PRECEDENTIAL

UNITED STATES COURT OF APPEALS
FOR THE THIRD CIRCUIT

No. 06-4292

BROADCOM CORPORATION,
Appellant

v.

QUALCOMM INCORPORATED

APPEAL FROM THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW JERSEY
D.C. Civil No. 05-cv-03350
District Judge: The Honorable Mary Little Cooper

Argued: June 28, 2007

Before: BARRY, FUENTES, and GARTH, Circuit Judges

(Filed: September 4, 2007)

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OPINION OF THE COURT

BARRY, Circuit Judge

This appeal presents important questions regarding whether a patent holder's deceptive conduct before a private standards-determining organization may be condemned under antitrust laws and, if so, what facts must be pled to survive a motion to dismiss. Broadcom Corporation ("Broadcom") alleged that Qualcomm Inc. ("Qualcomm"), by its intentional deception of private standards-determining organizations and its predatory acquisition of a potential rival, has monopolized certain markets for cellular telephone technology and components, primarily in violation of Sections 1 and 2 of the Sherman Act and Sections 3 and 7 of the Clayton Act. The District Court dismissed the Complaint, and Broadcom appeals. For the reasons that follow, we conclude that Broadcom has stated claims for monopolization and attempted monopolization under § 2 of the Sherman Act – Claims 1 and 2 of the Complaint. We also conclude, however, that Broadcom lacks standing to assert a claim for unlawful monopoly maintenance in a market in which it neither competes nor seeks to compete – Claim 7 – and that it has failed to allege an antitrust injury sufficient to state a claim under § 7 of the Clayton Act – Claim 8. We will, accordingly, affirm in part, reverse in part, and will order the reinstatement of Broadcom's state and common-law claims.

I. Background

A. Mobile Wireless Telephony and the UMTS Standard

Mobile wireless telephony is the general term for describing the technology and equipment used in the operation of cellular telephones. A cellular telephone contains one or more computer "chipsets" – the core electronics that allow it to transmit and receive information, either telephone calls or data, to and from the wireless network. Chipsets transmit information, via radio waves, to cellular base stations. Base stations, in turn, transmit information to and from telephone and computer networks. It is essential that all components involved in this transmission of information be able to communicate seamlessly with one another. Because multiple vendors manufacture these components, industry-wide standards are necessary to ensure their interoperability. In mobile wireless telephony, standards are determined privately by industry groups known as standards-determining organizations ("SDOs").

Two technology paths, or families of standards, are in widespread use today: "CDMA," which stands for "code division multiple access"; and "GSM," which stands for "global system for mobility." Cellular telephone service providers operate under one or the other path, with, for example, Verizon Wireless and Sprint Communications operating CDMA-path networks, and Cingular (now AT&T) and T-Mobile operating GSM-path networks. The CDMA and GSM technology paths are not interoperable; equipment and technologies used in one cannot be used in the other. For this reason, each technology path has its own standard or set of standards. The standard used in current generation GSM-path networks is the third generation ("3G") standard created for the GSM path, and is known as the Universal Mobile Telecommunications System ("UMTS") standard.[1]

The UMTS standard was created by the European Telecommunications Standards Institute ("ETSI") and its SDO counterparts in the United States and elsewhere after a lengthy evaluation of available alternative equipment and technologies. Qualcomm supplies some of the essential technology that the ETSI ultimately included in the UMTS standard, and holds intellectual property rights ("IPRs"), such as patents, in this technology. Given the potential for owners of IPRs, through the exercise of their rights, to exert undue control over the implementation of industry-wide standards, the ETSI requires a commitment from vendors whose technologies are included in standards to license their technologies on fair, reasonable, and non-discriminatory ("FRAND") terms. Neither the ETSI nor the other relevant SDOs further define FRAND.

Broadcom alleged that Qualcomm was a member of the

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[1] Previous generation standards were more limited in their capacity for data transmission. The first generation ("1G") standard was analog and could transmit voice communication but little or no data. The second generation ("2G") standard was digital and had limited data-transmission capacity. A 2.5G standard added more data-transmission capacity. Future generation standards with greater data-transmission capacity are currently in development, and are known as the "beyond-3G" ("B3G") and 4G standards.

ETSI, among other SDOs, and committed to abide by its IPR policy. Specifically, Broadcom alleged, the ETSI included Qualcomm's proprietary technology in the UMTS standard only after, and in reliance on, Qualcomm's commitment to license that technology on FRAND terms. The technology in question is called Wideband CDMA ("WCDMA"), not to be confused with the CDMA technology path. Although it represents only a small component of the technologies that collectively comprise the UMTS standard, WCDMA technology is said to be essential to the practice of the standard.

B. Broadcom's Complaint

Broadcom filed this action in the U.S. District Court for the District of New Jersey on July 1, 2005, and filed its First Amended Complaint (the "Complaint") shortly thereafter. The Complaint alleged that Qualcomm induced the ETSI and other SDOs to include its proprietary technology in the UMTS standard by falsely agreeing to abide by the SDOs' policies on IPRs, but then breached those agreements by licensing its technology on non-FRAND terms. The intentional acquisition of monopoly power through deception of an SDO, Broadcom posits, violates antitrust law.

The Complaint also alleged that Qualcomm ignored its FRAND commitment to the ETSI and other SDOs by demanding discriminatorily higher (i.e., non-FRAND) royalties from competitors and customers using chipsets not manufactured by Qualcomm. Qualcomm, the Complaint continued, has a 90% share in the market for CDMA-path chipsets, and by withholding favorable pricing in that market, coerced cellular telephone manufacturers to purchase only Qualcomm-manufactured UMTS-path chipsets. These actions are alleged to be part of Qualcomm's effort to obtain a monopoly in the UMTS chipset market because it views competition in that market as a long-term threat to its existing monopolies in CDMA technology.

Broadcom claims to have been preparing to enter the UMTS chipset market for several years prior to its filing of the Complaint. After Broadcom purchased Zyray Wireless, Inc., a developer of UMTS chipsets, Qualcomm allegedly demanded that Broadcom license Qualcomm's UMTS technology on non-FRAND terms. Broadcom refused, and commenced this action. Qualcomm also allegedly acquired Flarion Technologies, a competitor in the development of technologies for inclusion in the forthcoming B3G and 4G standards, in an effort to extend Qualcomm's monopolies into future generations of standards.

Based on the above factual allegations, the Complaint asserted claims under Sections 1 and 2 of the Sherman Act, 15 U.S.C. §§ 1, 2; Sections 3 and 7 of the Clayton Act, 15 U.S.C. §§ 14, 18; and various state and common-law claims.

C. The District Court's Opinion

Qualcomm moved to dismiss the Complaint under Federal Rule of Civil Procedure 12(b)(6) for failure to state a claim. On August 30, 2006, little more than a year after the filing of the Complaint and while discovery was ongoing, the District Court granted the motion. In dismissing Broadcom's claim of monopolization in the WCDMA technology markets, the Court reasoned that Qualcomm enjoyed a legally-sanctioned monopoly in its patented technology, and that this monopoly conferred the right to exclude competition and set the terms by which that technology was distributed. Acknowledging that industry-wide standards merit "additional antitrust scrutiny" (App. at A18), the Court nevertheless quickly concluded that the inclusion of Qualcomm's WCDMA technology in the UMTS standard did not harm competition because an absence of competition was the inevitable result of any standard-setting process. That inclusion of Qualcomm's technology may have been the product of deception was of no moment under antitrust law, the Court continued, because no matter which company's patented technology ultimately was chosen, the adoption of a standard would have eliminated competition. (*Id.* at A21 ("[I]t is the SDO's decision to set a standard for WCDMA technology, not Qualcomm's 'inducement,' that results in the absence of competing WCDMA technologies.").) The Court did not discuss the possibility that the FRAND commitments that SDOs required of vendors were intended as a bulwark against unlawful monopoly, nor did it consider the possibility that the SDOs might have chosen nonproprietary technologies for inclusion in the standard.

As to the claim that Qualcomm was attempting to obtain a monopoly in the UMTS chipset market by exploiting its monopolies in WCDMA technology and CDMA-path chipsets, the District Court faulted the Complaint for not providing "information on the composition or dynamics of the market for UMTS chipsets to enable the Court to infer that Qualcomm's conduct is anticompetitive." (*Id.* at A23.) The Court also dismissed Broadcom's claim for unlawful maintenance of monopoly, reasoning that the combination of patent rights and an industry-wide standard foreclosed the possibility of unlawful monopoly, and that the Complaint did not describe the composition of the 3G CDMA chipset market in sufficient detail.

