
FRAND DEVELOPMENTS IN INDIA

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ABSTRACT

In the past two decades there has been a boom in the consumer electronics market in India, particularly in relation to telecoms. The government has been giving special attention to this sector to help extend its e-governance programmes in remote areas and to connect communities for direct benefit programmes, as well as to provide health, education, financial and information services. Since the consumer electronics industry, and particularly telecoms equipment and mobile devices, require inter-operability, there is a growing need for standardising technologies. This allows multiple manufacturers to enter the market with compatible devices, and standardisation boosts fair competition.

Further, issues emanating from implementation of standards in consumer electronic devices also became common in the industry. Several cases pertaining to standard essential patents (SEPs) and fair, reasonable, and non-discriminatory (FRAND) commitments have been filed before the Competition Commission of India (CCI). These cases pertain to well established technology companies that granted SEPs for their innovations in the telecommunications sector.

The presumption is that SEP owners are dominant and therefore immune to competitive constraints. It is significant that all cases pertaining to SEPs have been considered in the framework of Section 4 (Abuse of Dominance) in terms of their anticompetitive effects and not with reference to Section 3(4) which deals with agreements and Section 3(5) which deals with agreements protected under IPRs. India. Three proceedings on the licensing of SEPs in the Delhi High Court (Ericsson v. Micromax, Ericsson v. Intex, and Ericsson v. Xiaomi) and pending investigations of Ericsson's licensing practices of its SEPs by the Competition Commission of India ("CCI") have attracted intense international attention.

The author ventures to provide an outline to some of the underlying disputes that drive the debate in relation to SEPs and FRAND. The paper provides a background on the IPR policies in SSOs. The author also analyses the recent cases involving SEPs in India.

Keywords: FRAND, SEP Licencing, Standardisation

SSOs, SEPs AND FRAND LICENSING

Standardized technologies are at the core of enabling the use of multiple devices at the same time and with each other. They provide interoperability and are developed and set by Standard setting organisations (SSOs). They carry an important responsibility to create transparent procedures, and to balance the incentives of multiple stakeholders so that they voluntarily choose to participate in the process of standard setting. Due to various new and complex technical inventions combining to create technical standards, many underlying IPRs form the bedrock of technical standards. Also, because all manufacturers of a standard need a licence from patent owners holding patents essential to the implementation of a standard, the IPR policies of several SSOs require their members to publicly declare any IPRs that may be potentially essential to the implementation of the standard, often referred to as Standard

Essential Patents (SEPs), and to license them to any interested parties on “fair, reasonable, and non-discriminatory terms” (“FRAND”).

The literature addressing FRAND is substantial and diverse. The most common interpretation of FRAND is a voluntary contract made by a patent owner to SSO. A patent owner can choose to preserve his/her right to exclude and can decline membership to an SSO (and have no obligations under its rules) or may decline to license its SEPs based on FRAND terms, in which case the SSO is free to adopt a standard that does not include the patented technology of the patent owner. Therefore, the contractual meaning of a FRAND commitment can begin with the interpretation of the wording of the contract and the recognition of the underlying motivation behind the contract.¹

Most SSOs’ IPR policies clearly state that one of the main purposes of the FRAND commitment is to ensure access to the standardised technology as well as to fairly compensate the contributors to the standardised technology. For example, the International Telecommunication Union’s (“ITU”) IPR policy states that “securing access to the SEPs ...is the sole objective of the code of practice.”² Similarly, the European Telecommunications

Standards Institute (“ETSI”) states that the purpose of its policy is to “reduce the risk that the investment in the preparation ... of [standards] could be wasted as a result of an [essential] IPR

¹ Roger G. Brooks & Damien Geradin, Interpreting and enforcing the voluntary FRAND commitment, *International Journal IT Standards & Standardization Research* 9(1), (2011), p. 2

² International Telecommunication Union, Common Patent Policy for ITU-T/ITU-R/ISO/IEC, available at <http://www.itu.int/en/ITU-T/ipr/Pages/policy.aspx>.

