U.S AND E.U. ANTITRUST ENFORCEMENT EFFORTS IN THE *RAMBUS* MATTER: A PATENT LAW PERSPECTIVE

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INTRODUCTION

The European Commission's December 9, 2009 decision, which accepted Rambus, Inc.'s proposed licensing royalty commitments, effectively ended the long-running antitrust saga over four of Rambus's patented technologies.[1] The saga began when former Joint Electron Device Engineering Council ("JEDEC") member, Rambus, Inc., sought to enforce four patents against firms that had manufactured and used JEDEC compliant memory chips.[2] While participating in JEDEC, Rambus never disclosed to fellow JEDEC members the patent applications that it later claimed covered two JEDEC standards.[3] In 2007, the European Commission issued a Statement of Objections to Rambus's position, alleging that Rambus had abused its dominant role in the global memory chip market by asserting patent rights and demanding royalties above the level it would have been able to charge absent deceptive conduct at JEDEC.[4] Before this, the United States Federal Trade Commission ("FTC") had investigated Rambus's participation in JEDEC and the "patent ambush" that subse-

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1 Case COMP/38.636—Rambus, Comm'n Decision, (Dec. 9, 2009) (summary at 2010 O.J. (C 30) 17), *available at* http://ec.europa.eu/competition/antitrust/cases/decisions/38636/en.pdf.

2 *Id.* at ¶¶ 2–3

3 *In re* Rambus, Inc., No. 9302, 2006 WL 2330117, at *2 (F.T.C. Aug. 2, 2006), *vacated*, 522 F.3d 456 (D.C. Cir. 2008), *cert. denied*, 129 S. Ct. 1318 (2009).

4 Case COMP/38.636—Rambus, Comm'n Decision (Dec. 9, 2009), *supra* note 1, ¶ 28.

quently ensued.[5] The FTC ultimately concluded that Rambus's deceptive conduct at JEDEC resulted in an unlawful monopoly over four technologies that were required to comply with JEDEC standards.[6] The U.S. Court of Appeals for the District of Columbia Circuit later set aside the FTC's finding.[7]

In *Rambus*, the FTC failed to make its best case and lost where it should have succeeded. Rambus jump-started and maximized its patent monopolies by abusing the cooperative standard-setting process; this harmed competition enough to justify intervention under the antitrust laws.[8] While the European Commission focused on Rambus's unilateral abuse of JEDEC decision-making process,[9] the FTC, instead, concentrated on Rambus's alleged deceptive conduct at JEDEC.[10] As a result, the FTC overlooked something that was vitally important to Rambus and harmful to its competition, something that Rambus's JEDEC participation and later clandestine monitoring of JEDEC standard-setting developments made possible. If the FTC had included Rambus's earlier-starting and longer-lasting patent terms in its findings, it could have made a stronger case both for (1) limiting Rambus's licensing royalties and for (2) the resolution subsequently set forth in the settlement agreement between Rambus and the European Commission.

This Article begins in Part I with a brief review of the inherent tension between antitrust law and industry standard-setting and a brief summary of the uncontroverted facts of the Rambus matter. Part II summarizes the FTC's findings that Rambus engaged in unfair and deceptive trade practices by monopolizing the synchronous dynamic random access ("SDRAM") and double data rate synchronous dynamic random access ("DDR SDRAM") markets in violation of section 2 of the Sherman Act. Part III(A)(3) identifies and discusses the FTC's failure to link Rambus's manipulation of the JEDEC standards development process to how Rambus obtained earlier-starting and longer-lasting patent terms. This review of antitrust enforcement efforts in the United States concludes with a discussion of the U.S. Court of Appeals for the District of Columbia's opinion, which set aside the FTC's final order in the Rambus matter. A similar summary and analysis of the European Commission's antitrust enforcement efforts and its

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5 *In re Rambus, Inc.*, 2006 WL 2330117, at *7; *see also* Joseph Farrell et al., 74 ANTITRUST L. J. 603, 604 (2007) (analyzing patent ambush strategy in the standard-setting context).

6 *In re Rambus, Inc.*, 2006 WL 2330117, at *57.

7 Rambus, Inc. v. F.T.C., 522 F.3d 456, 469 (D.C. Cir. 2008) *cert. denied*, 129 S. Ct. 1318 (2009).

8 *Id.* at 459.

9 Case COMP/38.636—Rambus, Comm'n Decision (Dec. 9, 2009), *supra* note 1, ¶¶ 36–39.

10 *Rambus*, 522 F.3d at 459.

ultimate settlement with Rambus follows. Finally, this Article concludes with a comparison of European and U.S. approaches to antitrust enforcement in the Rambus matter and a defense of the U.S. Court of Appeals for the District of Columbia's decision vacating the FTC's final order.

I. BACKGROUND

In order to discuss the European and U.S. antitrust enforcement efforts directed at Rambus, it is first necessary to briefly summarize the antitrust concerns that surround private standards-setting organizations ("SSOs") and the pro-competitive benefits of standard-setting that tend to allay these concerns. In addition, Subpart C provides a necessary background on JEDEC and Rambus and briefly summarizes the interactions between the two organizations.

A. Standard-Setting Presents Opportunities for Anticompetitive Conduct

Many antitrust concerns arise when industry competitors join together and engage in private, standard-setting collaborations. A successful standard-setting effort yields an agreement among competitors that is "implicitly an agreement not to manufacture, distribute, or purchase certain types of products . . . ."[11] Because section 1 of the Sherman Act prohibits agreements that unreasonably restrain trade, the most obvious harm that might result from a private SSO is a violation of this prohibition.[12]

Despite the potential for collusive anticompetitive harms, industry standard-setting can also generate significant pro-competitive benefits.[13] These benefits have led U.S. courts to apply the "rule-of-reason" analysis when evaluating the impact of SSO activities on competition.[14] As the U.S. Supreme Court has observed:

> [P]rivate standard-setting by associations comprising firms with horizontal and vertical business relations is permitted at all under the antitrust laws only on the understanding that it will be conducted in a nonpartisan manner offering procompetitive benefits . . . .[15]

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11 Allied Tube & Conduit Corp. v. Indian Head, Inc., 486 U.S. 492, 500 (1986).

12 15 U.S.C. § 1 (2006).

13 *Allied Tube & Conduit Corp.*, 486 U.S. at 500–01.

14 Standard Oil Co. of New Jersey v. United States, 221 U.S. 1, 66–67 (1911).

15 *See Allied Tube & Conduit Corp.*, 486 U.S. at 507.

Article 101 of the Treaty on the Functioning of the European Union ("TFEU") focuses on collusive agreements among competitors.[16] Article 101(1) sets forth a non-exhaustive list of objectionable subject matter that includes price fixing, segmenting markets, and limiting production.[17] Article 101(3) codifies the "rule of reason" by expressly providing that article 101 is inapplicable to agreements that improve economic efficiency, further technical and economic progress, allow a fair share of benefits to flow to consumers, contain no unnecessary restrictions on competition, and create no possibility of eliminating competition in a substantial portion of the market.[18] Thus, by its terms, article 101 does not preclude industry competitors from engaging in legitimate, procompetitive standard-setting collaborations.[19]

SSOs also enable monopolists or aspiring monopolists to engage in unilateral, anticompetitive action. In the United States, section 2 of the Sherman Act prohibits willful monopolization, maintenance of a monopoly, and attempts to monopolize.[20] Monopolization under section 2 requires possession of monopoly power and "the willful acquisition or maintenance of that power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident."[21] Attempted monopolization occurs when one "engage[s] in predatory or anticompetitive conduct with [the] specific intent to monopolize" and where there exists a "dangerous probability of achieving monopoly power."[22]

Article 102 of TFEU also addresses unilateral anticompetitive conduct.[23] This Article is directed at firms already holding a dominant market position, which the European Commission has defined as a firm's ability "to behave to an

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16 Consolidated Version of the Treaty on the Functioning of the European Union, art. 101, Mar. 30, 2010, 2010 O.J. (c 83) 47 [hereinafter TFEU], *available at* http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2010:083:0047:0200:EN:PDF (formerly article 81 of the Treaty of Rome).

17 *Id.* at art. 101(1).

18 ELEANOR FOX & DANIEL CRANE, GLOBAL ISSUES IN ANTITRUST AND COMPETITION LAW 5 (2010); *see* TFEU *supra* note 16, at art. 101(3).

19 *See, e.g.*, Case COMP/38.636—Rambus, Comm'n Decision (Dec. 9, 2009), *supra* note 1, ¶ 33 (discussing the European Commission's Guidelines on the applicability of art. 81 of the TFEU to horizontal agreements as providing a framework for analyzing standardization's effects on competition).

20 15 U.S.C. § 2 (2006).

21 *See* United States v. Grinnell Corp., 384 U.S. 563, 570–71 (1966).

22 United States v. Microsoft, 253 F.3d 34, 80 (2001) (quoting Spectrum Sports, Inc. v. McQuillan, 506 U.S. 447, 456 (1993)).