The District Court, next, dismissed Broadcom's claims for unlawful tying and exclusive dealing, finding that Qualcomm's mere refusal to offer discounts and market incentives to potential licensees who did not purchase Qualcomm chipsets was neither coercive nor an unlawful agreement not to use a competitor's goods that foreclosed a substantial share of commerce. The Court also dismissed the final federal claim, the claim relating to Qualcomm's purchase of Flarion, finding Broadcom's alleged injuries "too speculative." (*Id.* at A44.) Absent a federal claim, the Court declined to exercise supplemental jurisdiction over the remaining state and common-law claims, and dismissed the Complaint with leave to amend. Choosing to stand on its Complaint, Broadcom filed this timely appeal.

II. Jurisdiction and Standard of Review

The District Court had jurisdiction to decide Broadcom's federal antitrust claims under 28 U.S.C. §§ 1331 and 1337, and § 4 of the Sherman Act, 15 U.S.C. § 4. Supplemental jurisdiction over Broadcom's state and common-law claims was proper under 28 U.S.C. § 1367. We have jurisdiction to review the final order of the District Court under 28 U.S.C. § 1291.

Our review of a district court's dismissal of a complaint for failure to state a claim is plenary. *Lum v. Bank of America*, 361 F.3d 217, 223 (3d Cir. 2004). In reviewing a dismissal under Rule 12(b)(6), "we accept all factual allegations as true, construe the complaint in the light most favorable to the plaintiff, and determine whether, under any reasonable reading of the complaint, the plaintiff may be entitled to relief." *Pinker v. Roche Holdings Ltd.*, 292 F.3d 361, 374 n.7 (3d Cir. 2002).

III. Discussion

Broadcom raises these issues on appeal: whether deception of an SDO may give rise to antitrust liability under the circumstances alleged, whether the Complaint adequately pled claims of attempted monopolization and monopoly maintenance, and whether the claim relating to Qualcomm's acquisition of Flarion was properly dismissed. Broadcom does not appeal the dismissal of its claims for tying and exclusive dealing.

A. The District Court erred in dismissing Claim 1 – the monopolization claim – on the ground that abuse of a private standard-setting process does not state a claim under antitrust law.

Claim 1 of the Complaint alleged that Qualcomm monopolized markets for WCDMA technology by inducing the relevant SDOs to include Qualcomm's patented technology as an essential element of the UMTS standard. Qualcomm did this by falsely promising to license its patents on FRAND terms, and then reneging on those promises after it succeeded in having its technology included in the standard. These actions, the Complaint alleged, violated § 2 of the Sherman Act, 15 U.S.C. § 2.

1. Unlawful Monopolization under § 2: Monopoly Power

Section 2 of the Sherman Act, in what we have called "sweeping language," makes it unlawful to monopolize, attempt to monopolize, or conspire to monopolize, interstate or international commerce.[2] It is, we have observed, "the provision of the antitrust laws designed to curb the excesses of monopolists and near-monopolists." *LePage's Inc. v. 3M*, 324 F.3d 141, 169 (3d Cir. 2003) (en banc). Liability under § 2 requires "(1) the possession of monopoly power in the relevant market and (2) 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." *United States v. Grinnell Corp.*, 384 U.S. 563, 570-71 (1966). Monopoly power is the ability to control prices and exclude competition in a given market. *Id.* at 571. If a firm can profitably raise prices without causing competing firms to expand output and drive down prices, that firm has monopoly power. *Harrison Aire, Inc. v. Aerostar Int'l, Inc.*, 423 F.3d 374, 380 (3d Cir. 2005).

The existence of monopoly power may be proven through direct evidence of supracompetitive prices and restricted output. *United States v. Microsoft Corp.*, 253 F.3d 34, 51 (D.C. Cir. 2001) (en banc); *Rebel Oil Co. v. Atl. Richfield Co.*, 51 F.3d 1421, 1434 (9th Cir. 1995). It may also be inferred from the structure and composition of the relevant market. *Harrison Aire*, 423 F.3d at 381; *Microsoft*, 253 F.3d at 51. To support an inference of monopoly power, a plaintiff typically must plead

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[2] Section 2 provides as follows:

> Every person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of the trade or commerce among the several States, or with foreign nations, shall be deemed guilty of a felony, and, on conviction thereof, shall be punished by fine not exceeding $100,000,000 if a corporation, or, if any other person, $1,000,000, or by imprisonment not exceeding 10 years, or by both said punishments, in the discretion of the court.

15 U.S.C. § 2.

and prove that a firm has a dominant share in a relevant market, and that significant "entry barriers" protect that market. *Harrison Aire*, 423 F.3d at 381; *Microsoft*, 253 F.3d at 51. Barriers to entry are factors, such as regulatory requirements, high capital costs, or technological obstacles, that prevent new competition from entering a market in response to a monopolist's supracompetitive prices. *Microsoft*, 253 F.3d at 51; *Rebel Oil*, 51 F.3d at 1439; *see also Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 591 n.15 (1986) ("[W]ithout barriers to entry it would presumably be impossible to maintain supracompetitive prices for an extended time.").

Proving the existence of monopoly power through indirect evidence[3] requires a definition of the relevant market. *See SmithKline Corp. v. Eli Lilly & Co.*, 575 F.2d 1056, 1062-63 (3d Cir. 1978). The scope of the market is a question of fact as to which the plaintiff bears the burden of proof. *Queen City Pizza, Inc. v. Domino's Pizza, Inc.*, 124 F.3d 430, 436 (3d Cir.

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[3] Because market share and barriers to entry are merely surrogates for determining the existence of monopoly power, *see* 2A Phillip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 531a (2006) [hereinafter Areeda & Hovenkamp], direct proof of monopoly power does not require a definition of the relevant market. *See PepsiCo, Inc. v. Coca-Cola Co.*, 315 F.3d 101, 107-08 (2d Cir. 2002) (stating that "a relevant market definition is not a necessary component of a monopolization claim" where there is direct evidence of monopoly power); *Conwood Co., L.P. v. U.S. Tobacco Co.*, 290 F.3d 768, 783 n.2 (6th Cir. 2002) (noting that monopoly power "may be proven directly by evidence of the control of prices or the exclusion of competition, or it may be inferred from one firm's large percentage share of the relevant market" (internal quotation marks and citation omitted)); *Toys "R" Us, Inc. v. F.T.C.*, 221 F.3d 928, 937 (7th Cir. 2000) (distinguishing between proving monopoly power by direct evidence, and "by proving relevant product and geographic markets and by showing that the defendant's share exceeds whatever threshold is important for the practice in the case").

1997); *Weiss v. York Hosp.*, 745 F.2d 786, 825 (3d Cir. 1984). Competing products are in the same market if they are readily substitutable for one another; a market's outer boundaries are determined by the reasonable interchangeability of use between a product and its substitute, or by their cross-elasticity of demand. *Brown Shoe Co. v. United States*, 370 U.S. 294, 325 (1962). Failure to define the proposed relevant market in these terms may result in dismissal of the complaint. *Queen City Pizza*, 124 F.3d at 436.

2. Unlawful Monopolization under § 2: Anticompetitive Conduct

The second element of a monopolization claim under § 2 requires the willful acquisition or maintenance of monopoly power. As this element makes clear, the acquisition or possession of monopoly power must be accompanied by some anticompetitive conduct on the part of the possessor. *Verizon Commcn's Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 407 (2004). Anticompetitive conduct may take a variety of forms, but it is generally defined as conduct to obtain or maintain monopoly power as a result of competition on some basis other than the merits. *LePage's*, 324 F.3d at 147. Conduct that impairs the opportunities of rivals and either does not further competition on the merits or does so in an unnecessarily restrictive way may be deemed anticompetitive. *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 604-05 & n.32 (1985). Conduct that merely harms competitors, however, while not harming the competitive process itself, is not anticompetitive. *See Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 224 (1993) ("It is axiomatic that the antitrust laws were passed for 'the protection of *competition*, not *competitors*.'" (quoting *Brown Shoe*, 370 U.S. at 320)); *Spectrum Sports, Inc. v. McQuillan*, 506 U.S. 447, 458 (1993) ("The law directs itself not against conduct which is competitive, even severely so, but against conduct which unfairly tends to destroy competition itself.").