... being unavailable”³ and that “IPR holders ... should be adequately and fairly rewarded for the use of their IPRs.” Thus, by implementing the FRAND contract, SSOs seek to prevent a SEP holder from refusing to license its SEPs on reasonable terms and denying implementers access to the technology, and, at the same time, aim to ensure that SEP holders will be fairly and adequately compensated for their contributions to the standard. Standard setting organisations have typically provided no further definition of what exactly the licensing terms may be, leaving the precise content of licenses to negotiation between the parties on a case-by-case basis, ensuring the flexibility to accommodate a wide variety of circumstances. FRAND commitment is a contract enforceable in court and designed to bring licensors and licensees together to negotiate appropriate terms such that the interests of both the parties are balanced. It follows that a breach of that contract by failure of a SEP owner to provide a licence on FRAND terms to a qualified potential licensee— that is, the alleged exercise of market power that commentators argue can result in hold-up—can be thwarted by the potential licensee by bringing a breach of contract claim against the SEP owner. Therefore, although a licence to SEPs is required by implementers of standards-compliant products, the SEP owners do not enjoy unilateral power over setting any price they desire to impose on the implementers due to the binding FRAND commitment.

Even though FRAND may be enforceable as a contract between the patent holder and the SSO, some commentators have raised concerns about the meaning and completeness of FRAND as a contract, and what that has meant to SSO members.⁴ It has been argued that the risk of patent holdup arises because of the ambiguity inherent in the term, i.e., its failure to define a specific rate. Contract incompleteness has been a persistent and historical feature across SSOs, even after taking several antitrust considerations into account. Therefore, it may be concluded that incompleteness may be an intended and efficient feature of a competitive contracting process, rationally chosen by the SSOs, as it allows for flexible bilateral negotiations between firms.

In India, FRAND licensing practices are still at a stage where practices and procedures are being put in place as per trends and principles in the US and EU courts and the practices as streamlined by the European Committee for Standardization. The Competition Commission of India ('CCI') is actively taking part in judging SEP agreements through the FRAND terms lens

³ European Telecommunication Standards Institute, ETSI Rules of Procedure at ann. 6 § 3.1 (2014), available at www.etsi.org/images/etsi_ipr-policy.pdf.

⁴ See Mariniello, Mario. Fair, reasonable and non-discriminatory (FRAND) terms: a challenge for competition authorities. *Journal of Competition Law and Economics* 7.3 (2011): pp. 523–541.

and building on its precedent inventory to enable the passing of fair and in-discriminatory orders. The CWA puts forth certain best practices which are a must to be adopted under FRAND terms. The same are stated in context of 'Parties', 'Non-Disclosure Agreements (NDAs)', 'Fundamentals', 'Valuations', 'Disputes', 'Injunctions' etc.

SEP LITIGATION

Although India is one of the world's largest wireless cellular markets, the Indian jurisprudence on FRAND licensing practices for SEPs has begun to take shape only recently. Most of the Indian telecoms industry relies on components manufactured by third parties such as chip manufacturers like Qualcomm and MediaTek. Initial lack of licensing in these sectors hinged on the notion that sourcing components from a third party inevitably absolves the manufacturers of final products from obtaining licences in respect of SEPs. This has resulted in several litigations in which SEP owners have begun asserting their patents aggressively against manufacturers and importers of consumer electronic devices, including telecoms equipment and mobile handsets.

Since 2010 there has been an increase in the number of litigations in information and communication technology. To start with, Philips sued a local assembler of DVD players for infringement of its patents that qualified as SEPs. This was followed by Ericsson Ericsson, a well-known and leading inventor of wireless cellular technologies, bringing a lawsuit against Indian suppliers Micromax and Intex in 2013 and 2014, respectively, in the Delhi High Court for the infringement of its SEPs related to 2G and 3G technologies after years of failed licensing agreement negotiations with both parties.

In turn, both Micromax and Intex filed a complaint with the CCI alleging that Ericsson abused its allegedly dominant position by imposing exorbitant royalties for its SEPs, thus violating the Indian Competition Act. In January 2014, the CCI made a prima facie determination of abuse of dominant position and ordered the Director General ("DG") to investigate the allegations against Ericsson. However, following a writ petition filed by Ericsson challenging the CCI's jurisdiction in cases related to the licensing of patents, the court directed the DG of CCI to refrain from passing any final order/report pending adjudication of this matter in court. Additionally, in December 2014, Ericsson filed a lawsuit against the Chinese manufacturer Xiaomi Technology Company in the Delhi High Court for infringement of its 2G and 3G SEPs. Further, in May 2015, iBall, an Indian supplier of smartphones, filed a complaint against Ericsson with the CCI. As of September 2015, the Delhi High Court issued interim orders and

calculated appropriate royalties for the two FRAND-related patent infringement cases while the investigations before the CCI remain pending.