23 TFEU *supra* note 16, art. 102.

appreciable extent independently of its competitors, customers and ultimately of its consumers."[24] Similar to article 101, article 102 sets forth a non-exhaustive list of prohibited exploitative and exclusionary conduct that includes product tying, predatory pricing, excessive pricing, and price discrimination.[25] Although exclusionary conduct aimed at maintaining a dominant market position is actionable under article 102, the article does not address how firms acquire a dominant market position.[26] Thus, while a dominant firm's exclusionary conduct in an SSO likely falls within article 102's express prohibitions, a firm's exclusionary conduct aimed at achieving a dominant market position would, by itself, seemingly not fall within article 102.[27]

For a party intent on achieving an anticompetitive end, participation in a SSO can provide the means. For example, an already dominant firm may manipulate the standard-setting process to bar new entrants.[28] On the other hand, a party seeking to acquire a dominant market position may attempt to ensure that the standard encompasses technologies to which that party enjoys superior or exclusive rights.[29] This latter version of anticompetitive conduct is known as patent "ambush" or patent "hold up" and is the primary focus of this Article.

Patent ambush refers to a form of unilateral conduct where the owner of a patented technology participating in an SSO surreptitiously works to have that patented technology included in the organization's approved standard.[30] In the United States, a patent owner has "the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States or

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24 Case 27/76, United Brands Co. v. Comm'n, 1978 E.C.R. 207, ¶ 65.

25 TFEU, *supra* note 16, at art. 102.

26 *See, e.g.*, Case T-201/04, Microsoft Corp. v. Comm'n, 2007 E.C.R. II-1491, ¶ 561 ("If the Commission were required to wait until competitors were eliminated from the market, or until their elimination was sufficiently imminent, before being able to take action under Article 82 EC, that would clearly run counter to the objective of that provision . . . .").

27 *See, e.g.*, Christopher B. Hockett & Anna G. Lipscomb, *Best FRANDs Forever? Standard-Setting Antitrust Enforcement in the United States and the European Union*, 23 ANTITRUST 19, 23 (Summer 2009) (quoting from EC DG Competition Representative Magdalena Brenning's discussion before the ABA International Roundtable on the applicability of EC art. 82 in the patent ambush context).

28 *See* Allied Tube & Conduit Corp. v. Indian Head, Inc., 486 U.S. 492, 496–97 (1986) (holding that steel a manufacturer's recruitment of new SSO members in order to stuff ballot boxes excluded competing technology and exposed the manufacturer to antitrust liability).

29 George S. Cary et al., *Antitrust Implications of Abuse of Standard-Setting*, 15 GEO. MASON L. REV. 1241, 1244 (2008).

30 *See* Joseph Farrell et al., *Standard Setting, Patents and Hold-Up*, 74 ANTITRUST L.J. 603, 603–04 (2007).

importing the invention into the United States . . . ."[31] A patent grant covering standardized technologies to which an entire industry has become economically committed, or locked in, can prove very lucrative for the patent owner and very costly for those industry participants who have committed significant resources to comply with the standard. A patent holder's deceptive conduct before a private SSO can constitute exclusionary conduct that is sufficient to support monopolization and attempted monopolization claims under section 2 of the Sherman Act.[32] In Europe, a patent holder who has successfully executed a patent ambush may violate article 102 of the TFEU by charging excessive or unfair prices or abusing market power.[33]

B. Standard-Setting Enhances Competition

Despite multiple opportunities for anticompetitive conduct, there are many recognized pro-competitive benefits of private standard-setting. These benefits include the interoperability of components purchased from different suppliers,[34] ease of product substitution, reduced consumer search costs, increased consumer confidence, and enhanced economies of scale.[35] For computer chips, the standardization of a chip's physical configuration and input-output workings allows computer manufacturers to design motherboards that accommodate chips from different suppliers.[36] The computer chip industry further benefits from standardization due to the "network effects" inherent in the computer industry whereby the value of the product—the computer and its constituent components—increases as the product user base expands.[37] In order to real-

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31 35 U.S.C. § 154(a)(1) (2006).

32 *See, e.g.*, Broadcom Corp. v. Qualcomm Inc., 501 F.3d 297, 304–05 (3d Cir. 2007) (complaint alleged that patent holder subsequently ignored promise to fellow SSO members that it would charge reasonable royalties should any patented technologies be incorporated into standards held sufficient to state monopolization and attempted monopolization claims under section 2 of the Sherman Act).

33 *See* Alex Potter & Simon Constantine, *The EU's Abuse of Dominance Rules and Their Impact on Commercial Policy Setting by U.S. Companies*, 24 ANTITRUST 78, 80–81 n.2 (Fall 2009).

34 *See* Cary et al., *supra* note 29, at 1241.

35 Herbert Hovenkamp, *Standards Ownership and Competition Policy*, 48 B.C. L. REV. 87, 90 (2007).

36 David J. Teece & Edward F. Sherry, *Standards-Setting and Antitrust*, 87 MINN. L. REV. 1913, 1917 (2003).

37 *See* Sean P. Gates, *Standards, Innovation, and Antitrust: Integrating Innovation Concerns into the Analysis of Collaborative Standard Setting*, 47 EMORY L.J. 583, 594 (1998) (explaining the economics of network industries).

ize these pro-competitive benefits, standard-setting must take place "in the presence of 'meaningful safeguards' that 'prevent the standard-setting process from being biased by members with economic interests in stifling product competition.'"[38]

C. JEDEC and Rambus

Affiliated with the Electronics Industries Alliance, JEDEC is an industry-wide, U.S.-based private SSO,[39] which any company in the solid-state products industry can join upon application and payment of annual dues.[40] Although JEDEC meetings are open meetings, nonmembers may only attend by invitation.[41] JEDEC minutes and JEDEC published standards, however, are available to both members and nonmembers alike.[42] In May 1993, JEDEC officially adopted and published its SDRAM standard that incorporated CAS latency and programmable burst length technologies.[43] Six years later, JEDEC adopted and published its DDR SDRAM standard that retained these two technologies and further incorporated data acceleration technology and dual-edge clock synchronization technology.[44]

Rambus develops computer memory technologies, secures intellectual property rights in these technologies, and then licenses these rights to others in exchange for royalties.[45] Rambus does not itself manufacture computer memory devices.[46] In December 1991, Rambus attended its first JEDEC meeting, and in February 1992, the company officially joined JEDEC.[47] Rambus attended its last JEDEC meeting in December 1995 and officially withdrew from the SSO in

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38 Broadcom Corp. v. Qualcomm Inc., 501 F.3d 297, 310 (3d Cir. 2007) (quoting Allied Tube & Conduit Corp., v. Indian Head, Inc., 486 U.S. 492, 501 (1986)).

39 Case COMP/38.636—Rambus, Comm'n Decision (Dec. 9, 2009), *supra* note 1, ¶ 18.

40 Rambus, Inc. v. F.T.C., 522 F.3d 456, 460 (D.C. Cir. 2008) *cert. denied*, 129 S. Ct. 1318 (2009).

41 Rambus, Inc. v. Infineon Techs. AG, 318 F.3d 1081, 1085, 65 U.S.P.Q.2d (BNA) 1705 (Fed. Cir. 2003).

42 *Id.*

43 *In re* Rambus, Inc., No. 9302, 2006 WL 2330117, at *23 (F.T.C. Aug. 2, 2006), *vacated*, 522 F.3d 456 (D.C. Cir. 2008), *cert. denied*, 129 S. Ct. 1318 (2009).

44 *Id.* at *26.

45 *Rambus*, 522 F.3d at 458–59.

46 *Id.* at 459.

47 Rambus, Inc. v. Infineon Techs. AG, 318 F.3d 1081, 1085, 65 U.S.P.Q.2d (BNA) 1705 (Fed. Cir. 2003).

June 1996.[48] In late 1999 and early 2000, the United States Patent and Trademark Office ("USPTO") granted Rambus four patents on the four aforementioned technologies that JEDEC had incorporated into its SDRAM and/or DDR-SDRAM standards.[49]

In 1999, Rambus invited major DRAM and computer chip manufacturers that had adopted the JEDEC, SDRAM, and DDR SDRAM standards to engage in licensing negotiations. Soon thereafter, Rambus commenced litigation against those manufacturers who had refused the invitation.[50] Over the next few years, Rambus acquired over 90% of the worldwide DRAM chip market.[51] JEDEC compliant SDRAM and DDR SDRAM memory chips accounted for 96% of all DRAM chip sales between 2004 and 2008.[52] After Rambus filed numerous lawsuits and complaints, U.S. and E.U. antitrust agencies opened investigations into the circumstances surrounding Rambus's involvement with JEDEC, its acquisition of overwhelming market share in JEDEC compliant memory chips, and the aggressive and opportunistic strategy Rambus employed in licensing its patented technologies.[53]

II. PATENT AMBUSH IN U.S. AGENCIES AND COURTS: THE RAMBUS EXAMPLE

A. Federal Trade Commission Proceedings Against Rambus

Pursuant to its authority under section 5(b) of the Federal Trade Commission Act ("FTC Act"),[54] the FTC filed a complaint in 2002 alleging that Rambus had monopolized and attempted to monopolize the memory chip market in violation of section 2 of the Sherman Act.[55] The complaint also alleged that Rambus had engaged in unfair competition and deceptive trade practices while it was a JEDEC participant and member.[56] Although the FTC broadly

48 *Id.*

49 *Id.* at 1086.

50 *In re* Rambus, Inc., No. 9302, 2006 WL 2330117, at *26 n.262 (F.T.C. Aug. 2, 2006), *vacated*, 522 F.3d 456 (D.C. Cir. 2008), *cert. denied*, 129 S. Ct. 1318 (2009).

51 *Id.* at *39.