In activities that enjoy First Amendment protection, such as lobbying, firms may enjoy broad immunity from antitrust liability for concerted efforts to influence political action in restraint of trade, even when such efforts employ unethical or deceptive methods. *See Eastern R.R. Presidents Conference v. Noerr Motor Freight, Inc.*, 365 U.S. 127, 136-38, 144-45 (1961); *Mine Workers v. Pennington*, 381 U.S. 657, 669-72 (1965); *see also Allied Tube & Conduit Corp. v. Indian Head, Inc.*, 486 U.S. 492, 499-500 (1988). "[I]n less political arenas," however, such as here, "unethical and deceptive practices can constitute abuses of administrative or judicial processes that may result in antitrust violations." *Allied Tube*, 486 U.S. at 500. Private standards-determining organizations, in contrast to legislative or quasi-legislative bodies, have historically been subject to antitrust scrutiny. *Id.*; *Am. Soc. of Mech. Eng'rs, Inc. v. Hydrolevel Corp.*, 456 U.S. 556, 571 (1982) ("[A] standard-setting organization . . . can be rife with opportunities for anticompetitive activity.").

The primary goal of antitrust law is to maximize consumer welfare by promoting competition among firms. Areeda & Hovenkamp, *supra*, ¶ 100a; *see also LePage's*, 324 F.3d at 169. Private standard setting advances this goal on several levels. In the end-consumer market, standards that ensure the interoperability of products facilitate the sharing of information among purchasers of products from competing manufacturers, thereby enhancing the utility of all products and enlarging the overall consumer market. *See Allied Tube*, 486 U.S. at 501, 506-07 (noting the procompetitive benefits of private standard setting); Areeda & Hovenkamp, *supra*, ¶ 2233 (referring to the foregoing benefits as "network externalities"); *see also* Letter from Thomas O. Barnett, Assistant Attorney Gen., Antitrust Div., Dep't of Justice, to Robert A. Skitol, Esq. [hereinafter "Skitol Letter"] 7 (Oct. 30, 2006), *available at* 2006 WL 3326742; Deborah Platt Majoras, Chairman, Fed. Trade Comm'n, Recognizing the Procompetitive Potential of Royalty Discussions in Standard Setting, Remarks (Sept. 23, 2005), *available at* 2005 WL 2406107, at *1; Gerald F. Masoudi, Deputy Assistant Attorney Gen., Address at the High-Level Workshop on Standardization, IP Licensing, and Antitrust, Tilburg Law & Economics Center, Tilberg University (Jan. 18, 2007), *available at* 2007 WL 969967, at *3. (Br. of *Amici*

Curiae American Antitrust Institute and Consumer Federation of America [hereinafter "AAI/CFA Br."] 18; Br. of *Amici Curiae* The Institute of Electrical and Electronics Engineers, Inc. et al. [hereinafter "IEEE Br."] 17-18.) This, in turn, permits firms to spread the costs of research and development across a greater number of consumers, resulting in lower per-unit prices. (Br. of *Amici* Texas Instruments Inc. et al. [hereinafter "Texas Instruments Br."] 4.) Industry-wide standards may also lower the cost to consumers of switching between competing products and services, thereby enhancing competition among suppliers. (*Id.*)

Standards enhance competition in upstream markets, as well. One consequence of the standard-setting process is that SDOs may more readily make an objective comparison between competing technologies, patent positions, and licensing terms before an industry becomes locked in to a standard. (AAI/CFA Br. 19.) Standard setting also reduces the risk to producers (and end consumers) of investing scarce resources in a technology that ultimately may not gain widespread acceptance. (Texas Instruments Br. 5.) The adoption of a standard does not eliminate competition among producers but, rather, moves the focus away from the development of potential standards and toward the development of means for implementing the chosen standard. (*Cf. id.* at 17.)[4]

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[4] In their brief, SDO *Amici* explain the competition that occurs between firms in the telecommunications standard-setting process. Prior to the adoption of a standard, firms compete on the basis of their respective technologies and intellectual property positions. Each SDO *Amicus* has policies in place to require competing firms to disclose all relevant patents and licensing commitments. Such policies facilitate an informed comparison of the firms and their technologies, and are "part of an effort to preserve the competitive benefits of *ex ante* technology competition." (IEEE Br. 10 (IEEE Standards Association); *see also id.* 12 (VITA Standards Organization); 16 (OASIS Open (Organization for the Advancement of Structured Information Standards)).) Thus, the selection of a standard is, itself, the product

Each of these efficiencies enhances consumer welfare and competition in the marketplace and is, therefore, consistent with the procompetitive aspirations of antitrust law. *See* Areeda & Hovenkamp, *supra*, ¶ 100a. Thus, private standard setting – which might otherwise be viewed as a naked agreement among competitors not to manufacture, distribute, or purchase certain types of products – need not, in fact, violate antitrust law. *See Allied Tube*, 486 U.S. at 500-01; *see also* Standards Development Organization Advancement Act of 2004, 15 U.S.C. §§ 4302, 4303 (Supp. 2004) (providing that private standard-setting conduct shall not be deemed illegal *per se*, and insulating such conduct from treble damages); Pub. L. 108-237, Title I, § 102, June 22, 2004, 118 Stat. 661 (noting congressional finding of "the importance of technical standards developed by voluntary consensus standards bodies to our national economy").

This is not to say, however, that acceptance, including judicial acceptance, of private standard setting is without limits. Indeed, that "private standard-setting by associations comprising firms with horizontal and vertical business relations is permitted at all under the antitrust laws [is] only on the understanding that it will be conducted in a nonpartisan manner offering procompetitive benefits," *Allied Tube*, 486 U.S. at 506-07, and in the presence of "meaningful safeguards" that "prevent the standard-setting process from being biased by members with economic interests in stifling product competition," *id.* at 501; *Hydrolevel*, 456 U.S. at 572; *see also Clamp-All Corp. v. Cast Iron Soil Pipe Inst.*, 851 F.2d 478, 488 (1st Cir. 1988) (acknowledging possibility of antitrust claim where firms both prevented SDO from adopting a beneficial standard and did so through "unfair, or improper practices or procedures"). As the Supreme Court acknowledged in *Allied Tube*, and as administrative tribunals, law enforcement authorities, and some courts have recognized, conduct that undermines the procompetitive benefits of private standard setting may, at least in some circumstances, be deemed anticompetitive under antitrust law.

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of a competitive process.

a. Patent Hold-up

Inefficiency may be injected into the standard-setting process by what is known as "patent hold-up." An SDO may complete its lengthy process of evaluating technologies and adopting a new standard, only to discover that certain technologies essential to implementing the standard are patented. When this occurs, the patent holder is in a position to "hold up" industry participants from implementing the standard. Industry participants who have invested significant resources developing products and technologies that conform to the standard will find it prohibitively expensive to abandon their investment and switch to another standard. They will have become "locked in" to the standard. In this unique position of bargaining power, the patent holder may be able to extract supracompetitive royalties from the industry participants. *See In the Matter of Rambus, Inc.*, No. 9302, at 4 (F.T.C. Aug. 2, 2006), *available at* 2006 WL 2330117; Skitol Letter, *supra*, at 8; Majoras, *supra*, at *1; Masoudi, *supra*, at *3; *see also Eastman Kodak Co. v. Image Technical Servs., Inc.*, 504 U.S. 451, 476 (1992) (describing the lock-in that causes purchasers of expensive office equipment to tolerate supracompetitive service prices before changing brands); *Qualcomm Inc. v. Broadcom Corp.*, No. 05-CV-1958-B, 2007 WL 2296441, at *34 (S.D. Cal. Aug. 7, 2007) (characterizing such conduct as an attempt at "holding hostage the entire industry desiring to practice the . . . standard").

In actions brought before the Federal Trade Commission ("FTC"), patent holders have faced antitrust liability for misrepresenting to an SDO that they did not hold IPRs in essential technologies, and then, after a standard had been adopted, seeking to enforce those IPRs. In 1996, the FTC entered into a consent order with Dell Computer Corporation. The complaint issued in conjunction therewith alleged that Dell participated in an SDO's adoption of a design standard for a computer bus (i.e., an information-carrying conduit), but failed to disclose that it owned a patent for a key design feature of the standard, and even certified to the SDO that the proposed standard did not infringe any of Dell's IPRs. After the design standard proved successful, Dell attempted to assert its IPRs, prompting the FTC to commence an enforcement action under § 5 of the FTC Act, 15 U.S.C. § 45, for unfair methods of competition in or affecting commerce. Dell's actions, it was alleged, created uncertainty that hindered industry acceptance of the standard, increased the costs of implementing the standard, and chilled the willingness of industry participants to engage in the standard-setting process. *In the Matter of Dell Computer Corp.*, 121 F.T.C. 616, 618 (May 20, 1996).

