DETERMINING RELEVANT MARKET TO ESTABLISH DOMINANCE IN STANDARD ESSENTIAL PATENT LICENSING DISPUTES: A COMPARATIVE STUDY

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Abstract

The process of standardization aims to ensure the inter-operability of certain products in the marketplace. Standard Setting Organizations, through its policies, require the Standard Essential Patent (SEP) holders to license their technology to other market players of fair, reasonable and non-discriminatory terms. But the problem arises when the SEP holder after getting his technology implemented into the standard acquires the dominant position. The process of standard setting can potentially create market power as it enhances the value of technology by reducing the number of close substitutes and may also eliminate competition. In order for the conduct of firms to have appreciable adverse effect on competition within the meaning of Competition Act, 2002, there must be market power. Market power is a key factor considered by competition authorities to analyse alleged anti-competitive conduct. The analysis involves two steps where in the first step "dominance" or the ability of a firm to act independently of its competitors and customers is estimated and the second step is an assessment of the alleged abusive behaviour. Both the steps are necessary to establish anti-competitive conduct. The relevant market determination for the determination of market power is a complex task when it comes to tangible goods and further when it comes to SEPs it becomes even more challenging. This paper investigates the concept of "relevant market" and "abuse of dominance" determination in the case of SEP licensing and breach of Fair, Reasonable and Non-Discriminatory (FRAND) commitments. It analyses the position in India and jurisprudence developed in European Union and United States and argues that the determination of relevant market should move from form-based to effect-based approach and identifies potential sources of evidence for establishing dominance in the SEP market that would be useful in SEP litigations in India.

Keywords: Dominance, Competitiveness, Network Effects, Litigations, Jurisdictions.

1. Introduction

In the past, it was a common belief that a patent conveyed market power and the competition / antitrust law attached market power presumption with ownership of patents. The market power presumption arose in the case of *United States* v. *Loews*,[1] where it was held that there is a presumption of market power when the tying product is patented or copyrighted. The doctrine has been discredited for the want of inquiry into the adverse economic effects abandoning the 'per se' criterion as the tie-in could have potential economic benefits.[2] Empirical evidence has established that distribution of patent value is skewed and most patent inventions are worth, while little and very few have considerable value.[3] The process of standard setting can potentially create market power as it enhances the value of technology by reducing the number of close substitutes and may even lead to elimination of competition. In settings where compatibility requirements are high, the choice of standard may eliminate competing technologies.[4]

In order for the conduct of firms to have appreciable adverse effect on competition within the meaning of Indian Competition Act, 2002 there must be market power. Market power is a key factor considered by competition authorities to analyse alleged anti-competitive conduct. The analysis involves two steps where in the first step 'dominance' or the ability of a firm to act independently of its competitors and customers is estimated and the second step is an assessment of the alleged abusive behaviour. It is an analysis of the allegedly abusive behaviour whether there is an anti-competitive conduct or not. Both the steps are necessary to establish anti-competitive conduct. The first step is performed by the competition authorities wherein dominance is established by reference to the market power of a firm. Therefore, market power is a crucial element in cases involving abuse of dominance.

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1 (1962) 371 U.S. 38, 45.

2 *Jefferson Parish Hospital District No. 2* v. *Hyde*, (1984) 466 U.S. 2.

3 Mark Schankerman, "How Valuable is Patent Protection? Estimates by Technology Field" 29 *The RAND Journal of Economics* 77-107 (1998); M. Scherer, Dietmar Harhoff and Joerg Kukies, "Uncertainty and Size Distribution of Rewards from Innovation" 10 *Journal of Evolutionary Economics* 175-200 (2000); Jean Lanjouw, "Patent Protection in the Shadow of Infringement: Simulation Estimations of Patent Value" 65 *Review of Economic Studies* 671- 710 (1998).

4 Richard T. Rapp and Lauren J. Stiroh, *Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy Washington*, Joint Hearings of the United States Department of Justice and the Federal Trade Commission Washington, D.C. (April 18, 2002).

The competition issues related to standardization revolve around the unilateral conduct of undertakings holding standard essential patents. In the context of formal standards, it is therefore important to understand the conditions under which market power is created and the conditions that standardization agreement may fulfil to avoid such risks such as - disclosures and FRAND commitments. Standard compliant products will confer upon their proprietor's appreciable market power. There are two explanations for this – sunk costs and network effects. Sunk costs refers to substantial non-recoverable costs which firms may have invested participating in the standards development and in tailoring their business in manufacturing standard compliant products.[5] Network effects refers to the special characteristics present on markets where standards are set to promote compatibility and interoperability between products from different manufacturers.

On the basis of the number of users of compatible products the value or utility from a good or service is derived by a user in network effects. It is believed that once the technology is included in a standard, the owner of the Intellectual Property Rights (IPR) relating to that technology in most, if not all, situations acquires a dominant position vis-à-vis manufacturers requiring licenses (Dolmans, 2002). However, most agencies that have addressed issues pertaining to inclusion of patents into standards agree that SEPs generally do not confer market power to its owners and the question of market power can only be assessed on a case by case basis.[6]

The relevant market determination for the determination of market power is a complex task when it comes to tangible goods and further when it comes to IPR and standards, it becomes even more challenging. With IPR and standard essential patents, the competitive conditions on at least three distinct markets need to be assessed - the technology market, the standards market and the product market. A careful analysis is

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5 Joseph Farrell, John Hayes, *et. al*., "Standard Setting, Patents, and Hold-up" 74 *Antitrust Law Journal* 603 (2007).

6 Edith Ramirez, "*Standard-Essential Patents and Licensing: An Antitrust Enforcement Perspective*" Federal Trade Commission, 8th Annual Global Antitrust Enforcement Symposium Georgetown University Law Center Washington, DC (September 10, 2014); U.S. Department of Justice & Federal Trade Commission, "Antitrust Guidelines For The Licensing Of Intellectual Property (Draft)" 2.2 (2016); EU Communication From The Commission, "Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to horizontal co-operation agreements" *Official Journal of European Union*, 2011/C 11/01 (2011); *Illinois Tool Works, Inc.* v. *Independent Ink, Inc.* (2006) 547 US 28.

required to study the market analysis that the agencies have adopted to make market determination with respect to standards.

