

Twombly and the Evolution of Telecom Regulation

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The plaintiffs in *Twombly v. Bell Atlantic* alleged that the nation's largest incumbent telephone service providers violated § 1 of the Sherman Act by conspiring to hinder competition in their regional markets. More specifically, each firm chose not to compete outside of its region (with another incumbent), even though doing so may have been profitable. In May of 2007, the United States Supreme Court ruled 7-2 in favor of the incumbents, effectively striking down the latest antitrust action against the telecommunications industry and raising the pleading standard for future cases. The *Twombly* outcome, along with other recent developments in the telecommunications industry, signals a re-consolidation of the wireline firms who were divested from AT&T in 1984. This paper describes where *Twombly* fits in the evolving regulation of telephony, discusses an economic rationale for the incumbents' parallel conduct, and reviews the antitrust and economic consequences of *Twombly*.

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I. INTRODUCTION

The 1996 Telecommunications Act¹ required that incumbent local phone service providers – predominantly the “Baby Bells” created by the breakup of AT&T² – lease elements of their upstream network infrastructures to emerging downstream competitors. Years later, the hoped-for competition had not materialized in local phone markets. The incumbents were not fully accommodating the entrants, nor were they competing with each other by entering new regions.

In *Twombly, et al. v. Bell Atlantic Corp, et al.*³, plaintiffs alleged that the incumbents' parallel restraint was evidence of collusion, a § 1 Sherman Act violation.⁴ A motion to dismiss at the pleading stage was granted, which raised a procedural question: is a simple assertion of conspiracy a sufficient “claim upon which relief could be granted?”⁵ The dismissal was reversed on appeal, but the U.S. Supreme Court ultimately held that “[a]n allegation of parallel conduct and a bare assertion of conspiracy will not suffice” for a § 1 claim.⁶

¹ Telecommunications Act of 1996, 47 USC §§ 251-252 (1996)

² There were other incumbent firms aside from the Bells at the time of divestiture, General Telephone and Electronics being the chief exception.

³ Hereinafter, let *Twombly* stand for all three related cases: the District case, *Twombly v. Bell Atlantic Corp.*, 313 F. Supp. 2d 174 SDNY (2003); the Circuit appeal, 425 F. 3d 99 2nd Cir (2005); and the Supreme Court case, *Bell Atlantic v. Twombly*, 127 S. Ct. 1955, (2007).

⁴ 15 USC § 1

⁵ Federal Rules of Civil Procedure 12(b)(6)

⁶ *Bell Atlantic v. Twombly*, 127 S. Ct. 1966 (2007)

The *Twombly* opinion, along with other developments in the telecommunications industry, brings attention to a re-consolidation of the wireline firms who were divested from AT&T in 1984. This consolidation stands in stark contrast to decades of deregulation and the competitive ideal that the 1996 Telecommunications Act was meant to engender. Since 1996, however, the scope of the communications industry has expanded to include other network technologies – among them, cable, wireless, fiber optic, and satellite – as viable substitutes for telephony connection. The persistent regional monopolization of incumbent wireline firms is less worrisome than it would have been before inter-modal competition transformed the telecommunications industry into the *communications* industry.

The paper is organized as follows: Section II traces the evolution of telephony regulation in the United States, and Section III describes the *Twombly* case. Section IV uses a simple model of dynamic competition in distinct markets to illustrate one explanation for why the phone companies chose not to compete with each other. Section V discusses the antitrust and economic consequences of *Twombly*, and Section VI concludes.

II HISTORY AND ECONOMICS OF TELEPHONY REGULATION

The roots of modern telephony regulation in the United States can be traced to the early 20th century, when American Telephone and Telegraph (AT&T) transitioned from a dominant provider of telephone services to a regulated monopoly.⁷ The company

⁷ For a thorough history of telephone technology and the telecommunications industry, see G. W. Brock, THE TELECOMMUNICATIONS INDUSTRY (1981).

accomplished this by (1) acquiring its independent rivals, who controlled half of the country's installed telephones in 1907⁸ and (2) deflecting antitrust action with AT&T president Theodore Vail's campaign for "One Policy, One System, Universal Service." Universal service, at that time, referred to universally compatible telephone networks.⁹ Subscribers of one network could not always connect with subscribers of a competing network, even within the same city. AT&T pointed to this inconvenience as cause for a regulated monopoly in telephone services. Congress agreed; in 1921, the Willis-Graham Act permitted AT&T to continue acquiring independents and linking networks. The Communications Act of 1934 formalized AT&T's position as a regulated monopoly by creating the Federal Communications Commission (FCC), which has monitored and directed AT&T's operations ever since.

