# Chapter – 1
# Introduction

## 1.0: Introduction

**In** today's life every person would have come across and used products incorporating Standards either knowingly or unknowingly. A Standard can be understood by the following definition "A Standard is a prescribed set of rules, conditions, or requirements concerning definition of terms; classification of components; specification of materials, performance, or operations; delineation of procedures; or measurement of a quantity and quality in describing materials, products, systems, services, or practices."[1] A Standards Setting Organization (SSO) forms and lays down a Standard. A SSO may be a trade association, Standards Development Organization (SDO), consortium, or an alliance. This thesis focuses on SSOs in the Information and Communication Technology (ICT) area where majority of the SSOs are formed privately by several players in the industry with an objective to form technology standards in the ICT area. With the increase in industrialization, standardization has become inevitable. "Standardization is one of the hallmarks of an industrial society"[2]. Increasing complexity of the society and the growth of its industrial base require the interoperability of the products, processes and procedures of the society. This interoperation provides a basis for greater integration of elements in the society, which in turn causes increased social interdependency and complexity"[3].

A *report*[4] prepared by German institute of Standardization states that "Innovation potential alone is not sufficient to maintain competitiveness; in addition, an efficient dissemination of innovation via Standards is a pre-condition for economic growth". The report also states that the indicators of technological progress include patents secured, expenditure on export licenses, and number of

---

[1] National Institute of Standards and Technology, *"The ABC's of Standards – Related Activities in the United States available at* http://ts.nist.gov/Standards/Conformity/stdpmr.cfm, last visited on Nov 1, 2013

[2] *Ibid.*

[3] Cargill, Carl F. *"Standards"*, in Ralston, Anthony *et al.* editors, Encyclopedia of Computer Science, Fourth Edition, Nature Publishing Group, 2000, London, pp. 1677-1683.

[4] *"Economic benefits of Standardization – Final report and practical examples"*, 2000, DIN German institute of Standardization, available at http://www.isotc211.org/Outreach/Newsletter/Newsletter_03_2003/Appendix_4.pdf, last visited on April 14, 2013.

Standards set by SSOs. Standards are as important for economic growth as patents and diffusion of innovation through Standards is a decisive factor.[5] Thus, Standards are very important for dissemination of innovation. Thus, the importance of standards for the dissemination of innovation can never be stated as exaggerated.

Historically, the patents (which provide exclusivity) and competition (which are opposed to exclusivity) appear to have conflicting goals, however, in reality both the patents and competition laws address the same objective of increasing innovation[6] by providing sufficient motivation and incentives. The primary goal of the SSOs is to enhance innovation and patents and competition play a very vital role in creation of standards. In fact, the patents play an important role in making meritorious inventions accessible to large number of market players and competition has an important role to play in restricting abuse of patent position by the patent holders such that the patent holders get reasonably compensated while competition is nurtured and the innovation grows.

## 1.1. FRAME WORK

### 1.1.1: Interrelation between Patent and Competition Law

The objective of patent and competition law is to promote competition, innovation, and achieve consumer welfare. Patent law attempts to achieve the objective by providing an exclusive right, for a limited period of time, to an applicant if the invention satisfies the criteria of patentability thereby motivating the inventors to invent, commercialize their inventions to recoup their investments. Patent law provides a limited time period exclusivity[7] to the patentee to exclude others from practicing the patented invention. On the other hand, competition law (or antitrust law) attempts to achieve the same objective

---

[5] *Ibid.*

[6] OECD's Policy Roundtable: Patents, Competition, and Innovation II (2009), available at http://www.oecd.org/daf/competition/45019987.pdf, last visited on May 15, 2016.

[7] See Sec 53 of Indian Patent Act, 1970, available at http://ipindia.nic.in/ipr/patent/eVersion_ActRules/sections/ps53.html, last visited on July 1st, 2016; Also, see USC 35 § 154 available at https://www.law.cornell.edu/uscode/text/35/154, last visited on July 1st, 2016.

by encouraging competition while discouraging monopoly and behaviours restraining trade. The objective of the competition law is to promote competition (which in turn promotes innovation) to enhance efficient use of resources while protecting the freedom of economic action of various market participants. Competition law is intended to achieve the objective by overseeing that dominant players in the market place do not curb competition and attain a monopoly status, which may be abused to extract higher prices, markets hold-ups, dictate the innovation and product. "[T]he aims and objectives of patent and antitrust laws may seem, at first glance, wholly at odds. However, the bodies of law are actually complementary, as both are aimed at encouraging innovation, industry, and competition"[8]. Competition law(s) around the world have recognized the existence of Intellectual Property rights and the exclusivity provided by the IP laws are recognized too, however, there are competition issues related to exercising of patent rights. Indian Competition Act[9] recognize the existence and rights provided under IP laws. Invariably, every competition act restricts certain behaviours of the IP holders, which may result in anti-competitive effect.

Two early cases *Kodak*[10] and *CSU*[11] in the US illustrate the importance and difficulty in, correctly, identifying the behaviour of IP holders which would be an antitrust (or competition) law concern. In *Kodak*, the allegation made under Sec.1 and 2 of Sherman Act by the plaintiff were that (a) *Kodak* unlawfully tied service for Kodak's photographic and micrographic equipment to the sale of parts in violation of Sec. 1; and (b) monopolized or attempted to monopolize the service market for Kodak machines in violation of Sec. 2. The jury verdict returned a damage against *Kodak*. *Kodak* also attacks the district court's business justifications instructions for their failure to properly detail Kodak's intellectual property rights. *Kodak* argues that the court failed to instruct the jury

[8] Atari Games Corp v Ninetendo of America, Inc., 897F. 2d 1572, 1576 (Fed. Cir. 1990).
[9] See Section 3(5) of "The Competition Act, 2002", available at http://www.cci.gov.in/sites/default/files/cci_pdf/competitionact2012.pdf, last visited on 1st July 2016.
[10] Image Technical services, Inc v. Eastman Kodak Co, 125 F.3d 1195 (9th Cir. 1997).
[11] Independent Service Organizations Antitrust Litigation (CSU, 203 F.3d 1322 (Fed. Cir. 2000)

that Kodak's numerous patents and copyrights provide a legitimate business justification for Kodak's alleged exclusionary conduct. *Kodak* holds 220 valid United States patents covering 65 parts for its high volume photocopiers and micrographics equipment, and all Kodak diagnostic software and service software are copyrighted. The jury instructions do not afford *Kodak* any "rights" or "privileges" based on its patents and copyrights: all parts are treated the same. In Jury Instruction No. 37, the court told the jury:

*[i]f you find that Kodak engaged in monopolization or attempted monopolization by misuse of its alleged parts monopoly ... then the fact that some of the replacement parts are patented or copyrighted does not provide Kodak with a defense against any of those antitrust claims.*

In Jury Instruction No. 28, the court stated, over Kodak's objection, that:

*[s]uch [exclusionary] conduct does not refer to ordinary means of competition, like offering better products or services, exercising superior skill or business judgment, utilizing more efficient technology, or exercising natural competitive advantages.*

*Kodak* proposed to include "exercising lawful patents and copyrights" amongst the list of non-exclusionary conduct in Instruction No. 28, but the district court rejected that language. Kodak's challenge raises unresolved questions concerning the relationship between federal antitrust and patent laws. In particular, the significance of a monopolist's unilateral refusal to sell or license a patented or copyrighted product in the context of a § 2 monopolization claim based upon monopoly leveraging is to be determined.

Identifying the general principles of antitrust, copyright and patent law as there is a need to ultimately harmonize these statutory schemes in responding to Kodak's challenge. Antitrust law seeks to promote and protect a competitive marketplace for the benefit of the public[12]. The Sherman Act prohibits efforts both

[12] See Standard Oil Co. v. United States, 221 U.S. 1, 58, 31 S.Ct. 502, 515, 55 L.Ed. 619 (1911); SCM Corp. v. Xerox Corp., 645 F.2d 1195, 1203 (2d Cir.1981).

to restrain trade[13] by combination or conspiracy and the acquisition or maintenance of a monopoly by exclusionary conduct[14]. Patent law seeks to protect inventions[15], while inducing their introduction into the market for public benefit. Patent laws "reward the inventor with the power to exclude others from making, using or selling [a patented] invention throughout the United States." Meanwhile, the public benefits both from faster introduction of inventions, and the resulting increase in market competition. Legally, a patent amounts to a permissible monopoly over[16] the protected work. Patent laws "are in pari materia with the antitrust laws and modify them pro tanto[17] (as far as the patent laws go)." It is known that the antitrust and patent laws both overlap and, in certain situations, seem to conflict and the "obvious tension" between the patent and antitrust laws is well captured as "[o]ne body of law creates and protects monopoly power while the other seeks to proscribe it.[18]"

Two principles have emerged regarding the interplay between these laws: (1) neither patent nor copyright holders are immune from antitrust liability, and (2) patent and copyright holders may refuse to sell or license protected work. First, as to antitrust liability, case law supports the proposition that a holder of a patent or copyright violates the antitrust laws by concerted and contractual behaviour that threatens competition. In Kodak, the Supreme Court noted:

---

[13] See Section 1 of Sherman Act: Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations, is declared to be illegal. Every person who shall make any contract or engage in any combination or conspiracy hereby declared to be illegal shall be deemed guilty of a felony, and, on conviction thereof, shall be punished by fine not exceeding $10,000,000 if a corporation, or, if any other person, $350,000, or by imprisonment not exceeding three years, or by both said punishments, in the discretion of the court.

[14] See Section 2 of Sherman Act: Every person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of the trade or commerce among the several States, or with foreign nations, shall be deemed guilty of a felony, and, on conviction thereof, shall be punished by fine not exceeding $10,000,000 if a corporation, or, if any other person, $350,000, or by imprisonment not exceeding three years, or by both said punishments, in the discretion of the court

[15] See SCM Corp., 645 F.2d at 1203.

[16] See Zenith Radio Corp. v. Hazeltine Research, Inc., 395 U.S. 100, 135, 89 S.Ct. 1562, 1583, 23 L.Ed.2d 129 (1969).

[17] Simpson v. Union Oil Co., 377 U.S. 13, 24, 84 S.Ct. 1051, 1058, 12 L.Ed.2d 98 (1964).

[18] See United States v. Westinghouse Electric Corp., 648 F.2d 642, 646 (9th Cir. 1981).

*[we have] held many times that power gained through some natural advantage such as a patent, copyright, or business acumen can give rise to liability if `a seller exploits his dominant position in one market to expand his empire into the next.*

The criticism against the judgement in Kodak was that it impractically focused on the subjective intent of the patent holder that had refused to license its patent.

In CSU case, in 1984 *Xerox* instituted a policy of not selling patented parts unique to its copiers to *Independent Services Organizations (IsO)*[19], which severely impaired the ability of IsO to purchase restricted parts[20] and the price of such parts increased considerably limiting IsO's ability to compete in the service market[21]. In 1994, IsOs brought a suit alleging Xerox's refusal to sell patented parts was in violation of Sherman Act as *Xerox* effectively eliminated IsOs as competitors in the service market[22]. *Xerox* counterclaimed for patent and copyright infringement, arguing that IsO's antitrust claims relied solely Xerox's legal right to refuse to license its IPs and that Xerox's refusal to deal did not constitute patent and copyright misuse. The court granted a summary judgement for *Xerox*, holding that if Xerox lawfully acquired a patent, then the intent was irrelevant and the refusal to license did not violate antitrust laws. The court rejected IsO's argument that Xerox illegally sought to leverage dominance in the parts market into a dominance in the service market. The court held that the case laws prohibit illegal tying and extension of patent owner's monopoly beyond the scope of the patent and the court concluded that this case did not involve either of the impermissible activities. The court declined to follow what was held in Kodak that place great importance on patent holder's subjective motive for exclusion and concluded that Xerox's infringement suit was not objectively

[19] See Footnote 11
[20] See Footnote 11
[21] See Footnote 11
[22] See Footnote 11

baseless and the patentees' subjective motives are immaterial. US antitrust agency has consistently attempted to provide clarity on what would constitute an antitrust concern while using intellectual Property. The Antitrust Guidelines[23] provide that (1) IP as essentially being comparable to any tangible property for antitrust analysis; (2) there is not presumption that IP creates market power in antitrust context; and (3) the IP licensing allows firms to combine complementary factors of production and is generally pro-competitive. Further, in a report[24] issued by US DoJ and FTC, the agency concludes that (a) patent act does not create any antitrust immunity for unilateral refusals to license patents, (b) supports the traditional understanding that the unilateral right to refuse to grant a patent license is core part of the patent grant, and (c) conditional refusals to license that cause competitive harm are subject to antitrust liability.

As indicated above patents provide a legal power to a patentee and the antitrust agencies have recognized that legal power and don't see an issue if a patentee exercises these legal rights fairly and if there is an inability to buy the patented protected product then it is fair to assume that exercise of such legal rights may also create market power in favour of the patentee[25]. Antitrust or competition agencies have recognized that patents may create market power and achieving such market power itself is not a violation of antitrust (or competition law) if such market power is achieved as a consequence of superior products, business acumen, or historic accident[26].

---

[23] Antitrust Guidelines for the Licensing of Intellectual Property (1995), Issued by U S Department of Justice (DoJ) and the Federal Trade commission, available at https://www.ftc.gov/sites/default/files/attachments/competition-policy-guidance/0558.pdf, last visited on July 1st 2016.

[24] Antitrust Enforcement and Intellectual Property Rights: Promoting Innovation and Competition, Issued by US DoJ and FTC (2007), available at https://www.ftc.gov/sites/default/files/documents/reports/antitrust-enforcement-and-intellectual-property-rights-promoting-innovation-and-competition-report.s.department-justice-and-federal-trade-commission/p040101promotinginnovationandcompetitionrpt0704.pdf, last visited on July 1st, 2016.