52 Case COMP/38.636—Rambus, Comm'n Decision (Dec. 9, 2009), *supra* note 1, ¶ 19.

53 Rambus, Inc. v. F.T.C., 522 F.3d 456, 461 (D.C. Cir. 2008) *cert. denied*, 129 S. Ct. 1318 (2009); Case COMP/38.636—Rambus, Comm'n Decision (Dec. 9, 2009), *supra* note 1, ¶¶ 3–7.

54 15 U.S.C. § 45(b) (2006).

55 *In re Rambus, Inc.*, 2006 WL 2330117, at *7 (F.T.C. Aug. 2, 2006).

56 *Id.*

prohibits unfair competition and deceptive trade practices, the FTC Act does not adequately define these actions;[57] however, conduct that violates the Sherman Act may likewise violate the FTC Act.[58] In its complaint, the FTC highlighted Rambus's failure to disclose its intellectual property rights to fellow JEDEC members as required by JEDEC's rules and procedures and the fact that Rambus used knowledge gleaned from JEDEC meetings to draft and refine its patent claims.[59] Rambus eventually issued these claims against memory chip manufacturers.[60]

Finding no basis to establish a violation of section 5 of the FTC Act, the Administrative Law Judge's ("ALJ") Initial Decision and Proposed Order dismissed the FTC's complaint in its entirety.[61] The ALJ found that Rambus had acquired its monopoly power from superior technology; that JEDEC members had been aware of Rambus's burgeoning patent portfolio; that the FTC failed to prove there were viable alternatives to Rambus's technology; and that Rambus's secrecy with respect to its pending patent applications was a justified protection of trade secrets that precluded a finding of exclusionary conduct. After this finding, the FTC filed an appeal with the Commission.[62]

On appeal, the Commission reopened the *Rambus* record based on compelling circumstances that had emerged in other patent infringement cases.[63] The Commission noted that the elements of a monopolization offense require the Commission to determine whether Rambus engaged in exclusionary conduct, and, if so, whether Rambus's exclusionary conduct yielded an acquisition of monopoly power.[64] The FTC posited that Rambus had engaged in exclusionary conduct by deceiving fellow JEDEC members as to its intellectual property rights and strategies.[65] Moreover, the FTC set forth that this exclusionary conduct significantly contributed to its acquisition of monopoly power in CAS la-

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57 *See* F.T.C. v. Cement Inst., 333 U.S. 683, 708 (1948) ("[I]ndividual conduct, or concerted conduct, which falls short of being a Sherman Act violation may as a matter of law constitute an 'unfair method of competition' prohibited by the Trade Commission Act.").

58 *See id.* at 694 ("[A]lthough all conduct violative of the Sherman Act may likewise come within the unfair trade practice prohibitions of the Trade Commission Act, the converse is not necessarily true.").

59 *In re Rambus, Inc.*, 2006 WL 2330117, at *7.

60 Rambus, Inc. v. Infineon Techs. AG, 318 F.3d 1081, 1085–86. (Fed. Cir. 2003); *see also infra* Table1, Section III.A.3.

61 *In re Rambus, Inc.*, 2006 WL 2330117, at *8.

62 *Id.* at *8–9.

63 *Id.* at *10.

64 *Id.* at *15.

65 *Id.* at *35–36.

tency technology, programmable burst length technology, data acceleration technology, and dual-edge clock synchronization technology markets.[66] The FTC cited the Sixth Circuit's decision in *Conwood Co. v. U.S. Tobacco Co.*[67] and the D.C. Circuit's opinion in *United States v. Microsoft*[68] to support the proposition that deceptive behavior can form the basis of a Sherman Act section 2 violation.[69]

Unlike *Rambus*, which involved a failure to disclose material information, both the *Conwood* and *Microsoft* cases involved affirmative misrepresentations by the defendant. In *Conwood*, the defendant provided retailers with misleading market data pertaining to the defendant's product sales as compared to competitors.[70] The *Conwood* court held that this deception distorted the retailers' purchasing decisions and, as a result, exposed the defendant to section 2 liabilities.[71] In *Microsoft*, the defendant publicly committed itself to the cross platform development of software applications, but then included in its software compilers directives that could only be executed using the defendant's operating system.[72] The *Microsoft* court found this conduct exclusionary, and because the defendant employed this deception for the purposes of maintaining its monopoly, the court additionally found that the defendant violated section 2 of the Sherman Act.[73]

1. Rambus's Alleged Exclusionary Conduct

In investigating Rambus, the FTC used its considerable experience to identify deceptive acts and practices that ran afoul of section 5 of the FTC Act.[74] The Commission recognized that although findings of a "misrepresentation, omission or practice" likely to mislead "others acting reasonably under the circumstances" and likely to affect their "conduct or decision[s]" may suffice for establishing FTC section 5 liability, a Sherman Act section 2 violation would require additional findings that Rambus had acted willfully to acquire monopoly power and had, in the process, harmed competition in a manner disproportionate

66 *Id.* at *57.

67 290 F.3d 768, 784 (6th Cir. 2002).

68 253 F.3d 34, 76–77 (D.C. Cir. 2001).

69 *In re Rambus, Inc.*, 2006 WL 2330117, at *10–16.

70 290 F.3d at 777.

71 *Id.* at 790–91.

72 253 F.3d at 76.

73 *Id.* at 76–77.

74 *In re Rambus, Inc.*, 2006 WL 2330117, at *16.

to any pro-competitive benefit.[75] Accordingly, the FTC began its opinion by itemizing Rambus's purported "chronology of concealment" during and after the period that Rambus participated in JEDEC.[76] Among the more egregious acts and omissions the FTC relied on were Rambus's well-documented strategy to refine claims so as to better cover JEDEC's developing standards; Rambus's 1996 withdrawal letter, which disclosed only the patents unrelated to JEDEC's work; and Rambus's use of clandestine sources to stay informed of DDR SDRAM standards development activities after Rambus had officially left JEDEC.[77]

The Commission emphasized the cooperative nature of SSOs, and in particular, the spirit of JEDEC's written intellectual property disclosure policies that require patents and patent applications bearing on any technologies being considered for standardization to be disclosed.[78] While noting that Rambus had in fact disclosed its first issued '703 patent, which included the written disclosure of Rambus's inventions, the Commission observed that:

> [t]he ability, after the fact, to determine from a written description that at the time of filing [at the USPTO] an applicant "*was* in possession" of a particular invention "*now* claimed" is not the same thing as the ability to predict, prior to their publication, the potential scope of future claims.[79]

The Commission denounced Rambus for playing on the expectations of fellow JEDEC members by using information gleaned from JEDEC meetings to draft and refine patent claims that more closely covered technologies being considered for standardization.[80]

In response, Rambus cited the need to keep information about its inventions confidential as a pro-competitive justification for its behavior at JEDEC. Rambus argued that disclosure would have revealed what inventions it was seeking to protect, jeopardized its ability to obtain foreign patents, and enabled competitors to slow down the patent application process then underway at USTPO.[81] The Commission noted that however valid these justifications might be in the context of a competitive marketplace—presumably to encourage and reward innovation—Rambus failed to explain how keeping its intentions secret

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75 *Id*.

76 *Id*. at *21–26.

77 *Id*. at *23–26.

78 *Id*. at *3.

79 *Id*. at *32 (citations omitted) (emphasis in original).

80 *In re* Rambus, Inc., No. 9302, 2006 WL 2330117, at *35 (F.T.C. Aug. 2, 2006), *vacated*, 522 F.3d 456 (D.C. Cir. 2008), *cert. denied*, 129 S. Ct. 1318 (2009).

81 *Id*. at *37–38.

could be considered pro-competitive in the cooperative atmosphere of the SSO.[82] Rambus also failed to present evidence identifying any foreign jurisdiction in which its patent applications would have been threatened by disclosure at JEDEC or any evidence that such disclosure would have encouraged third parties to intervene in the ongoing prosecutions of Rambus's patent applications at the USPTO.[83] Most notably, the Commission observed that if Rambus believed its patent position and strategy were critical trade secrets requiring protection from disclosure, then it could have elected not to participate in JEDEC at all.[84]

In short, the Commission found nothing to support Rambus's pro-competitive justification for its deceptive conduct. Instead, the Commission described Rambus's conduct as calculated to mislead JEDEC members by fostering the belief that Rambus neither had nor was seeking patents to later assert against JEDEC compliant products.[85]

2. Causation and Standards of Proof

After noting that Rambus had acquired over 90% of the four relevant technology markets that both the Commission and Rambus agreed had a worldwide geographic scope, the Commission turned its attention to the issue of causation; that is, whether and how Rambus's deceptive conduct was linked to its dominance of the four relevant technology markets.[86] In accordance with well-settled antitrust law,[87] the Commission inferred from Rambus's intent to have JEDEC incorporate its technologies that (1) Rambus believed it owned JEDEC's SDRAM and DDR SDRAM standards and (2) that but for Rambus's conduct, "JEDEC *either* would have excluded Rambus's patented technologies from the JEDEC DRAM standards, *or* would have demanded RAND assurances, with an opportunity for ex ante licensing negotiations."[88] The Commission concluded that Rambus's market dominance emanated from the market's incli-

82 *Id.*

83 *Id.* at *38.

84 *Id.* at *37.

85 *Id.* at *37–38.

86 *In re* Rambus, Inc., No. 9302, 2006 WL 2330117, at *2 (F.T.C. Aug. 2, 2006), *vacated*, 522 F.3d 456 (D.C. Cir. 2008), *cert. denied*, 129 S. Ct. 1318 (2009).