2. Dominance and Standard Essential Patents in India

There are about half a dozen cases with respect to SEPs and telecommunication sector in India. The debate over SEP related issues is still at a nascent stage in India but it has raised pertinent jurisprudential issues qua the interface between competition and patent law. In all the cases that appeared before the Commission, abuse of dominance under Section 4 of Competition Act, 2002 was alleged. The Indian mobile manufacturers alleged that the SEP holders were dominant in the relevant market and abused their dominant position. The Delhi High Court while determining whether the Competition Commission of India (CCI) has jurisdiction to investigate a complaint against Ericsson with respect to standard essential patents noted that the Patents Act, 1970 despite being a special statute where the patents are concerned, would only override the Competition Act in case there is an inconsistency. This means that the two legislations could operate harmoniously provided the remedies offered by the two Acts were not mutually exclusive. Both the legislations contemplate the exercise of jurisdiction by different regulators.[7]

In a complaint filed against Ericsson by Micromax alleging abuse of dominance under Section 19(1) (a), the complainant suggested that the royalty demanded by Ericsson was unfair, discriminatory, exorbitant and excessive.[8] Micromax further accused excessive royalty rates being charged by Ericsson which were contrary to the FRAND terms as they had no linkage to the patented product and it refused to share the licensing terms negotiated with the other licensees. This was substantiated by the non-disclosure agreements that Ericsson had made the licensees sign which indicated that different rates of royalty were charged and there was no uniformity in this regard. Micromax suggested that Ericsson's method to calculate royalty rate was erroneous and the rate should be on the basis of the chipset or the technology instead of the final value of a phone that uses such technology.

The Commission was of the view that Ericsson has a dominant position in the market of Global System for Mobile Communications (GSM) as it held around 33,000

[7] *Telefonaktiebolaget LM Ericsson* v. *Competition Commission of India*, W.P. (C) Nos. 464/2014 and 1006/2014.

[8] Case No. 50/2013, Competition Commission of India, order dated 12.11.2013.

patents in GSM and Code Division Multiple Access (CDMA). It was the largest holder of SEP in 2G, 3G and Edge technology. As there was no alternative present for such a technology it was determined that it enjoys dominance. The opinion of the Commission in the Order read as follows: *"From the perusal of the information and the documents filed by the Informant prima facie it is apparent that Ericsson is dominant in the relevant market of GSM and CDMA…"* In the Commission's opinion the firms holding of a standard is indicative of absence of alternate technology and signifies market power and dominance. The market so defined in this case and similarly in the other complaints received by CCI suggested dominance of the enterprise which along with the alleged anti-competitive behaviour called for further investigation by the Director General. However, later in the year 2018 both the parties withdrew all the pending disputes from Delhi High Court and Micromax signed a global patent licence from Ericsson, under which it agreed to pay royalties to Ericsson for sale of every phone that uses 2G or 3G technology in India or abroad. Micromax also withdrew all the pending complaints from Competition Commission of India against Ericsson.[9]

Recently, the Supreme Court had rejected an order by Competition Appellate Tribunal criticizing the "myopic" definition of relevant market and stated that "*the concept of relevant market implies that there could be an effective competition between the products which form part of it and this presupposes that there is a sufficient degree of interchangeability between all the products forming part of the same market insofar as specific use of such product is concerned and the CCI must look at evidence that is available and relevant to the case at hand while determining the relevant market*"[10].

However, in cases relating to SEP related FRAND disputes markets are defined based on patented technology which presumes dominance even before assessing market definition. With newer business models developing and with the rapid growth technology driven markets there is a need to stay aware of the risks of defining the market too narrowly by not taking in account asymmetric substitutions.

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[9] Gulveen Aulakh "Micromax to take global patent licence from Ericsson", *The Economic Times* (Mar 14, 2018), *available at*: https://economictimes.indiatimes.com/news/company/corporate-trends/micromax-to-take-global-patent-licence-from-ericsson/articleshow/63293517.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst (last visited on Aug 14, 2022).

[10] *CCI* v. *Coordination Committee of Artists and Technicians of WB Films and Television*, (Civil Appeal 6691/2014 dated 07.03.2017).

2.1. '*Per Se*' Approach

The scope afforded to Section 4 of Competition Act, 2002 provides for a '*per se*' approach for assessing abuse once dominance is established. The usage of the word 'shall' under Section 4 in a form based approach is the guiding factor enabling conditions for a '*per se*' decision. While making an enquiry into dominance the Commission must consider the factors listed out under Section 19(4).[11] Various tests and concepts are employed under competition law that are either presumption or form based which are simple and may provide legal certainty and effects based that involve use of economics and complex quantitative techniques which are more accurate. It is argued that form based approach may be inadequate in cases involving SEPs as dominance is a temporary phenomenon in the telecommunications sector as it is highly innovative with ever expanding horizons.[12]

In such a market the entry of new firms with competing and disruptive technologies is the hallmark. The dominance in such a sector is often temporary and the competitive constraints restrict the ability of SEP owners to charge exorbitant royalties. An 'effects-based' approach however would be appropriate in defining the market. The approach adopted by competition authorities in defining the technology market is similar to any other relevant market definition that is on the basis of substitutability which identifies close substitutes with the help of the Small but Significant Non-Transitory Increase in Prices (SSNIP) test.

If close substitutes are not available, reasonable substitute technologies or goods are considered. The substitutability criterion enables research to be targeted on any substitute products, making it possible to define the relevant product market and geographic market with a greater degree of certainty. The SSNIP is taken to be either 5 per cent or 10 per cent. Therefore, it is also known, sometimes, as the 5-10 per cent test or Hypothetical Monopolist (HM) test. SSNIP test could help in understanding the market and ranking alternate technologies and SEPs based on the popularity could help to comprehend whether the patent is "essential".[13] An "effects-based" approach helps in

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[11] Competition Act, 2002 (Act 12 of 2003), s. 19 (4).

[12] Geeta Gouri, "Competition Law and Standard essential patent (SEP) in India: A Few Critical Issues to Ponder", in A. Bharadwaj, V. Devaiah, I. Gupta (eds), *Multi-dimensional Approaches Towards New Technology* 231-242 (Springer Singapore, 2018).

