1.3.2 Royalty Stacking

So-called "*royalty stacking"* is an established economic theory that can be explained as follows: If a company wishes to produce a good, especially one, which embodies technical standards, it needs to acquire licenses to all of the underlying IPRs from multiple licensors. When a good consists of complementary products each representing an essential input for the standard, multiple IP holders can set the price for all of these rights independently. As a result, the aggregate amount of the royalty fees can end up exceeding the cost rate and it will not any longer be feasible for the manufacturer to produce the good.[44] This phenomenon can occur even if the individual licensor would agree to offer his individual license on "*reasonable terms*", since when stacking up all of the licenses needed for producing the good, the overall royalty level will still amount to an unreasonable sum. As noted by *Mr. Ruikka* in article *"FRAND" Undertakings in Standardization- A Business Perspective"*: Even if some licensors may accede to royalty rates that are above FRAND, such excessive rates are not so high as to drive implementers completely from the market.

Lemley and *Shapiro* argue, in a paper published in 2006, that particularly licensing arrangements for mobile telecom standards are candidates for royalty stacking.[45] This is especially true since most often (i) the standard-essential patents are complementary (a license for one patent has no value unless all other essential patents are licensed too), (ii) there are large numbers of companies holding large numbers of standard essential patents, and (iii) the royalty rate is only mark-up since the marginal cost of licensing per unit produced is zero.[46] Accordingly, the risk of royalty stacking inherent in mobile telecoms standards, could, and according to many industry representatives, has exposed consumers to end up paying higher prices. Recently, Ericsson's representative *Mr. Philippe Chappatte* commented on this issue in the European Competition Journal, while referring to a MLex report on the significant consumer harm created by Qualcomm's abusive royalty practices.[47] According to *Chappatte,* excessive royalty rates result in increased consumer prices, which constitute an inherent risk in the mobile industry due to the longevity of the implemented standards.

44 Damien Geradin and Miguel Rato: *" Can Standard-setting Lead to Exploitative Abuse?"* European Competition Journal, Vol.3 Nr.1, June 2007, p.125.

45 Mark Lemley and Carl Shapiro, "*Patent Hold Up and Royalty Stacking In High Tech Industries: Separating Myth from Reality,"* Stanford Law and Economics Olin Work Paper No.324, July 2006.

46 Ibid.

47 See also Philippe Chappatte, "*FRAND Commitments- The Case of Antitrust Intervention, "*European Competition Journal, Vol.5 Nr.2, August 2009, p.334-335.

Recently, also the Düsseldorf District Court acknowledged the risk of royalty stacking with regard to the GSM standard in its so-called *Zeitlagenmultiplexverfahren* case dating from 2007.[48] In this case, the plaintiff held three percent of all standard-essential patents integrated into the GSM standard and therefore the Court found that there was a risk of this leading to an unreasonable accumulation of total royalties payable if all companies holding essential patents would ask comparable royalties as requested by the plaintiff. Interestingly, the Court suggested that this matter be handled in the same way as suggested by the six complainants in the *Qualcomm* case currently pending before the European Commission.[49] In essence, the Düsseldorf District Court suggests that royalties satisfying FRAND are those that are proportional to the number of essential patents contributed by a licensor to a standard.[50] In practical terms, this would mean that if 100 patents were essential to a standard, and company A holds 10 of them, company A should receive 10% of the total royalty the standard commands.

On the one hand, this proposal seems tempting since it makes it easier to calculate and administrate royalties, which naturally lowers the transaction cost of the licensing industry. It is also likely, that this method would satisfy the fair part of the FRAND commitment. However, a number of disadvantages offset this advantage. *Layne-Farrar, Padilla*, and *Schmalensee* have particularly discussed negative effects and practical difficulties arising from numeric proportionality method under the heading *"Pricing Patents for Licensing in Standard Setting Organizations: Making Sense of FRAND Commitments."*[51] According to these authors, one of the main difficulties arises from the fact that numeric proportionality rules requires that one assumes that all essential patents are equally valuable, which naturally is not the case. As stated in this discussion paper: "…*the intellectual property literature has made it clear that patents differ in their technological contributions, the value of the products which embed those contributions, and the nature of the best alternatives*".[52] In other words, if technology is

48 Landgericht (LG) Düsseldorf, 13 February 2007, Case 4a O 124/05-GPRS, BeckRS 2008, 07732.

49 See *e.g* Timo Ruikka, "*FRAND" Undertakings in Standardization- A Business Perspective*," N.Y. Fordham IPs Conference, 28 March 2008, where it is stated: "…*one must derive an appropriate value of single Essential patent, or of one patent holders portfolio of Essential patents licensed as a bundle, in relation to the cumulative value of all essential patents."*

50 Landgericht (LG) Düsseldorf, 13 February 2007, Case 4a O 124/05-GPRS, BeckRS 2008, 07732.

51 Anna Layne-Farrar, Atilano Jorge Padilla, Richard Schmalensee,*"Pricing Patents for Licensing in Standard Setting Organizations: Making Sense of FRAND Commitments,"* Discussion Paper No. 6025, January 2007, (Center for Economic Policy Research).

52 Ibid, p.13.

easy to invent or has substitutes it naturally should receive lower compensation than so-called break through inventions.[53] As argued by these authors, different IP valuation principles should not be applied more often in standard markets than in normal, non-standardized markets. It cannot either be deemed fair, reasonable, and non-discriminatory to offer, "*the holder of easily substitutable patents the same compensation as the holder of a critical, irreplaceable patented technology supporting the same standard*."[54] Consequently, it is suggested that the numeric proportionality makes sense only in circumstances where technology contributions are symmetric in value and where members' shares correlate with their contribution shares of the standards value.[55]

However, it is good to keep in mind that the determination of royalties on the basis of numeric proportionality rules so far has only been proposed in the litigation context. Many interesting proposals have been presented in the economic literature. All of these proposals are rooted in a desire to define FRAND from business perspective and specifically aimed at establishing the appropriate value of the patented technology.[56] However, this aspect falls outside the scope of this paper and therefore in this paper the evaluation of how to determine a correct pricing system is limited to the discussion of the possibility of applying a numeric proportionality as suggested by the Düsseldorf District Court and in the complainants lodged in Qualcomm case.

In conclusion, although most standard bodies provide rules covering topics such as the process for declaring essential technologies and the basis for FRAND commitments, they typically do not give sufficient guidance on the more essential questions listed above. Faced with this uncertainty, the war of attrition between those who believe that SSOs rules impose meaningful constrains on licensors and those who prefer to disregard them will continue.

In the meanwhile, as long as the industry is not able to reach consensus, one inevitable source of guidance in the next couple of years will be the European Commission. The increasing number of complaints seems to suggest that eventually the licensing practices of FRAND commitments will be assessed under Article 102 TFEU. In EC competition law the concept of fairness, reasonableness,

53 Supra note Anna Layne-Farrar, Atilano Jorge Padilla, Richard Schmalensee.
54 Ibid.
55 Ibid, p.14.
56 Particularly discussed by Layne-Farrar, Padilla and Schmalensee. This discussion paper analyses "*a market efficiency based approach*" developed by Swanson and Baumol, as well as "*a cooperative-game theoretic approach to FRAND*" developed by Shapley.

and non-discrimination does already form part of well established in case law, particularly case law related to Article 102 TFEU. Cases relating to excessive pricing, unfair trading terms and discrimination are all directly relevant.