines stating that: "licensors and licensees must be free to develop competing products and standards and must also be free to grant and obtain licences outside the pool. These requirements are necessary in order to limit the risk of foreclosure of third party technologies and ensure that the pool does not limit innovation and preclude the creation of competing technological solutions. Where a pool supports a (de facto) industry standard and where the parties are subject to non-compete obligations, the pool creates a particular risk of preventing the development of new and improved technologies and standards".[379]
- Grant-back obligations[380] pursuant to the Guidelines "should be non-exclusive and be limited to developments that are essential or important to the use of the pooled technology. This allows the pool to feed on and benefit from improvements to the pooled technology. It is legitimate for the parties to ensure that the exploitation of the pooled technology cannot be held up by licensees that hold or obtain essential patents".
- Non-challenge clauses are associated in with the risk that they may shield invalid patents within the pool. In this respect, the Guidelines warn that: "pooling raises the costs/risks for a successful challenge, because the challenge fails if only one patent in the pool is valid. The shielding of invalid patents in the pool may oblige licensees to pay higher royalties and may also prevent innovation in the field covered by an invalid patent. In order to limit this risk any right to terminate a licence in the case of a challenge must be limited to the technologies owned by the licensor who is the addressee of the challenge and must not extend to the technologies owned by the other licensors in the pool".[381]

On this last point, it is necessary to explain that the problem of challenging invalid patents and the consequent right of the licensor to terminate the agreement, which are and have to stay two separated concepts, are slightly different when arising in a pooling agreement or in a bilateral license.[382] The latter case is dealt with in Art.5.1 of the TTBER, which prohibits: "(lett. c) any direct or indirect obligation on the licensee not to challenge the validity of intellectual property rights which the licensor holds in the common market, without prejudice to the possibility of providing for termination of the technology transfer agreement in the event that the licensee challenges the validity of one or more of the licensed intellectual property rights".

ed.: Research Handbook on Intellectual Property and Competition Law, Cheltenham, UK, Northampton, MA, USA, Edward Elgar, 2008, p. 121 *et seq.*

379 Guidelines, *supra*, fn. 299, para. 227.

380 *Id.,* para. 228.

381 *Id.,* para. 229.

382 On the legal implications of non-challenge clauses in general, see the i.a.: McPeake R., "European Community Competition Law in Practice", Oxford University Press, 2004, ed. 5, p. 215 *et seq.*

This provision is mirrored by paragraphs 112 and 113 of the Guidelines. The first, with regard to non-challenge clauses,[383] i.e. obligations not to challenge the validity of the licensor's intellectual property, specifies that:

- "The reason for excluding non-challenge clauses from the scope of the block exemption is the fact that licensees are normally in the best position to determine whether or not an intellectual property right is invalid. In the interest of undistorted competition and in conformity with the principles underlying the protection of intellectual property, invalid intellectual property rights should be eliminated. Invalid intellectual property stifles innovation rather than promoting it […]".
- Conversely, paragraph 113 of the Guidelines covers the possibility for the licensor to terminate the licence agreement in the event of a challenge of the licensed technology, stating that: "the licensor is not forced to continue dealing with a licensee that challenges the very subject matter of the licence agreement […] The provision thereby ensures that the licensee is in the same position as third parties". What is important here is the wording of the legal provisions and in particular of Art. 5.1 (c) of the TTBER, providing the licensor with a right of termination in the event that the licensee challenges the validity of "one or more of the licensed intellectual property rights". Thus, when the licensee challenges "any" of the grantor's licensed patents, the agreement can be terminated as a whole and not just with reference to the challenged patent at issue. This is different in the case of patent pools, where it is specifically stated that "any right to terminate a licence in the case of a challenge must be limited to the technologies owned by the licensor who is the addressee of the challenge and must not extend to the technologies owned by the other licensors in the pool".[384]

2. Contextual Implementation

As outlined by a recent study on the design of patent pools and the determination of licensing rules to be adopted,[385] typical grant-back or non-compete clauses cannot be evaluated in themselves, without considering the nature of the technologies involved. In fact, both non-compete clauses - i.e. prohibiting independent licensing,

383 For a legal outline on such clauses, see i.a.: Van Bael I., "Termination Clauses and Non-Challenge Obligations ", In: "Competition Law of the European Community", Kluwer Law International, 2005, p. 704.