[25] Jefferson Parish Hospital District No. 2 v. Hyde 466 US 2, 16 (1984).

[26] Abbott Laboratories v. Bernnan, 952 F. 2d 1346, 1341-42 (Fed. Cir 1991).

Courts have analysed whether the "patent scope test" is an appropriate test to determine the anticompetitive effect and in Cardizem[27] and Valley[28] drug cases, the courts came to a conclusion that the behaviour was *"per se"* illegal. In a recent case[29], the US Supreme Court rejected the "Scope of Patent test", and held that the antitrust law's "rule of reason" analysis can pierce the shield of patent rights. In most antitrust cases, the US courts have used "rule of reason"[30] in evaluating the restraints in patent licensing and the primary inquiry is into market conditions and whether such licensing clauses would tend to reduce the output or increase prices and whether the restraint is not reasonably related to efficiencies. Harm to competition also may occur if the arrangement poses a significant risk of retarding or restricting the development of new or improved goods or processes.

The rule of reason test has three parts[31]: (a) the plaintiff should show that the challenged conduct has produced anti-competitive effects within the market, if yes, then: (b) defendant must show the challenged conduct promotes a sufficiently pro-competitive objective; and (c) the plaintiff can rebut defendant's pro-competitive justification by showing that the restraint is not reasonably necessary to achieve the pro-competitive objective. The rule of reason focuses on pro-competitive and anti-competitive benefits of licensing and would invoke antitrust (or competition) clauses if there is an anti-competitive behaviour. Thus, even though patents are acknowledged by the antitrust agencies, any misuse or behaviour of a patent holder leading to anticompetitive effect is dealt with by the agencies under the provisions of antitrust laws.

---

[27] Cardizem CD antitrust Litigation, 332 F.3d 896 (6th Cir. 2003).
[28] Valley Drug Co. v. Geneva Pharmaceuticals, Inc, 334 F.3d 1294 (11th Cir. 2003).
[29] FTC v. Actavis Inc, 677 F. 3d 1298.
[30] Federal Trade commission v. Indiana Federation of Dentists, 476 US 447 (1986); NCAA v. Broad Regents of University of Oklahama, 468 US 85 (1984).
[31] Supreme Court in FTC v. Actavis Inc, case, available at http://www.lexology.com/library/detail.aspx?g=1985e3e6-5e3d-4c7b-af7c-c81333167814, last visited on July 1st, 2016.

In EU, Article 101[32] and 102[33] deal with competition law issues. Article 101 prohibits restrictive agreements, article 102 prohibits the abuse of dominance, and article 82 (present Article 102) deals with the conduct of one or more economic operators involving the abuse of a position of economic strength.

The commission found that Microsoft had infringed Article 82 EC and Article 54 of the agreement on the European Economic Area (EEA). In

---

[32] Article 101 (ex Article 81 TEC):

1. The following shall be prohibited as incompatible with the internal market: all agreements between undertakings, decisions by associations of undertakings and concerted practices which may affect trade between Member States and which have as their object or effect the prevention, restriction or distortion of competition within the internal market, and in particular those which:

> (a) directly or indirectly fix purchase or selling prices or any other trading conditions; (b) limit or control production, markets, technical development, or investment; (c) share markets or sources of supply; (d) apply dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage; (e) make the conclusion of contracts subject to acceptance by the other parties of supplementary obligations which, by their nature or according to commercial usage, have no connection with the subject of such contracts.

2. Any agreements or decisions prohibited pursuant to this Article shall be automatically void.

3. The provisions of paragraph 1 may, however, be declared inapplicable in the case of: - any agreement or category of agreements between undertakings, - any decision or category of decisions by associations of undertakings, - any concerted practice or category of concerted practices, which contributes to improving the production or distribution of goods or to promoting technical or economic progress, while allowing consumers a fair share of the resulting benefit, and which does not: (a) impose on the undertakings concerned restrictions which are not indispensable to the attainment of these objectives; (b) afford such undertakings the possibility of eliminating competition in respect of a substantial part of the products in question, available at http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:12008E101, last visited on July 2, 2016.

[33] Article 102 (ex Article 82 TEC): Any abuse by one or more undertakings of a dominant position within the internal market or in a substantial part of it shall be prohibited as incompatible with the internal market in so far as it may affect trade between Member States. Such abuse may, in particular, consist in: (a) directly or indirectly imposing unfair purchase or selling prices or other unfair trading conditions; (b) limiting production, markets or technical development to the prejudice of consumers; (c) applying dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage; (d) making the conclusion of contracts subject to acceptance by the other parties of supplementary obligations which, by their nature or according to commercial usage, have no connection with the subject of such contracts, available at http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:12008E102, last visited on July 2, 2016.

proceedings brought on the basis of Article 82 EC[34], the Commission defined 'interoperability' as the capacity for two software products to exchange information and to use that information mutually in order to allow each of those software products to function in all the ways envisaged. In that context, the Commission determined the 'degree of interoperability' of software products by reference to what, in its view, is necessary[35], in the light of Article 82 EC, in order to enable developers of work group server operating systems competing with the dominant developer to remain viably on the market. Should it be established that the existing degree of interoperability does not enable those developers to remain viably on the market, it follows that the maintenance of effective competition on that market is being hindered.

The Commission, by way of remedy, required *Microsoft* (in a dominant position)[36] to provide an undertaking to disclose the interoperability information. That description does not extend to the way in which the undertaking implements those rules, in particular, to the internal structure or to the source code of its products. The degree of interoperability thus required by the Commission

---

[34] Microsoft Corp. v Commission of the European Communities, Case T-201/04, available at http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:62004TJ0201&from=EN, last visited July 1, 2016.

[35] IMS health GmbH and Co, OHG v. NDC Health GmbH and Co. KG, 2004, available at http://www.curia.eu.int/en/content/juris/index.htm, last visited on July 2nd, 2016. European Court of Justice (ECJ) in its ruling in April 2004 ruled on the concept of indispensable for the purposes of Article 82 (new Article 102), it is necessary to take into account "the degree of participation by the users" and "the outlay, particularly in terms of the cost, on the part of potential users, to switch. After confirming that refusal to license an IPR can constitute abuse in exceptional circumstances, the court took the opportunity to clarify the law developed in this area as developed principally in the *Magill and Bronner cases*, setting out the following test: [T]he refusal by an undertaking which holds a dominant position and owns an Intellectual Property right in brick structure indispensable to the presentation of regional sales data on pharmaceutical products in a Member State to grant a license to use that structure to another undertaking which also wishes to provide such data in a Member State, constitutes an abuse of dominant position within the meaning of Article 82 EC where the following conditions are fulfilled: (a) the undertaking which requested the license intends to offer, on the market for supply of data in question, new products or services not offered by the owner of the intellectual property right and for which there is a potential consumer demand; (b) the refusal is not justified by objective consideration; (c) the refusal is such as to reserve to the owner of the intellectual property right the market for the supply of data on sales of pharmaceutical products in the Member State concerned by eliminating all competition on that market.

[36] See paragraphs 192, 206, 225, 227-228, 230, 234, 236-238, 241, 259, and 374-375 of the footnote 34.

enables competing operating systems to interoperate with the dominant undertaking's domain architecture on an equal footing in order to be able to compete viably with the latter's operating systems. It does not entail making competitors' products[37] work in exactly the same way as its own and does not enable its competitors to clone or reproduce its products or certain features of those products.

Section 83[38] of The Patent Act, 1970 in India specifies that the patents are not granted to the inventors merely to enjoy monopoly for the importation of the patented article. The Act envisages that the patented invention is worked in the territory of India either by the patentee himself or by licensing the patented invention to seekers of license. Such licensing is also subject to restrictions enshrined in Section 140[39] of the Patent Act, 1970.

---

[37] Ibid

[38] Section 83 (of The Patent Act, 1970). **General principle applicable to working of patented inventions.**
Without prejudice to the other provisions contained in this Act, in exercising the powers conferred by this Chapter, regard shall be had to the following general considerations, namely -

a. that patents are granted to encourage inventions and to secure that the inventions are worked in India on a commercial scale and to the fullest extent that is reasonably practicable without undue delay; and

b. that they are not granted merely to enable patentees to enjoy a monopoly for the importation of the patented article, available at http://www.ipindia.nic.in/ipr/patent/patents.htm, last visited on July 2nd, 2016.

[39] Section 140 (of The Patent Act, 1970). **Avoidance of certain restrictive conditions**
(1) It shall not be lawful to insert -

(i) in any contract for or in relation to the sale or lease of a patented article or an article made by a patented process; or

(ii) in a licence to manufacture or use a patented article; or

(iii) in a licence to work any process protected by a patent, a condition the effect of which may be -

a. to require the purchaser, lessee, or licensee to acquire from the vendor, lessor, or licensor, or his nominees, or to prohibit from acquiring or to restrict in any manner or to any extent his right to acquire from any person or to prohibit him from acquiring except from the vendor, lessor, or licensor or his nominees, any article other than the patented article or an article other than that made by the patented process; or

b. to prohibit the purchaser, lessee or licensee from using, or to restrict in any manner or to any extent the right of the purchaser, lessee or licensee, to use an article other than the patented article or an article other than that made by the patented process, which is not supplied by the vendor, lessor or licensor or his nominee; or

While certain manners of exercise of rights under a conventional patent can lead to anticompetitive effects, the chances of exercising rights of a patent declared as essential to a standard must be viewed with increased scrutiny as SEPs acquire the entire market share and leaves no alternatives as a feasible option.

### 1.1.2: Interrelation of Patent and Competition Law with Standards

The objective of the Standards is to promote innovation by standardizing technologies so that products from different manufactures interoperate and thus lead to quick adaption of technologies, which help the consumers. Section 48[40]

---

c. to prohibit the purchaser, lessee or licensee from using or to restrict in any manner or to any extent the right of the purchaser, lessee or licensee to use any process other than the patented process, and any such condition shall be void.

(2) A condition of the nature referred to in clause (a) or clause (b) or clause (c) of sub-section (1) shall not cease to be a condition falling within that sub section merely by reason of the fact that the agreement containing it has been entered into separately, whether before or after the contract relating to the sale, lease or licence of the patented article or process.

(3) In proceedings against any person for the infringement of a patent, it shall be a defence to prove that at the time of the infringement there was in force a contract relating to the patent and containing a condition declared unlawful by this section:

Provided that this sub-section shall not apply if the plaintiff is not a party to the contract and proves to the satisfaction of the court that the restrictive condition was inserted in the contract without his knowledge and consent, express or implied.

(4) Nothing in this section shall -

a. affect a condition in a contract by which a person is prohibited from selling goods other than those of a particular person;
b. validate a contract which, but for this section, would be invalid;
c. affect a condition in a contract for the lease of, or licence to use, a patented article, by which the lessor or licensor reserves to himself or his nominee the right to supply such new parts of the patented article as may be required or to put or keep it in repair.

(5) The provisions of this section shall also apply to contracts made before the commencement of this Act if, and in so far as, any restrictive conditions declared unlawful by this section continue in force after the expiration of one year from such commencement, available at http://www.ipindia.nic.in/ipr/patent/patents.htm, last visited on July 2nd, 2016.

[40] Section 48 (of The Patent Act, 1970). **Rights of patentees**

(1) Subject to the other provisions contained in this Act, a patent granted before the commencement of this Act, shall confer on the patentee the exclusive right by himself, his agents or licensees to make, use, exercise, sell or distribute the invention in India.

(2) Subject to the other provisions contained in this Act and the conditions specified in section 47, a patent granted after the commencement of this Act shall confer upon the patentee -

a.where the patent is for an article or substance, the exclusive right by himself, his agents or licensees to make, use, exercise, sell or distribute such article or substance in India;

of The Patent Act, 1970 confers on the patentee the exclusive rights by himself, his agents, or the licensees to practice (i.e., make, use, sell, offer to sell, and import) the patented invention. However, exercise of such rights under section 48 is subject to certain conditions provided in Sections 83 and 140 of the Patent Act, 1970. The patentee cannot create monopoly[41] using the patent rights granted and license cannot be used to impose overly restrictive conditions. The competition Commission of India (CCI) in *Micromax*[42] observed that the Informant had every right to raise issues before the CCI and Sec 62[43] of the Competition Act makes it clear that the provisions of the Competition Act are in addition to and not in derogation of other existing laws. Section 3(5)[44] of the Competition Act protects IPRs of a person, subject to reasonable conditions. Section 4(1)[45] prohibits abuse of dominant position by an enterprise and section 4(2)[46] provides that imposition of unfair and discriminatory conditions in purchase

---

b.where a patent is for a method or process of manufacturing an article or substance, the exclusive right by himself, his agents or licensees to use or exercise the method or process in India, available at http://www.ipindia.nic.in/ipr/patent/patents.htm, last visited on July 2nd, 2016.

[41] See sub-section (b) of footnote 38.

[42] Competition Commission of India, Case No. 50/2013.

[43] Section 62 of Competition Act, 2002: Application of other laws not barred – the provisions of this Act shall be in addition to, and not in derogation of the provisions of any other law for the time being in force, available at http://www.cci.gov.in/sites/default/files/cci_pdf/competitionact2012.pdf, last visited on July 2, 2016.