AT&T's campaign for monopoly status relied critically on the assumption that a unified telephone network would increase the value of a telephone connection through network effects. The value of a network good like a telephone connection depends on the size of the network to which that connection belongs.¹⁰ AT&T argued that as a regulated monopoly, it would join rival networks and dramatically increase the value of telephone service. This would have infra- and extra-marginal benefits: existing telephone consumers would benefit from a much larger network, and potential consumers would be induced to join the network.

⁸ *Id.* at 174.

⁹ See M.L. Mueller, *UNIVERSAL SERVICE* (1997).

¹⁰ See S.J. Liebowitz and S.E. Margolis, *Network Effects*, 1 *HANDBOOK OF TELECOMMUNICATION ECONOMICS* 75.

Was a monopoly necessary to provide universal service? The disjoint systems of telephone networks were not permanently irreconcilable, and network effects could have been achieved without monopolizing the industry. Mueller notes that, “[i]t was business rivalry, not expert engineers or technology, that had brought about the geographic scope of the telephone network.”¹¹ An alternative solution would have been to require interconnection between competing networks. More than seventy years later, interconnection between incumbent monopolists and entrants was one of the provisions of the 1996 Telecommunications Act.

The Bell System was thought of as a collection of natural monopolies, not because of demand-side network effects, but because of supply-side cost efficiencies. An industry is a natural monopoly if one firm can serve the market at lower total cost than multiple firms.¹² This definition is consistent for single-product monopolies (which are rare) and multiproduct monopolies, which the Bells claimed to be. Formally, a natural monopoly has a *subadditive* cost function.¹³ For a given bundle of output (say, 10 billion local phone calls and 3 billion long distance calls), industry costs are minimized when all production is allocated to one firm, rather than split among two or more. In a market with subadditive costs, competitive pricing would lead to one firm serving the entire market. That firm is thought of as a “natural” monopoly.

¹¹ M.L. Mueller, *supra* n. 9 at 93

¹² For a rigorous treatment of the theory of natural monopolies, see W. K. Viscusi, J. E. Harrington, and J. M. Vernon, *ECON. OF REG. AND ANTITRUST* 401 (2005).

¹³ See W. J. Baumol *On the Proper Cost Tests for Natural Monopoly in a Multiproduct Monopoly*, 67 *AMER. ECON. REV.* 809 (1977).

Cost functions can be statistically examined for subadditivity, and many studies have tested the hypothesis that telephone markets were natural monopolies. Methodologies and specifications varied, as did conclusions. Collectively, this literature raised a measure of doubt in the belief that the company at large or its regional operating companies were natural monopolies.¹⁴

Regardless of whether AT&T was a natural monopoly, the presumption was reinforced (at least for local exchange carriers) with 1982's Modification of Final Judgment.¹⁵ In a consent decree, the company agreed to divest its local telephone companies – the Bell Operating Companies, or BOCs – and retain long distance services. In 1984, twenty-two BOCs subsequently organized into seven regional monopolies, or RBOCs: Ameritech, Bell Atlantic, BellSouth, NYNEX, Pacific Telesis, SBC Communications, and US West. The merged and acquired incarnations of these early RBOCs were ultimately the defendants in the *Twombly* antitrust case. “Long distance” calls were distinguished from “local” calls by the creation of 161 local access and

¹⁴ Evans and Heckman tested for subadditivity in AT&T's cost function, and concluded that the company was not a natural monopoly. (D.S. Evans and J.J. Heckman, *Natural Monopoly* in D.S. Evans (ed.), *BREAKING UP BELL* 140. (1983)) But competing methodologies reached the opposite conclusion. (L.H. Roeller, *Proper Quadratic Cost Functions With Applications to the Bell System*, 72 *REV. ECON. STAT.* 202 (1990); and A. Charnes, W.W. Cooper, and T. Sueyoshi, *A Goal Programming/Constrained Regression Review of the Bell System Breakup* 34 *MANAGEMENT SCIENCE* 1 (1988)) Another study estimated cost functions for local exchange carriers and concluded that they were not natural monopolies. (R. T. Shin and J. S. Yang *Unnatural monopolies in local telephone* 23 *RAND J. ECON.* 171 (1992)) Also see S. Berg and J. Tschirhart, *A Market Test for Natural Monopoly in Local Exchange*, 8 *J. REG. ECON.* 103 (1995).