384 *Id.,* para. 229. For a comparison and along the same line, see: Joelson M., "An International Antitrust Primer: A Guide to the Operation of United States, European Union and Other Key Competition Laws in the Global Economy", Kluwer Law International, 2006, 3 ed., p. 366 *et seq.*

385 Lerner J., Strojwas M., Tirole J., "The Design of Patent Pools: The Determinants of Licensing Rules", November 2005, p. 1 *et seq.*, available at: http://www.people.hbs.edu/jlerner/PatPoolEmpiricalPaper.pdf

where patent owners would otherwise remain free to grant licenses on their inventions, as typically combined with follow-up implementations - and grant-back provisions - i.e. disposing that any innovation deriving from the contributed patent has to be mandatorily transferred to the pool - present both costs and benefits, respectively. In particular, as supported by empirical evidence:[386]

Independent licensing has the disadvantage of potentially creating competition between the members and the pool itself, in particular if the patents involved are substitutes; on the other hand, not foreclosing the possibility of such licenses through non-compete clauses has the benefit of allowing patent holders to develop their technologies in directions unrelated to the pool, thus bringing new implementations into the marketplace for the benefit of consumers.

Conversely, a non-compete provision would oblige the members of the pool, in order to be allowed to license independently to third interested parties, to first secure for themselves a license from the pool for the very same technology they initially conceived, which within the context of ordinary bilateral negotiations may appear as a paradox. In fact, these so called "add-on innovations", built on a particular patent contributed by a member to the pool, enable a new, stand-alone implementation of such patent, unrelated to the activities of the pool, as the latter stays unaffected by this particular new application. By contrast, the individual right holder could benefit from this new implementation, should the possibility of independent licensing and marketing be provided to recoup his investment in this research and development.

Grant-back clauses are normally foreseen to avoid the risk of "hold-up",[387] which arises when a pool member, after entering into a pooling agreement, develops a technology which turns out to be essential to the pool, thus leading to a "blocking patent", and holds up the whole pool - which is initially formed around a starting, agreed-upon set of patents, technically referred to as "kernel" - by detaining exclusive rights on his new patent and denying access to the pool. In this case, it is extremely difficult to determine whether the "missing piece" of intellectual property right that is necessary for an efficient implementation of the pooled technology (i.e. the "blocking patent") was already known to the patentee at the time of entering the

386 Lerner J., Tirole J., "Efficient Patent Pools", American Economic Review, 2004, p. 691 *et seq*.

387 Merges R., "Contracting into Liability Rules: Intellectual Property Rights and Collective Rights Organizations", 84 California Law Review, 1996, vol. 9, p. 1293 *et seq.*: "A hold-out is someone who refuses to agree to a bargain for strategic reasons. For example, if a city government needs to buy five parcels of land from property owners A, B, C, D, and E, E might wait until the other four (A-D) have sold their land. This puts E in the driver's seat in bargaining with the city: E can now charge a very high price—in theory, up to the total amount the city has to spend on the project, minus what was paid to A-D—for his or her land. Since this price will often be more than the average price paid to A-D, and in any event more than the price E could have obtained if he or she were not the last to sell, such a holdout strategy will be rational in many cases". See generally, Calabresi G. *et al.*, "Property Rules, Liability Rules, and Inalienability: One View of the Cathedral", Harvard Law Review, 1972, vol. 1089, p. 1106 *et seq.*

pool or not.[388] This gives courts, in case of litigation, a hard time when they are called upon to assess the alleged "bad faith" of the pool member, under which circumstance only they could legitimately mandate the compulsory transfer of the litigated patent to the pool, at no or low cost. The impasse, which the judiciary may be confronted with, is easy to perceive when at the time of entering the pool the pool member had the mere "knowledge", but not yet the "ownership" of the essential patent at issue.