These disputes arose from SEPs and inevitably revolved around FRAND licensing terms and the amount of royalty to be paid. Recently in 2020, another SEP owner, Interdigital, sued Xiaomi for infringement of its SEPs relating to wireless communications.

Some of these FRAND proceedings have been discussed below along with a brief analysis of the key issues involved. Further we determine the potential impact of these proceedings on the Indian jurisdiction on SEPs.

ERICSSON vs. MICROMAX

In March 2013, Ericsson brought a suit against Micromax, an Indian supplier of mobile devices, for infringement of its eight patents related to 2G and 3G SEPs registered in India seeking damages and a permanent injunction against Micromax.⁵ According to the court documents, Ericsson initiated licensing negotiations with Micromax in 2009 after sending an initial notice of infringement. After repeated notices, Ericsson and Micromax finally did agree to negotiate a FRAND licence, and pending negotiations Micromax agreed to pay the rates Ericsson had initially proposed in November 2012.⁶ However, Micromax never entered into any agreement to license Ericsson's SEPs, thus leading Ericsson to file a lawsuit. After the hearing in December 2014, the Delhi High Court granted an injunction to Ericsson against Micromax based on the infringed 2G and 3G technologies, and directed Micromax to pay royalties to Ericsson ranging from 0.8%–1.3% of the net selling price of the devices containing the infringed technology.

In order to compute the royalty rates, the court asked Ericsson to produce comparable licences, i.e., the licences to use Ericsson's patents essential to 2G and 3G standards that Ericsson had signed with third parties similarly situated to the defendants. The court based its calculation on 26 comparable licences that Ericsson had signed with other Indian parties.⁷ The interim

⁵ Order, *Telefonaktiebolaget LM Ericsson v. Mercury Elecs. & Another*, Interim Application No. 3825 of 2013 in Civil Suit (Original Side) No. 442 of 2013, High Ct. of Delhi (6 March 2013), available at http://delhihighcourt.nic.in/dhcqrydisp_o.asp?pn=46519&yr=2013.

⁶ Order, *Telefonaktiebolaget LM Ericsson v. Mercury Elecs. & Another*, Interim Application No. 4694 of 2013 in Civil Suit (Original Side) No. 442 of 2013, High Ct. of Delhi (19 March 2013), available at http://delhihighcourt.nic.in/dhcqrydisp_o.asp?pn=57850&yr=2013.

⁷ Judgment, *Telefonaktiebolaget LM Ericsson v. Mercury Elecs. & Another*, Interim Application No. 3825 of 2013 and Interim Application No. 4694 of 2013 in Civil Suit (Original Side) No. 442 of 2013}} 1–4, High Ct. of Delhi

agreement also stated that Micromax and the Customs department would have to notify Ericsson when a consignment of Micromax devices arrives in India. Following an inspection by Ericsson's representative, the consignment will be cleared for release and immediately handed over to Micromax. Upon sale, Micromax will transfer royalties to Ericsson based on the court's established rate.

ERICSSON vs. INTEX

In April 2014, Ericsson sued Intex for the infringement of eight SEPs related to 2G and 3G standards and sought a permanent injunction and damages.⁸ In March 2015, the Delhi High Court issued an interim decision granting an injunction against Intex and directed Intex to transfer the determined royalties to Ericsson. The facts of the case are colourful and are considered carefully in the interim decision by the presiding judge, Justice Manmohan Singh.⁹

Ericsson argued that because its asserted patents are 2G and 3G SEPs, any entity that makes, uses, or sells devices complying with these standards by definition infringes on these patents. Ericsson produced a record of having initiated a licensing negotiation with Intex in December 2008, with repeated interactions until 2013, but no agreement was reached.¹⁰ Ericsson argued that Intex had taken two contradictory stands on the issue of validity and infringement of

Ericsson's SEPs. Ericsson produced a record that its licensing negotiations continued with Intex in 2013, during which time, on the one hand, Intex continued to correspond with Ericsson about a potential licensing agreement but, on the other hand, initiated proceedings against Ericsson with the Intellectual Property Appellate Board ("IPAB") for the revocation of Ericsson's patents as well as initiated a complaint against Ericsson with the CCI alleging abuse of dominance by Ericsson due to its prominent position in ownership of SEPs for a standard for which there is no other alternative.¹¹ Intex argued that the court should not grant an injunction against it because there was no clear evidence of validity of Ericsson's patents and damages were adequate to compensate Ericsson for its claim.