[13] *Ibid.*

defining the market appropriately. It helps in developing a clear understanding of the concept "essential" so as to determine dominance. It is imperative to have an appropriate assessment of dominance as being in a dominant position is not an offence *per se* and it is the primary step towards determining abuse. An inappropriate assessment could hamper the innovation and development in the telecommunication sector.

The Delhi High Court calculated royalty on the basis of net sales of the product as opposed to the approach adopted by CCI on the basis of Smallest Salable Patent Practicing Unit (SSPPU) (i.e. royalty to be determined on the basis of technology which is licensed) as it was of the opinion that the technology adds value to the existing product thereby making it more advanced. This approach by Delhi High Court suggests that market power cannot be determined without understanding the specific market forces at play.

3. Network Effects

In assessing market power, first the relevant market is defined and then the assessment revolves around the measurement of market shares held by the firm. Market share has a central role in the assessment of market power. It is logical to consider a firm having the highest market share to have maximum market power. Though the market share threshold is used by competition authorities explicitly in assessing the market, however, a firm's high market share is not sufficient to conclude that it is dominant.[14] Market power in case of standard needs to be understood in the light of market forces at play. Interoperability standards are likely to confer market power to its owners due to network effects.

In network effects the utility of a product is directly or indirectly linked to the total number of compatible/interoperable products. Network effects provides an explanation as to why markets "tip" in favour of a single standard and why significant market power is likely to arise in the context of Information and Communication Technology (ICT) standardization.[15] Telecommunication sector is at the heart of the network effect. Standardization on a single technology occurs due to network effects. The advantage of adoption of a particular standard at the initial stage influences consumer

[14] Massimo Motta, *Competition Policy, Theory and Practice* (Cambridge University Press, European University Institute, Florence, 2015).

[15] *Supra* note 5 at 604.

expectations and encourages the innovators to invest in sunk costs necessary to develop the technology. The last two decades has been a witness to a growing economy of high tech consumer electronic products which exhibits network effects.

Network effects were central to the pleadings in the antitrust pleadings against *in United States* v. *Microsoft.*[16] It was contended that Microsoft had used its large user base to encourage software developers and hardware developers to promote Windows. This led to MS Office becoming the dominant suite for business and personal use thereby making the competing operating system's unattractive. This is the reason networks markets are tippy, making the coexistence of incompatible products unstable with a single winning standard dominating the market.[17] As more users adopt a particular technology its utility value increases and this creates an incentive for others to adopt the same technology resulting in less room for alternate competing technologies.

Once a sufficient number of users embrace a given technology in a networks market there is tendency of the market to tip in the favour of technologies having widespread acceptance leaving competing technologies to become obsolete. However, it is not always that the market will tip towards a single technology nor does the unassailable advantage last forever. The kind of advantage that Microsoft had in the late 1990s has eroded in recent years as the pace of technological innovations quickened. Several competing technologies also exist in the same market as there are sufficient numbers of users for Apple IoS, Google Android, Microsoft Windows each offering a wide variety of apps. However, once a market becomes 'locked-in' to a particular standard the holder of the standards gains the control to act as market barrier and confer on them dominant position.

Expectations play a crucial role in deciding which technology to choose on the basis of their expectations about its diffusion on the market- large user base would result in larger product utility.[18] A number of factors are therefore responsible in adoption of a standard and not merely its superiority from a technical perspective, *for e.g.*, size of the firm supporting the technology and the promotion around it have an influence on the

[16] 253 F.3d 34 (D.C. Cir. 2001).

[17] Stanley M. Besen and Joseph Farrell, "Choosing How to Compete: Strategies and Tactics in Standardization" 8 *Journal of Economic Perspectives* 117-131 (1994).

[18] David Teylas, *The Interface between Competition Law, Patents and Technical Standards*, (Kluwer Law International, 2014).

consumers. This may also result in reluctance to adopt new technologies due to the uncertainty with respect to other prospective users' behaviour.[19] This phenomenon is called "excess inertia" - a socially excessive reluctance to switch to a superior new standard when important network externalities are present in the current one.[20] Network markets are therefore characterized by strong demand side economies of scale.[21] Adopting a standardized product benefits others who adopt it. The potential entrant faces challenges not only with respect to proving technical superiority but also that its technology is capable of gaining widespread adoption. This task is even more difficult in case of standards with strong presence. Strong network effects may make the market impenetrable for new entrants after standard adoption and restrict market access.

4. Standard Essential Patents and Dominance in Other Jurisdictions

Dominance is defined as a position of strength enjoyed by an enterprise, in the relevant market, which enables it to: a) operate independently of the competitive forces prevailing in the relevant market; or b) affect its competitors or consumers or the relevant market in its favour.[22] To determine relevant markets the assessment of relevant product markets and geographic markets are considered to be important elements.

In the United States, monopoly power is referred to the power of an enterprise to control prices and exclude competition.[23] In several European Union case laws the courts have opined that dominance follows from the fact that an undertaking enjoys a position of economic strength which enables it to prevent effective competition by affording it the power to behave to an appreciable extent independently of its competitors, its customers and ultimately of the consumers.[24] In SEP context it would mean the power of an SEP holder to set excessive or discriminatory royalty prices and other conditions in the licensing agreement. The process of assessment of market power requires determination of relevant markets on the basis of identification of competitive constraints

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19 *Supra* note 17.

20 Joseph Farrell, Garth Saloner. "Installed Base and Compatibility: Innovation, Product Preannouncements, and Predation." 76 *The American Economic Review* 940–55 (1986).

21 *Supra* note 17.

22 *Supra* note 11, s. 4.

23 *Cellophane Case United States* v. *E. I. du Pont de Nemours & Co*. (1956) 351 U.S. 377, 391.

24 *Hoffmann-La Roche* v. *Commission* (1979) Case 85/76 ECR 461; *United Brands Co*. v. *Commission* (1979) 27/76 ECR 00207; EU Communication from the Commission, "Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings, 52009XC0224(01)" (Feb 24, 2009).

faced by the undertakings in a systematic manner. The objective is to define a market in a manner that identifies the actual competitors of the undertakings involved that may potentially constrain the behaviour of the undertakings and prevent them from behaving independently of effective competitive pressure.