¹⁵ *United States v. AT&T, et al.*, 552 F. Supp. 131 (1982).

transport areas (LATAs). The RBOCs were only permitted to carry calls originating and terminating in one LATA. Calls originating and terminating in different LATAs were long distance, and these were carried by more competitive long distance companies like AT&T, MCI, and Sprint. Long distance calls start and end in local networks, and the RBOCs were required to grant network access to any long distance carrier on a non-discriminatory basis. Access prices were regulated, as were local phone service prices.

Just twelve years after divestiture, the Telecommunications Act of 1996 (hereinafter “the Act”) again reinvented the underlying structure of the industry, ostensibly taking another big step towards a competitive market.¹⁶ The Act's objectives were clear:

“To promote competition and reduce regulation in order to secure lower prices and higher quality services for American telecommunications consumers and encourage the rapid deployment of new telecommunications technologies.”¹⁷

The promise of competition and technological advancement – unburdened by regulation – outweighed the old justifications for monopolized exchange carriers. Network effects had long been exhausted. Supply-side cost efficiencies were protected (in theory) by allowing rivals to access the RBOCs’ existing infrastructure in such a way that all firms faced the same input costs. The RBOCs were required to open up local phone service markets by leasing elements of their essential facilities (local loops, switches, transmission facilities, etc.) to rivals at regulated access prices that

¹⁶ For thorough discussions of the Act, see R.G. Harris and C.J. Kraft (1997) *Meddling Through: Regulating Local Telephone Competition in the United States*, 11 J. ECON. PERSPECT. 93 and R. Sherman MARKET REGULATION 487 (2008).

¹⁷ Telecommunications Act, preamble

approximated efficient input costs. In exchange, incumbents were allowed to enter the long distance market.

The Act further complicated the industry by introducing new jargon into common usage, which I will review here. Incumbent local exchange carriers (ILECs) are defined as the local service incumbents who were in place at the time of AT&T's divestiture. For our purposes, these are equivalent to the RBOCs listed in the *Twombly* complaint. Competitive local exchange carriers (CLECs) are defined as the incumbents' rivals, those who entered local phone markets after divestiture. CLECs could lease elements of an RBOC's infrastructure piece by piece, on very favorable terms. These unbundled network elements (UNEs) disaggregated upstream capital and allowed entrants to make or buy each piece of their network infrastructures as they saw fit.¹⁸ A CLEC could even lease an entire network at unbundled rates – this is known as the UNE platform, or UNE-P. By exploiting UNE-P, entrants purchased downstream phone services for a fraction of the RBOCs' retail prices.¹⁹ Regulated UNE rates were derived from total element long-run incremental costs (TELRIC). The TELRIC methodology estimated efficient long-run unit costs for each network element, assuming that the best available technologies were in place. Introducing UNE and TELRIC into the downstream market was intended to (1)

¹⁸ There is disagreement over whether regulated access rates induce optimal make-or-buy decisions by the entrants. See D.E.M. Sappington, *On The Irrelevance of Input Prices for Make-or-Buy Decisions*, 95 AMER. ECON. REV. 1631 (2005); and P.G. Gayle and D.L. Weisman, *Are Input Prices Irrelevant for Make-or-Buy Decisions?* 32 J. REGULATORY ECON. 195 (2007).

¹⁹ See P. J. Howe, *Technology and Innovation; Baby Bells Complain Telecom Rivals Get Below-Cost Access to Their Network*, BOSTON GLOBE (10.14.2002).

encourage entry by competitive rivals and (2) induce the RBOCs to upgrade their network infrastructure and lower costs.

Local exchange markets had been monopolized for more than seventy years prior to the Act, albeit with a shaky foundation in the economic principles of natural monopoly. Inducing competition in those markets proved to be difficult. In the years leading up to *Twombly*, five major trends characterized the telecommunications industry:

1. The RBOCs challenged TELRIC pricing and the UNE regime. The Supreme Court upheld TELRIC pricing in 2002²⁰, but the FCC eventually weakened the UNE regime.²¹
2. CLECs achieved some market share, but the RBOCs were still dominant in their respective markets. CLECs controlled 4.3 percent of switched access lines in 1999 and 13.1 percent by December 2002.²²
3. RBOCs were allowed to enter the long-distance market after proving that they had opened their local markets to competition.²³
4. The seven original RBOCs consolidated into four: SBC, BellSouth, Qwest, and Verizon.²⁴

²⁰ *Verizon Communications, Inc. v. FCC et al.*, 122 U.S.C. 1646 (2002), reversing 219 F.3d 744

²¹ *FCC Lessens Bell UNE Sharing Requirements*, WASHINGTON TELECOM NEWSWIRE (12.15.2004).