[44] Section 3(5) of Competition Act, 2002: Nothing contained in this section shall restrict - (1) a right of any person to restrain infringement of, or to impose reasonable conditions, as may be necessary for protecting any of his rights which have been or may be conferred upon him under – (a) the Copyright Act, 1957; (b) the Patents Act, 1970; (c) the Trade and Merchandise marks act 1958 or the Trade Marks Act 1999; (d) the Geographical Indications of Goods (Registration and Protection) Act, 1999; (e) the Designs Act, 2000; (f) the Semiconductor Integrated Circutis Layout-Design Act, 2000; (2) the right of any person to export goods from India to the extent to which the agreement relates exclusively to the production, supply, distribution, or control of goods or provision of services for such export, available at http://www.cci.gov.in/sites/default/files/cci_pdf/competitionact2012.pdf, last visited on July 2, 2016.

[45] Section 4(1) of Competition Act, 2002: Abuse of Dominant position – (1) No enterprise shall abuse its dominant position, available at http://www.cci.gov.in/sites/default/files/cci_pdf/competitionact2012.pdf, last visited on July 2, 2016.

[46] Section 4(2) of Competition Act, 2002: There shall be an abuse of dominant position (under sub-section (1)), if an enterprise or a group – (a) directly or indirectly, imposes unfair or discriminatory –(i) condition in purchase of sale of goods or service; or (ii) price in purchase or sale (including predatory price) of goods or service. (b) limits or restricts- (i) production of goods or provision of services or market there for or (ii) technical or scientific development relating to goods or services to the prejudice of consumers; (c) indulges in practice or practices resulting in denial of market access; or (d) makes conclusion of contracts subject to acceptance by other

or sale of goods or services amounted to an abuse of dominant position. Also, as per clause 6[47] of ETSI's IPR Policy, an IPR owner is required to give

---

parties of supplementary obligations, which by their very nature or according to commercial usage, have no connection with the subject of the contracts; or (e) uses its dominant position in one relevant market to enter into, or protect, other relevant market, available at http://www.cci.gov.in/sites/default/files/cci_pdf/competitionact2012.pdf, last visited on July 2, 2016.

[47] Clause 6 of ETSI's IPR policy: When an ESSENTIAL IPR relating to a particular STANDARD or TECHNICAL SPECIFICATION is brought to the attention of ETSI, the Director-General of ETSI shall immediately request the owner of ESSENTIAL IPR to give within three months an irrevocable undertaking in writing that it is prepared to grant irrevocable licences on Fair, Reasonable, and Non-discriminatory terms and conditions under such IPR to at least the following extent:

a. MANUFACTURE, including the right to make or have made customised components and sub-systems to the licensee's own design for use in MANUFACTURE;
b. Sell, lease, or otherwise dispose of EQUIPMENT so MANUFACTURED;
c. Repair, use, or operate EQUIPMENT.
d. Use METHODS.

The above undertaking may be made subject to the condition that those who seek licences agree to reciprocate.

6.1. FRAND licensing undertakings made pursuant to Clause 5.1 shall be interpreted as encumbrances that bind all successors-in-interest. Recognizing that this interpretation may not apply in all legal jurisdictions, any Declarant who has submitted a FRAND undertaking according to the POLICY who transfers ownership of ESSENTIAL IPR that is subject to such undertaking shall include appropriate provisions in the relevant transfer documents to ensure that the undertaking is binding on the transferee and that the transferee will similarly include appropriate provisions in the event of future transfers with the goal of binding all successors-in-interest. The undertaking shall be interpreted as binding on successors-in-interest regardless of whether such provisions are included in the relevant transfer documents.

6.2 An undertaking pursuant to Clause 6.1 with regard to a specified member of a PATENT FAMILY shall apply to all existing and future ESSENTIAL IPRs of that PATENT FAMILY unless there is an explicit written exclusion of specified IPRs at the time the undertaking is made. The extent of any such exclusion shall be limited to those explicitly specified IPRs.

6.3 As long as the requested undertaking of the IPR owner is not granted, the COMMITTEE Chairmen should, if appropriate, in consultation with the TSDSI Secretariat, use their judgment as to whether or not the COMMITTEE should suspend work on the relevant parts of the STANDARD or TECHNICAL SPECIFICATIONS until the matter has been resolved and/or submit for approval any relevant STANDARD or TECHNICAL SPECIFICATIONS.

6.4 At the request of European Commission and/or EFTA, initially for specific STANDARD and TECHNICAL SPECIFICATION or a class of STANDARDS/TECHNICAL SPECIFICATIONS, ETSI shall arrange to have carried out in a competent and timely manner an investigation including an IPR search, with the objective of ascertaining whether IPRs exist or are likely to exist which may be or become essential to a proposed STANDARD or TECHNICAL SPECIFICATIONS and the possible terms and conditions of such licenses for such IPRs. This shall be subject to the EC or EFTA meeting all reasonable expenses of such investigation in accordance with detailed arrangements to be worked out with the EU or EFTA prior

*irrevocable written undertaking* that it is prepared to grant irrevocable licenses on FRAND terms, to be applied fairly and uniformly to similarly placed players. *Micromax* alleged that the royalties demanded were unfair, exorbitantly high, and discriminatory[48] and it also alleged that OP abused its dominant position[49] by imposing exorbitant royalties rates for SEPs as it is well aware that there are no alternate technologies available and OP was a sole licensor for the SEPs of globally acceptable technology standards.

In a standards settings organization (SSOs), the technology contributors may hold several patent assets covering the technical inventions incorporated into a standard. The technology contributors join the SSOs voluntarily and then would strive to get their technology to become a standard and in the process will have their patents covering the standard. A successful standard is widely adapted and the technology contributor (or the standard essential patent holder) is already significantly benefited by getting an access to wide market place and thus the opportunity to receive reasonable royalties from many implementers. This is in contrast to a patent, which is not a standard essential patent (SEP), wherein the licensing opportunities are very limited. With a goal to balance the benefits to the SEP holder and the standards, the SSOs (at least a majority of them) rely on Fair, Reasonable, and Non-discriminatory (FRAND) principles. According to FRAND, the SEP holder has made a promise to the SSO to,

(a) make his SEPs available to ***all*** license seekers without being selective (this translates into Fairness principle of the FRAND),

(b) ask for and receive ***reasonable royalties*** from the implementers (this translates into Reasonableness objective of FRAND), and

(c) be non-discriminative to various implementers by charging different royalty rates and differentiating the implementers based on their level in the

---

to investigation being undertaken, available at http://www.etsi.org/about/how-we-work/intellectual-property-rights-iprs, last visited on July 2, 2016.

[48] See para 2 of footnote 42

[49] See para 8 of footnote 42.

overall chain (discriminating based on whether the implementer is a component manufacturer or a system manufacturer).

However, in practice, the SEP holders abuse their SEPs by hold-ups, demanding higher royalties, use injunctions as a threat to extract higher royalties, impose certain conditions in the licensing agreements, which severely inhibit the implementer's options to challenge the validity, essentiality, and infringement of such SEPs (each of these is discussed below in detail). The implementers may invest to make standards compliant products based on the FRAND promise made by the SEP holder but, may find themselves in a litigation for failing to agree on a reasonable royalty. Inherently, there is a conflict in the interest of the SEP holders and implementers as SEP holders intend to maximize their royalties and implementers intend to minimize the royalties that they want to pay. Seeking injunctions to extract higher royalties (higher than the reasonable royalties) affects competition and thus, is considered be anti-competitive by the competition commissions and courts. Like-wise, imposing a condition on the implementer not to challenge the validity of a patent and essentiality of a patent to the standard takes away the ability of an implementer to compete as the implementer is affected by the dominant behavior of the SEP holder.

Thus, there is an interplay of patents and competition law, especially, in standards settings organizations. These interplay have a significant effect on competition, consumers, industry, markets, and economy of the countries and the world. This is a critical, interesting, and emerging area at the interface of law and technology. Therefore, it is important to conduct a research on this interplay and arrive at suggestions, which is believed to bring a right balance among the rights and obligations of SEP holders and standards implementers.

The Patent Act and the Competition Act provide clauses to make sure that the patent rights are not misused. However, such misuses seem to continue and there is a need to further strengthen the laws to prevent such abuses and its ill-effects on competition, consumers, innovation, and economy.

## 1.2. Background of the Study

### 1.2.1: Standard Settings Organizations (SSOs)

#### (i) Objectives and Benefits of Standardization

The standardization process involves choosing the best technology from a group of competing technologies to best serve the interest of the consumer. The objective behind formulation of Standards in all fields including Information and Communication Technologies (ICT) is to build compatible and interoperable products from multiple vendors. Interoperability among complementary or component products from different manufacturers empowers a consumer to choose a best product at the lowest cost. As a result of standardization a consumer may also get to enjoy the benefits of the products/services in the "network markets", i.e., the value of a product or a service to a particular consumer increases with the increase in the number of consumers using the same product or service. Interoperability provides varied solutions to the consumers through Standards. Device interoperability and product-compatibility are essential for the promotion of innovation and competition in the market. Standardization enables the achievement of both of these requirements and thereby has contributed to the significant growth of innovation and product differentiation, especially in the ICT sector.

#### (ii) Evolution of Standardization in ICT

As a result of the unprecedented growth of the ICT sector in the past 40 years, several models of standard setting organizations (SSOs) have evolved more recognizably since 1985 and continue to evolve more rapidly even to this day to meet the challenges being faced. Although the end sought by all these different models of SSOs is the same i.e., standardization of technology, the means adopted by these different models are different. Each of these models would cater a few particular needs of standard setting process and each of these models faced their own challenges. Though none of these models provided a complete solution for the standard setting process each of these

models of SSOs are relevant as they have contributed substantially in their own way in the shaping of the standards scenario. These different models of SSOs may be broadly categorized as (1) Trade Associations; (2) Standards Development Organizations (SDOs); (3) Consortia; and (4) Alliances.

Though creation of standards was, initially, started with an intention of creating discipline and uniformity amongst engineers, but today it has turned out to be a necessity. Trade associations like ASTM and ASME were the first standard setters[50] whose primary motive was to provide education about best engineering practices and trends to their members. 1918 ushered a new era in the field of standardization as the first successful government approved standards body - American National Standards Institute (ANSI) came into existence by the coordinated efforts and coming together of five engineering societies and three government agencies. Standardization in the Information and Communication Technology (ICT) sector began in the early 1960s with the founding of Accredited Standards Committee X3, which specialized in computing equipment and languages. This was followed by the Institute of Electrical and Electronics Engineers - Computer Society (IEEE - CS) and the Electronics Industry Association (now Electronics Industry Alliance). During the mid-1970s, the standardization arena in the US witnessed a period of turbulence and uncertainty due to issues related to antitrust violations by the parties to a standards settings organization. American Society of Mechanical Engineers vs. Hydrolevel[51] case, which reached the Supreme Court also contributed to the prevalent turbulence by taking a not-for-profit organization (ASME) to the US Supreme Court, for the first time, was held liable for treble damages under the Sherman antitrust Act due to antitrust violations. This phase resulted in the participants of the standardization process led by ANSI coming up with a policy regarding licensing of patents submitted for standardization and thus the concept of licensing on Reasonable and Non-Discriminatory basis

[50] Standards setting in the United States – Chapter 2 available at https://www.princeton.edu/~ota/disk1/1992/9220/922004.PDF, last visited on May 15, 2016.
[51] American Society of Mechanical Engineers *v.* Hydrolevel Corp., 456 U.S. 556, 562 (1982)

(RAND) came to the fore. The increasing pace of change and shortened product life cycle began to affect the entire ICT industry by the mid-1980s, which promoted the growth of "anticipatory standardization"[52]. Though initially limited only to IEEE and X3, anticipatory standardization received a major boost, internationally, when Joint Technical Committee 1 (JTC1) was created by International Organization for Standardization (ISO) and the International Electro-technical Commission (IEC). The Open Systems Interconnect (OSI) project, started by JTC1, saw the participation of International Consultative Committee on Telephony and Telegraphy (CCITT) of the International Telecommunication Union (ITU). All the organizations participating in this project adhered to RAND policies of licensing of patents[53]. The ever increasing pace of growth of the ICT sector forced the ICT community to look into other alternatives to SDOs by early 1990s as even the SDOs were unable to catch up with the speed of the ICT arena. This led to the formation of consortia, which are alliances of like-minded companies where the attempts are more driven by need to cater to the rapidly changing market.

Consortia can be a collaboration of stakeholders with a common goal of the standardization of a specific technology or application. Consortia type bodies, generally, create specifications and are less formal as compared to standard development bodies such as ITU/ISO/IEC and other SSOs such as IEEE or ETSI. Consortia may include special interest groups (SIGs) and Alliances. SIG's (e.g., Association for Information systems[54]) focus on a single standard for a specific technology or industry and its activities are usually limited to development and possibly promotion of a specification and is, generally, short-lived. Alliances (e.g., Wi-Fi Alliance[55]) develop multiple related specifications for a technology and may offer their logo, certification and marketing programs and are usually of longer life cycle as compared to SIGs.

---

[52] See *supra* note 5 at p.5.

[53] See *supra* note 5 at p.5.

[54] Association for Information systems, A special Interest group on ICT and global development, available at http://www.globdev.org/, last visited on May 16, 2016.

[55] Wi-Fi Alliance, available at http://www.wi-fi.org/, last visited on May 16, 2016.

### (iii) Forms of Standards

It has been observed that standardization arises under three distinct sets of circumstances. First, a particular product or technical specification may evolve into a *de facto* standard through market dynamics, as a result of widespread adoption by consumers. E.g., Lotus 1-2-3. Second, in certain cases public authorities (governments, agencies or supra-national entities such as the European Union ["EU"]) will specify that certain products or processes must comply with a standard and thus compel manufacturers to adopt it. These are usually referred to as *legal* standards. Third, private organizations, often congregating dozens of member companies and individuals, may cooperatively agree on a standard. Their creation will often be prompted or supported by public bodies.