4.1. Approach in EU

The EU competition instruments comprises of rules on anticompetitive agreements, abuse of dominant position and merger control and provides relevant guidance on the conduct of firms involving IPRs. The most fundamental EU rules on competition are found in the Treaty on the Functioning of the European Union (TFEU), but secondary EU legislation and European Commission (EU) guidelines are also highly relevant.[25] Specific rules on restraints on specific agreements dealing with IPRs such as technology transfer, R&D or specialization agreements are provided under EU competition law. The EC recently published a Communication entitled "Setting out the EU approach to Standard Essential Patents".[26] The objective of these instruments is to incentivize the holders of intellectual property with leeway to impose certain restraints on licensees so as to promote innovation. According to the European Commission Guidelines on the application of Article 101 of the TFEU to technology transfer Agreements (2014):

> "[*t]he fact that intellectual property laws grant exclusive rights of exploitation does not imply that intellectual property rights are immune from competition law intervention. Nor does it imply that there is an inherent conflict between intellectual property rights and the [EU] competition rules. Indeed, both bodies of law share the same basic objective of promoting consumer welfare and efficient allocation of resources.*"

[25] EU Commission Regulation, *The Application of Article 101(3) TFEU to categories of technology transfer agreements (TTBER) and the accompanying Technology Transfer Guidelines*, Official Journal of the European Union, 316/2014 (March 21, 2014); EU Commission Regulation, "The R&D Block Exemption Regulation on the application of Article 101(3) TFEU to certain categories of research and development agreements" *Official Journal of the European Union*, 1217/2010 (Dec 18, 2010); The Horizontal Cooperation Guidelines, "EC Guidelines on the applicability of Article 101 TFEU to horizontal cooperation agreements" *Official Journal of the European Union* (2011).

[26] EU Communication from the Commission to the Institutions, "Setting out the EU approach to Standard Essential Patents", *Official Journal of the European Union* (Nov 28, 2017), *available at*: https://ec.europa.eu/docsroom/documents/26583.

There is a global consensus with regard to IPR and Competition Law being two bodies of law that are complementary. However, circumstances arise when there is conflict between the two. Article 102 TFEU prohibits any abuse of a dominant position and the EC's Guidance on enforcement priorities in applying Article 102 TFEU provides a framework for analysis on cases concerning exclusionary conduct and provides greater clarity and predictability to the Commission to determine the cases that would require intervention by the commission and also helps the undertakings in assessing whether a certain behaviour would result in intervention by the Commission.[27] It provides for abusive conduct involving refusal to license IPRs.

The EC's Horizontal Cooperation Guidelines, 2011 emphasizes on the role of FRAND commitments as a means to prevent abusive conduct by the holder of IPR by charging excessive or exorbitant royalties by the implementers of the technology once the industry has been locked-in after the adoption of the particular standard. The conduct of only those undertakings that enjoy a dominant position in relevant markets would be assessed for infringement under Article 102 TFEU which means it is necessary to assess dominance in relevant markets to determine abuse. When assessing market power of SEPs it is necessary to take into consideration three separate but interconnected market dimensions based on the analysis of EU Commission Guidelines and Google/Motorola merger decision, first, the technological markets in which the specific technology represents a market such as Wi-Fi, Bluetooth or USB technologies; second, the product markets, in which competition exists with regard to certain products and third being the SEP markets in which each SEP constitutes a separate market.[28]

4.1.1. Market share

Market shares is a proxy for market power (Section 5.3 of the Horizontal Guidelines, 2011). It is a preliminary factor to establish dominance of an enterprise in the relevant market however, high market share alone is not sufficient. There is no pre-

[27] EU Communication from the Commission, "Guidance on the Commission's enforcement priorities in applying Article 82 (now Article 102 TFEU) of the EC Treaty to abusive exclusionary conduct by dominant undertakings" *Official Journal of the European Union*, Document 52009XC0224(01), (February 24, 2009), *available at*: https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A52009XC0224%2801%29.

[28] Guillaume Dufey, "Patents and Standardisation: Competition Concerns in New Technology Markets," *The Interdisciplinary Centre for Competition Law and Policy (ICC), Global Antitrust Review* (2013).

determined threshold of market share, an analysis of cases decided by the courts and on the basis of Commission's Guidance following principles could be made out:

i. Market shares of 50% or more give rise to a rebuttable presumption of dominance (*AKZO Chemie BV* v. *Commission of the European Communities*, 1991);
ii. Dominance is not likely if the undertaking's market share is below 40% in the relevant market.[29]

Just like any other assessment of relevant markets in the context of SEPs, the purpose is to identify alternatives or appropriate substitutes to which licensees of that particular SEP would switch in response to a hypothetical small but significant increase in the relative royalties charged by the SEP holder. According to the ECJ in *Hoffmann-La Roche*,[30] a sufficient degree of interchangeability is required between the products forming part of the same market in order to ensure effective competition between those products. The market definition helps in assigning market shares to the various sources of competition and helps in identifying immediate competitive pressure which may act as a restraint. The technologies that are considered to be interchangeable by the licensees would constitute a relevant market for licensed technology rights.[31]

4.1.2. Dominance

EU's competition guidance provides that even if the establishment of a standard can potentially create or increase the market power there is no presumption of dominance or exercise of market power. The holding of essential patents should not be equated to exercise of market power.[32] In practice however the approach is very different as SEP holders are generally found to be dominant where the SEP relates to widely used standards. The manner in which the relevant market is defined affects determination of dominance in the defined market. If the market is defined very narrowly then it is likely for the enterprise to be in a dominant position. Where the relevant market is defined as

29 *Supra* note 27.

30 *Hoffmann-La Roche* v. *Commission*, Case 85/76 (1979) ECR 461.

31 EU Communication from The Commission, "Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements" *Official Journal of the European Union*, 2014/C 89/03, (March 28, 2014).