87 *Id.* at *40 (quoting Chi. Bd. of Trade v. United States, 246 U.S. 213, 238 (1918)) ("knowledge of intent may help the court to interpret facts and to predict consequences."); *accord* Aspen Skiing Co. v. Aspen Highlands Skiing Corp., 472 U.S. 585, 602 (1985).

88 *In re Rambus, Inc.*, 2006 WL 2330117, at *40 (emphasis added).

nation to coalesce around JEDEC standards and Rambus's assertions that its patents were necessary to make, use, or sell JEDEC-compliant DRAM chips.[89]

Rambus raised several arguments as to why the chain of causation had been broken. Most notably, Rambus argued that JEDEC's choice to include Rambus technology in its SDRAM and DDR SDRAM standards was the inevitable result of Rambus's superior technology.[90] The Commission viewed this argument as an affirmative defense for which Rambus had the burden of proof.[91] After exhaustively evaluating the various alternative technologies that Rambus's expert had analyzed, the Commission concluded that Rambus had failed to demonstrate that these alternatives would have been more expensive, or that Rambus's patented technologies were in every case technically superior.[92]

The Commission, however, was similarly unable to demonstrate, by a preponderance of the evidence, that Rambus's exclusionary conduct had led JEDEC to adopt the standards that effectively made Rambus's patented technologies the only relevant technologies in the SDRAM/DDR SDRAM marketplace.[93] The Commission could only say that Rambus's exclusionary conduct "contributed significantly to Rambus's acquisition of monopoly power by distorting JEDEC's technology choices *and* undermining JEDEC members' ability to protect themselves against patent hold-up."[94] "[A] patent is an exception to the general rule against monopolies and to the right to access a free and open market" and thus it is unsurprising that the incorporation of patented technologies into standards widely adopted by an entire industry would result in monopoly market positions for the patent owner.[95] Nevertheless, the Commission's inability to conclude that, but for Rambus's deceptive conduct, a properly informed JEDEC membership would have standardized alternative technologies, left the required link between Rambus's exclusionary conduct and its resulting monopolies in the relevant technology markets unconnected.[96]

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89 *Id.* at *41.

90 *Id.* at *42.

91 According to the antitrust treatise cited and relied upon by the Commission, the FTC's pleading, introducing evidence and proving by a preponderance of the evidence that Rambus' exclusionary behavior contributed significantly to the achievement of its monopoly was a necessary prerequisite to Rambus having to raise, much less prove, its inevitability/superiority defense. *See id.* at *42 (citing AREEDA & HOVENKAMP, ANTITRUST LAW, ¶ 650c.)

92 *Id.* at *42–49.

93 *Id.* at *55–56.

94 *Id.* at *36 (emphasis added).

95 Precision Instrument Mfg. Co. v. Auto. Maint. Mach. Co., 324 U.S. 806, 816 (1945).

96 *In re Rambus, Inc.*, 2006 WL 2330117, at *56.

3. Oversight in the FTC's Causation Analysis

One antitrust expert has cautioned that in anticompetitive standard-setting cases, the antitrust decision-maker should avoid difficult technological issues raised in evaluating the substantive merits of adopted standards, and instead, focus on the exclusionary power that the standard generates and other signs of the standard's potential to exclude rivals.[97] If the Commission had heeded this advice, then perhaps it might have included in its findings one notable and direct effect of Rambus's abuse of the SSO process: earlier-starting and longer-lasting patent terms.

Table 1 below lists the four patents Rambus asserted against JEDEC compliant products and identifies several key dates associated with each patent:

Table 1

US Patent Number	Issue Date	Priority Date	Patent Granted on Application Filed	Pendency at USPTO[98]
5,954,804[99]	9/21/99	4/18/90	2/10/97	2 years, 7 mos.
5,953,263[100]	9/14/99	4/18/90	11/20/98	10 mos.
6,034,918[101]	3/7/00	4/18/90	2/19/99	1 year, 1 mo.
6,032,214[102]	2/29/00	4/18/90	2/19/99	1 year

Professor Lemley has estimated that patents issued between 1996 and 1998 spent an average of 2.77 years being prosecuted before the USPTO.[103] The four Rambus patents shown in Table 1 had prosecution ranges from ten months to two years and seven months. Measuring the pendency of Rambus's patent applications back to date of priority—or the date of the first application containing a written description fully enabling of the patent claims—results in prosecu-

97 Hovenkamp, *supra* note 35 at 90–91.

98 As measured from date of issue and filing date of the application immediately preceding patent grant.

99 U.S. Patent No. 5,954,804 (issued Sept. 21, 1999).

100 U.S. Patent No. 5,953,263 (issued Sept. 14, 1999).

101 U.S. Patent No. 6,034,918 (issued Mar. 7, 2000).

102 U.S. Patent No. 6,032,214 (issued Feb. 29, 2000).

103 John R. Allison & Mark A. Lemley, *The Growing Complexity of the United States Patent System*, 82 B.U. L. REV. 77, 98 (2002).

tion ranges of over nine years and five months for all four patents.[104] In 1994, revisions to U.S. patent law changed the patent term from seventeen years from date of issue to "a term beginning on the date that the patent issues and ending 20 years from the date that the application for the patent was filed in the United States."[105] Since June 8, 1995, it is only by obtaining the earliest possible patent issue date that one can maximize the period of enforcement of patents issuing from continuing or divisional applications.

This revision in the patent law took effect while Rambus was an active JEDEC meeting participant.[106] The new patent law fixed April 18, 2010 as the expiration date for all continuation or divisional applications claiming priority to Rambus's April 18, 1990 application,[107] filed on or after June 8, 1995.[108] Because each patent issued from an application filed after the new law went into effect, the four Rambus patents in Table 1 above were all subject to the patent term of twenty years from initial filing date.

In May 1993, JEDEC officially approved and published its SDRAM standard, which included two technologies that Rambus later patented.[109] In August 1999, JEDEC approved and published its much more widely adopted[110] DDR SDRAM standard, which retained these two technologies and further incorporated two additional technologies that Rambus also subsequently patent-

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104 The application from which U.S. Patent No. 5,953,263 issued was a continuation of application Ser. No. 08/798,520 filed Feb. 10, 1997, now U.S. Patent No. 5,841,580, which in turn claimed priority to the '898 application for patent filed on April 18, 2010.

105 35 U.S.C. § 154(a)(2) (2006); *see also* MPEP § 2701 (8th ed. Rev. July 2010) ("For applications filed on or after June 8, 1995, Section 532(a)(1) of the Uruguay Round Agreements Act . . . amended 35 U.S.C. 154 to provide that the term of a patent . . . begins on the date the patent issues and ends on the date that is twenty years from the date on which the application for the patent was filed in the United States or, if the application contains a specific reference to an earlier filed application or applications . . . twenty years from the filing date of the earliest of such application(s) . . . . All patents . . . that were in force on June 8, 1995, or that issued on an application that was filed before June 8, 1995, have a term that is the greater of the 'twenty-year term' or seventeen years from the patent grant.").

106 *See* Rambus Inc. v. Infineon Techs. AG, 318 F.3d 1081, 1085 (Fed. Cir. 2003); MPEP, *supra* note 105, § 2701.

107 *See Rambus Inc.*, 318 F.3d at 1085–86 (providing history of relevant Rambus patent applications).

108 Patent applications filed on or after May 29, 2000 are eligible for adjustments to the patent term for certain USPTO delays in the prosecution of the application. *See* 35 U.S.C. § 154(b) (2006).

109 Rambus Inc. v. Fed. Trade Comm'n, 522 F.3d 456, 460 (D.C. Cir. 2008).

110 *See id.* (Unlike the DDR SDRAM standard, JEDEC's initial SDRAM Standard published in 1993 had not been adopted as quickly or as widely as JEDEC had anticipated.)

ed.[111] Rambus was able to patent these technologies because each of the four patents listed in Table 1 claim priority to and find written support in Rambus's '898 application for patent filed on April 18, 1990.[112] Although the four Rambus patents asserted against JEDEC-compliant products all descend from the '898 application, each patent issued from applications filed after Rambus had officially withdrawn from JEDEC in June 1996, but before official approval and publication of the JEDEC DDR-SDRAM standard in August 1999.[113]

Citing *Kingsdown Med. Consultants, Ltd. v. Hollister, Inc.*,[114] Rambus argued that no impropriety occurred when Rambus amended pending claims to cover products it learned about while prosecuting its patent applications.[115] In rejecting this argument, the FTC noted that while *Kingsdown* and its progeny approve of refining claims during prosecution to read on competing products, "from a *patent law* perspective," this line of cases does not address the competitive consequences of an applicant's abuse of a cooperative SSO environment to deceive fellow SSO members and draft claims more closely reading on the developing standard.[116] Although *Kingsdown* holds that "there is nothing improper, illegal or inequitable in filing a patent application for the purpose of obtaining a right to exclude a known competitor's product from the market,"[117] drafting patent claims to cover a widely adopted industry standard does not simply exclude a competing product, it monopolizes the entire market that the standard defines as relevant.

Putting aside the issues of whether Rambus deceived JEDEC members, and whether that deception led JEDEC to incorporate Rambus's patented technologies in its SDRAM and DDR SDRAM standards, one fact is indisputable: Rambus's participation in, and later clandestine monitoring of JEDEC standards development, enabled Rambus to draft and refine claims based on its '898 application that more closely covered technologies that JEDEC adopted as standards. Equally important was the fact that Rambus was able to file these tailored claims earlier than if it had waited until JEDEC's publication of the DDR SDRAM standard in August 1999. Because of this, Rambus was able to begin enforcing its patented claims at least one year, and possibly up to three years,

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111 *Id*.