The consent order required, among other things, that Dell cease and desist from asserting that the use or implementation of the standard violated its IPRs. Significantly, the FTC's announcement that accompanied the order stated that in the "limited circumstances . . . where there is evidence that the [SDO] would have implemented a different non-proprietary design had it been informed of the patent conflict during the certification process, and where Dell failed to act in good faith to identify and disclose patent conflicts . . . enforcement action is appropriate to prevent harm to competition and consumers." *Id.* at 624. It also noted that once the standard had gained widespread acceptance, "the standard effectively conferred market power upon Dell as the patent holder. This market power was not inevitable: had [the SDO] known of the Dell patent, it could have chosen an equally effective, non-proprietary standard." *Id.* n.2. One Commissioner, writing in dissent, conceded that "[i]f Dell had obtained market power by knowingly or intentionally misleading a standards-setting organization, it would require no stretch of established monopolization theory to condemn that conduct." *Id.* at 629. She objected, nevertheless, to imposing antitrust liability on Dell absent specific allegations in the proposed complaint that Dell misled the SDO intentionally or knowingly, and that it obtained market power as a result of its misleading statements. *Id.* at 629-30.

In 2005, the FTC entered into a consent order resolving allegations that Union Oil Company of California ("Unocal") made deceptive and bad-faith misrepresentations to a state standards-determining board concerning the status of Unocal's IPRs. The administrative complaint had alleged that the board relied on these misrepresentations in promulgating new standards governing low-emissions gasoline, and that Unocal's misrepresentations led directly to its acquisition of monopoly power and harmed competition after refiners became locked in to regulations that required the use of Unocal's proprietary technology. Unocal's anticompetitive conduct was alleged to have violated § 5 of the FTC Act. The consent order required Unocal, among other things, to cease and desist from all efforts to enforce its relevant patents. *In the Matter of Union Oil Co. of Cal.*, No. 9305 (F.T.C. July 27, 2005), *available at* 2005 WL 2003365.

Most recently, a landmark, 120-page opinion in *In the Matter of Rambus, Inc.*, was entered on the docket on August 2, 2006 by a unanimous FTC. Rambus, a developer of computer memory technologies, was found to have deceived an SDO by failing to disclose its IPRs in technology that was essential to the implementation of now-ubiquitous computer memory standards, by misleading other members of the SDO into believing that Rambus was not seeking any new patents relevant to the standard then under consideration, and by using information that it gained from its participation in the standard-setting process to amend its pending patent applications so that they would cover the ultimate standard. *Id.* at 3, 4. Noting that such conduct "has grave implications for competition," *id.* at 3, the FTC found that Rambus had distorted the standard-setting process and engaged in anticompetitive hold-up. For the first time, the FTC held that deceptive conduct of the type alleged in *Dell Computer* and *Union Oil* constituted "exclusionary conduct" under § 2 of the Sherman Act, as well as unlawful monopolization under § 5 of the FTC Act. *Id.* at 3.[5]

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[5] In related litigation before the U.S. District Court for the Eastern District of Virginia, the Court observed of Rambus's conduct that

> even if the SSO [i.e., standard-setting organization] itself is not corrupt, the subversion of an SSO by a single industry player or by a limited subset of SSO members can result in anticompetitive outcomes.

Rambus is particularly noteworthy for its extensive discussion of deceptive conduct in the standard-setting context and the factors that make such conduct anticompetitive under § 2 of the Sherman Act. The FTC likened the deception of an SDO to the type of deceptive conduct that the D.C. Circuit found to violate § 2 of the Sherman Act in *Microsoft*. There, the Court found that Microsoft had marketed software-development tools that would permit software developers to create programs that, ostensibly, did not need to run on Microsoft's ubiquitous operating system, but that, in fact, could operate properly *only* on Microsoft's operating system. The Court found that in an environment in which software developers reasonably expected Microsoft not to mislead them, Microsoft's deceptive conduct was anticompetitive. *Microsoft*, 253 F.3d at 76-77. Analogizing to *Microsoft*, the FTC found that Rambus's deception occurred in an environment – the standard-setting process – in which participants "expected each other to act cooperatively." *Rambus*, No. 9302, at 33, 51-52.

The FTC discussed at length the unique dangers of deception in the standard-setting context. Private standard setting occurs in a consensus-oriented environment, where participants rely on structural protections, such as rules requiring the disclosure of IPRs, to facilitate competition and constrain the exercise of monopoly power. In such an environment, participants are less likely to be wary of deception and may not detect such conduct and take measures to counteract it until after lock-in has occurred. At that point, the resulting harm to

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> Thus, antitrust law historically has been concerned with the risk of one or a small number of participants capturing the economic power of an industry-wide standard and turning the SSO into a source of exclusionary power. Simply put, by hijacking or capturing an SSO, a single industry player can magnify its power and effectuate anticompetitive effects on the market in question.

Rambus, Inc. v. Infineon Techs. AG, 330 F. Supp. 2d 679, 696-97 (E.D. Va. 2004).

competition may be very difficult to correct. *See id.* at 33-35;[6] *see also Qualcomm*, 2007 WL 2296441, at *31 (noting the seriousness of standard-setting misconduct).

These decisions reflect a growing awareness of the risks associated with deceptive conduct in the private standard-setting process. The Supreme Court acknowledged these risks in *Allied Tube*, and the FTC has found deception of an SDO to constitute anticompetitive conduct in violation of § 2 of the Sherman Act. Recent statements by Department of Justice officials support this trend. *See, e.g.*, Skitol Letter, *supra*, at 10.[7]

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[6] The concurring opinion reiterated the FTC's finding that Rambus violated § 2 of the Sherman Act when it "effectively transmogrified [the SDO's] procompetitive efforts into a tool for monopolization." *Rambus*, No. 9302, concurring op. at 1 (F.T.C. Aug. 2, 2006).

[7] Although several district court decisions appear to cut against the trend, they are easily distinguishable. In *Hynix Semiconductor Inc. v. Rambus Inc.*, 441 F. Supp. 2d 1066, 1080-81 (N.D. Cal. 2006), the Court balanced the competing policies underlying patent and antitrust law and concluded that Rambus's "breach of the [SDO] disclosure policies, without more, cannot give rise to antitrust liability." Significantly, however, the Court also noted that "Hynix is not barred from asserting that Rambus's overall course of conduct, which may include the circumstances and intent behind its decision to not disclose its patents and patent applications, violated antitrust laws." *Id.* at 1081. It should be noted that the FTC's *Rambus* decision considered all of the "circumstances" and followed a lengthy trial on the merits. *See Rambus*, No. 9302, at 51. Another readily distinguishable decision is *Townshend v. Rockwell Int'l Corp.*, No. C99-0400SBA, 2000 WL 433505, at *7, *10-11 (N.D. Cal. Mar. 28, 2000), a case cited approvingly by the District Court. The Court in *Townshend* dismissed an antitrust claim alleging that, prior to the adoption of a standard incorporating proprietary technology, proposed licensing terms that violated the SDO's patent policy had been submitted to the SDO, and litigation involving the relevant IPRs had not been disclosed. In dismissing, the Court found no allegation that the

b. FRAND Commitments

Against this backdrop, we must determine whether Broadcom has stated actionable anticompetitive conduct with allegations that Qualcomm deceived relevant SDOs into adopting the UMTS standard by committing to license its WCDMA technology on FRAND terms and, later, after lock-in occurred, demanding non-FRAND royalties. As Qualcomm is at pains to point out, no court nor agency has decided this *precise* question and, in that sense, our decision will break new ground. The authorities we have cited in our lengthy discussion that has preceded this point, however, decidedly favor a finding that Broadcom's allegations, if accepted as true, describe actionable anticompetitive conduct.