32 European Commission Communication from The Commission, "Guidelines On the Applicability of Article 101 Of The Treaty On the Functioning of the European Union to Horizontal Co-Operation Agreements" *Official Journal of the European Union*, 2011/C 11/01 (Jan 14, 2011).

the licensed SEP, in such cases owing to exclusivity, the owner of the SEP inevitably holds a market share of 100%. However, the mere ownership of an SEP does not in itself confer a dominant position.[33]

In *Google/Motorola Mobility*,[34] an EC merger decision in which the court made observations regarding potential competition concerns was raised in the exercise of SEPs. It was held by the Commission that the relevant market can be considered as the standard essential patent itself as it is necessary to comply with the standard as there cannot be any circumvention around it. Where a standard cannot be substituted by any other standard in such cases the market definition is very narrow. This means that the SEP holder owns 100% of market shares in a narrowly defined relevant market even though EC guidance categorically states that there is no presumption that holding or exercising IPR essential to a standard equates to the possession or exercise of market power. Therefore, practically, SEP holders whose SEPs cannot be substituted by any alternatives will likely be determined to be in a relevant position and the onus of proof will lie upon them to prove that they face competitive constraints that prevents it from exercising market power.

In the *Magill and RTE and ITP* v. *Commission*[35] the court held that the owner of an IPR is dominant if the ownership of the IPR enables them to foreclose potential competitors from a downstream product market. Similarly in the *Samsung*[36] and *Motorola*[37] cases concerned SEPs in the telecommunications sector where Samsung and Motorola sought injunctions against Apple on the basis of its alleged infringement of their respective SEPs. As per the FRAND terms and conditions of European Telecommunications Standard Institute (ETSI), both the companies had committed to license their SEPs on FRAND. The Commission in the absence of any objective justifications raised concerns in its preliminary conclusions about the compatibility of such injunctions with Article 102 TFEU as there was an explicit commitment to provide licenses on FRAND. The Commission was of the opinion that relevant product markets

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33 Case AT. 39939, Samsung, 2014 *Enforcement of UMTS standard essential patents.*

34 Case No COMP/M.6381, Google/ Motorola Mobility (Feb 13, 2012).

35 *Raidió Teilifís Éireann (RTÉ) and Independent Television Publications Ltd (ITP)* v. *Commission*, C-241/91 P and C-242/91 P (1995) E.C.R. I-743.

36 *Supra* note 33.

37 Case AT.39985 - Motorola, 2014 *Enforcement of GPRS Standard Essential Patents*.

encompass the licensing of technologies as specified in the respective standard technical specifications. As there were no substitutes for the implementers, the specific technology delineated a market in itself which would be considered a relevant product market. However, on the question of dominance the Commission opined that mere establishment of a standard does not render the holder of SEP to be in a dominant position.

Much like the SEP cases of Competition Commission of India, the European Commission has often been criticized for defining the market too narrowly and applying a wide interpretation in the case of abuse which reflects the interventionist approach of the commission in the market. Recently in *Intel* vs. *Commission*[38], the EU's General Court (GC) annulled the European Commission's 1.06 billion pound fine on Intel for abusing a dominant position with its rebate schemes. The Commission had defined the market narrowly as the market of x86 CPUs. In this case the findings of the General Court are aligned to 2017 ECJ Intel judgement where the Court observed that assessment must be on the basis of rigorous effects-based assessment and it must not merely rely on a formalistic approach based on "presumptions" of competitive harm. In this case the General Court observed that in addition to analysing the extent of the undertaking's dominant position on the relevant market it must also assess the share of market covered by the contested practice, the duration and amount of such naked restrictions and conditional rebates provided by Intel to its trading partners, and the assessment of the exclusionary conduct as-efficient competitors.

4.1.3. Other Competitive Constraints

Though the existence of competing standard to which the licensees may switch to, constitutes the most effective competitive constraint on SEP, there are other sources of evidence that can reflect competitive constraints which are listed below:

i) Countervailing bargaining power

Under the EU law, one of the key elements of countervailing bargaining power is the buyer's ability or credible threat to switch to competing suppliers. The bargaining strength of potential licensees may sufficiently deprive the SEP holder the power to act independently when setting royalty rates or while imposing other licensing conditions. In case of SEPs a single firm seldom controls all patents essential to the implementation of

[38] Case T-286/09 2022.

a standard and therefore in vertically integrated firms the independence and market power is likely to be constrained by the fact that their own downstream presence is dependent on reciprocal licenses. However, the countervailing power of few licensees does not obviously shield all licensees from the market power of the SEP holder.[39]

In EC's *Motorola*[40] decision, the Commission opened a formal antitrust investigation against MMI after complaints made by Apple that Motorola in contravention of commitments, gave to standard setting organizations with respect to General Packet Radio Service (GPRS) standard to distort competition by seeking injunctions in a German court in order to distort licensing negotiations. Motorola's contention was rejected by EC that it did not hold dominant position much less when it comes to Apple due to its countervailing bargaining power. The EC explained that its assessment whether Motorola enjoys a dominant position is based on the economic strength it enjoys as the holder of the GPRS SEPs with relation to the market as a whole, and not on the basis of its negotiating position with one or more customers. The EC further reasoned that, even if one or more potential licensees were to have bargaining power as regards the licensing of their patents (SEPs or non-SEPs), this could not be considered a sufficiently effective constraint on the dominance that Motorola holds given the lack of substitutes for GPRS SEPs.

ii) Dynamic Competition

An assessment of market power also needs to include an assessment of barriers to entry or growth (entry barriers) and of the rate of innovation. The importance of looking at competitive constraints while establishing dominance reflects effects based analysis by using econometric tools for such inquiry. In the case of interoperability standards, there is a tendency for a technology to get locked-in once they are successful in the market. There is an argument that the lock-in is temporary and the market will become competitive again when it is time to adopt the next generation of the standard.

However, an empirical study by Justus Baron *et. al.*[41] reveals that essential patents lead to more frequent upgrades of the standard, which would in turn delay

[39] *Supra* note 18.

[40] *Supra* note 37.