112 *See Rambus Inc.*, 318 F.3d at 1085–86.

113 *Rambus Inc.*, 522 F.3d at 460; *Rambus Inc.*, 318 F.3d at 1085–86.

114 863 F.2d 867 (Fed. Cir. 1988).

115 *In re* Rambus, Inc., No. 9302, 2006 WL 2330117, at *35 (F.T.C. Aug. 2, 2006), *vacated*, 522 F.3d 456 (D.C. Cir. 2008), *cert. denied*, 129 S. Ct. 1318 (2009).

116 *Id.*

117 *Kingsdown*, 863 F.2d at 874.

earlier than it would have otherwise been able. Because the applications for the relevant patents were filed after June 8, 1995, the earlier issue dates also maximized the duration of the patent terms set by law to expire on or about April 18, 2010.

"A patent confers a monopoly, and the longer the term of the patent the greater the monopoly."[118] An SSO member's subversion of a cooperative standard-setting process to tailor and file patent claims in order to create a greater monopoly should constitute exclusionary conduct sufficient to support a Sherman Act section 2 violation.[119] Such conduct not only unquestionably impairs the opportunities of rivals, but also fails to further the simulated market competition taking place within the confines of the SSO.[120]

Standard-setting by industry competitors is allowed "under the antitrust laws only on the understanding that it will be conducted in a nonpartisan manner offering procompetitive benefits."[121] SSO participants are industry experts who meet and decide which among an array of competing technologies will be the "winning" technology on which an industry will standardize, and which technologies will lose.[122] Organized standard-setting, as a method for promoting innovation and economic efficiency,[123] stands "in contrast to the race for market share and battle for expectations typical of *de facto* standards wars."[124] Organized standard-setting "replac[es] (or complement[s]) the bandwagon *de facto* standards process with an orderly explicit search for consensus."[125] Just as procurement of a patent by "knowingly and willfully misrepresenting facts to the Patent Office" strips a patent owner of any exemption from the antitrust laws,[126]

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118 Scheiber v. Dolby Labs., Inc., 293 F.3d 1014, 1018 (7th Cir. 2002), *cert. denied* 537 U.S. 1109 (2003).

119 *Cf.* Precision Instrument Mfg. Co. v. Auto. Maint. Mach. Co., 324 U.S. 806, 816 (1945) ("The far-reaching social and economic consequences of a patent, therefore, give the public a paramount interest in seeing that patent monopolies spring from *backgrounds free from fraud or other inequitable conduct* and that such monopolies are *kept within their legitimate scope*.") (emphasis added).

120 *See* Aspen Skiing Co. v. Aspen Highlands Skiing Corp., 472 U.S. 585, 605 n.32 (1985) (quoting P. AREEDA & D. TURNER, 3 ANTITRUST LAW 78 (1978)).

121 Allied Tube & Conduit Corp. v. Indian Head, Inc., 486 U.S. 492, 506–07 (1986).

122 Cary et al., *supra* note 29, at 1242–43.

123 David A. Balto & Andrew M. Wolman, *Intellectual Property and Antitrust: General Principles*, 43 IDEA 396, 453 (2003).

124 Joseph Farrell & Timothy S. Simcoe, Choosing the Rules for Consensus Standardization 1 (Nov. 30, 2009) (unpublished manuscript), *available at* http://ssrn.com/abstract=1396330.

125 *Id.* at 2.

126 Walker Process Equip., Inc. v. Food Mach. & Chem. Corp., 382 U.S. 172, 177 (1965).

an SSO member's abuse of the standard-setting process to jump start and effectively extend the term of an otherwise lawfully obtained patent should trigger antitrust scrutiny.

As the FTC noted, Rambus could have elected not to participate in JEDEC at all. Assuming Rambus could have kept continuation and divisional applications from its '898 application pending at the USPTO long enough, Rambus would have had the right to draft and file claims reading on any technologies that JEDEC incorporated into its standards as long as those claims found support in Rambus's '898 application. Any monopoly Rambus might have achieved as a result of filing and successfully prosecuting claims reading on a publicly available standard would not have been unlawful.[127] Rambus, however, elected otherwise, and its abuse of the cooperative JEDEC standard-setting process,[128] at a minimum, enabled Rambus's otherwise lawful monopoly to begin earlier and last longer. During this ill-gotten portion of the patent terms,[129] Rambus's assertion of its patent rights harmed competition by prematurely excluding all-comers from using, selling, or manufacturing JEDEC-compliant SDRAM devices.

Had the FTC included this cause and effect as an additional basis for antitrust liability, it might well have supported, for example, a remedial divesture whereby Rambus's royalties would have been prospectively suspended for a period of time corresponding to the unlawfully obtained portion of each patent's term. The FTC's expert estimated that Rambus had enjoyed annual royalty payments of $600 million in the first several years of patent enforcement, expected to increase to $2.1 billion by 2005, and Rambus's own estimates of 2005 royalty revenues set a range between "several hundred million dollars up to as much as $2.5 billion."[130] A finding that Rambus had unlawfully obtained an earlier-starting and longer-lasting monopoly would also have provided an independent basis for section 2 liability, a basis that would not have required the FTC to delve into the difficult technological issues raised when contemplating

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127 *See* Kingsdown Med. Consultants, Ltd. v. Hollister, Inc., 863 F.2d 867, 874 (Fed. Cir. 1988) (en banc).

128 *In re* Rambus, Inc., No. 9302, 2006 WL 2330117, at *34–35 (F.T.C. Aug. 2, 2006), *vacated*, 522 F.3d 456 (D.C. Cir. 2008), *cert. denied*, 129 S. Ct. 1318 (2009).

129 A truer determination of the illicit period of enforcement for each patent would include consideration of factors such as the date Rambus first filed claims substantially similar to those that ultimately issued and the date on which the JEDEC standards first became publicly known. Using the more readily ascertained official SSO-standard publication date to calculate the ill-gotten portion of the patent term, however, would serve as a more effective deterrent against abuse of the SSO process.

130 *In re Rambus, Inc.*, 2006 WL 2330117, at *40 n.409.

what technologies JEDEC might have adopted in the absence of Rambus's deceptions. As a result, the FTC's causation argument should have been: but for Rambus's conduct, memory chip manufacturers would have been able to comply with the JEDEC, SDRAM, and DDR SDRAM standards royalty-free for one to three years before Rambus would have been in position to enforce any patents and achieve its dominant position in the four relevant technology markets.

B. Appellate Review of the FTC Orders in In re Rambus

Rambus appealed from the FTC's Final Order in which the FTC set a schedule for capped patent licensing fees.[131] Rambus challenged the FTC's conclusion that it had "engaged in unlawful monopolization," arguing that the FTC erred in finding that Rambus had "violated any JEDEC patent disclosure rules and thus that it breached any antitrust duty to provide information to its rivals."[132] Rambus also argued that the FTC's determination in the alternative—that Rambus's non-disclosure prevented JEDEC from either adopting non-proprietary standards or obtaining a reasonable and non-discriminatory licensing commitment from Rambus[133]—failed to provide a legally sufficient basis for antitrust liability.[134] The D.C. Circuit Court of Appeals found the latter argument persuasive.[135]

The D.C. Circuit cited the Supreme Court's decision in *NYNEX Corp. v. Discon, Inc.*[136] for the proposition that deceptive conduct underlying an otherwise lawful monopolist's charging of higher prices does not give rise to an anti-

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131 *In re* Rambus Inc., No. 9302, 2007 WL 431522, at *1–2 (F.T.C. Feb. 2, 2007), *rev'd* Rambus Inc. v. Fed. Trade Comm'n, 522 F.3d 456 (D.C. Cir. 2008).

132 *Rambus Inc.*, 522 F.3d at 462.

133 The following discussion is illuminative:

> Our liability opinion identified two realistic possibilities for what would have occurred had Rambus not engaged in deception of JEDEC members: either (i) JEDEC would have chosen alternative technologies, or (ii) JEDEC would have incorporated Rambus's technologies into the standard but would have demanded, as a precondition of adopting Rambus's technology, that Rambus agree to license the technology on RAND terms. There is evidence in the record to support both possibilities.

In re Rambus, Inc., No. 9302, 2007 WL 431524, at *6 (F.T.C. Feb. 5, 2007) (citations omitted).

134 *Rambus*, 522 F.3d at 462.