Based on the circumstances in which they are formed, standards can be classified into three categories[56]:

a. Formal/De jure Standards

b. Adhoc Standards

c. Defacto Standards

#### *a. Formal/De jure standards*

European, U.S., and international standards are commonly set by formal or "official" standardization bodies that have some governmental or quasi-governmental control. These standards are also known as de jure standards.

#### *b. Ad-hoc standards*

Informal, unofficial, or "ad-hoc" standardization organizations are formed by industry groupings, who come together voluntarily to define standards and set their own patent rules. Usually, the patent rules of ad-hoc standards

---

[56] Tim Frain, *"Patents In Standards & Interoperability"* 29 November 2006, p.3. World Intellectual Property Organization, available at http://www.wipo.int/export/sites/www/meetings/en/2006/patent_colloquia/11/pdf/frain_paper.pdf, last visited on August 15, 2013.

groups require licenses to standards-related patents to be available either on RAND or RF terms. From the point of view of interoperability and patents policy considerations similar to formal standards may apply to ad-hoc standards as well.

***c. De facto proprietary standards***

Solutions may become the industry norm without any standardization process at all and, as such, any patents will not be subject to obligatory licensing terms. If relevant patents exist they could prevent access to what has become a *de facto* proprietary standard. The patents may be owned by one or very few proprietors. Different policy considerations, which are similar to formal and ad hoc standards may apply, to de facto proprietary standards as well.

Standards produced collaboratively cease to be de facto and become de jure. At what point this transition occurs is determined by the recognition of the legitimacy of the processes within which the standards are developed. As a standards body becomes more organizationally defined it can claim to be the dominant standards development organization within its area, and become the legitimate standard bodies in their areas if formal standards bodies, such as ISO or ANSI, recognize this claim or ratify the standards.[57]

**(iv) A Standard Setting Process**

Standard-setting taking place in SSOs is typically open to all interested parties and is designed to foster consensus. Participation is voluntary and the policies and decision-making procedures of formal SSOs endeavour to ensure that standards are developed in an open environment. Membership of an individual SSO, however, implies accepting the terms and conditions set out in that SSO's bylaws. Where such bylaws are perceived as burdensome or unfair,

[57] Raluca Bunduchi, Ian Graham, Alison Smart and Robin Williams, "*The Tensions Shaping the Emergence of Standard Bodies: The Case of a National Health Informatics Standards*" at p.6.

they will deter technology developers from joining. As a rule, each participating member has the opportunity to contribute to the scope of the particular standard under discussion, participate in its development, take part in the "consensus-driven" approval process, and generally make its positions known.

A typical SSO comprises two parts: (a) the administrative management part; and (b) the working group(s) part. The working group which comprises of volunteers from the interested firms, government agencies and academic departments, is the basic unit that meets collaboratively to draft a written specification embodying a standard. These volunteers are technical experts and contribute technology ideas to the process from which a final specification emerges.

**(v) Participants in a Standards-Setting Organization (SSO)**

Three main participants may be identified in the standard setting process. These are pure IP companies, vertically integrated companies, and pure downstream companies (standard implementers)[58]. Pure IP companies are the ones do not engage in manufacturing (of either hardware or software), but merely produce IP which is licensed to produce revenues. Pure downstream companies are the ones who only produce the final product, which may implement the IP produced by both pure IP companies and vertically-integrated companies. Vertically-integrated companies are the ones who engage in R&D yielding IP, as well as manufacturing downstream products making use of IP.

Moreover, even after it is determined within an SSO that a particular process or technology should be standardized, the majority of SSOs allow for appeals by dissenting members. These policies and procedures aim to allow the most appropriate technology to become standardized, based upon technical merit and other relevant factors and to ensure that no single participant can

[58] Damien geradin, "what's wrong with royalties in high-technology industries?" in competition policy and patent law under uncertainty: regulating innovation, p.462 (geoffrey a. manne & joshua d. wright eds., 2011).

manipulate or abuse the standard-setting process. In that sense, their nature is often quasi-legislative. While firms compete to have their technologies included in a standard, checks and balances are generally built within the SSOs' decision making procedures to ensure that the best technological option succeeds.

Standard setting is a technical process undertaken for a business benefit. The space for *de jure* standards exists only where a single firm cannot supply a single solution to the market and thereby establish a *de facto* standard. The goal of ICT compatibility (interoperability) standardization is thus plural supply of a single interface, i.e., different parts made by different producers working together to accomplish the consumer's desired results. The typical scenario is anticipatory standard setting that enables an emerging technology. History has proved that the consensus process of formal standard setting is time consuming and critical to launching new technologies.

### 1.2.2. Strategic Battles in SSOs

Access to the standardized technology is the backbone of open standards. The rules of standards bodies generally impose an obligation to license, usually on reasonable and non-discriminatory (RAND) terms or, in some cases, on royalty-free (RF) terms. The companies participating in standardization activities generally expect to see some return on the investments they make in developing standardized interoperable solutions accessible to all, which is why RAND tends to be a more prevalent model than RF. Requiring royalty free terms may discourage important technology owners from contributing to and supporting the standard, which may lead to fragmentation of the market and a resulting lack of interoperability. Also, reluctance of important patent holders to contribute may result in the standard specification turning out to be technically inferior.

The framework underpinning open standards would be lost and the number of initiatives to create open standards would decrease if patent rights

did not apply to standards contributions at all. Innovators would then have to rely on trade secrets to protect their inventions resulting in more proprietary and less open standards. The bigger challenge to interoperability in the standards context is not from patent owners who are contributing to the standard, but from owners of relevant patents who are not a member of the standards body. There is currently no mechanism for ensuring that third parties have a right of access to non-members' patented technology. Such an outside patent owner could therefore use their standard-related patent to block the standard. As third parties are not signatories to the IPR policies of the standard-setting body developing the standard they are not bound to offer licenses on RAND or on any other terms promoted by the standard-setting body.

As a result of the inevitable tension between the incentives that every firm has to promote its own proprietary technology for inclusion in a standard and the need for SSO members to work together to develop, establish, endorse, and promote those standards many a time cause the standard setting process itself to severe strain. As a result, the technologies included in these resulting standards have been subject to severe scrutiny. The fact that firms involved in standard-setting often wear different "hats", corresponding to the fundamentally different business models they adopt also contributes to this tension. The "winner-take-all" nature of standardization makes the whole situation even more competitive. As mentioned earlier a distinction may be made between the participants in the standard setting process based on the following categories[59]:

a. pure innovators or upstream-only firms (i.e., firms which develop technologies and earn their revenues solely by licensing them);
b. pure manufacturers or downstream only firms (i.e., firms which manufacture products based on technologies developed by others but which have no relevant IPR);
c. vertically-integrated firms (i.e., firms which develop technologies and manufacture products based on those technologies and the technologies

[59] *Ibid* at p.466

of others; these firms may either license their technologies for revenue or choose not to engage in other than defensive licensing activities with their own IPR); and

d. firms which do not create technologies or manufacture products, but buy products which are manufactured on the basis of patented technologies.

While there is a certain degree of fluidity between these categories, the following structure of incentives can be identified:

a. Pure innovators are entirely dependent on licensing revenues to continue their operations.
b. For pure manufacturers royalties represent a cost (not revenue) and so they have every incentive to reduce them.
c. Vertically-integrated firms that both develop technology and sell products have mixed incentives. One the one hand, they can draw revenue from their IPR. On the other hand, they will have to pay royalties to other firms holding IPR essential to the standard for the products they manufacture. They are much less dependent than pure innovators on the revenue they may obtain by licensing their essential IPR as their major revenue source is sale of their product downstream. They have a much stronger incentive to cross-license their own essential IPR in exchange for essential IPR held by other firms than in seeking royalties as they would want to avoid litigation.
d. For buyers of products the royalties which manufacturers pay to IP holders will increase the price of the products they buy from such manufacturers. Hence their incentives are similar to those of the manufacturers themselves to reduce the royalties to be paid.

Standard Essential Patents (SEPs) are not only a potential source of significant revenue, but they are also 'exchange chips' that open the door to

attractive cross-licensing agreements.[60] Hence having SEPs has incentives which are much more than just purely technological. Ownership of SEPs also facilitates market entry. One may better understand how firms can employ strategies in order to get SEPs by looking at the typical standardization process at formal SDOs in some more detail. The way in which the work on a new standard commences differs between SDOs, but often it is triggered by a proposal that is backed by a number of members. A set of requirements is defined in order to establish the mandate of the participants (usually employees of member firms) that are going to make the standard (often called "Terms of Reference"). Subsequently, one or more Technical Committees (TC) are established in order to develop draft specifications for the standard. Members can decide to actively participate in these committees (by sending their representatives to the meetings, or even by providing the chairman) and thus take an active part in deciding what the exact technological content of the standard will be. Although higher bodies in the standards bodies (such as a General Assembly or a Technical Assembly, depending on the SDO) will still need to vote on the acceptance of a standard, the real technical inclusion process including dictions to include patented technologies takes place in the technical committees. In exceptional cases, major design decisions might be taken to a higher level, but once these decisions are taken, the detailed work goes back to the Technical Committee. In these committees, discussions and negotiations are held on the exact definition of the standard, and therefore the exact set of technologies the standard is drawn.

During the standard setting process the participants may propose all kinds of solutions and technologies to finalize a standard which meets the set of requirements agreed to before. If a consensus is achieved then such a technology is included in the standard. Each firm has an obligation to disclose all the IPR they own relating to a particular technology which they suggest. Most

[60] "ESSENTIAL PATENTS IN INDUSTRY STANDARDS: THE CASE OF UMTS" (Rudi Bekkers, Rene Bongard and Alessandro Nuvolari) available at http://home.tm.tue.nl/rbekkers/Bekkers%20Bongard%20Nuvolari%20(2009)%20DRUID.pdf

technology decisions are taken as a part of social processes in relatively small groups, where the participants usually know each other. The benefits that firms derive from the social network created by cooperation in the standard has been found to be one of the strongest determinants of the willingness of firms to contribute to standards by participating in technical committees.[61] Since each firm is allowed to bring in its own patented technology it creates an atmosphere where the firms accept the technologies brought in by others in expectation of a reciprocal treatment.

Having one's intellectual property deemed essential to a new standard can help insure a steady stream of licensing revenue in future years. A standard that demands backwards compatibility can insure ongoing revenues for a legacy product for many years. Since having essential patents provides a lot of incentives to the holders of the essential patents many firms go to great extents to get their patents included as essential patents in the standard. Once adopted there have been many instances where such holders of essential patents have adopted various strategies to exploit this advantage they have, many times to the detriment of other firms adopting the standard. Some of the strategies at the extreme end of the spectrum are patent ambush or 'holdup'. Some have also claimed that firms massively 'over-claim', i.e., unjustly declaring patents to be essential.[62]

The complexity of the decision-making process and the impact of standards design on firm profitability can make the standardization process intensely competitive:

a. Standards are frequently formed at an early stage of a technology's evolution. In many cases, there are a variety of promising alternatives

[61] Talia Bar & Aija Leiponen, "*Collaboration and Networking in Cooperative Standard Setting*", 2008, p.5, available at http://www2.druid.dk/conferences/viewpaper.php?id=3364&cf=29, last visited on 15 August 2013.
[62] Rudi Bekkers, René Bongard, Alessandro Nuvolari, "*Essential Patents In Industry Standards: The Case Of Umts*", Paper Presented at the Summer Conference 2009 at Copenhagen, at p.5.

among which the standard-setting body must choose. These alternatives' relative virtues may still be uncertain.

b. Being included or excluded from an important standard can have a substantial impact on a firm.

As there are typically multiple technological approaches to the same problem, standard-setting groups frequently find themselves in competition, whether with other standard-setting bodies or even with other standard-setting efforts within the same organization. These bodies are to a certain extent differentiated, for instance, by end-user orientation, the standardization process followed, and the geographic composition of the membership.

### 1.2.3. Issues at the Interface of Patents and Competition in SSOs

As discussed above, standards play an important role in promoting innovation and delivering value to consumers, it is critical that the standards process is properly administered. This responsibility is handled by Standard-Setting Organizations (or "SSOs"), and one of their most important functions is to develop IPR policies that set the terms under which patent holders agree to license their patents to implementers of the standard. These licenses are typically required to be made on *Fair*, *Reasonable*, and *Non-discriminatory*[63] ("FRAND") terms and are limited to those patents that must be practiced to comply with the standard, known as standard-essential patents (or "SEPs"). This gives standard implementers (particularly manufacturers) confidence that they can rely on patent holders' commitments to make their SEPs available on acceptable terms (as embodied within the FRAND formulae). Such confidence, in turn, makes investing in standard-compliant products more attractive and promotes their development, manufacture, and sale.

As part of the standard setting process, SSOs are typically presented with a range of competing technology solutions that can potentially achieve the same

[63] The terms "reasonable and non-discriminatory" terms ("RAND") and "fair, reasonable, and nondiscriminatory" ("FRAND") are collectively referred to herein as "FRAND."

result.[64] The good fortune of having technology selected for a standard can sometimes be quite lucrative for the developers who hold the SEPs that are included in the standard. By agreeing to license their SEPs on a FRAND basis, SEP holders get an opportunity to tap a significantly larger market than would otherwise have existed in the absence of a standard. The tradeoff for them is that they must agree to license their patents on a fair and reasonable basis and not discriminate between licensees (i.e, they are committed to license on FRAND terms). Conversely, many patent holders earn their success by making significant and sometimes risky investments in research and development and they look anxiously for the most effective model to get compensated. For some, that means not committing to a standard and simply licensing their patents (or not) on terms of their choosing. However, most patent owners elect to make FRAND commitments because they gain access to a substantially larger market and gain far more than they lose by supporting the standard.