To guard against anticompetitive patent hold-up, most SDOs require firms supplying essential technologies for inclusion in a prospective standard to commit to licensing their technologies on FRAND terms. (*E.g.*, IEEE Br. 9 & n.13 (stating that under IEEE bylaws, the absence of irrevocable FRAND assurances will preclude approval of standards known to incorporate essential, proprietary technologies).) A firm's FRAND commitment, therefore, is a factor – and an important factor – that the SDO will consider in evaluating the suitability of a given proprietary technology vis-a-vis competing technologies. (*Id.* 9.)

The FRAND commitment, or lack thereof, is, moreover, a key indicator of the cost of implementing a potential technology. *See Rambus*, No. 9302, at 4 (noting that FRAND commitments "may further inform [SDO] members' analysis of the costs and benefits of standardizing patented technologies"); *see also id.* at 35 (noting that predisclosure of IPRs enables SDO participants "to make their choices with more complete knowledge of the

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misrepresentation caused the SDO to adopt defendant 3Com's technology over competing technologies, and no allegation that defendant 3Com demanded license fees inconsistent with those that the SDO considered before adopting the standard.

consequences"); *cf. F.T.C. v. Indiana Fed'n of Dentists*, 476 U.S. 447, 461-62 (1986) (noting that efforts to obscure "information desired by consumers for the purpose of determining whether a particular purchase is cost justified is likely enough to disrupt the proper functioning of the price-setting mechanism of the market that it may be condemned" under antitrust law). During the critical competitive period that precedes adoption of a standard (*see* AAI/CFA Br. 11 ("[T]he *competition to become the standard* is critical.")), technologies compete in discrete areas, such as cost and performance characteristics (*id.* 12 n.8). Misrepresentations concerning the cost of implementing a given technology may confer an unfair advantage and bias the competitive process in favor of that technology's inclusion in the standard. *See Allied Tube*, 486 U.S. at 501 (noting the need for private standard setting to be free "from being biased by members with economic interests in stifling product competition"); *see also Rambus*, No. 9302, at 29 ("[D]istorting choices through deception obscures the relative merits of alternatives and prevents the efficient selection of preferred technologies."); *Qualcomm*, 2007 WL 2296441, at *15 (noting that intentional concealment of IPRs deprived SDO of opportunity to design around patented technologies in developing standard).

A standard, by definition, eliminates alternative technologies. *See Hydrolevel*, 456 U.S. at 559 ("Obviously, if a manufacturer's product cannot satisfy the applicable [standard], it is at a great disadvantage in the marketplace."). When a patented technology is incorporated in a standard, adoption of the standard eliminates alternatives to the patented technology. Although a patent confers a lawful monopoly over the claimed invention, *Ethyl Gasoline Corp. v. United States*, 309 U.S. 436, 456 (1940); *Scheiber v. Dolby Labs., Inc.*, 293 F.3d 1014, 1018 (7th Cir. 2002), its value is limited when alternative technologies exist. *See Northern Pac. Ry. Co. v. United States*, 356 U.S. 1, 10 n.8 (1958) ("Often the patent is limited to a unique form or improvement of the product and the economic power resulting from the patent privileges is slight."); *see also Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 547 U.S. 28, ___, 126 S. Ct. 1281, 1292 (2006) ("[A] patent does not necessarily confer market power.").

That value becomes significantly enhanced, however, after the patent is incorporated in a standard. *Rambus*, No. 9302, at 35. Firms may become locked in to a standard requiring the use of a competitor's patented technology. The patent holder's IPRs, if unconstrained, may permit it to demand supracompetitive royalties. It is in such circumstances that measures such as FRAND commitments become important safeguards against monopoly power. *See* Daniel G. Swanson & William J. Baumol, *Reasonable and Nondiscriminatory (RAND) Royalties, Standards Selection, and Control of Market Power*, 73 Antitrust L.J. 1, 5, 10-11 (2005).

We hold that (1) in a consensus-oriented private standard-setting environment, (2) a patent holder's intentionally false promise to license essential proprietary technology on FRAND terms, (3) coupled with an SDO's reliance on that promise when including the technology in a standard, and (4) the patent holder's subsequent breach of that promise, is actionable anticompetitive conduct. This holding follows directly from established principles of antitrust law and represents the emerging view of enforcement authorities and commentators, alike. Deception in a consensus-driven private standard-setting environment harms the competitive process by obscuring the costs of including proprietary technology in a standard and increasing the likelihood that patent rights will confer monopoly power on the patent holder. *See Rambus*, No. 9302, at 68 (holding that "distorting [the SDO's] technology choices and undermining [SDO] members' ability to protect themselves against patent hold-up . . . caused harm to competition"). Deceptive FRAND commitments, no less than deceptive nondisclosure of IPRs, may result in such harm. *See id.* at 66 (noting that SDO's rules requiring members to disclose IPRs and commit to FRAND licensing "presented the type of consensus-oriented environment in which deception is most likely to contribute to competitive harm").[8]

[8] We are unpersuaded by Qualcomm's argument that antitrust liability cannot turn on so vague a concept as whether licensing terms are "reasonable," although, in other contexts, we

3. Claim 1 States a Claim for Monopolization of WCDMA Technology Markets

The District Court's only stated reason for dismissing Broadcom's Claim 1 was that it did not plead an antitrust cause of action. Having now held that a firm's deceptive FRAND commitment to an SDO may constitute actionable anticompetitive conduct, we conclude quickly and easily that Claim 1 states a claim for monopolization under § 2 of the Sherman Act.[9]

First, the Complaint adequately alleged that Qualcomm possessed monopoly power in the relevant market. The Complaint defined the relevant market as the market for Qualcomm's proprietary WCDMA technology, a technology

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have summarily dismissed claims that turn on similarly ambiguous terms, *see Lum*, 361 F.3d at 226. The reasonableness of royalties is an inquiry that courts routinely undertake using the 15-factor test set forth in *Georgia-Pacific Corp. v. United States Plywood Corp.*, 318 F. Supp. 1116, 1120 (S.D.N.Y. 1970), and some courts have already applied this test in the FRAND context, *see, e.g.*, *ESS Tech., Inc. v. PC-Tel, Inc.*, No. C-99-20292 RMW, 2001 WL 1891713, at *3-6 (N.D. Cal. Nov. 28, 2001); *see also Rambus*, No. 9302, at 114-15 (finding substantial evidence that Rambus's royalty rates were not reasonable). Their success persuades us that, given a fully-developed factual record, the same can be done here.

[9] An interesting question, not developed by the parties, is whether "deception" of an SDO is sufficiently akin to fraud to bring the claim within the heightened pleading requirements of Federal Rule of Civil Procedure 9(b). Analogous claims for inequitable conduct before the United States Patent and Trademark Office must be pled with particularity. *See, e.g.*, *Cent. Admixture Pharmacy Servs., Inc. v. Advanced Cardiac Solutions*, 482 F.3d 1347, 1356 (Fed. Cir. 2007). We need not resolve the "interesting question" because Broadcom's allegations would satisfy even a heightened pleading standard, particularly given that Rule 9(b) permits intent to be averred generally.

essential to the implementation of the UMTS standard. (¶¶ 2, 3; *see also* ¶ 58.)[10] This technology was not interchangeable with or substitutable for other technologies (¶¶ 7, 48, 58-59), and adherents to the UMTS standard have become locked in (¶ 53). With respect to monopoly power, Qualcomm had the power to extract supracompetitive prices (¶¶ 13, 87-109), it possessed a dominant market share (*see* ¶¶ 9, 10, 14, 58, 82), and the market had entry barriers (¶¶ 82, 86). These allegations satisfied the first element of a § 2 monopolization claim.

Qualcomm objects to a relevant market definition that is congruent with the scope of its WCDMA patents, arguing that such a definition would result in every patent holder being condemned as a monopolist. This objection misconstrues Broadcom's theory. It is the incorporation of a patent into a standard – not the mere issuance of a patent – that makes the scope of the relevant market congruent with that of the patent.