However, the situation may be equally complicated when the contributor was unaware, at the stage of the pool formation, that one of his patents would turn out to be essential, thus acting in "good faith" by not dedicating it to the pool. In the face of these deficiencies, such hold-ups can be more easily avoided "a priori", through ad-hoc grant-back clauses to be included in the patent pool's constitutional statute. Nonetheless, grant-backs come at a cost, by discouraging pool members from investing their own resources into new implementations of the contributed technologies, when they will be forced to license it back to the pool, at no or a low licensing rate, according to a pre-determined scheme. In fact, such an automatic grant may lead to a "free riding" on the part of passive members of the pool to the detriment of innovation, while discouraging individual initiatives.

The actual balance between costs and benefits of the restrictive clauses at issue is greatly influenced by the nature of the pooled technologies.[389] The idea is easily grasped when considering the polar cases of pools composed, respectively, by either perfect substitute or perfect complement technologies:

- In a pool constituted of substitute technologies, the main restriction derives from non-compete clauses, prohibiting independent licensing from individual pool members to third parties, outside the constitutional framework of the pool. That is comprehensible if you consider that substitute technologies may both be employed individually for the production of the contract-product developed by the pool, so that the patentee, who would license his technology independently pursuant to bilateral negotiations with third parties, would directly compete with the pool he is part of. On the other hand, the patentee may freely develop further implementations of his own technology, normally without being forced to automatically grant them back to the pool. In fact, in pool of substitute grant-back clauses do not represent the default solution, but the choice of whether or not including them is conducted on a case-by-case basis and depends on the comparison of the reduced incentive to innovate and the wish to avoid the threat of a hold-up by the owner of a subsequent, potential blocking patent, which would paralyze the activity of the whole pool. However, based on the same considerations as to the nature of substitute technologies, the risk of a hold-up situation is highly reduced here, since the contract-product may normally be produced with the alternative pooled technologies, as well.

388 Lerner J., Strojwas M., Tirole J., *supra*, fn. 385, p. 1 *et seq.*
389 *Id.,* p. 4 *et seq.*

- In a pool constituted of complement technologies, instead, independent licensing is not a problem under normal circumstances, thus non-compete clauses are rarely included in such kinds of pools. Here, the key can also be found in the nature of the technologies involved: complements have necessarily to be employed together in order to obtain the desired contract-product. For this reason, should a patentee market his own individual technology by way of independent licensing to third parties, which would not constitute direct competition for the pool, as its field of activity is not limited to the pool members' isolated technologies. Besides, as outlined above, such independent licensing practices offer the benefit of enhancing the incentives for the pool contributors to innovate in pool-unrelated areas. However, these kinds of pools are much more concerned with the hold-up problem, should a new implementation of one of the technologies involved turn out to be indispensable for the production of the contract-product at issue, which could freeze the whole pool's functioning mechanism in the absence of grant-back provisions. This policy is implemented at the cost of a reduced incentive for pool members to invest into the development of pool-related innovations.

In fact, pools composed of perfect substitute or complement technologies mostly represent a mere abstraction of the reality and can rarely be found in their "pure" form. Besides, apart from "grey areas" where clear-cut distinctions based on the nature of the technologies involved are not easily discernable, in the real world pools do not come "labelled" as consisting of complementary or substitute patents.

Indeed, in order to resist a stereotypical assessment of the nature of patent pools that often tends to be confined to merely formal grounds, such as the declared intents of the parties entering into the agreements, a deeper consideration of empirical evidences should be enhanced. The former, more rigid approach is in fact based on a tradition of mistrust towards pooling arrangements,[390] which were historically associated with horizontal, price-fixing, anti-competitive "cartels", and thus deemed to comprise substitute technologies, unless proven to be "innocent". On the contrary, nowadays we should advocate a more flexible and pragmatic evaluation of such business practices, taking into consideration the overall context in which they arise, also when examining the individual clauses that contribute to their overall appearance.

IV. Institutional Framework Governing the Pool

Finally, a last point to be dealt with concerns the institutional framework governing the pool, which covers the way in which such consortia are created and orga-

390 See in this respect the report traced by Gilbert R., "Antitrust for Patent Pools: A Century of Policy Evolution", Stanford Technology Law Review, April 2004, available at: http://www.law.berkeley.edu/institutes/bclt/stemcell/articles/gilbert_patent_pools.pdf