Unfortunately, FRAND commitments are not always kept. Indeed, manufacturers of standard compliant products are facing a recent and rising wave of breaches of FRAND commitments in a number of jurisdictions. This rising wave of breaches has become very relevant for India as well. Antitrust agencies have brought various actions to enforce FRAND commitments and prevent the abuse of intellectual property rights. But courts are the ones who have determined what constitutes a reasonable royalty because they are in the best position to do so. The mechanism by which courts seek to define FRAND royalties is peculiar to the area of standard setting with barely a useful analogy being found in any other area of patent law. This involves purporting to put patent holders and standard implementers in the position in which they had been prior to the adoption of a standard, when SEP holders faced competition from alternative technologies. In this competitive environment, SEPs could only be licensed on FRAND terms because if they were not, licensees would quickly

[64] despite the billions of dollars invested in developing and promoting Wimax (wireless) technology, the popularity of LTE has threatened to make Wimax obsolete WiMAX (Worldwide Interoperability for Microwave Access) is another fourth generation standard.

seek out fairer licensing terms from the owners of competitive technologies. An analysis on the various ways in which FRAND commitments can be abused is described briefly below:

### *i. The Problem of Patent Hold-up*

SEP holders do not always obtain their market power through innovation and hard work alone, but are virtually ordained a monopoly by SSOs who need to select a technology that will enable the ICT ecosystem to coalesce around a particular solution. One particular solution is generally selected from several solutions and that particular solution so selected ("winning solution") will be adapted as a standard. All other solutions (other than the winning solution) irrespective of their technical merits may be rendered almost useless compared to the winning solution. Thus, these other solutions will not be of any use as all the standard complaint products would use the winning solutions and any non-standard product will have very little or no demand in the market place. Once standard implementers are locked in to a particular technology, a SEP holder's "*bargaining power surges because a prospective licensee has no alternative to licensing the patent; he is at the patentee's mercy.*"[65] The SEP holder's strengthened bargaining power after the adoption of a standard is attributable to the elimination of the alternatives to the SEP resulting from the adoption of a standard.[66] This is a necessary by-product of standardization, which requires the elimination of technological alternatives to achieve the desired product compatibility and interoperability.[67]

---

[65] *Apple, Inc. v. Motorola, Inc.*, 869 F. Supp. 2d 901, 913 (N.D. Ill. 2012); *see also* Case 85/76 *Hoffmann-La Roche v. Commission* [1979] ECR 461, § 38 (Under Community law, a dominant position is "*a position of economic strength enjoyed by an undertaking which enables it to prevent effective competition being maintained on the relevant market by affording it the power to behave to an appreciable extent independently of its competitors, customers and ultimately of its consumers*".).

[66] *See Case No* COMP/M.6381 - Google/Motorola Mobility, 13 February 2012, ("Google/Motorola Mobility") § 53 ("*[O]nce the standard is set, and in the absence of a competing standard, technology competition is largely eliminated.*"); Almunia *Quo Vadis* Speech, at 5 ("*Once a standard is adopted, it becomes the norm and the underlying patents are indispensable.*").

[67] Google/Motorola Mobility, § 54. ("*The very purpose of choosing a standard is that the industry coordinates on a specific technological solution at the expense of alternative technologies.*").

At that point, the patents that cover the chosen technology become essential because they must be used to comply with the standard.[68] Once a standard achieves commercial acceptance, compliance with the standard becomes a matter of economic necessity.[69] A product that fails to comply with a relevant standard renders it incompatible with other companies' products, and therefore makes it unmarketable in nearly all cases. This phenomenon creates a "lock-in" effect, whereby companies that make or use standard-compliant products must use the SEPs that are incorporated into the standards that they implement.[70] The lock-in is reinforced by the sunk nature of R&D costs already incurred by standard implementers. Switching away from the standardized technology would require new R&D investments and foregoing further returns on existing investments in standard-compliant products.

As a result, unless a SEP holder is constrained by an enforceable FRAND commitment, it may engage in what economists call "patent hold-up"–the exploitation of the locked-in position of standard implementers through various means of anti-competitive conducts.[71] As succinctly described by the European Commission:

> *"Once a standard has been agreed and industry players have invested heavily in standard-compliant products, the market is de facto locked into*

---

[68] *See* Google/Motorola Mobility, § 54 ("*The specificity of SEPs is that they have to be implemented in order to comply with a standard and thus cannot be designed around, i.e. there is by definition no alternative or substitute for each such patent.*").

[69] European Commission, "Commission sends Statement of Objections to Motorola Mobility on potential misuse of mobile phone standard-essential patents", 6 May 2013 ("EC MMI Press Release"), at 1, *available at* http://europa.eu/rapid/press-release_IP-13-406_en.pdf (Access to SEPS is "*a precondition for any company to sell interoperable products in the market*".).

[70] *See* Google/Motorola Mobility, § 53 ("*A company wishing to produce goods complying with a certain standard cannot do so without either a licence to the technology incorporated in that standard or by infringing the patents covering that technology.*"); *see also* European Commission, MEMO/10/676, Commission adopts revised competition rules on horizontal co-operation agreements, 14 December 2010, at 2 ("MEMO/10/676"), *available at* http://europa.eu/rapid/press-release_MEMO-10-676_en.htm?locale=en ("*'[L]ocked in' means that the costs in switching to another technology would be prohibitive.*").

[71] *Article 101 Guidelines, § 269* (Being a SEP holder "*could allow companies to behave in anti-competitive ways, for example by 'holding-up' users after the adoption of the standard either by refusing to license the necessary IPR or by extracting ... excessive royalty fees....*"); MEMO/10/676, at 2 ("*[P]atent ambush*" occurs when "*companies hid[e] patents until industry is locked in and thereafter refus[e] to license or request exorbitant fees.*").

*both the standard and the relevant SEPs. This gives companies the potential to behave in anti-competitive ways by "holding up" users after the adoption of the standard by excluding competitors from the market, extracting excessive royalty fees, setting cross-license terms which the licensee would not otherwise agree to, or forcing the licensee to give up their invalidity or non-infringement claims against SEPs"*[72].

If SEP holders are able to renege on their FRAND commitments the efficacy of the standards process breaks down, giving SEP holders the same power as a monopolist that faces no competition. When SEP holders breach their FRAND commitments, they acquire and abuse the market power that they voluntarily relinquished in making such commitments and that standards implementers relied in adopting the standardized technology. Such breaches injure consumers through higher prices; reduce incentives to invest in the development, manufacture, and technological improvement of standard-compliant products; and harm economic progress. As the chart below illustrates, litigation and enforcement actions for smartphone SEPs has escalated to a point where the world's leading mobile technology providers are involved.

[72] European Commission, *Competition Policy Brief*. Issue 8 June 2014

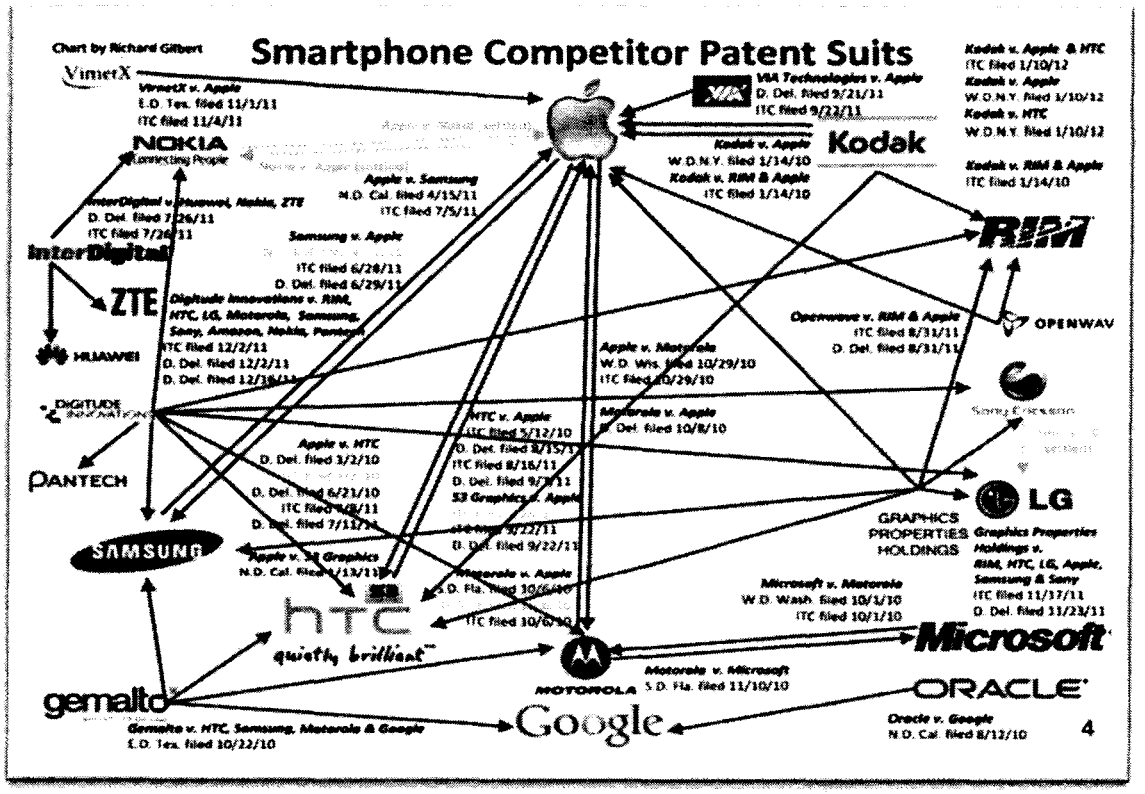


**FIG. 1: Patent Suits among Smartphone companies** *(Source: Fish & Richardson 2013).*

### *ii. The Emerging FRAND Challenges in India*

It is understood from news reports and publicly available information that an Indian company has filed a complaint with the Competition Commission of India ("CCI"), alleging that a particular SEP holder had abused its dominant position. The standard implementer also submitted that the SEP holder was discriminating between similarly placed prospective licensees by claiming different royalties. In a similar and subsequent case, another Indian company filed a CCI complaint against the same SEP holder which raised similar allegations leading to the two investigations being clubbed together. However, the SEP holder challenged the jurisdiction of CCI to investigate SEP abuse issues before the Delhi High Court. As at the time of writing, CCI had issued instructions to the Director General to conduct investigations and the courts had intervened upon the application of the SEP holder to prevent any final determination pending further enquiries by the courts.

In yet another case, a SEP holder (Vringo) brought a case against ZTE in India alleging that ZTE was infringing Vringo's SEPs relating to CDMA2000 technology[73]. However, reports suggest that ZTE has successfully vacated an injunction against it after the Court *inter-alia* held that *Vringo* can be compensated and there was no irreparable harm[74].

Irrespective of how these particular cases are resolved, the trend lines are clear in that the claims of anticompetitive conduct by SEP holders that have been seen around the globe are beginning to surface in India. Accordingly, it is worthwhile to look to international practice to see how similar disputes have been resolved and whether these rulings can be of persuasive value to Indian courts and CCI when they deal with SEP abuse cases.

### *iii. FRAND Abuses - a Worldwide Perspective*

The increasing sophistication of product technologies and expanding patent portfolios have contributed to royalty rates ceasing to show any realistic relationship with the products they cover.[75] The more significant threat for implementers and consumers, however, is from patent owners who have made industry-wide commitments to license their patents on FRAND terms but later renege on their promises. The offending practices fall into various kinds of patent abuses that threaten the integrity of the standards system and impair its benefits to implementers and consumers alike.

### *iv. Refusal to License Essential IP on FRAND Terms*

European Community law requires SEP owners, pursuant to applicable SSO policies, to commit "*in writing to offer to license their essential IPR to all*

---

[73] Viringo Infrastructure Inc and ANR v. Xu Dejun and others, CS(OS) 2168/2013, available at http://delhihighcourt.nic.in/dhcqrydisp_o.asp?pn=221627&yr=2013, last visited on April 18, 2016.

[74] Viringo v. ZTE: DHC vacates Injunction against ZTE, available at http://spicyip.com/2014/08/vringo-v-zte-dhc-vacates-injunction-against-zte.html?utm_source=rss&utm_medium=rss&utm_campaign=vringo-v-zte-dhc-vacates-injunction-against-zte&utm_source=twitterfeed&utm_medium=twitter, last visited on April 18, 2016.

[75] Patent insanity: Royalty fees could reach $120 on a $400 smartphone, available at http://www.zdnet.com/patent-insanity-royalty-fees-could-reach-120-on-a-400-smartphone-7000030067/, last visited on April 18, 2016.

*third parties*" that are willing and able to enter into a FRAND-compliant license.[76] To this end, leading SSOs, such as the IEEE and the International Telecommunications Union (ITU), require SEP owners to "*grant a license to an unrestricted number of applicants*"[77] that wish to implement their standards. However, in actual practice, at least some SEP holders are willing to grant licenses to their SEPs to select standard implementers such as the system makers as against component makers.

In a recent example, involving Wi-Fi SEPs the licensor had made a commitment to "*grant a license to an unrestricted number of applicants on a worldwide, non-discriminatory basis and on reasonable terms and conditions.*"[78] The SEP holder admitted that it had refused to license chipmakers in order to extract higher royalties from downstream computer manufacturers by basing royalties on the much higher value of the end products that use the Wi-Fi chips.[79]

The SEP holder justified its demand for a 50-cent per unit royalty as reasonable by referencing the PC prices, which run in the hundreds of dollars, rather than the prices of the allegedly infringing chips, which sell for as little as US$1-2 each. The SEP holder's asserted SEPs accounted for only 3% of all

---

[76] Article 101 guidelines, § 285; *see Google/Motorola Mobility*, § 55 (FRAND "*oblige[s] SEP owners: [] to make the patent in question available to all interested third parties*").