Second, the Complaint also adequately alleged that Qualcomm obtained and maintained its market power willfully, and not as a consequence of a superior product, business acumen, or historic accident. Qualcomm excluded competition (¶ 10) and refused to compete on the merits (¶ 12). As discussed above, the alleged anticompetitive conduct was the intentional (¶¶ 9, 99) false promise (¶ 82) that Qualcomm would license its WCDMA technology on FRAND terms, on which promise the relevant SDOs relied in choosing the WCDMA technology for inclusion in the UMTS standard (¶¶ 82, 84-85, 140), followed by Qualcomm's insistence on non-FRAND licensing terms (¶¶ 3, 12, 13, 86, 87-109). Qualcomm's deceptive conduct induced (¶ 140) relevant SDOs to incorporate a technology into the UMTS standard that they would not have considered absent a FRAND commitment. (¶¶ 3, 42.) Although the Complaint did not specifically allege that Qualcomm made its false statements in a consensus-oriented environment of the type discussed in *Microsoft* and *Rambus*, this omission is not fatal in light of

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[10] Paragraph ("¶") citations refer to the relevant paragraphs of the Complaint, found in the Appendix at A69 to A128.

allegations that FRAND assurances were required (¶ 42), *see Rambus*, No. 9302, at 66, as well as allegations concerning the SDOs' reliance on Qualcomm's assurances (¶¶ 82, 140). Together, these allegations satisfy the second element of a § 2 claim.

Qualcomm makes much of the Complaint's failure to allege that there were viable technologies competing with WCDMA for inclusion in the UMTS standard. (Qualcomm's Br. 31.) As Qualcomm concedes, however, the Complaint does allege that an SDO's adoption of a standard eliminates competing technologies. (¶¶ 58, 82.) The District Court also inferred that the relevant SDOs selected Qualcomm's WCDMA technology "to the detriment of those patent-holders competing to have their patents incorporated into the standard." (App. at A21.) This inference was reasonable, particularly because even if Qualcomm's WCDMA technology was the only candidate for inclusion in the standard, it still would not have been selected by the relevant SDOs absent a FRAND commitment. (*See* ¶ 42.) Thus, the allegations of the Complaint foreclose the possibility that WCDMA's inclusion in the standard was inevitable.

Finally, in closing our discussion of Claim 1, we acknowledge, and will briefly address, certain of the concerns voiced by *Amici* regarding the reasoning of the District Court as to Claim 1. The Court, focusing on the anticompetitive conduct element, proceeded from the premise that "the basic allegation is that Qualcomm's conduct amounts to a refusal to deal fairly in the WCDMA technology market, which affects the UMTS chipset market and CDMA markets." (App. at A14.) The Court then rejected this "basic allegation" as an impermissible attempt to extend the Supreme Court's refusal-to-deal jurisprudence. This case does not involve a refusal to deal; Qualcomm conceded as much at oral argument. But even if we were to analyze it as such, we would find that the Complaint does not run afoul of established Supreme Court precedent.

A firm is generally under no obligation to cooperate with its rivals. *Monsanto Co. v. Spray-Rite Serv. Corp.*, 465 U.S. 752, 761 (1984). In *Aspen Skiing*, 472 U.S. at 610-11, however, the Supreme Court created an exception to this rule by holding that the decision of a defendant who possessed monopoly power to terminate a voluntary agreement with a smaller rival evidenced the defendant's willingness to forego short-run profits for anticompetitive purposes. The Court has since refused to expand this exception. Most recently, in *Verizon*, 540 U.S. at 410-11, the Court considered whether plaintiffs stated a claim under § 2 of the Sherman Act by alleging that the defendant did not honor a statutory duty to give competitors access to its telecommunications network on "just, reasonable, and nondiscriminatory" terms. *Id.* at 401, 405-06. The Court held that they did not. First, the Court observed, the complaint did not allege that the defendant engaged in a voluntary course of dealing with its rivals, or would have done so absent statutory compulsion. *Id.* at 409. Second, said the Court, the defendant would not have publicly marketed the allegedly withheld services absent a statutory duty to do so. *Id.* at 410. Here, by contrast, Qualcomm is alleged to have actively marketed its WCDMA technology for inclusion in an industry-wide standard, and to have voluntarily agreed to license that technology on FRAND terms. We note, albeit in passing, that the Court in *Verizon* pointed as well to the extensive regulatory framework that created oversight functions and remedies that the antitrust laws were unsuited to augment. *Id.* at 410-15. No such regulatory framework exists here.

We also agree with *Amici* that the District Court erred when it concluded that Qualcomm's alleged inducement of an SDO did not harm competition, as is required for a § 2 claim, because "it is the SDO's decision to set a standard for WCDMA technology, not Qualcomm's 'inducement,' that results in the absence of competing WCDMA technologies." (App. at A21.) This conclusion failed to recognize that Qualcomm's FRAND commitment was an essential part of its competitive effort to win inclusion of its patented technology in the UMTS standard. *Cf. Rambus*, No. 9302, at 97 ("If Rambus had refused to provide the requisite [F]RAND assurances, [the SDO] would have been bound by its rules to avoid Rambus's patented technologies."). The Court also failed to recognize that even if adoption of the UMTS standard did not expand Qualcomm's exclusionary rights as a patent holder, it nevertheless significantly expanded Qualcomm's market power by eliminating alternatives to its patented technology. Finally, the Court erroneously assumed that monopoly is the "natural consequence of the standard-setting process," an unsupported factual finding that ignores the possibility of a standard comprised of nonproprietary technologies.

B. The District Court erred in dismissing Claim 2 – the attempted monopolization claim.

A claim of attempted monopolization under § 2 of the Sherman Act must allege "(1) that the defendant has engaged in predatory or anticompetitive conduct with (2) a specific intent to monopolize and (3) a dangerous probability of achieving monopoly power." *Crossroads Cogeneration Corp. v. Orange & Rockland Utils., Inc.*, 159 F.3d 129, 141 (3d Cir. 1998) (internal quotation marks omitted). The District Court found insufficient factual allegations to satisfy the first and third elements. (App. at A24.) Broadcom argues that the Court impermissibly applied a heightened pleading requirement when it dismissed Claim 2 for failing to allege specific facts regarding the composition and dynamics of the UMTS chipset market.

Antitrust claims, at least those not akin to fraud, *see* n.10, *supra* at 28, are subject to the notice-pleading standard of Federal Rule of Civil Procedure 8(a)(2), which requires only "a short and plain statement of the claim showing that the pleader is entitled to relief." *Midwest Gas Servs., Inc. v. Indiana Gas Co.*, 317 F.3d 703, 710 (7th Cir. 2003). Such claims must, nevertheless, allege facts sufficient to raise a right to relief above the speculative level. *Bell Atl. Corp. v. Twombly*, ___ U.S. ___, 127 S. Ct. 1955, 1965 (2007); *Commw. of Pa. ex rel. Zimmerman v. PepsiCo, Inc.*, 836 F.2d 173, 179 (3d Cir. 1988). We have held, in the context of a § 2 claim for attempted monopolization, that a complaint must allege "something more" than mere market share, such as "the strength of competition, probable development of the industry, the barriers to entry, the nature of the anticompetitive conduct, and the elasticity of consumer demand." *Crossroads*, 159 F.3d at 141 (internal quotation marks omitted).

The Complaint alleged a relevant market that was global in scope (¶ 57) and comprised of non-interchangeable UMTS chipsets (¶ 55) – a market that was in its "infancy," but experiencing rapid growth (¶ 112). In that market, the Complaint continued, Qualcomm engaged in a variety of anticompetitive practices. Contrary to the District Court's puzzling characterization of these allegations as "broad and non-specific" (App. at A23), the Complaint described numerous specific practices. Qualcomm possessed a near monopoly in the CDMA chipset market (¶¶ 8, 61-68), and was exploiting that monopoly to obtain a new monopoly in the UMTS chipset market (¶ 19). Qualcomm was discriminating among licensees of the essential WCDMA technology by charging more and higher fees to those who do not use Qualcomm's UMTS chipsets. (¶¶ 14, 15, 104-05.) Qualcomm was demanding royalties on parts of UMTS chipsets for which it did not own patents (¶ 89), and demanding that UMTS licensees grant back to Qualcomm licenses for their own proprietary technologies on terms much more favorable to Qualcomm (¶ 91). Qualcomm was charging double royalties to UMTS cell phone manufacturers who use non-Qualcomm UMTS chipsets (¶¶ 92-98), in violation of its FRAND commitment (¶¶ 98, 99). Qualcomm was discouraging price competition by demanding sensitive sales and pricing information from its UMTS chipset licensees, even when those licensees were competing directly with Qualcomm. (¶ 102.) Qualcomm was also providing discounts, incentives, and payments to cell phone manufacturers who use only Qualcomm UMTS chipsets. (¶¶ 16, 106-11.) These actions, the Complaint concluded, harmed competition and undermined innovation in the UMTS chipset market. (¶¶ 90, 91, 98, 102.) Such factual allegations of anticompetitive conduct are sufficiently specific to satisfy the first element of an attempted monopolization claim. *See LePage's*, 324 F.3d at 152-57.