135 *Id.*

136 525 U.S. 128 (1998).

trust injury.[137] Likening Rambus's conduct in avoiding negotiating lower patent licensing fees with its fellow JEDEC members to a lawful monopolist's use of deceptive conduct to obtain higher prices, the court vacated the FTC's order.[138] Because one of the two equally likely outcomes identified by the FTC was not an anticompetitive injury, it was unnecessary for the court to decide whether the other possible outcome—Rambus preventing JEDEC from selecting alternative technologies—was also anticompetitive.[139]

Relying heavily on the analysis of JDEC's disclosure policies and Rambus's adherence to those policies in the Federal Circuit's *Rambus Inc. v. Infineon Technologies AG* decision,[140] the D.C. Circuit commented at length upon Rambus's purported failure to disclose its patents and applications.[141] The court felt it necessary to undertake this analysis before remanding the case because "at least one Commissioner suggested that a 'stand-alone' [FTC Act section 5] action would have had a 'broader province' than a Sherman Act case."[142] The court began this analysis by questioning whether JEDEC's disclosure policies were so broad as to have required Rambus to disclose "*potential* amendments to pending applications, as that work became pertinent."[143] Describing the FTC's findings relative to both JEDEC's policies and Rambus's lack of adherence to them as "murky," the court characterized the FTC's conclusion that Rambus had engaged in deceptive conduct as "an aggressive interpretation of rather weak evidence."[144] On remand, the FTC closed its investigation of Rambus.[145]

III. EUROPEAN COMMISSION PROCEEDINGS AGAINST RAMBUS

A. Procedural Summary

In 2002, Infineon Technologies AG and Hynix Semiconductor, Inc. filed a joint complaint against Rambus with the European Commission.[146] This

137 Rambus v. Fed. Trade Comm'n, 522 F.3d 456, 464–65 (D.C. Cir. 2008).

138 *Id.* at 466–67.

139 *Id.* at 463–64, 466–67.

140 318 F.3d 1081 (Fed. Cir. 2003).

141 *Rambus*, 522 F.3d at 467–69.

142 *Id.* at 467.

143 *Id.* at 467.

144 *Id.* at 467, 469.

145 Rambus Inc., No. 9302, 2009 WL 641824, at *1 (F.T.C. Feb. 25, 2009).

146 Case COMP/38.636—Rambus. Comm'n Decision ¶ 5 (Dec. 9, 2009) (summary at 2010 0.J. (C 30) 17), *available at* http://ec.europa.eu/competition/antitrust/cases/dec_docs/38636/38636_1203_1.pdf.

complaint initiated the Commission's investigation into the Rambus matter. In July 2007, the Commission sent a Statement of Objections to Rambus expressing the Commission's preliminary conclusion that, beginning in January 2000 when Rambus first asserted its patent rights, Rambus had held a dominant position in the world-wide DRAM-chip market.[147] The Commission stated its preliminary view that Rambus's practice of claiming royalties at levels higher than it could have charged absent its allegedly deceptive conduct raised concerns of abuse of a dominant position under TFEU article 102.[148] The Commission added that Rambus's behavior undermined confidence in the standard-setting process, noting that an effective standard-setting process is necessary for "the development of the market in general to the benefit of consumers."[149]

In response to the Commission's Statement of Objections, Rambus requested an oral hearing.[150] The Commission admitted five parties to the hearing as interested third parties, and these parties provided comments to the Commission.[151] In June 2009, Rambus, although expressing disagreement with the Commission's findings, submitted prospective royalty commitments in response to the Statement of Objections.[152] After the Commission published Rambus's commitments for comment, Rambus amended its commitments to align with the Commission's suggested changes.[153] After accepting Rambus's proposed royalty commitments, the Commission notified original complainant Hynix that "there was no significant degree of Community interest for conducting a further investigation into the alleged infringement [of article 102]."[154]

B. The European Commission's Preliminary Assessment

Like the FTC, the European Commission defined the relevant geographic market as encompassing the entire globe.[155] The Commission defined the relevant product market as the market for DRAM interface technology.[156] Not-

147 *Id.* ¶ 2.

148 *Id.* ¶ 3.

149 *Id.*

150 *Id.* ¶¶ 8–9.

151 *Id.* ¶ 9

152 Case COMP/38.636—Rambus. Comm'n Decision ¶ 10 (Dec. 9, 2009) (summary at 2010 0.J. (C 30) 17), *available at* http://ec.europa.eu/competition/antitrust/cases/dec_docs/38636/38636_1203_1.pdf.

153 *Id.* ¶¶ 11–12.

154 *Id.* ¶ 14.

155 *Id.* ¶ 17.

156 *Id.* ¶ 16.

ing that JEDEC-compliant DRAM chips represented 96% of overall DRAM-chip sales between 2004 and 2008, and that the patent claims Rambus had been asserting covered 90% of world-wide DRAM-chip production, the Commission readily concluded that Rambus held a dominant position in the relevant markets.[157]

After reviewing both the potential for standard-setting to result in anti-competitive outcomes and the pro-competitive aspects of standard-setting, the Commission observed that for the benefits of SSOs to be realized, special attention must be provided to "procedures used to guarantee that . . . the users of standards are protected."[158] Citing its 1992 communication *Intellectual Property Rights and Standardization*,[159] the Commission stated that a patent holder acts in bad faith if it is aware that its patent reads on a standard under development and fails to disclose its patent rights until after the standard's adoption.[160] The Commission preliminarily found that in light of "Rambus's intentional breach of JEDEC policy and the underlying duty of good faith in the context of standard-setting," Rambus's excessive royalty demands were incompatible with TFEU article 102.[161] Notably, the Commission stressed that while it believed Rambus had breached JEDEC's patent disclosure policy, such a specific finding was not necessary to support a finding of abuse.[162] The finding of abuse instead was premised upon conduct that "necessarily distorted the decision making process within a standard-setting body," that is, Rambus's suppression of relevant information.[163] After summarizing the same facts surrounding Rambus, its patent strategy, and its JEDEC involvement that the FTC had laid out in much greater detail, the European Commission concluded by accepting Rambus's royalty commitments; thus, the Commission forewent the need for any official finding that Rambus had infringed TFEU article 102.[164]

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157 *Id.* ¶¶ 18–19, 26.

158 Case COMP/38.636—Rambus. Comm'n Decision ¶ 30-32 (Dec. 9, 2009) (summary at 2010 0.J. (C 30) 17), *available at* http://ec.europa.eu/competition/antitrust/cases/dec_docs/38636/38636_1203_1.pdf.

159 Comm'n of the European Cmtys., *Intellectual Property Rights and Standardization*, §§ 4.4.1–4.4.2, COM (1992) 445 final (Oct. 27, 1992), *available at* http://ec.europa.eu/enterprise/policies/european-standards/files/reference_documents/doc/com_92_445_ipr_en.tif.

160 *Case COMP/38.636—Rambus*. Comm'n Decision (Dec. 9, 2009), ¶ 32.

161 *Id.* ¶ 28.

162 *Id.* ¶ 39.

163 *Id.* ¶ 39.

164 *Id.* ¶¶ 40–47, 76–77.

IV. ANALYSIS

While section 2 of the Sherman Act addresses the means by which a firm achieves or attempts to achieve a monopoly, TFEU article 102 concerns itself only with abuses of dominant market position. In acting to enforce article 102, the European Commission proved more effective than the FTC in mitigating the harmful results of Rambus's alleged deceptive conduct and manipulation of the JEDEC standard-setting process. Interestingly, the abusive conduct that the European Commission accused Rambus of engaging in was conduct that the Supreme Court had concluded in *NYNEX Corp. v. Discon, Inc.* did not constitute an anticompetitive harm within the meaning of the Sherman Act. In the European Union, the European Commission's response to Rambus's excessive royalty fees—fees the European Commission stated would not have been possible absent Rambus's deceptions—was to force Rambus to agree to a fixed schedule of lower royalty rates. The D.C. Circuit had vacated the FTC's order imposing upon Rambus an administratively determined lower royalty schedule. Given the ostensible purpose of TFEU article 102 to deter, and if necessary remedy, a firm's abuse of a dominant market position, the European Commission proceeded unencumbered by the causation issues that had so vexed U.S. antitrust enforcement efforts.

However, one cannot read the European Commission's December 2009 decision without noting the repeated references to and condemnation of Rambus's alleged deceptive conduct and abuse of JEDEC's cooperative standard-setting process. While the Supreme Court in *Illinois Toolworks Inc. v. Independent Ink, Inc.*[165] held that patent rights alone are not presumed to confer market power,[166] the European Commission's disposition of the Rambus matter suggests that in the European Union, patent ownership might well provide the level of market dominance required under TFEU article 102. Ownership of a patent and the accompanying right to exclude others can no doubt provide a patent owner with opportunities to act independently of competitors and consumers. However, at the time Rambus participated in JEDEC and used knowledge gleaned from JEDEC to tailor patent claim, Rambus's patent rights to the technologies at issue were inchoate. During that period of time, Rambus also had at best an inconsequential share of the DRAM-chip market.

Rambus's behavior at JEDEC, which occurred prior to Rambus's achievement of a dominant position in the SDRAM markets, could alternatively be viewed as an aggravating factor that, at a minimum, influenced the terms of

165 547 U.S. 28 (2006).

166 *Id.* at 45–46.

settlement that the European Commission and Rambus ultimately agreed upon. Despite whether Rambus's alleged deceptive conduct at JEDEC impacted Rambus's liability or the applicable remedy, it is clear from the Commission's decision that one would be mistaken to view TFEU article 102 as a blunt instrument indifferent to the circumstances that give rise to a firm's dominant market position.

The contrasting inability of U.S. antitrust law to remedy the effects of what many view as a successful patent ambush has prompted considerable criticism. For the most part, this criticism is directed at the D.C. Circuit's decision in *Rambus Inc. v. F.T.C.* The opinion appears to signal a retreat from a number of recent cases in which U.S. antitrust enforcement agencies and private plaintiffs have successfully invoked antitrust principles to combat patent ambush and other deceptive behaviors intended to achieve or maintain a monopoly.