[77] IEEE-SA Standards Board Bylaws § 6.2(b), *available at* http://standards.ieee.org/develop/policies/bylaws/sb_bylaws.pdf; ITU, General Patent Statement and Licensing Declaration Form, *available at* http://www.itu.int/dms_pub/itu-t/oth/04/04/T04040000030003MSWE.docx.

[78] *Ericsson Inc. v. D-Link Systems, Inc.*, 2013 WL 4046225 (E.D. Tex. 6 Aug. 2013).

[79] *Ericsson Inc. v. D-Link Systems*, Case No. 6:10-CV-473 (E.D.Tex.) ,testimony of Christina Petersson, Director of Patent Licensing, transcript of 4 June 2013, pm session, at 35:18-36-2 ("bigger dollars" from licensing end products than licensing chips); testimony of Nhils Forslund, Ericsson's Director of Portfolio Management, dep. transcript of 14 Dec. 2012 at 96:25-97:7 (admitting that "Ericsson can demand a higher royalty income" from end product manufacturers "because those products are more expensive than for example, Wi-Fi chips").

unreasonable terms or may opt out due to not having sufficient resources to meet the unreasonable demands.

A review of US cases involving FRAND-encumbered Wi-Fi SEPs reveal a number of instances where SEP holders have demanded royalties far in excess of what they could have obtained for its patents before the adoption of a standard:

a. Motorola Mobility demanded a royalty of 2.25% of the price of Microsoft Xbox games consoles, based on its ownership of 11 Wi-Fi SEPs out of the estimated universe of 3,000 such patents.[82]
b. A patent assertion entity known as Innovatio, which holds 19 Wi-Fi SEPs (or 0.6 % of all Wi-Fi SEPs) demanded a royalty of as much as 6% of the price of various systems such as computers or routers that incorporate Wi-Fi chips.[83] Under this scheme, manufacturers of tablet computers that incorporated allegedly infringing Wi-Fi chipsets that sell for as little as US$1-2 each would have been required to pay a royalty of US$16.17 per tablet, or more than two orders of magnitude greater than the level that the court ultimately found to be reasonable.
c. In a recently litigated German case, the holder of only 2.5% of claimed Wi-Fi SEPs demanded a US$1 royalty on those patents, which if matched by all other Wi-Fi SEP owners, would have resulted in an aggregate royalty equal to 3,000% of the average selling price of Intel Corporation's lowest priced Wi-Fi chipsets.

---

[82] *See Microsoft Corp. v. Motorola*, Inc., 2013 U.S. Dist. LEXIS 60233 (W.D. Wash. 25 Apr. 2013). Motorola Mobility sought a royalty of US$3.00–$4.50 per unit, *id.* at *212, but the court determined that the F/RAND rate was US$0.03471 per unit, *id.* at *303.

[83] *In re Innovatio IP Ventures, LLC, Patent Litigation*, Case No. 1:11- cv-09308 (N.D. Ill. 13 Oct. 2013). The court ultimately awarded the plaintiff a tiny fraction of the amount that it sought, determining that the reasonable royalty was only US$0.095 per unit.

d. The holder of only two of the approximately 3,000 FRAND-encumbered Wi-Fi SEPs demanded that a Wi-Fi chipmaker pay "a royalty that exceeds the selling price of [the chipmaker's] products."[84]

Courts in many jurisdictions are yet to publish opinions addressing the determination of FRAND royalties. However, several courts have reached FRAND rate determinations for Wi-Fi SEPs held by at least four companies—Ericsson, Motorola, Interdigital, and Innovatio.[85] Two courts squarely rejected Motorola's and Innovatio's exorbitant royalty demands and set the royalties for their SEPs at a fraction of the companies' exorbitant demands. The cumulative royalties awarded in the Ericsson, Motorola, and Innovatio cases nevertheless give reasons for concern that SEP holders are still able to circumvent their FRAND commitments. The cumulative royalty awarded to Motorola Mobility, Innovatio, and Ericsson for their 30 patents, or roughly 1% of Wi-Fi SEPs, is US$0.28.[86] If the average per-patent royalty awarded in these cases represented the reasonable royalty for all Wi-Fi SEPs, the cumulative royalty on such SEPs would total US$25.49, or more than ten times the average price of the Wi-Fi chip cited in the *Ericsson* decision.[87] This cumulative royalty is particularly problematic in light of the court's finding in the *Microsoft* case that the majority of the technologies incorporated into the Wi-Fi standard "*were in the public domain and not covered by patents.*"[88]

---

[84] *Realtek Semiconductor Corp. v. LSI Corp.*, 2012 WL 4845628 at 2 (N.D. Cal. 20 May 2013).

[85] In a lawsuit between Interdigital and Huawei, the Shenzhen Intermediate People's Court in China found that Inter digital's royalty demands did not comply with FRAND and accordingly ruled (without explanation) that the royalties to be paid by Huawei for InterDigital's 2G, 3G and 4G essential Chinese patents should not exceed 0.019% of the actual sales price of each Huawei product. *See* Form 10-K, InterDigital, Inc., at 23 (26 Feb. 2013), *available at* http://files.shareholder.com/downloads/IDCC/2438652851x0xS1405495-13-10/1405495/filing.pdf

[86] *See* Joseph Kattan and Chris Wood, *Standard-Essential Patents and the Problem of Hold-Up* (forthcoming Concurrences Journal), *available at:* papers.ssrn.com/sol3/papers.cfm?abstract_id=2370113, last visited on April 18, 2016.

[87] *Id. See Ericsson*, 2013 WL 4046225 at 18 (citing US$2.50 average selling price)

[88] *Microsoft*, 2013 U.S. Dist. LEXIS 60233, at *144.

With at least *250 standards* in a notebook computer,[89] the implications of a US$25 aggregate royalty for *a single* standard's SEPs are enormous. It is not far-fetched to see that the royalties can exceed the selling prices of many high-technology products if other SEP holders are able to obtain similar royalties. In the wireless telephony business, aggregate royalties have already reached the level of 25-30% of the price of a mobile phone, or well over US$100 for many smartphones.[90]

The cases of attempted hold-up discussed above are publicly known because they became the subject of litigation. But, many more hold-ups occur before litigation begins where the standard implementer cannot afford the risk of a legal battle. Because standard implementers are locked into a standard, SEP holders have the ability to threaten an injunction against a standard implementer that would effectively extract all of the profits from selling a standard-compliant product. The result often is a confidential settlement at an inflated royalty level that reflects, not the value of the SEP(s) at issue, but rather the standard implementer's risk that it would be barred from selling its standard-compliant products. Such instances of successful hold-up—where a standard implementer caves into the demands for extortionate royalties because of business risk—go unreported. The financial terms of license agreements are seldom publicly disclosed. It is clear, nevertheless, that the reported cases represent only the tip of a growing iceberg. At least, 20 cases involving Wi-Fi SEPs have been filed in the US alone, with the majority producing confidential settlements. One of these settlements alone was expected to generate "*hundreds of millions of dollars*" in royalties, according to the SEP holder.[91]

---

[89] Brad Biddle, *et al.*, *How Many Standards in a Laptop? (And Other Empirical Questions)*, at 1 (2010), *available at:* http://www.standardslaw.org/How_Many_Standards.pdf, last visited on April 18, 2016.

[90] Eric Stasik, *Royalty Rates And Licensing Strategies For Essential Patents On LTE (4G) Telecommunication Standards*, les Nouvelles at 119(Sept.2010), *available at* http://www.investorvillage.com/uploads/82827/files/LESI-Royalty-Rates.pdf, last visited on April 18, 2016.

[91] WiLAN Annual report 4 (2011), *available at* http://www.wi-lan.com/files/documents_financial/WiLAN_2011_Annual_Report_Final.pdf. last visited on April 18, 2016.

Although large companies may have the financial means to defend themselves against FRAND violators, the costs of doing so are substantial, running into millions of dollars for each case. Smaller standard implementers often do not have the resources to wage such a legal battle against SEP holders, and thus are left with the choice of paying excessive royalties or ceasing to make their standard-compliant products.[92] To make things worse, SEP holders that breach their FRAND commitments use the existence of licenses (and the higher than expected royalty rates) extracted from smaller entities that lack the means to challenge the SEP holders' FRAND violations as benchmarks against larger entities. In other words, SEP holders claim that they must charge everyone else the same extortionate rate that they are able to extract from smaller entities because FRAND requires them to license on nondiscriminatory terms.

Even outside the SEP area, European Community law provides that "*charging a price which is excessive because it has no reasonable relation to the economic value of the product supplied [...]*" would be an abuse of a company's dominant market position.[93] US patent law provides that "*in any case involving multi-component products, patentees may not calculate damages based on sales [price] of the entire product, as opposed to the smallest salable patent-practicing unit, without showing that the demand for the entire product is attributable to the patented feature.*"[94] This is because "*[w]here small elements of multi-component products are accused of infringement, calculating a royalty on the entire product carries a considerable risk that the patentee will be improperly compensated for non-infringing components of that product.*"[95] The obligation to avoid taxing non-infringing components is particularly relevant in

---

[92] In one recent US case, a SEP holder sued "*numerous hotels, coffee shops, restaurants, supermarkets, and other commercial users of wireless internet technology located throughout the United States.*" *In re Innovatio IP Ventures, LLC, Patent Litigation*, Case No. 1:11-cv-09308 (N.D. Ill. 26 Jul. 2013).

[93] Case 27/76 *United Brands Company and United Brands Continentaal BV v. EC Commission* [1978] ECR 207, § 250

[94] *LaserDynamics, Inc. v. Quanta Computer, Inc.*, 694 F.3d 51, 67 (Fed. Cir. 2012); *see Lucent Techs., Inc. v. Gateway, Inc.*, 580 F.3d 1301 (Fed. Cir. 2009)

[95] *LaserDynamics, Inc.*, 694 F.3d at 67

the FRAND context, where the FRAND commitment requires the SEP holder to charge only the royalty that it could have secured prior to the adoption of the standard.

### *vi. Imposing Other Unreasonable Terms*

Another way that some SEP holders attempt to extract excessive royalties from standard implementers is to require potential licensees to agree to a "package license" that includes non-SEPs. Holders of SEPs and licensees will often find it in their mutual interest to enter into licenses that cover both SEPs and non-SEPs, and they should be free to do so. But, mandating such a requirement circumvents the FRAND commitment when the SEP holder demands excessive royalties for the non-SEPs.

Tying SEPs and non-SEPs is a mechanism for evading the price control that is created by the FRAND obligation, which effectively imposes a cap on the royalty and the value of other license terms that the holder of a FRAND-encumbered SEP may obtain. It is all too easy to demand an unreasonable 50-cent royalty on a US$1 product by tying some non-SEPs to the FRAND-encumbered SEPs and then demanding a large royalty for the package license, even though the non-SEPs might have little or no value to the licensee and are included in the package principally to disguise excessive royalty demands for the SEPs.[96] The use of the tying mechanism in this manner to evade price controls has been long recognized as an abuse under European Community law. Specifically, the EC has explained that "*[i]f the prices the dominant undertaking can charge in the tying market are regulated, tying may allow the*

---

[96] *See generally* U.S. Dep't Of Justice & Federal Trade Comm'n, Antitrust Guidelines For The Licensing Of Intellectual Property §5.3 & n.34 (1995), *available at* http://www.usdoj.gov/atr/public/guidelines/ (*"Conditioning the ability of a licensee to license one or more items of intellectual property on the licensee's purchase of another item of intellectual property or a good or a service has been held in some cases to constitute illegal tying"*).

*dominant undertaking to raise prices in the tied market in order to compensate for the loss of revenue caused by the regulation in the tying market."*[97]

In a similar vein, the leading conservative scholar Robert Bork observed that "*[w]here the price of product X is regulated, it may be possible to evade the regulation and obtain a higher price by requiring the purchaser to take unregulated product Y as well, and at a higher price than Y would command by itself.*"[98] That is precisely what SEP holders do when they demand that potential licensees take a license to non-essential patents, the royalty to which is not regulated by the FRAND regime, in order to obtain a license to the price-regulated SEPs.

Requiring package licenses that include non-SEPs is just as much a violation of FRAND as making an unreasonable royalty demand because it accomplishes the same purpose—excessive royalties that the SEP holder would not have been able to obtain prior to the promulgation of a standard.[99] FRAND commitments do not allow for this type of conduct. For instance, the ETSI FRAND undertaking, by its express terms, is subject only to one condition—"*that those who seek licenses agree to reciprocate.*"[100] It is otherwise

---

[97] Guidance on the European Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings [now Article 102 of the Treaty on the Functioning of the European Union], 2009/C 45102, at § 57; *see also* Renato Nazzini, *The Foundations of European Union Competition Law: The Objective and Principles of Article 102*, at 213 (2011).

[98] Robert Bork, *The Antitrust Paradox* 378 (1976). *See also Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 1, 13 n.19 (1984) (noting that "*tying arrangements may be used to evade price control in the tying product through clandestine transfer of the profit to the tied product*") (citation omitted); Dennis W. Carlton and Jeffrey M. Perloff, *Modern Industrial Organization* 319 (4th ed. 2005) ("*Another common reason for tie-in sales is to evade price control.*").