[41] Justus Baron and Tim Pohlmann, *et. al.*, "Essential patents and standard dynamics" 45 *Research Policy, Elsevier*, 1762-1773 (2016).

standard obsolescence. This type of continuous technological progress allows integrating new technological functionalities, while preserving at least partial backward compatibility, it significantly delays discontinuous standard replacements. In cases where ownership is concentrated or owners of SEPs are relatively more specialized on the technological field of the standards, they are less likely to be replaced. However, based on the evidence presented in paper they do not assert that standard essential patents lead to an inefficient lock-in of outdated standards. Nonetheless it is a known fact that consumers who have purchased products compliant to a particular standard may be reluctant to buy subsequent generations if backward compatibility is not allowed. This may act as a constraint for SSOs where the SEP owner violates its commitments as it may not be in the position to exclude such technologies.

iii) Entry barriers

The Courts and competition authorities generally use a combination of factors in order to assess market dominance in a given sector so as to avoid the potential pitfalls as no single factor is decisive. In case the SEP holder has high market share, any presumption regarding market power when the competitors are able to meet the demand of the consumers who can readily switch to other products is inapplicable. As per the EC Guidance Paper,[42] "an undertaking can be deterred from increasing prices if expansion or entry is likely, timely and sufficient". These barriers could be in the form of legal barriers (such as legislation conferring a statutory monopoly or intellectual property rights) or barriers such as economies of scale or scope, technological advantages or network effects.[43]

4.1.4. Abuse

Merely holding a dominant position is not unlawful, unless it is accompanied by anticompetitive conduct. A dominant firm infringes Article 102 TFEU only if it abuses its dominant position. There are broadly two kinds of abuses: exploitative and exclusionary. In a situation where a dominant undertaking exploits its customers by taking advantage of its market power it is an exploitative abuse whereas the conduct

[42] *Supra* note 27.

[43] Henry Mostyn, Cleary Gottlieb Steel, *et.al.*, *The Dominance and Monopolies Review: European Union* (The Law Reviews Shop, June 2021).

which affects effective competition by excluding (foreclosing) competitors is an exclusionary abuse.

i) Exclusionary Conduct

Though there are different forms of abuse the Guidance Paper limits itself to exclusionary conduct and in particular, certain specific types of exclusionary conduct. The Commission does not generally concern itself in cases which purely involve unfair pricing. A patent is by its very nature exclusionary, since the patent owner is granted exclusive rights to its use.

When a Search Engine Optimization (SEO) owner seeks an injunction against an alleged infringer, the proprietor may abuse its dominant position by:

> (i) excluding a rival manufacturer of standard-compliant products from the market, or
>
> (ii) inducing that manufacturer to accept disadvantageous licensing terms, compared to those which it may have accepted in the absence of injunctions being sought.[44]

ii) The Foreclosing of Competition

In *Magill*[45] case, the court held that a refusal to license might constitute an abuse in exceptional circumstances. The court observed that the dominant undertakings abused their dominant positions by foreclosing competition in the secondary market, reserving it for themselves. In CJEU's language in the Magill case, it was held that the dominant undertakings must have "by their conduct, reserved to themselves the secondary market … by excluding all competition on that market." The implication would appear to be that the standard of foreclosure in these cases is not the limited requirement that "access be made more difficult" from Intel but the higher "exclusion of all competition" standard in essential facilities cases. *Huawei* v. *ZTE,*[46] the case also involves a delicate balancing of interests to justify an interference with property rights, and the CJEU's express recognition of the need for that balance, the application of a higher standard would seem justified. First, the court clarifies that the exercise of the exclusive rights granted by an

[44] *Supra* Note 33; *Supra* note 34.
[45] *Supra* note 35.
[46] Case C 170/13 (2015).

IPR cannot in itself constitute an abuse. Then, it provides the exceptional circumstances which renders the exercise of those rights abusive.

4.2. Approach in US

Under US Antitrust law, Section 2 of the Sherman Act, 1890 holding a monopoly position is not illegal but it makes it unlawful for any person to "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".[47] The law makes it illegal to acquire or maintain monopoly power through improper means. However, mere possession of monopoly power, and the concomitant charging of monopoly prices is not unlawful unless it is accompanied by an element of anticompetitive conduct.[48]

Monopoly power means substantial market power that is durable rather than fleeting market power being the ability to raise prices profitability above those that would be charged in a competitive market.[49] For Section 2 of Sherman Act to apply, there should be a proof of a causal connection between the anticompetitive conduct and the obtaining or maintenance of monopoly power. However, in cases where there is a rigorous proof of the anticompetitive conduct and the existence of monopoly power, the US antitrust law generally permits a looser standard of proof of the causal connection between the two.

There is a distinction by US antitrust agencies between two sources of market power: "the market power that comes from the technology on its own and the market power that comes just from the standard".[50] The Agencies will not presume that a patent, copyright, or trade secret necessarily confers market power upon its owner.[51] Unlike EU Law on abuse of dominance which comprises of elaborate rules, secondary legislations and guidelines, the US Law does not have such elaborate guidelines as such. However,

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47 15 U.S.C. (2000), s. 2.

48 *Verizon Commc'ns Inc*. v. *Law Offices of Curtis V. Trinko, LLP*, 2004 540 U.S. 398, 407.

49 US DOJ, "Competition and Monopoly: Single-Firm Conduct Under Section 2 Of The Sherman Act," *available at*: https://www.justice.gov/atr/competition-and-monopoly-single-firm-conduct-under-section-2-sherman-act-chapter-1#N_6_ (last visited Aug 27, 2022).

50 U.S. Department of Justice and Federal Trade Commission, "Antitrust Enforcement and Intellectual Property Rights: Promoting Innovation and Competition" 39 (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 Aug 27, 2022).

51 US DOJ and FTC Antitrust Guidelines for the Licensing of Intellectual Property (Jan 12, 2017)

US defines relevant markets broadly in line with the EU approach spelt out in other guidance: horizontal co-operation agreements guidelines and guidelines on technology transfer agreements. The approach adopted has to be interpreted by the catena of decisions by US Supreme Court and Circuit Courts.