The D.C. Circuit's opinion in *Rambus* is said, for example, to have placed the law addressing standard-setting "in a state of flux."[167] The *Rambus* decision purportedly "call[s] into question the ability of antitrust agencies and private plaintiffs to challenge standard-setting deception on Sherman Act grounds."[168] These near-apocalyptic views of the D.C Circuit's *Rambus* decision fail to appreciate the relatively straightforward nature of the legal question presented on appeal, the unique and complex facts of the case, and the remote likelihood that this complicated fact set could ever be reasonably replicated.

Critics have argued that the D.C. Circuit misapplied the Supreme Court's holding in *NYNEX Corp. v. Discon, Inc.* because the defendant in that case held a lawful, government-granted monopoly prior to engaging in its alleged exclusionary conduct.[169] Rambus, on the other hand, was an aspiring monopolist who had the right to exclude others from practicing its patented inventions, "but not the right to exclude any of the numerous technologies considered by JEDEC."[170] The court applied *NYNEX*, however, only after first recognizing that the FTC had found the consequences of Rambus's deceptive conduct—on which Rambus's section 2 liability hinged—in the alternative. Although the

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167 Balto & Wolman, *supra* note 123, at 459.

168 Wilson D. Mudge & Marni B. Karlin, *The District of Columbia Circuit Court's Decision in Rambus Overturns the FTC Finding of Monopolization*, 20 INTELL. PROP. & TECH. L.J. 11, 13 (2008).

169 *See, e.g.*, Cary et al., *supra* note 29, at 1252–53 ("The decision in *NYNEX* was premised on the fact that the defendant was a legal monopolist before it engaged in the alleged deceptive behavior."); *accord* Joel M. Wallace, Rambus v. F.T.C. *in the Context of Standard-Setting Organizations, Antitrust, and the Patent Hold-Up Problem*, 24 BERKELEY TECH. L.J. 661, 685–86 (2009).

170 Wallace, *supra* note 169, at 686.

D.C. Circuit's application of the *NYNEX* case extends over several pages, the application of *NYNEX* was necessitated by a long line of cases that hold that a general verdict cannot be based on alternative theories of liability unless each theory independently provides a basis for liability.[171] The court allotted a single comparative citation to this fundamental principle.[172]

The D.C. Circuit could not have ignored or treated as inapposite the *NYNEX* decision. *NYNEX* was binding precedent holding that one of the two purported alternative anticompetitive harms requisite to the FTC's determination that Rambus had unlawfully obtained a monopoly did not as a matter of law constitute an anticompetitive harm. The court began its review of the legal reasoning on which the FTC based its finding of antitrust liability with the presumption that as a patent owner, Rambus held a lawful monopoly.[173] With that presumption, application of the *NYNEX* decision proved straightforward. The unlawfulness of Rambus's monopolies in the four relevant technology markets could not be established based on a harm that was not anticompetitive within the meaning of section 2 of the Sherman Act.

The Third Circuit's 2007 opinion in *Broadcom Corp. v. Qualcomm, Inc.*[174] has been contrasted by some critics with the D.C. Circuit's opinion in *Rambus*.[175] *Broadcom* should not be viewed as the Third Circuit having ascribed to the D.C. Circuit's ruling in *United States v. Microsoft* that the court could infer causation from defendant's deceptive conduct in establishing the defendant's exclusionary conduct.[176] In reversing the district court's determina-

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171 *See, e.g.*, United N.Y. & N.J. Sandy Hook Pilots Assoc. v. Halecki, 358 U.S. 613, 617–19 (1959) (jury verdict of liability pursuant to New Jersey Wrongful Death Act vacated and remanded where based on negligence and unseaworthiness and trial court erred in submitting issue of unseaworthiness to jury); Avins v. White, 627 F.2d 637, 646 (3d Cir. 1980) (jury's general verdict overturned when two of three alleged incidents of defamation on which the jury based a general verdict in favor of defamation plaintiff were held as a matter of law not to constitute defamation); Albergo v. Reading Co., 372 F.2d 83, 85–86 (3d Cir. 1966) (reversing general verdict of negligence when causation evidence was completely lacking in one of two claims on which jury had based verdict).

172 Rambus Inc. v. Fed. Trade Comm'n, 522 F.3d 456, 464 (D.C. Cir. 2008).

173 *Id.* at 463.

174 501 F.3d 297 (3d Cir. 2007).

175 *See, e.g.*, Maurice E. Stucke, *How Do (and Should) Competition Authorities Treat a Dominant Firm's Deception?*, 63 SMU L. REV. 1069, 1104–06 (2010) (contrasting the Third Circuit's "hard line approach" in *Broadcom Corp. v. Qualcomm, Inc.* with the District of Columbia Circuit's decision in *Rambus Inc. v. F.T.C.*); Cary et al., *supra* note 29, at 1251–52 (distinguishing *Broadcom* and *Rambus* decisions); *see also* Wallace, *supra* note, 169 at 672–73.

176 U.S. v. Microsoft Corp., 253 F.3d 34, 79 (D.C. Cir. 2001).

tion that the plaintiff had failed to state a claim under section 2 of the Sherman Act, the *Broadcom* court, as it was required to do, assumed all allegations had been proved.[177] In *Broadcom,* the plaintiff alleged that defendant had promised its fellow SSO members that the defendant would license its patented technology on a reasonable and nondiscriminatory basis. This promise led the industry to incorporate defendant's technology into the standard, and the defendant reneged on the promised licensing terms once the industry had become locked into the standard.[178] Although the *Broadcom* opinion describes in detail what must be proved in a successful section 2 patent hold-up claim in the standard-setting context, the decision provides little if any insight as to the applicable standards of proof.

Although the D.C. Circuit's opinion in *United States v. Microsoft* did relieve the Government of its burden as plaintiff to prove what would have likely transpired in the absence of the defendant's deceptive conduct,[179] it is not clear why this should reasonably have been the case given the circumstances leading to the FTC's *Rambus* investigation. In the *Microsoft* case, the defendant relied upon deceptive conduct to maintain its monopoly position by quashing nascent competition in the world-wide middleware marketplace.[180] The *Microsoft* court ruled that in a monopolization case seeking injunctive, as opposed to structural, relief, courts could infer causation because requiring plaintiff to reconstruct "the hypothetical *marketplace* . . . would only encourage monopolists to undertake more and earlier anticompetitive action."[181] In other words, monopolists would act evermore preemptively to make a plaintiff's later reconstruction of the marketplace evermore speculative.

Had the court in *Microsoft* not inferred causation from the fact that the defendant had engaged in deceptive conduct, the plaintiff would have been burdened with demonstrating both how the individual decisions of hundreds of millions of consumers would have differed and how those different decisions would have impacted the technological development of competing products that at the relevant time were "merely potential substitutes" for the monopolist's product offerings.[182] In the Rambus matter, the FTC's burden was not to demonstrate how things would have been different in a wide-open marketplace defined by the decisions of hundreds of millions of consumers; the competitive market in

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177 *Broadcom*, 501 F.3d at 306.

178 *Id.* at 313.

179 *Microsoft Corp.*, 253 F.3d at 79.

180 *Id.* at 74.

181 *Id.* at 79–80 (emphasis added).

182 *Id.* at 79.

this instance had been supplanted by a far more organized and manageable industry SSO comprised of a handful of interested industry stakeholders.[183] The interactions of this small number of JEDEC members were also the subject of written correspondence, including meeting minutes, intended to record JEDEC's decision-making process.[184] It is also difficult to see how allowing the FTC to infer causation in the SSO setting would further the *Microsoft* rule's goal of deterring would-be patent ambushers from acting earlier or more anticompetitively. The reason for the *Microsoft* court having relieved plaintiff's burden of proving causation is simply inapposite in the SSO patent hold-up context.

In addition, the remedies that the FTC had under consideration in its August 2, 2006 liability opinion[185] should have alerted the FTC to the heightened need for more direct proof of causation. The *Microsoft* decision makes clear that divestiture remedies of the sort contemplated by the FTC, as compared to merely enjoining the anticompetitive conduct,[186] "raise more serious questions and require clearer indication of a significant causal connection between the conduct and the creation or maintenance of market power."[187] The FTC expressly recognized this dynamic in its remedial opinion, observing:

> In general terms, previous decisions have placed non-damage civil remedies on a spectrum. At one end of the spectrum are controls on conduct . . . . At the other end are structural measures such as divestiture . . . . Compulsory licensing often lies between the two ends of the spectrum, although courts sometimes have likened compulsory licensing to "structural" . . . . [T]he cases appear to establish the broad proposition that, as the plaintiff's demands for relief move across the spectrum from less drastic (conduct) solutions toward

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183 "By its very nature, standard setting displaces the competitive process through which the purchasing decisions of customers determine which interoperable combinations of technologies and products will survive." *In re* Rambus, Inc., No. 9302, 2006 WL 2330117, at *2 (F.T.C. Aug. 2, 2006), *vacated*, 522 F.3d 456 (D.C. Cir. 2008), *cert. denied*, 129 S. Ct. 1318 (2009); *see also id.* at *20 ("In sum, standard setting can function as an efficient substitute for selecting interoperable technologies through direct competition.").

184 *See, e.g.*, Rambus Inc. v. Infineon Techs. AG, 318 F.3d 1081, 1097–98 (Fed. Cir. 2003) (quoting testimony of JEDEC attendee regarding recorded minutes of JEDEC standards-setting committee's meetings); *see also In re Rambus, Inc.*, 2006 WL 2330117, at *55 (referring to minutes of JEDEC's Future DRAM Task Group October 2000 conference call).