[99] *Rambus*, §3, the Shenzhen Intermediate People's Court in China held that InterDigital had violated the Chinese Anti-Monopoly Law by, among other things, tying the licensing of SEPs to the licensing of non-SEPs. Accordingly, the court ordered InterDigital to cease its improper bundling of InterDigital's Chinese SEPs and non-SEPs. *See* Form 10-K, InterDigital, Inc., at 23 (26 Feb. 2013), *available at* http://files.shareholder.com/downloads/IDCC/2438652851x0xS1405495-13-10/1405495/filing.pdf.

[100] ETSI IPR Policy § 6.1; *see also Samsung v Apple*, The Hague Decision, at § 4.35 (finding that Apple's unwillingness "to grant Samsung a licence, in exchange for a licence under the essential patents of Samsung, for the copyrights, design rights and non-essential patent rights that Apple has asserted ... against Samsung" does not suggest Apple is unwilling to pay a

the semiconductor chip is used. As discussed above, SSOs' FRAND policies typically provide that all willing standard implementers, including manufacturers of standard-compliant semiconductor chips, are entitled to be licensed. Royalties imposed on these manufacturers may thus only tax the standard-compliant products that the manufacturers produce, whether they are semiconductor chips or other components. The European Commission's *Rambus* decision provides support for this proposition. In that case, certain companies expressed their concern that Rambus would seek to "*extract royalties based not on the price of the individual chips or controllers [including the relevant technology], but on the value of the end-product (such as PCs, mobile phones and other devices integrating DRAMs), even if the licensed technologies only represent a small percentage of such end-products.*"[102] In response, the Commission's decision clarified that the "*royalty shall be determined on the basis of the price of the individually sold chip and not of the end-product. If they are incorporated into other products, the individual chip price remains determinative.*"[103] Any wider royalty base would automatically lead to royalties that are excessive.[104]

### *viii. Threat of Using SEPs to seek Injunctions*

One of the critical tools used by SEP holders to coerce potential licensees to acquiesce to their demands for excessive royalties and other unreasonable licensing terms is the threat of an injunction.[105]

The standard implementers, being locked in to the standard, have little bargaining power as they have already made investments to commercialize

---

[102] *See Rambus* § 60.

[103] *Id.*, § 66.

[104] This position also is endorsed by the US Federal Trade Commission (FTC), which has advocated that the royalty base should be the "*smallest priceable component that incorporates the inventive feature.*" Fed. Trade Comm'n, *The Evolving IP Marketplace: Aligning Patent Notice And Remedies With Competition*, at 212 (Mar. 7, 2011) ("Evolving Marketplace Report"), *available at* http://www.ftc.gov/os/2011/03/110307patentreport.pdf

[105] *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 396 (2006) (Kennedy, J., concurring) (*"An industry has developed in which firms use patents not as a basis for producing and selling goods but, instead, primarily for obtaining licensing fees...For these firms, an injunction, and potentially serious sanctions arising from its violation, can be employed as a bargaining tool to charge exorbitant fees to companies that seek to buy licenses to practice the patent."*)

standard-compliant products based on the FRAND commitment made by SEP holders. Companies threatened with the exclusion of their products from the market are more likely to succumb to unreasonable royalty demands than companies that are free to litigate the incompatibility of such demands with a FRAND commitment without facing that threat of exclusion. As one US court put it, "*[i]t would seem clear that a negotiation where one party ... must either come to an agreement or cease its sales ... fundamentally places that party at a disadvantage.*"[106]

In summarizing their recent decisions in this area, the European Commission has explained,

> *"In the Samsung and Motorola cases, the Commission clarifies that in the standardization context where the SEPs holders have committed to (i) license their SEPs and (ii) do so on fair, reasonable, non-discriminatory (FRAND) terms, it is anti-competitive to seek to exclude competitors from the market by seeking injunctions on the basis of SEPs if the licensee is willing to take a license on FRAND terms. In these circumstances, the seeking of injunctions can distort licensing negotiations and lead to unfair licensing terms, with a negative impact on consumer choice and prices".*[107]

Additionally, at least one European court has expressed concern that the threat of an injunction puts prospective licensees "*under improper pressure to agree during license negotiations to license conditions that are not FRAND.*"[108] For this reason, under European Community law, "*threatening to use injunctions*

---

[106] *Microsoft Corp. v. Motorola Inc.*, 2012 WL 1669676, at *10 (W.D. Wash. May 14, 2012), aff'd, 696 F.3d 872 (9th Cir. 2012).

[107] European Commission, *Competition Policy Brief*, Issue 8 June 2014.

[108] *Samsung v Apple*, The Hague Decision, at § 4.31; *see also* "Decision of the Tokyo District Court in the FRAND Defense Case" (7 Oct.2013) *available at:*http://www.nakapat.gr.jp/english/legal/2013/10/decision_of_the_tokyo_district_1.html (explaining that a FRAND defense was available to prospective licensee where SEP holder sought an injunction in violation of Japan's Civil Code).

*... to make demands*" that potential licensees "*would not accept outside of a standard*," is "*in breach of FRAND*".[109]

When backed with the threat of an injunction, "even a very weak patent could command a high royalty in settlement."[110] Injunctions are also especially problematic where standard implementers are not well-funded and cannot bear the cost of SEP litigation. These implementers may conclude that paying an unreasonable royalty is the less risky path as compared to fending off infringement litigation.[111] This places poorly funded enterprises or SMEs at a major disadvantage as they may have little option but to take licenses of invalid or non-infringed patents. As the European Commission has noted:

> *"There is strong public interest in fostering challenges of patent validity and infringement. Royalty payments for SEPs which are either invalid or not used may unduly increase production costs which in turn may lead to higher prices for consumers.*
>
> *On average more than 30% of European invalidity actions result in the explicit invalidation of the challenged patents, and* approximately 50% of the patents challenged are found not be infringed".[112]

Injunctive relief is an extraordinary remedy that is available only where a patent holder cannot be adequately compensated for his injury by monetary

---

[109] Italianer, *Innovation*, at 6. The Commission has taken the position that where the "*threat of immediately being excluded from the market*" is present, "*FRAND negotiations may be distorted to the detriment of potential licensees and ultimately consumers who might be faced with less choice and innovation.*" *Google/Motorola Mobility*, § 140. Similarly, the US FTC has concluded that the threat of injunctions against willing licensees is incompatible with a FRAND commitment. *See Motorola Mobility LLC*, Analysis of Proposed Consent Order to Aid Public Comment, *available at* http://ftc.gov/os/caselist/1210120/130103googlemotorolaanalysis.pdf.

[110] *See, e.g.*, Colleen V. Chien & Mark A. Lemley, Patent Holdup, The ITC, And The Public Interest, 98 CORNELL L. REV. 1, 8 (2012).

[111] Fiona Scott Morton and Carl Shapiro, *Strategic Patent Acquisitions* at 5-6 (2013), *available at* http://faculty.haas.berkeley.edu/shapiro/pae.pdf (concluding that a rational standard implementer would be willing to settle for more than three times the royalty level that the court deemed reasonable in *Microsoft Corp. v. Motorola, Inc.*, 2013 WL 2111217 (W.D. Wash., 25 Apr. 2013) in order to avoid a mere 1.2% chance of losing in court).

[112] European Commission, *Competition Policy Brief*, Issue 8 June 2014, citing an internal study.

relief.[113] By contrast, a SEP holder that makes a FRAND commitment agrees to license its SEPs to any standard implementer willing to pay a FRAND-compliant royalty, thus acknowledging that monetary compensation constitutes adequate remuneration for its SEPs.[114] Moreover, a key purpose of an injunction, preventing the use of the patented technology, is wholly inapplicable in the FRAND context. The very premise of a technical standard is that every feature of the standard—including every patented feature—must be implemented to achieve a single market-wide technical solution. The FRAND commitment is a promise to permit the use of the technology, in return for which the SEP holder is amply rewarded by securing a much larger market for its inventions than it could obtain otherwise.

Given that injunctions are designed to provide a remedy where monetary compensation cannot, injunctions should be reserved for the limited circumstances in which monetary damages are an insufficient remedy for patent infringement.[115] If a standard implementer is either unwilling or unable to pay a judicially-determined FRAND royalty, or is outside the court's jurisdiction so that monetary relief could not be enforced, monetary compensation may not be an adequate remedy. In these limited cases, an injunction should be available. Whenever the SEP holder is able to secure monetary compensation, however, the threat of injunctive relief serves no purpose other than to give the SEP

---

[113] *Nokia OYJ v. IPCom GmbH*, [2012] EWHC 1446 (Ch.), No. HC10 C01233, 18 May 2012 ("*Nokia v. IPCom*"), 5–6, as reported in Leon B. Greenfield, Hartmutschneider, & Joseph J. Mueller, *Beyond the Water's Edge: A Survey of Recent Non-U.S. Decisions*, 27 ANTITRUST 3, 53 (2013); *see also eBay Inc.*, 547 U.S. at 391 (patent-infringement injunctions are unavailable unless "remedies available at law, such as monetary damages, are inadequate to compensate for [the plaintiff's] injury").

[114] *Nokia v. IPCom*, as reported in http://www.fosspatents.com/2012/05/uk-high-court-denies-patent-injunction.html; *see Microsoft Corp. v. Motorola Inc.*, 2012 WL 1669676, at *10 (W.D. Wash. 14 May 2012), *aff'd*, 696 F.3d 872 (9th Cir. 2012).

[115] *See, e.g.*, EC MMI Press Release at 2 (Where there is "*a previous commitment to license SEPs on FRAND terms and the agreement of [the licensee] to accept a binding determination of the terms of a FRAND licence for SEPs by a third party - recourse to injunctions harms competition.*"); EC Samsung Press Release, at 1 ("recourse to injunctions ... may be abusive where SEPs are concerned and the potential licensee is willing to negotiate a licence" on FRAND terms); *Apple, Inc.*, 2012 WL 2376664, at *12 (Posner, J.).

holders market power to extract royalties above the FRAND levels that they contractually agreed to accept.[116]

### *ix. Royalty Stacking*

The hold-up problem—the imposition of excessive SEP royalties on standard implementers—is exacerbated by "royalty stacking." This occurs when multiple patent holders set royalties on the same product independently of each other without regard to the aggregate royalty burden. Royalty stacking results in higher aggregate royalties compared to the royalty burden that would be imposed by a single licensor that owned all of the licensed patents.[117] This problem is further exacerbated by the staggering number of patents that may be used in contemporary high tech products. According to one widely cited estimate, more than 250,000 patents may be used in a smartphone.[118] Although no comparable estimate exists for the number of SEPs that are used in a particular product, it is estimated that thousands of SEPs are used in some standards,[119] and the number of standards implemented in many high-tech products is itself quite large.[120] Thus, when a SEP holder seeks a 2.25% royalty on the value of a PC or smart phone for a small percentage of the SEPs on just two standards, and another SEP holder demands royalties that exceed the price of a Wi-Fi chip for a license to two out of the thousands of Wi-Fi SEPs, the royalty stack that would result if other SEP holders follow suit would cause prices of high-tech devices to increase by at least an order of magnitude. Such

---

[116] *See* Order, *Samsung Electronics Co. Ltd, v. S.A.R.L Apple France*, No. 11/58301, Tribunal De Grande Instance, Paris, at 14 (8 December 2011) (noting that the purpose of the rules requiring irrevocability of FRAND is to prevent an SEP holder "*from taking advantage of his necessarily dominant position in order to abuse of it and, by revoking the authorisation to exploit the patent ... to prevent a competitor from having access to the market or to develop his own products*").

[117] Lemley & Shapiro, 85 Tex. L. Rev. at 2015.

[118] *See, e.g., RPX Corporation*, Amendment No. 3 to Form S-1, 11 Apr. 2011, at 59, *available at* http://www.sec.gov/Archives/edgar/data/1509432/000119312511101007/ds1a.htm; Steve Lohr, *Apple-Samsung Case Shows Smartphone as Legal Magnet*, New York Times, 25 Aug. 2012, *available at* http://www.nytimes.com/2012/08/26/technology/apple-samsung-case-shows-smartphone-as-lawsuit-magnet.html

[119] Lemley & Shapiro, 85 Tex. L. Rev. (1991)

[120] *See* footnote 34.

royalty demands are entirely inconsistent with the *ex-ante* royalty that FRAND commitments are designed to preserve.[121]

### 1.3. Statement of Problems

The researcher has examined the complexities in the standards settings process and its impact on patent rights and competition. The researcher has attempted to identify the inadequacies in the standards settings regime and has identified the broad legal issues surrounding the use of patents in the SSOs in the following sections that has compelled the present research.

Since at the start of the standardization process nobody knows what technologies will be included in the standard, none of the participants initially know who will end up having the most essential patents included in the standard. Thus, each participant tries to ensure that at least a few patents of its sponsoring firm are included in the standard so that such a firm will have access to a wider pool of licensees. The pushing for competitive advantage has foreseeable consequences for patent licensing. Patent license disputes[122] from outside the SSO context suggest that, if participants were to wait until after the standard were set before working out any license terms, the SEP holders could hold up standards adopters for a disproportionate share of the standardized technology's substantial coordination value. The holdup plays on a gap in projected returns that depends on continued access to the standardized technology: Once the standard is set, users invest in making goods and services that use the specification. If a user was then denied access to the standard technology, and the standard compliant assets were sold at market value, the return on those investments would be far lower than first projected i.e., when continued access was assumed. After all, if other providers enjoy continued access to the standard, and the interface dependent market thrives,

[121] *See Article 101* Guidelines, *§ 289*; *Microsoft*, 2013 U.S. Dist. LEXIS 60233 at 43, 63-64.