The Complaint also alleged that Qualcomm acted with specific intent to obtain a monopoly in the UMTS chipset market. (¶¶ 81, 105, 107, 111, 146.) Several of the anticompetitive practices, moreover, allegedly lacked a legitimate business justification. (*See, e.g.*, ¶¶ 14, 102, 105.) In *Aspen Skiing*, the Supreme Court noted that evidence that business conduct is "not related to any apparent efficiency" may constitute proof of specific intent to monopolize. 472 U.S. at 608 n.39 (emphasis and internal quotation marks omitted); *see also LePage's*, 324 F.3d at 152 ("[A] monopolist will be found to violate § 2 of the Sherman Act if it engages in exclusionary or predatory conduct without a valid business justification."). There is no doubt, therefore, that the Complaint satisfied the specific intent element.

The only question remaining is whether the Complaint alleged sufficient facts as to the dangerous probability of Qualcomm obtaining monopoly power in the UMTS chipset market, "a particularly fact-intensive inquiry." *Microsoft*, 253 F.3d at 80. Courts typically should not resolve this question at the pleading stage "unless it is clear on the face of the complaint that the 'dangerous probability' standard cannot be met as a matter of law." *Brader v. Allegheny Gen. Hosp.*, 64 F.3d 869, 877 (3d Cir. 1995). Dangerous probability is a question of "proximity and degree," *Microsoft*, 253 F.3d at 80 (quotation omitted), and the elements of an attempted monopolization claim are frequently interdependent "so that proof of one may provide circumstantial evidence or permissible inferences of other elements," *Barr Labs., Inc. v. Abbott Labs.*, 978 F.2d 98, 112 (3d Cir. 1992) (citing *Twin City Sportservice, Inc. v. Charles O. Finley & Co.*, 676 F.2d 1291, 1308 (9th Cir. 1982)). In a determination of dangerous probability – and remembering that we are only considering "the face of the complaint" – factors such as significant market share coupled with anticompetitive practices, barriers to entry, the strength of competition, the probable development of the industry, and the elasticity of consumer demand may be considered. *Id.* No single factor is dispositive. *See id.* (noting that market share is not an exclusive factor); *cf. Pastore v. Bell Tel. Co.*, 24 F.3d 508, 513 (3d Cir. 1994) (identifying market share as the most significant factor).

Broadcom contends that the same anticompetitive practices that resulted in Qualcomm's acquisition of monopoly power in the markets for CDMA chipsets and technologies now threaten to create monopoly power in the emerging market for UMTS chipsets. (¶¶ 20, 21.) Although the complaint did not allege Qualcomm's market share in the UMTS chipset market, determining whether a defendant has a "dangerous probability" of successful monopolization is a fact-sensitive inquiry, in which market share is simply one factor. *See Barr Laboratories, Inc. v. Abbott Laboratories*, 978 F.2d 98, 112 (3d Cir. 1992) ("[A]lthough the size of a defendant's market share is a significant determinant of whether a defendant has a dangerous probability of successfully monopolizing the relevant market, it is not exclusive.").[11] The Complaint alleged Qualcomm's licensing practices in considerable detail (*see* ¶¶ 14-16, 89-102, 104–11) and described their anticompetitive effects (*e.g.*, ¶¶ 90, 91, 98, 102). It also alleged that Qualcomm's practices "effectively foreclosed Broadcom's entry into the UMTS chipset market." (¶ 86.) *See LePage's*, 324 F.3d at 159 ("When a monopolist's actions are designed to prevent one or more new or potential competitors from gaining a foothold in the market by exclusionary, i.e. predatory, conduct, its success in that goal is not only injurious to the potential competitor but also to competition in general."). Finally, the Complaint alleged that the market was experiencing "rapid growth" (¶ 112), and that Qualcomm was extending its anticompetitive licensing practices into this emerging market by signing deals, as of January 2005, "with 26 cell phone manufacturers, including three of the leading UMTS cell phone manufactures [sic], LGE, Samsung, and Siemens, . . . as well as six of the top seven Chinese

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[11] We note Qualcomm's admission in a recent proceeding before the International Trade Commission that it now possesses a share of the United States market for UMTS chipsets of 80 to 100 percent, although we need not decide what weight, if any, we should accord that admission. *See In re Certain Baseband Processor Chips and Chipsets, Transmitter and Receiver (Radio) Chips, Power Control Chips, and Products Containing Same, Including Cellular Telephone Handsets*, Inv. No. 337-TA-543, 2007 ITC LEXIS 621, at *27, *50-51 & nn. 108, 109 (I.T.C. June 19, 2007).

manufacturers” (¶ 113). Because it is by no means “clear on the face of the complaint that the ‘dangerous probability’ standard cannot be met as a matter of law,” *Brader*, 64 F.3d at 877, we conclude that the District Court erred in dismissing Claim 2.

C. The District Court did not err in dismissing Claim 7 – the monopoly maintenance claim.

Claim 7 alleged that Qualcomm maintained its monopoly in the markets for 3G CDMA technology and 3G CDMA chipsets, in violation of § 2 of the Sherman Act. In moving to dismiss this claim, Qualcomm argued only that Broadcom lacked standing because it failed to allege that it participated in those markets, and Broadcom responded only on that ground. The District Court dismissed the claim on the merits, however, without addressing the standing issue. Both parties take issue with the Court’s decision, and resurrect their positions on standing.

Broadcom’s rather highly attenuated theory of standing is that Qualcomm is illegally maintaining a monopoly in various markets for 3G CDMA technologies and chipsets (¶ 173); that most manufacturers of UMTS cell phones are subject to Qualcomm’s monopoly power in the CDMA markets (¶ 19); that Qualcomm is using leverage over customers in the CDMA markets to destroy the UMTS chipset business (¶ 174); and that Broadcom, as an innovator in WCDMA technology and UMTS chipsets, is suffering injury (¶ 116). We will affirm the District Court’s dismissal of Claim 7 on the ground that Broadcom lacks standing. *See Narin v. Lower Merion Sch. Dist.*, 206 F.3d 323, 333 n.8 (3d Cir. 2000) (noting that court of appeals may affirm on grounds not reached by district court).

We apply a five-factor balancing test in considering antitrust standing:

> (1) the causal connection between the antitrust violation and the harm to the plaintiff and the intent by the defendant to cause that harm, with neither factor alone conferring standing; (2) whether the

> plaintiff's alleged injury is of the type for which the antitrust laws were intended to provide redress; (3) the directness of the injury, which addresses the concerns that liberal application of standing principles might produce speculative claims; (4) the existence of more direct victims of the alleged antitrust violations; and (5) the potential for duplicative recovery or complex apportionment of damages.

Barton & Pittinos, Inc. v. SmithKline Beecham Corp., 118 F.3d 178, 181 (3d Cir. 1997) (quotation marks and citation omitted). There are simply insufficient factual allegations that Qualcomm, by maintaining its monopolies in the 3G CDMA technology and chipset markets, intended to cause harm to Broadcom in the WCDMA technology and UMTS chipset markets. Any causal connection, moreover, is highly speculative. Injury to Broadcom is extremely remote, and there is no apparent reason why Qualcomm's competitors in the CDMA markets could not assert a monopoly maintenance claim. To the extent that Broadcom's injury results from its being excluded from competing in the WCDMA technology and UMTS chipset markets, Claim 7 also largely duplicates Claims 1 and 2. Only the second factor weighs in Broadcom's favor.

Ignoring the standing factors set forth above, Broadcom attempts to persuade us that a similar claim was allowed to proceed in *Microsoft* – a case in which, obviously, the government's standing to prosecute antitrust violations was not in issue. But Broadcom is incorrect that the injury in *Microsoft* was analogous. Microsoft was found to have maintained its computer operating system monopoly by suppressing certain emerging technologies. Because those technologies were not yet sophisticated enough to stand in as substitutes for Microsoft's operating system, they were excluded from the relevant market for purposes of calculating Microsoft's market share. The D.C. Circuit held that nascent competitive threats were not beyond the protection of the Sherman Act simply because they were not yet "well-developed enough to serve as present substitutes." 253 F.3d at 54. Microsoft's anticompetitive conduct, in other words, was a barrier to the entry of new competitors into the relevant market. Here, by contrast, there is no allegation that Broadcom has sought, seeks, or ever will seek to enter the CDMA markets. *Microsoft*, therefore, is inapposite.