185 *In re Rambus, Inc.*, 2006 WL 2330117, at *58 ("The Commission is most interested in the parties' views regarding possibilities for establishing reasonable royalty rates for JEDEC-compliant products affected by Rambus's exclusionary conduct.").

186 U.S. v. Microsoft Corp., 253 F.3d 34, 79–80 (D.C. Cir. 2001) (describing appropriateness of "endentulous" causation test where plaintiff seeks to merely enjoin defendant's offensive conduct).

187 *Id.* at 80 (quoting 3 AREEDA & HOVENKAMP, ANTITRUST LAW ¶ 653b, at 91–92).

> more drastic (structural) solutions, the plaintiff's duty to establish the need for such remedial intervention increases.[188]

After noting that "[c]ompulsory patent licensing *on a reasonable royalty basis* is a well-recognized remedy,"[189] the FTC ultimately fashioned this form of divestiture ordering Rambus to henceforth license its technology in accordance with an FTC-created royalty schedule.[190]

Thus, the procedural posture of the *Broadcom* case on appeal and the litany of distinctions between *Rambus* and *United States v. Microsoft* discussed above do not support the criticism that the D.C. Circuit established a new causation standard in *Rambus Inc. v. F.T.C*.

The D.C. Circuit's decision in *Rambus Inc. v. Fed. Trade Comm'n* may also appear to be a departure from *In re Negotiated Data Solutions*[191] and *In re Dell*,[192] two other FTC enforcement actions addressing patent hold-up situations. As was the case in *Broadcom*, *In re Negotiated Data Solutions* involved a promise by the patent owner, National Semiconductor, to offer its patented technologies on reasonable and nondiscriminatory terms if the Institute for Electrical and Electronics Engineers ("IEEE") incorporated National Semiconductor's patented technology into its Ethernet standard.[193] Negotiated Data Solutions ("N-Data"), the successor to the patent at issue, refused to honor that promise and sought to extract higher licensing fees.[194] The FTC brought an action under section 5 of the FTC Act.[195] Ultimately, N-Data agreed to a settlement whereby it would not seek to enforce the patent unless it had first offered the licensing terms National Semiconductor had agreed to with IEEE.[196]

In re Dell "involved an effort by the Video Electronics Standards Association ("VESA") to identify potentially conflicting patents and to avoid creating standards that would infringe those patents."[197] While VESA was developing a standard for VL-bus, "VESA asked its members to certify whether they had any patents . . . that conflicted with the proposed VL-bus standard. Dell

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188 Rambus, Inc., No. 9302, 2007 WL 431524, at *4 (F.T.C. Feb. 5, 2007) (footnote omitted).

189 *Id.* at *5 (emphasis added).

190 *See* Rambus Inc., No. 9302, 2007 WL 431522, at *5–6 (F.T.C. Feb. 2, 2007) *rev'd by* Rambus Inc. v. Fed. Trade Comm'n, 522 F.3d 456 (D.C. Cir. 2008).

191 For a discussion of this case, *see* Wallace, *supra* note, 169 at 674–75.

192 121 F.T.C. 616 (1996).

193 Wallace, *supra* note 169, at 674.

194 *Id.*

195 *Id.*

196 *Id.* at 675.

197 *In re* Dell, 121 F.T.C. 616, 623 (1996).

certified that it had no such intellectual property rights. After VESA adopted the standard . . . Dell sought to enforce its patent against firms planning to follow the standard."[198] Dell eventually settled with the FTC, agreeing not to enforce its patent against firms practicing the VL-bus standard.[199]

Unlike the circumstances at issue in *Broadcom*, *In re Dell*, and *In re Negotiated Data Solutions*, Rambus never sought to enforce against practitioners of JEDEC's SDRAM and DDR SDRAM standards any patents Rambus possessed at the time it participated in the JEDEC standard-setting process. Indeed, Rambus filed the applications that led to the four Rambus patents covering JEDEC-compliant products were all filed *after* officially withdrawing from JEDEC.[200] Moreover, two federal courts of appeals described JEDEC's patent disclosure policies as having suffered from a "staggering lack of defining details."[201] The FTC itself observed that JEDEC's disclosure policies were "not a model of clarity."[202] Finally, the '898 application for patent that Rambus submitted to the USPTO on April 18, 1990, was unquestionably rich with invention, resulting in an eleven-way restriction by the examiner, numerous divisional and continuation applications, and at least thirty-one issued patents by the time the Federal Circuit decided the *Rambus Inc. v. Infineon Technologies AG* appeal in January 2003.[203] This unique set of facts distinguishes the Rambus matter from other patent ambush cases that the FTC's *In re Rambus* proceedings have been frequently likened.

The unique facts surrounding the Rambus matter are also unlikely to be repeated given the patent application publication requirements enacted as part of the 1999 American Inventors' Protection Act. As of November 2000, the USPTO must publish applications eighteen months after filing unless the applicant certifies that the application will not be the subject of an application for patent in a foreign jurisdiction.[204] The eighteen month period is calculated from the filing date of the earliest application to which a continuation or divisional application claims priority.[205] Had this law been in place in the mid-1990s, any

198 *Id.* at 624 (footnote omitted).

199 *Id.*

200 *See* Rambus Inc. v. Infineon Techs. AG, 318 F.3d 1081, 1085–86 (Fed. Cir. 2003).

201 *Id.* at 1102; *accord* Rambus Inc. v. Fed. Trade Comm'n, 522 F.3d 456, 468 (D.C. Cir. 2008).

202 *In re* Rambus, Inc., No. 9302, 2006 WL 2330117, at *28 (F.T.C. Aug. 2, 2006), *vacated*, 522 F.3d 456 (D.C. Cir. 2008), *cert. denied*, 129 S. Ct. 1318 (2009).

203 *See Rambus Inc.*, 318 F.3d at 1084.

204 *See* 35 U.S.C. § 122(b) (2006).

205 *See* MPEP, *supra* note 105, at § 1120 ("Applications will be published after the expiration of a period of eighteen months from the earliest of: (1) the U.S. filing date; (2) the international

application for patent filed by Rambus claiming the benefit of the '898 application's April 18, 1990 filing date would have been published by the USPTO as soon as practicable after filing.[206] Having been made aware of the disclosed '898 application's written description, concerned JEDEC members could have readily informed themselves of the claims Rambus was continuing to file based on the inventions disclosed in the '898 application.

The 1999 American Inventors' Protection Act publication requirements do not solve all of the issues associated with Rambus's patent strategy and behavior at JEDEC. However, the publication requirements should allay the concerns of those who believe the D.C. Circuit's *Rambus Inc. v. Fed. Trade Comm'n* opinion invites more patent ambush in the standard-setting context. The *Rambus* decision addressed a unique set of facts, facts that as a result of changes in the patent laws are unlikely to reoccur. Any would-be patent ambusher misrepresenting or omitting relevant information concerning an existing patent or filed patent application would be well advised to keep in mind the Third Circuit's *Broadcom Corp. v. Qualcomm, Inc*. opinion.

V. CONCLUSION

The inability of U.S antitrust laws to address what even the Federal Circuit, in its opinion largely absolving Rambus of liability, found was conduct that "impeach[ed] Rambus's business ethics"[207] has left many wondering if U.S. antitrust law is still relevant in the patent-ambush context. Such concerns are overstated. Section 2 of the Sherman Act remains an available tool with which U.S. authorities and private plaintiffs can seek to remedy the anticompetitive results of a patent ambush. Indeed, section 2 is a superior means of addressing this behavior because unlike TFEU article 102, it does not negatively impact the rewards available to an innovator who legitimately achieves a dominant market position. Although the European Commission was careful to identify the particular context that justified Rambus's licensing commitments, the fact remains that TFEU article 102 can potentially cast too wide a net and reduce incentives for innovators who achieve a dominant market position as a result of their superior technology. The potential use of section 2 to combat patent ambush—

filing date; or (3) the filing date of an earlier application for which a benefit is sought under 35 U.S.C. 119, 120, 121, or 365.").

206 Given the world-wide market for SDRAM chips, it is reasonable to assume Rambus would have filed foreign patent applications.

207 *See* Rambus Inc. v. Infineon Techs. AG, 318 F.3d 1081, 1104 (Fed. Cir. 2003).

indeed, monopolization in general—should not be thought diminished by the failure of the FTC to properly build its monopolization case against Rambus.

Under section 2 of the Sherman Act, the FTC's proposed remedy, identical in function to that imposed by the European Commission, required more robust and direct proof that Rambus's deceptive conduct enabled it to unlawfully acquire a monopoly. This result should inform not only future FTC enforcement actions but also the disclosure and recordation policies of private industry SSOs. In addition, plaintiffs, government and private, should invoke section 2 of the Sherman Act to remedy anticompetitive harms resulting from assertion of patent rights during any portion of a patent term that can be proved to have resulted from the patent applicant's exclusionary conduct. While changes in U.S. patent laws render unlikely a recurrence of the unique Rambus scenario, "[t]he species of fraud are numberless, and like a chameleon."[208] The lesson of the D.C. Circuit's *Rambus Inc. v. Fed. Trade Comm'n* decision should not be to abandon antitrust enforcement as a means to combat patent ambush. Rather, the lesson should be to apply section 2 carefully based upon presented facts and all identifiable anticompetitive injuries.

[208] *Id.* at 1107 (Prost, J., dissenting) (quoting Hirschberg v. G.W. Motors, Inc., 34 Va. Cir. 55, 60 (1994)).