The Delhi High Court determined that the asserted patents *prima facie* appear to be valid. The court referred to Intex's statements in its complaint to the CCI that Ericsson's patents are

⁸Judgment, *Telefonaktiebolaget LM Ericsson v. Intex Techs. (India) Limited*, Interim Application No. 6735 of 2014 in Civil Suit (Original Side) No. 1045 of 2014}} 1, 8, High Ct of Delhi (13 March 2015), available at <http://lobis.nic.in/ddir/dhc/MAN/judgement/16-03-2015/MAN13032015S10452014.pdf>.

⁹ Id. at 2–34.

¹⁰ Id. at 2–34.

essential to 2G and 3G, leaving companies complying with these standards no choice other than implementing these SEPs.¹¹ The court observed that Intex's complaint to the CCI is admission of its infringement of Ericsson's SEPs. The court also brought to attention Intex's statement before the IPAB, where it admitted that the patents in suit were directly related to its business, a further admission of infringement. Based on these facts and the contradictory positions taken by Intex, the court found Intex an unwilling licensee, i.e., a licensee not negotiating in good faith.

In addition, the Delhi High Court performed an analysis of Ericsson's practice of charging royalties based on the price of the device and considered them consistent with its FRAND commitments, citing the US decision in *CSIRO v. Cisco*, where the District Court for the Eastern District of Texas had rejected that the royalty base should be based on the chipset price, and the Chinese decision by the National Development and Reform Commission ("NDRC") for Qualcomm's 3G and 4G SEPs, where it calculated royalty rates as a percentage of the net selling price of devices incorporating those technologies.¹² The court upheld the royalty rates calculated for the *Ericsson v. Micromax* interim decision as the facts in both the cases were similar.

Notably, the Delhi High Court's decision of granting an interim injunction to an unwilling licensee predates a recent hallmark decision by the European Court of Justice on the *Huawei Technologies v. ZTE Corporation*, which provides useful guidance that a SEP owner does not abuse its dominant position when seeking injunctive relief against an unwilling licensee.¹³¹⁴

ERICSSON vs. XIAOMI

In December 2014, Ericsson sued Xiaomi in the Delhi High Court for the same set of its 2G and 3G SEPs that it asserted against Micromax and Intex.¹⁵ Ericsson had allegedly asked Xiaomi to take a licence for its SEPs, but Xiaomi launched infringing products in India, and created an Indian subsidiary for marketing the infringing products without obtaining a licence.

¹¹ Id.

¹² Id. at 249-50.

¹³ Case C-170/13, *Huawei Technologies v. ZTE Corporation* [not yet reported], available at http://curia.europa.eu/juris/document/document.jsf?jsessionid=9ea7d2dc30dda3db711f97bb4c0d8dfeefb363beda_e34KaxiLc3qMb40Rch0SaxuSahr0?text=&docid=165911&page

¹⁴ Index=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=2106054.

¹⁵ Judgment, *Telefonaktiebolaget LM Ericsson v. Xiaomi Technology and Others*, Interim Application No. 24580 of 2014 in Civil Suit (Original Side) No. 3775 of 2014, 1-2, High Ct of Delhi (8 December 2014), available at http://delhihighcourt.nic.in/dhcqrydisp_o.asp?pn=250092&yr=2014.

The court issued an interim injunction against Xiaomi to restrain it from importing or selling any infringing devices in India. Xiaomi appealed and argued that since it had obtained the chipset implementing Ericsson's asserted patented technology from Qualcomm Inc., which had a licence from Ericsson, its products did not infringe Ericsson's patents. As a temporary arrangement, Xiaomi is allowed to import and sell only devices containing Qualcomm's chipsets in India. Unlike the Micromax and Intex cases, no royalty rate has been determined by the court.