4.2.1. Direct Evidence v. Circumstantial Evidence

Market power is indispensable in all antitrust cases except for those arising under the Sherman Act's rule of *per se* illegality where market determination is not required.[52] Antitrust Court begins its definition of a relevant market by focusing narrowly on the good or service directly affected by a challenged restraint.[53] The issue of whether a particular SEP holder has market power requires a case-specific inquiry. Courts have defined the market as a 'one-product' market in some cases for a particular IP right or technology. Market power is shown either through direct or circumstantial evidence.

In *U.S.* v. *Microsoft,*[54] Microsoft Corporation appealed from judgments of the District Court finding the company in violation of Section 1 and Section 2 of the Sherman Act and ordering various remedies. The District Court had held that Microsoft had maintained a monopoly in the market for Intel-compatible PC operating systems in violation of Section 2 and attempted to gain a monopoly in the market for internet browsers and illegally tied two purportedly separate products, Windows and Internet Explorer, in violation of Section 1. In this case the court observed that direct evidence[55] could include proof that a firm has profitably raised price above competitive levels or restricted output but since direct evidence is not always available, courts rely on circumstantial evidence of market structure to assess market power. Market power is inferred from a firm's possession of a dominant share of a relevant market that is protected by entry barriers. The Court relied on the structural market power approach and held that it was capable of fulfilling its purpose even in a changing market. The court denied to adopt direct evidence to show monopoly power in any market.

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[52] Phillip E. Areeda, Herbert Hovenkamp Antitrust Law: An Analysis of Antitrust Principles and Their Application 107 (Wolters Kluwer Law & Business 3d Ed. 2007).

[53] *Times-Picayune Publishing Co*. v. *United States*, 1953 345 U. S. 594, 610.

[54] D.C. Cir. 2001253 F.3d 34, 5.

[55] Lerner Index: the leading "direct" measure of market power-quantifies market power based on the excess of price over marginal cost since firms should price at marginal cost under conditions of perfect competition.

Current legal doctrine largely treats market power as an abstract quality deduced from market shares, entry barriers and other structural factors.[56] In case of Standard Essential Patents circumstantial evidence will always be conclusory. By definition, a successful standard will have no close substitutes. SEP holders will be sole suppliers in the relevant market with barriers to entry. Many antitrust scholars have raised concerns that Courts cannot always avoid traditional market definition approaches, but when they can direct measurement will provide a better solution.[57]

The 2010 revisions of Horizontal Merger Guidelines clarified that market definition is a tool for evaluating competitive effects and should be used as just one part of a broader factual analysis.[58] Market share as an indicator of market power could be a starting point of investigation into market power in regulated industries like telecommunication. Heavy reliance on market share statistics is likely to be an inaccurate or misleading indicator of 'monopoly power' in regulated settings.[59] Where direct evidence available shows that the SEP holder has exercised market power, relying on circumstantial evidence may prove to be unnecessary.

4.2.2. Narrow market definition

Narrow market definition may sometimes be considered in case of standardization. In a few cases US courts have held that the relevant market consisted of a particular standard technology. As per the United States guidance Horizontal Merger Guidelines[60], the market determination requires delineating the relevant market by identifying other technologies and goods that are reasonable substitutes for the licensed technology. SEP owners will always be the sole supplier in a relevant technology market with barriers to entry. A standard, by definition, eliminates alternative technologies.[61] In

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[56] *Supra* note 53; Daniel A. Crane, "Market Power Without Market Definition" 90 *Notre Dame Law Review* 31-79 (2014).

[57] Letter from Herbert Hovenkamp to Chairman David N. Cicilline and Ranking Member F. James Sensenbrenner, Jr., Subcommittee on Antitrust, Commercial, and Administrative Law, Committee on the Judiciary, U.S. House of Representatives, 3-4 (April 17, 2020), *available at*: https://judiciary.house.gov/uploadedfiles/submission_from_herbert_hovenkamp.pdf (last visited on August 30, 2022).

[58] U.S. Department of Justice and Federal Trade Commission, Horizontal Merger Guidelines, (2010).

[59] *MCI Communications Corporation* v. *AT&T*, 7th Cir. 1983 F.2d 1081, 1107.

[60] *Supra* note 58.

[61] *American Soc. of M. E.'s* v. *Hydrolevel Corp.*, 1982 456 U.S. 559; *Ethyl Gasoline Corp*. v. *United States* (1940) 309 U.S. 436, 456; *Scheiber* v. *Dolby Labs., Inc.*, 7th Cir.2002 293 F.3d 1014, 1018; *Research in Motion, Ltd.* v. *Motorola, Inc*., 2010 644 F. Supp. 2d 788, 793.

Broadcom v. *Qualcomm*,[62] the court identified the relevant market as comprising of non-interchangeable Universal Mobile Telecommunications System (UMTS) chipsets and observed that it significantly expanded Qualcomm's market power by eliminating alternatives to its patented technology. The court held that:

> (i) in a consensus-oriented private standard-setting environment,
>
> (ii) a patent holder's intentionally false promise to license essential proprietary technology on FRAND terms,
>
> (iii) coupled with an SDO's reliance on that promise when including the technology in a standard, and
>
> (iv) the patent holder's subsequent breach of that promise, is actionable anticompetitive conduct.

The Court concluded that a relevant market for an antitrust claim could be the market for proprietary technology, stating that the incorporation of a patent into a standard makes the scope of the relevant market congruent with that of the patent. Qualcomm did not allege evasion from FRAND commitments. Therefore the Court held that even though the plaintiff had successfully alleged market power, the defendant's FRAND commitment provided important safeguards against monopoly power.[63] This kind of decision based on structural analysis ignoring vertical, horizontal and dynamic economic constraints results in automatic finding of dominance in a narrow market.

In *Research in Motion* v. *Motorola*[64], a district court held that the ordinary presumption that a patent does not confer market power should not apply to an SEP because, by definition, the standard eliminates alternative technologies. In *Apple* v. *Samsung*[65], Apple allegedly failed to disclose its IPR in the patents and acquired monopoly power in the Inputs Technology Markets covered by Samsung's declared essential patents and its subsequent failure to license on FRAND terms violates Section 2 of the Sherman Act. The Court distinguished between a normal patent which does not

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62 3d Cir. 2007 501 F.3d 297 (3d Cir. 2007).