As a last resort, Broadcom relies on our decision in *Carpet Group International v. Oriental Rug Importers Association, Inc.*, 227 F.3d 62, 76-77 (3d Cir. 2000). There, we found that brokers, who were neither direct competitors of the defendants nor consumers, had standing to assert an antitrust action against an association of importer/wholesalers of oriental rugs because their injury was "inextricably intertwined" with defendants' alleged anticompetitive conduct in the market for oriental rugs. Since that time, however, we have declined to extend the "inextricably intertwined" exception beyond cases in which both plaintiffs and defendants are in the business of selling goods or services in the same relevant market. Because Broadcom does not allege that it sells goods in the same relevant market as Qualcomm – indeed, it concedes that it does not – we conclude that Broadcom's alleged injury is not "inextricably intertwined" with Qualcomm's alleged anticompetitive conduct, and that Broadcom lacks standing to assert Claim 7.

D. The District Court did not err in dismissing Claim 8 – the claim under Section 7 of the Clayton Act seeking to enjoin Qualcomm's acquisition of Flarion.

Broadcom, finally, disputes the dismissal of Claim 8, which sought to enjoin Qualcomm's then-pending acquisition of Flarion.[12] Qualcomm moved to dismiss on the ground that

[12] The acquisition has since been completed, having been approved by the Department of Justice. Departmental approval, however, does not preclude independent judicial review. *Int'l Tel. & Tel. Corp. v. Gen. Tel. & Elecs. Corp.*, 351 F. Supp. 1153, 1185 (D. Haw. 1972), *rev'd on other grounds*, 518 F.2d 913 (9th Cir. 1975). In a private action for injunctive relief under the Clayton Act, a court may order the remedy of divestiture. *California v. Am. Stores Co.*, 495 U.S. 271, 280-81 (1990).

Broadcom lacked standing, but the District Court declined to address the issue of standing and held, instead, that Broadcom failed to allege a sufficient antitrust injury. (App. at A46 n.6.) Although Qualcomm mistakenly tells us that the dismissal was for lack of standing (Qualcomm's Br. 58), both parties' arguments track the reasoning of the District Court. We will affirm the District Court largely for the reasons given by the Court.

Section 7 of the Clayton Act provides, in relevant part, as follows:

> No person engaged in commerce or in any activity affecting commerce shall acquire, directly or indirectly, the whole or any part of the stock or other share capital and no person subject to the jurisdiction of the Federal Trade Commission shall acquire the whole or any part of the assets of another person engaged also in commerce or in any activity affecting commerce, where in any line of commerce or in any activity affecting commerce in any section of the country, the effect of such acquisition may be substantially to lessen competition, or to tend to create a monopoly.

15 U.S.C. § 18. Section 16 authorizes injunctive relief for violations of § 7. 15 U.S.C. § 26. A private plaintiff seeking to enjoin an acquisition "need only prove that its effect '*may be* substantially to lessen competition.'" *California v. Am. Stores Co.*, 495 U.S. 271, 284 (1990) (citation omitted). The prospective harm to competition must not, however, be speculative. *See City of Pittsburgh v. West Penn Power Co.*, 147 F.3d 256, 267-68 (3d Cir. 1998) ("[A]ntitrust injury must be caused by the antitrust violation – not a mere causal link, but a direct effect."). There must be "a threat of antitrust injury" which produces "directly harmful effects" that are "closely related to the violation." *Alberta Gas Chems. Ltd. v. E.I. Du Pont De Nemours & Co.*, 826 F.2d 1235, 1240 (3d Cir. 1987). Failure to allege actionable anticompetitive conduct forecloses further judicial inquiry. *See Cargill, Inc. v. Monfort of Colo.,*

Inc., 479 U.S. 104, 122 (1986).

The Complaint alleged that Qualcomm sought to acquire Flarion, a company widely regarded as the "leading developer" of technologies known as Orthogonal Frequency Division Multiplexing and Orthogonal Frequency Division Multiplexing Access ("OFDM/OFDMA") (¶ 22), and the only company to own an operational OFDM/OFDMA network (¶ 121). According to the Complaint, OFDM/OFDMA technology is widely regarded to be the most likely foundation for the forthcoming B3G and 4G standards, and the leading competitive threat to Qualcomm's CDMA technology. (¶¶ 23, 51, 120, 131.) In the past, the Complaint alleged, Qualcomm competed CDMA against OFDM/OFDMA technologies (¶¶ 122, 126-27), and continues to tout CDMA as the most promising technology for the foreseeable future (¶ 51). Given the competitive threat posed by OFDM/OFDMA, however, Qualcomm allegedly purchased Flarion as part of its pattern of acquiring competitors to obtain market dominance. (¶ 117.) It is not entirely clear whether the Complaint alleged that Qualcomm intended to extend its CDMA monopoly into future generations of standards (¶¶ 2, 22, 52), or whether it intended to promote OFDM/OFDMA for that purpose (¶¶ 24, 52, 118, 123, 128). At all events, the likely effect of Qualcomm's acquisition of Flarion will, at least allegedly, be a substantial lessening of competition. (¶¶ 124, 132-35, 177.)

Broadcom, significantly, conceded that B3G standards were "not yet fully developed" (¶ 51), and that products utilizing B3G technologies "may not arrive in the marketplace for three or more years" (¶ 119). Although the B3G standards-development process was "well underway" (*id.*; *see also* ¶ 50), 4G technology standards were merely "expected to follow closely." (¶ 119.) Despite the uncertain development of B3G and 4G technologies, Broadcom fears injury because it "expects to be a competitor to Qualcomm" in B3G and 4G chipset markets (¶ 138), and because it "may require" a license for B3G and 4G technologies (¶ 137). The Complaint did not allege that Broadcom is developing technologies to compete for inclusion in B3G and 4G standards.

The District Court was undoubtedly correct to dismiss Claim 8 as "too speculative." Any "directly harmful effects" resulting from Qualcomm's acquisition of Flarion will be experienced by firms competing in the markets for the development of B3G and 4G standards. *See Alberta Gas*, 826 F.2d at 1240. (*See* ¶ 124.) As Broadcom does not compete in these markets, it will not experience these effects firsthand. Rather, as a manufacturer of equipment that *may* require a license from a firm possessing monopoly power in the B3G and 4G technology markets, Broadcom will experience only secondary injury from Qualcomm's acquisition of Flarion. (*See* ¶ 137.) *Cf. Volvo Trucks North Am., Inc. v. Reeder-Simco GMC, Inc.*, 546 U.S. 164, ___, 126 S. Ct. 860, 870 (2006) (classifying competitive injury suffered by competitors as "primary line" and that suffered by customers as "secondary line" in antitrust claims under the Robinson-Patman Act, 15 U.S.C. § 13(a)). Even this secondary theory of injury is premised on two major assumptions: first, that SDOs will adopt B3G and 4G standards incorporating Qualcomm's IPRs as essential elements, thus conferring monopoly power; and second, that Qualcomm will intentionally engage in anticompetitive conduct by refusing to offer Broadcom a license on competitive terms, if at all, in violation of some putative FRAND commitment – assuming, of course, that Broadcom even seeks a license. (*See* ¶ 137.) Hypothetical anticompetitive conduct, speculative monopoly power, and remote injuries do not merit the extreme remedy of divestiture. *See West Penn Power*, 147 F.3d at 267 (affirming denial of claim for injunctive relief under Clayton Act premised on allegation that plaintiff "would have benefitted from competition *it hoped would occur*").

IV. Conclusion

For the reasons discussed, we will affirm in part and reverse in part, and remand for further proceedings consistent with this Opinion. Because the District Court summarily dismissed Claims 9 through 13 – Broadcom's state and common-law claims – for lack of supplemental jurisdiction pursuant to 28 U.S.C. § 1367(c)(2), we will order the reinstatement of those claims. *See Berckeley Inv. Group, Ltd. v. Colkitt*, 455 F.3d 195, 224 n.28 (3d Cir. 2006); *Siegel v. Alpha Wire Corp.*, 894 F.2d 50, 56 (3d Cir. 1990).