[122] Cotter, Thomas F., Patent Holdup, Patent Remedies, and Antitrust Responses (December 10, 2008). Journal of Corporation Law, Vol. 34, No. 1151, 2009; Minnesota Legal Studies Research Paper No. 08-39. Available at SSRN: http://ssrn.com/abstract=1273293 or http://dx.doi.org/10.2139/ssrn.1273293, last visited on May 16, 2016.

how much will consumers pay for the shut-out party's nonstandard product? This scenario is not unique to the standards setting context. Economists have long called the problem "asset specificity."[123]

The RAND (Reasonable and Non-Discriminatory) licensing promise, which is an early agreement on the framework for later negotiation, is utilized to counter the ill effects of the ignorance and is designed to prevent this holdup problem. Given the risk of holdup, it is natural for an outsider to wonder why SSOs insist merely that each participant promise to license all adopters on reasonable terms later, rather than insisting that participants negotiate detailed license terms with the adopter community before a standard is finalized. There are two main reasons, one legal and one practical. First, assuming it were possible for participants to hammer out detailed license terms before the standard is determined, the prospect of antitrust liability deters a SSO from being a forum for adopters to bargain as a group with participant patentees. Second, it is *not* possible to specify in advance a set of detailed, tailored license terms for SEPs. Frontline workgroup participants are not equipped to engage meaningfully with the details of licensing deals that will shape the market for the interface. Individuals who participate in standard setting are, for the most part, engineers unschooled in business considerations and unequipped to address the costs and related competitive implications of their technical specification-writing exercises. And even if they *were an* expert in business and licensing details, SSO participants would *still* face data gaps that render highly detailed negotiations nearly impossible at the time of standard setting.

Some of the gaps would relate to the existence of patents. Before the standard is established, it is unclear which, if any, of the participants will own SEPs. This uncertainty is compound, comprising questions about both whose technology the standard will incorporate, and whether the contributor in

[123]Benjamin Klein, "*Asset Specificity and Holdups*", p.1, available at http://www.masonlec.org/site/files/2012/05/WrightBaye_klein-b-asset-specificity-and-holdups.pdf, last visited April 14, 2013.

question owns a patent covering that technology. Once all SEPs come to light, negotiations may take account of each patent's centrality to the standardized technology, relative to all the other SEPs. Other gaps would relate to the future market for products that include that standardized interface such as: What unstandardized products will affect the price of standardized products early in the product cycle, and how will that change as more people adopt the standardized product? What plans, if any, should be made for adjustable license terms that take account of price changes in the market, and what should the adjustment formulae be?

Calibrated royalty rates should take into account of the answers to these and myriad other patent and market questions, but most of the answers will not be known (or known in sufficient detail) until after the SSO has established the standard and producers have begun selling standardized products. Ex ante licensing is thus likely to take place only at a general level, e.g., with short terms sheets that foreswear royalties above a benchmarked cap. It is a folly to expect, much less insist upon, ex ante negotiation of detailed, tailored license terms much beyond the royalty-free and RAND options. And, against this backdrop, the RAND promise's mandate that license terms be "reasonable" is not needlessly vague. Rather, it is appropriately open-textured, given that participants in the standard-setting process do not yet know the contours of the standard that will emerge, or how the as-yet unknown patents essential to the standard should be valued in the standard-based market that develops. As Professor Lemley notes[124], "parties need not specify a price in order to create a binding agreement. In the absence of a price, courts will supply a reasonable and customary price term," and other reasonable terms as well.

Including patented technology in standards can benefit the efficacy and value of a standard, and, as a result, ultimately prove to be in the public interest.

---

[124] Mark A. Lemley, *Intellectual Property Rights And Standard-Setting Organizations*, 90 Cal. L. Rev. 1889, 1893 (2002) at 1914.

Indeed, in many technical fields, a substantial percentage of standards-relevant innovation has invariably already been, or is in the process of being, patented at the time that a standard is developed. Incorporating these patented inventions can result in a standard with better performance (in whatever relevant dimension), improved cost effectiveness, or a better match with other design requirements. Indeed, it is increasingly possible (as patents continue to proliferate) that some design requirements cannot be met at all without including patented technology. It is important to note also that the potential to include patented technology often creates incentives for participation in standard setting, and also attract parties that can contribute valuable technology, knowledge and insights. In addition, allowing standards to incorporate patented technology can create or keep in place long term incentives for parties to be engaged in research and development, particularly if these parties do not implement the technology themselves (which may be upstream technology developers).

The benefits of including patentable inventions in standards should be considered against the costs of incorporating such technology. These costs include the ensuing licensing burden (both procedural as well as economic) on the implementers, but also the various legal risks associated with implementing patented technologies in products, and especially where the owner of a technology is not subject to a licensing obligation under the IPR policy in question, or where ambiguities in the IPR policy leave room for subsequent disputes. There is also the risk that an SSO might discover, after a standard has already been released and widely adopted, that not all essential claims are available on terms that the marketplace finds to be acceptable. In such a situation, the SSO may need to withdraw or modify an existing standard, resulting in considerable costs for the companies involved and society at large. Where this is a practical impossibility, due to the extent that industry has already become "locked in" to implementing the standard, lengthy and

expensive litigation between the owner of the technology and an (often random and unfortunate) sampling of implementers can be the result.

In a standards context where the IPR licensing policy is undefined, a vertically integrated company may have incentives to get its IP to read onto standards for two reasons. First, in order to tap into the potentially lucrative revenue streams of IP licensing from other companies making use of its IP. Second, by getting its IP to read onto a standard, a vertically-integrated company can raise the relative costs of implementation for its competitors in the downstream market. Even in the case where a vertically-integrated company fails to get its IP included in the eventual standard, it can still lower its implementation costs vis-à-vis pure downstream companies by concluding cross-licenses with other vertically integrated companies, which were successful in getting their IP included. Pure IP companies on the other hand would seem to only have incentives to get their IP included in a standard in so far as they can monetize that IP directly into licensing fees, although there may also be some weaker incentives to benefit indirectly through complementary assets not essential to the standard. Unlike vertically integrated companies, a pure IP company may not be interested in cross-licensing. Pure downstream companies which do not have any IP clearly have incentives to lower their standard implementation costs as much as possible in order to maximize their final product margins, in so far as this drive does not affect the technological quality to the extent consumers are put off.

### 1.4. Objectives of the Study

This research attempts to examine the following:

1. to study the practices in SSOs that may cause hold-up and the impact of such hold-ups and possible solutions thereof.
2. to examine the IPR policies of SSOs to understand the similarities, differences, and uncertainties in the IPR policies and their impact on the SSOs and its participants.

3. to examine the ex-ante licensing provisions and the challenges in practicing ex-ante licensing provisions and its impact.
4. to study the effect of inclusion of patented technologies into a Standard and the mechanisms that need to in place to balance the interests of the SEP holders and SEP implementers and the cost and benefits of including such patented technology into a standard.
5. to study the disclosure requirements of SSOs and its usefulness.
6. to study the FRAND licensing practices and its impact and standards settings bodies and its participants.
7. to examine various licensing clauses in a FRAND based licensing agreement that can lead to anti-competitive effects.
8. to examine the appropriateness of injunctions in SEP infringement cases and the possible misuse of injunctions to extract higher royalties
9. to propose an appropriate legal and policy framework to avoid or minimize misuse of rights associated with SEPs. The legal and policy framework is intended to bring about a right balance between the interests of SEP holders and standards implementers.

### 1.5 Research Questions

In order to fulfil the objectives, the researcher attempts to answer the following research questions:

- whether the telecommunications SSOs have a policy which would be binding on its members and whether such binding nature has any effect on the standards and its participants and whether legal basis for the formation of the SSOs have any impact on the binding nature of the decisions made by the SSOs.
- Whether the patent policies of the telecommunications SSOs differ from each other and would that impact the disclosure of patents essential to standards and the licensing provisions.
- Whether the disclosure policy of the telecommunications SSOs achieving the intended transparency for the participants to gain an

insight into patents declared as essential to standards and whether such disclosure policy has led to under or over disclosure of patents and what it impact on the SSOs, its participants and adaption of standards.

- Whether the patents declared as essential to standards (SEPs) differ substantially in nature as compared to other patents and whether there is a need for amending patent law to address the nature of SEPs.
- Whether seeking the royalty at the level of end product led to payment of excessive royalties and whether such excessive royalties have any anti-competitive effects and whether there are alternatives to seeking royalties at the level end-product and whether such alternatives have any adverse impact on competition and participation in the SSOs
- Whether implementers (or licensees) end-up paying higher than reasonable royalties under the threat of SEP holders seeking injunctions and whether the injunction should be even available to SEP holders except under limited circumstances
- Whether imposing conditions in an agreement not to challenge the validity, essentiality, and infringement of the SEPs lead to anti-competitive practices and whether such conditions have impact on the reasonable royalties and adaptation of standards.

### 1.6. Scope and limitations of the Study

This research endeavor attempts to understand the use of patent rights of the various participants in twelve telecommunications related technology Standards Settings Organizations (SSOs) (sample space SSOs) and how certain behaviors of the SEP holders and Standards implementers that cause imbalances in these SSOs. This research is confined to such behaviors of the participants in sample space SSOs and its effect in the telecommunications industry. This research did not deal with criteria for patentability, examination procedures for granting patents, usability or technical feasibility of a patented invention ad whether such patented invention is suitable to become a SEP. This

research did not deal with issues in non-ICT SSOs. This research did not deal in detail the effect of such behaviors of sample space SSO participants on the end users or consumers.

This research analyzes the issues related to the sample space SSOs operating in the telecommunications sector and especially in the cellular and wireless arena within the telecommunications sector. This research uses empirical study and then analytical methods to compare the patent policies of these sample space SSOs to arrive at conclusions on binding nature, disclosure volume, transparency objective of disclosure, and effective sharing of information between patent offices and SSOs based on the policies of these sample space SSOs. Further, this research is confined to doctrinal analysis of case laws and orders by commissions in USA, EU, China, and India to arrive at conclusions on whether the SEPs should be treated as a special group of patents, basis for determining reasonable royalties, appropriateness of injunctions for SEPs, and anti-competitive effect of certain licensing clauses related to validity of a SEP, essentiality of a SEP, and infringement of a SEP. This research has come-up with conclusions based on the said analysis.

This research studies the use of IPRs and its effect on competition in SSOs. In order to carry out this successfully, the EU, US, Indian case laws, policy briefs, submissions made by various interested parties to government organizations throughout the world, orders of the quasi-judicial bodies such as EU commission, Federal Trade Commission (FTC), US, the Competition Commission of India (CCI), and other such bodies have been studied. However, not all cases relevant to the topic of this research may be covered.

- The issues caused due to abuse of patent rights by SEP holders and its effect on competition has been covered in appropriate detail. The issues related to abuse of other forms of IPRs such as copyrights or designs have not been studied as a part of this research.
- The developments in the IPR policies of SSOs and their impact in the last 20 years i.e., 1995 to 2015 have been studied in this research.

- The researcher has used internet sources extensively and the research is not bound by the accuracy of the data or information provided in these internet sources.
- The research has extensively focused this study on IP issues of wireless SSOs within the ICT arena.
- The researcher has focused this research to study how abuse of IP rights by a SEP holder will affect the competition and has not focused in detail on the effect of such abuse of IP rights on end users (or consumers).

The researcher has studied the developments in EU. US, and India primarily to arrive at inferences, however, there may be several developments outside these countries and the researcher has not considered such developments outside these countries to arrive at the inferences.

### 1.7. Research Methodology

The researcher used a combination of empirical, analytical and doctrinal study during this research. In order to build the basic knowledge about SSOs and their IPR policies and practices empirical and analytical methods are used. Empirical study was carried out based on the secondary data collected. In order to understand the legal positions in India and other countries library research was used to collect the literature, after which the doctrinal method was used to analyze and deduce common threads to build legal arguments. The research adopted a research design anchored in doctrinal analysis of EU, US, Indian case laws, policy briefs, submissions made by various interested parties to government organizations throughout the world, orders of the quasi-judicial bodies such as EU commission, Federal Trade Commission (FTC), US, the Competition Commission of India (CCI), and other such bodies. This research will use deduction and induction logic to arrive at some principles on which the patent policies of the SSOs may be developed.

#### 1.7.1. Sources of Data

In order to carry out this research, the researcher has used a combination of primary and secondary data. The researcher would carry out mostly library

research to understand the various facets of the above mentioned issues. The data required for this research was obtained through a combination of library research and internet research. A detailed bibliography provided below will enumerate the materials used the purpose of the research.

### 1.8. Chapterization

This research work will be presented in 10 chapters.

*Chapter 1* introduces the research area outlining the structure of SSOs, the issues caused due to abuse of SEPs by SEP holder, scope, and methodology in carrying out this research.

*Chapter 2* introduces relevant ICT based International SSOs and their patent policies and compares the patent polices.

*Chapter 3* introduces relevant ICT based Indian SSOs and their patent policies and compares the patent polices and further examines the relationship between SSOs and the Patent offices.

*Chapter 4* examines the special nature of Standard Essential Patents (SEP).

*Chapter 5* examines the disclosure policy of SSOs and its impact on standards settings, SEP holders, and SEP implementers.

*Chapter 6* examines the issues with the determination of reasonable royalties and provides a new approach for determining reasonable royalties for SEPs.

Chapter 7 examines the issues with availability of Injunctions to SEPs and provides a new approach to grant of Injunctive relief.

*Chapter 8* examines the SEP licensing clauses and their impact on competition.

*Chapter 9* draws conclusions and indicates the scope for future work.

### 1.9: Conclusion

The overview of the issues at the interface of patents and competition in standards settings organization is an important area and it is worthwhile to

conduct a detailed study. The following chapters are designed to address the research problems enumerated above.