MICROMAX against ERICSSON

In 2013, after Ericsson filed a lawsuit against Micromax in the Delhi High Court, Micromax filed a complaint with the CCI alleging that Ericsson had abused its dominant position by asking for exorbitant royalties for its SEPs.¹⁶ Micromax argued that the royalty rates being charged by Ericsson were on the basis of the value of the device and not the value of the chipset in which the patented technology was implemented, thus constituting a "misuse of SEPs" that would ultimately harm consumers.¹⁷ Micromax also submitted that Ericsson had subjected all its present and prospective licensees to signing a non-disclosure agreement ("NDA"), which prevented the disclosure of commercial terms between similarly placed patent seekers, allegedly demonstrating that "the royalty charged from Micromax may be many times more than the royalty being charged from others."¹⁸

The opinion by the CCI determined Ericsson to be a dominant player due to being the largest holder of SEPs for 2G, 3G, and 4G technologies, for which there is no alternative technology available in the market. The CCI suggested that "FRAND licences are primarily intended to prevent patent hold-up and royalty stacking," noting some alleged harms of patent hold-up, but not citing any evidence of harm to competition.¹⁷ The CCI also stated that the practices adopted by Ericsson were excessive and discriminatory, and contrary to FRAND terms, as the royalty rates being charged had "no linkage to the patented product"—in other words, the CCI took issue with the royalties being charged as a percentage of the net selling price of the device rather than the chip implementing the 2G or 3G technology. The CCI argued that for the use of the GSM chip in a phone costing Rs 100, the royalty of 1.25% would be Rs 1.25, but for the use of the same chip in a phone of Rs 1000, the royalty would be Rs 12.5, and that this "increase

¹⁶ *Micromax Informatics Ltd. v. Telefonaktiebolaget LM Ericsson*, Case No. 50/2013, Competition Commission of India (12 November 2013), available at <http://infojustice.org/wp-content/uploads/2013/12/CCI-Case-no-502013.pdf>. ¹⁷ *Id.* at 4 ¹⁸ *Id.*

¹⁷ *Id.* at 6

in the royalty for the patent holder is without any contribution to the product of the licensee.” The CCI argued that the charging of two different licence fees per unit phone for the use of the same technology prima facie is discriminatory and reflects excessive pricing.

The court used the mechanism to valuate royalties and held that they were in line with recent judicial trends and sound economic reasoning.¹⁸ In spite of the judgment, The Delhi High Court took a different stance during Ericson's suit against Micromax¹⁹.

The CCI concluded that Micromax had established a prima facie case of Ericsson's abuse of its dominant position and directed the DG to further investigate without being swayed in any manner by the strong observations already made by the CCI in its opinion.

INTEX against ERICSSON

In 2013, Intex Technologies (India) Limited filed a complaint against Ericsson with the CCI. Intex, similar to Micromax, alleged that Ericsson's licensing rates were “exorbitant” and thus constituted an abuse of its allegedly dominant position in India's telecommunications market. In addition, Intex argued that Ericsson's demand that potential licensees sign a non-disclosure agreement (NDA) was restrictive and violated Ericsson's FRAND commitment.²⁰ Intex argued that the NDA was “strongly suggestive” that different royalty rates/commercial terms were being offered to potential licensees of the same category, and alleged that Ericsson had abused its position to force Intex to sign the NDA, which unreasonably restricted Intex from discussing the infringement of Ericsson's patents with its vendors whom Intex needed to rely on for making representations regarding non-infringement. On the basis of this complaint, the CCI's prima facie opinion expressed the same conclusions as its response to Micromax's complaint.

On many of the conclusions, however, the CCI opinion is directly at odds with the Delhi High Court's interim decision.

¹⁸ Id. at 7-8

¹⁹ Order, *Telefonaktiebolaget LM Ericsson v Mercury Elecs. & Another*, Interim Application No. 3825 of 2013 in Civil Suit (Original Side) No. 442 of 2013, High Ct of Delhi (6 March 2013), http://delhihighcourt.nic.in/dhcqrydisp_o.asp?pn=46519&yr=2013

²⁰ *Intex Techs. (India) Ltd. v. Telefonaktiebolaget LM Ericsson*, Case No. 76 of 2013,} 6, Competition Commission of India (16 January 2014).