63 Daniel G. Swanson, William J. Baumol, "Reasonable and Non-discriminatory (RAND) Royalties, Standards Selection, and Control of Market Power" 73 *Antitrust Law Journal* 10-41 (2005).

64 2010 644 F. Supp. 2d at 791.

65 N.D., 2012 Case No.: 11-CV-01846.

generally confer antitrust market power on the patent owner and a patent incorporated into a standard which may confer antitrust market power on the patent owner. The court also held that a plaintiff can successfully allege market power to support an antitrust claim by merely asserting that a patent is essential to a standard. In a recent decision in *Continental Automotive Systems* v. *Avanci*,[66] the court held market power as "inevitable as a very frequent consequence of standard setting", though it rejected antitrust claims of the plaintiff as it failed to allege anticompetitive exclusion.

The courts have adopted structural market power analysis to determine whether potential substitutes constrain a firm's ability to raise prices above the competition level. The courts have relied on circumstantial evidence in a number of cases to determine market power and explained that it was capable of fulfilling the requirement even in a dynamic market. However, FRAND commitments are a form of safeguard against monopoly power and should be considered while assessing market power in the technology incorporating SEP.

5. Significant Constraints to Consider While Evaluating Market Power

Both in US and EU jurisdiction, the agencies and guidance have prescribed against the presumption that a patent, copyright or trade secret necessarily confers market power upon its owner. However, the same is not seen in practice as evident from various court rulings from both sides of the Atlantic. It has been argued that the process of standardization confers significant market power to the technology that incorporates IPR essential to practice a standard. This eliminates the competition between technologies for the essential parts of that standard.

As discussed above in network effects, once sufficient number of users embrace a given technology in a networks market there is tendency of the market to tip in the favour of technologies and once market becomes locked-in, the holder of the standards gains the control to act as market barrier and confer on them dominant position. However, there are other constraints like horizontal, vertical and dynamic competitive constraints that might be considered before making an automatic conclusion of market power in the case of SEPs.

[66] (ND Tex. Sept. 10, 2020) No. 3:19-cv-02933-M.

Once a standard is adopted by an SSO, it ends the competition between rival technologies for incorporation in that specific standard but it will not affect competition between rival standards both in terms of substitutable end-products compliant with different technology in the downstream market or at upstream level as competition between standards for licensing. There might be vertical constraints from competition between rival/alternate standards and non-standardised substitute products. The competitive constraints at upstream and downstream level would constrain SEP holders from holding a dominant position in the market.

Recently, a unanimous panel of the U.S. Court of Appeals for the Ninth Circuit reversed the decision by the U.S. District Court for the Northern District of California in *FTC* v. *Qualcomm*[67] with respect to SEPs covering cellular technology. The court noted that though Qualcomm's conduct was hypercompetitive it acted within its rights as the owner of valuable intellectual property. The reason Qualcomm does not license its SEPs to competing chip suppliers is to avoid "patent exhaustion," whereby OEMs could purchase chips from Qualcomm's rival chip manufacturers without paying for the licenses themselves. The court explained that OEMs have been somewhat successful in "disciplining" Qualcomm's pricing through arbitration claims, negotiations, threatening to move to different chip suppliers, and threatened or actual antitrust litigation.

These careful practices generally resulted in settlements and renegotiated licensing and chip-supply agreements with Qualcomm even while OEMs continued to look elsewhere for cheaper modem chip options. Consequently, Apple's 2014 decision to switch to Intel as its main chip supplier, demonstrated that Qualcomm's "no license, no chips" policy did not foreclose competition in the modem chip markets.

The approach is moving away from form-based to effects based as observed in the *Huawei* v. *ZTE*[68] judgment by ECJ. In the *Intel* v. *Commission*[69] the EU's General Court held that loyalty rebates can be categorized as abusive with no effects-based analysis being required. This is the first time that the CJEU has required an effects-based analysis in an exclusivity rebate case. The Intel judgment means that an effects-based

[67] 2019 411 F.Supp.3d 658.
[68] (2015) Case C 170/13.
[69] (2017) C-413/14 P.

analysis will become much more central not only in future rebates cases, but by analogy also to other abuse of dominance cases.

6. Potential Sources of Evidence for Establishing Dominance in SEP Market

Looking at the shift in the approach adopted by the two jurisdictions, a chart has been prepared which could provide necessary guidance to determine dominant position of a firm in SEP related technology:

Issues	Sources of evidence
Market definition (from form based to effects-based)	i. Structural factors: market share, barriers to entry ii. Economic quantitative techniques iii. Information from SSOs, implementers and other competitors iv. Information regarding dynamic competition (backward compatibility- impacts profitability)
Relevant Market forces	i. Sunk costs (non-recoverable investment in development of standard) ii. Network effects- information requests, analyst reports, internal documents
Demand-substitutability	i. Information regarding substitutes for Standard Essential Patents if any (from firms, implementers and SSOs)
Entry barriers	i. Information from recent, potential competitors' implementers ii. Legal barriers (such as legislation conferring a statutory monopoly or IP rights as in the case of SEPs particularly); iii. Barriers such as economies of scale or scope, technological advantages or network effects- information requests, analyst reports, internal documents
Countervailing bargaining	i. Bargaining strength of potential licensees ii. Vertically integrated firms – constraints by downstream market players

Aggregate Royalty Ceiling	i. Acts as a constraint on SEP holders

These sources could be analysed to look into the conditions that favour one party over the other to determine the relevant market and analysis of abuse on a case to case basis. This will provide guidance about the strength of SEP holders over its competitors and the implementers.

7. Conclusion

The process of standardization confers significant market power to the technology that incorporates IPR essential to practice a standard but that doesn't essentially lead to abuse of dominance. There are several constraints like horizontal, vertical and dynamic competitive constraints that should be considered before making an automatic conclusion of market power in the case of SEPs. It is time that we move forward from form-based analysis to effect based analysis in case of determining relevant market and analysis of abuse involving standard essential patents. An arm-chair analysis that doesn't look into the potential sources of evidence for the determination of dominance, constraints from upstream and downstream level that would inhibit SEP holder from holding a dominant position in the market would lead to a flawed conclusion of abuse of dominance.