iBALL against ERICSSON

In May 2015, Best IT World (India) Private Limited (known as iBall) filed a complaint against Ericsson with the CCI.²¹ Unlike Micromax's and Intex's complaints, iBall focused more on Ericsson's "strict and onerous terms" through the NDA that Ericsson required iBall to sign for conducting the licensing negotiations. These terms included settling all disputes through arbitration in Stockholm, requiring confidentiality for 10 years, and covering past as well as future sales within the ambit of the licence agreement. iBall alleged that this conduct—including the threat of patent infringement proceedings, the demand of "unreasonably high royalties" calculated as a percentage of the price of the standards-compliant products, and the bundling of "patents irrelevant to iBall's products" in the licence agreement—violated the Competition Act. The CCI, similar to its opinions for the Micromax's and Intex's complaints, observed that, because there is no alternative technology available for Ericsson's patents in the 2G, 3G, and 4G standards, Ericsson enjoys dominance over its present and prospective licensees. iBall asserted that the NDA terms weren't just strict and onerous but also restricted arbitration in Stockholm and covered iBall's *past as well as future sales* within the ambit of the licensing agreement. iBall also accused Ericsson of bundling non SEPs with SEPs in the agreement which was a blatant disregard of the FRAND terms. The CCI upheld the accusations and found Ericsson guilty of the same. The CCI opined that Ericsson's practice of "forcing a party to execute NDA and imposing excessive and unfair royalty rates, prima facie, amount to abuse of dominance in violation of section 4 of the Act." The CCI directed the DG to investigate further Ericsson's licensing practices and highlighted that iBall's allegations were similar to the allegations made by Micromax and Intex.

To date, there has been no authoritative judicial precedence on FRAND terms in India. Even though there have been several SEP litigations in the country, the courts have not had the opportunity to decide on FRAND terms. While granting interim injunctions, the courts have fixed terms of licence before allowing the defendants to continue with their manufacturing, this has been based on discretion of the courts according to the terms that the SEP owners agreed on with other manufacturers. The courts sought licences from SEP owners that they have agreed with other manufacturers and, based on such terms, the courts made interim

²¹ *Best IT World (India) Private Ltd. v. Telefonaktiebolaget LM Ericsson*, Case No. 4 of 2015, Competition Commission of India (12 May 2015), available at http://www.cci.gov.in/sites/default/files/042015_0.pdf.

arrangements. This method indicates that the courts rely on the parallel arrangements to arrive at FRAND terms, although a definitive and conclusive judgment in this regard is outstanding.

However, there has been a consistent trend in defences being taken by mobile-telephone manufacturers in SEP-related cases. A defendant in a patent case can take any ground in defence by which a patent can be revoked and almost all the defendants in SEP cases to date have taken the defence that the patent alleged to be infringed is invalid. Section 64 of the Commercial Courts Act provides grounds for revoking a patent and the same grounds are available as defence in any patent infringement suit. These grounds include, among others, the grounds of lack of novelty and inventive step, as well as ineligible subject matter. The defendants also took the ground that material facts were concealed, and that the technology used by the defendants is entirely covered by another earlier patent.

The abovementioned defences are normally manifested in every patent litigation. However, in SEP cases, defendants have also struck at the ‘essentiality’ of patents, and in the Ericsson SEP cases the defendants took a defence under competition law. The defendants alleged that the patent owner was misusing its dominant position and hindering the commercialisation of proprietary technologies in an unfair manner. The defendants in almost all the SEP infringement cases filed by Ericsson complained before the Competition Commission of India and sought an investigation into the misuse of dominant position by Ericsson. There has been no conclusive decision in this regard by the Competition Commission of India as yet.

CONCLUSION

With the world’s second largest mobile market, India is an important and attractive market for the key global firms in the wireless communications industry, both in supplying and selling products, as well as in setting up local manufacturing plants and design centres. Court procedures and patent law are evolving hand in hand with the increasing volume of patent cases, resulting in simpler and stricter procedural laws that go a long way to reducing the time taken in adjudicating a case.

How India chooses to shape its policies related to IP enforcement and FRAND licensing issues will be interesting for the international dialogue, but more importantly, it would be instrumental in determining India’s future in the global wireless value chain. With the government’s initiatives on “Make in India” and “Design in India,” it is imperative that the adopted IPR

policies are attractive both to implementers and inventors of new technologies, so that local investment in R&D and manufacturing is lucrative, as well as for activities in India to climb further in the value chain towards long-term innovation.