²² FCC reports are available online at www.fcc.gov/wcb/iatd/comp.html. Also see R. Sherman, MARKET REGULATION, 491 (2008).

²³ See www.fcc.gov/Bureaus/Common_Carrier/in-region_applications/ for a state-by-state timeline of BOC entry into long distance markets, as well as a description of the current long distance regulatory environment.

5. The scope of communication technologies expanded beyond wirelines.

Networks of coaxial cable, wireless spectrum, and fiber optic lines emerged as viable substitutes to traditional telephone networks.²⁵

The *Twombly* complaint was about a trend that we *did not* see – namely, the incumbent RBOCs competing with each other as CLECs.²⁶ The incumbents were opposed to the cost advantage that CLECs enjoyed thanks to the UNE regime, but they made no effort to exploit that cost advantage themselves by competing in another incumbent's market. For instance, Verizon could have leased unbundled elements of the Qwest network at discounted TELRIC rates, and this cost advantage would have allowed Verizon to capture market share in Qwest's region.²⁷ In the years between the Act and *Twombly*, some of the geographic boundaries separating one incumbent from another disappeared due to mergers and acquisitions, but there were no “invasions” by any one RBOC. There were no meaningful attempts by an RBOC to compete with a different incumbent in a different geographic market. Figure 1 illustrates the RBOC territories in 2002, at the time of the *Twombly* complaint.

²⁴ The *Twombly* complaint was filed against these four plus Bell Atlantic, which changed its name to Verizon after acquiring General Telephone and Electronics in 2000.

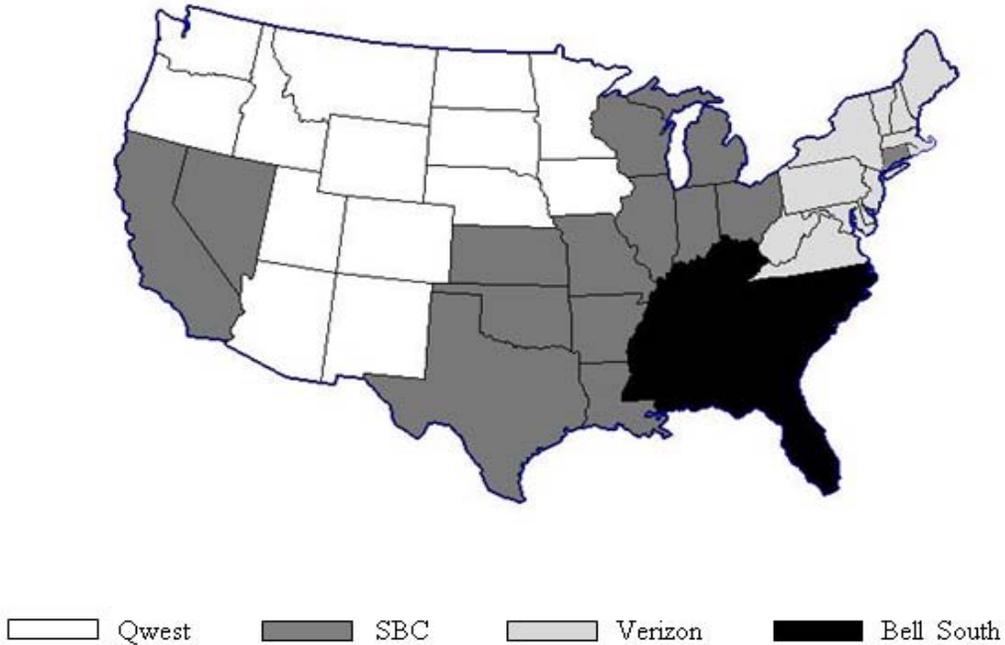
²⁵ See M. Jamison, *INDUSTRY STRUCTURE AND PRICING* 41 (1999)

²⁶ Amended complaint in No. 02 CIV. 10220 (GEL) (SDNY), hereinafter “complaint.”

²⁷ This counterfactual scenario is especially interesting, because Verizon has a wireline presence in much of the southwestern United States. *Id.* at “RBOC Territories” Figure.

Figure 1

2002 RBOC Territories



Source Data for this graphic can be found in the amended complaint.

III. THE TWOMBLY CASE

William Twombly and Lawrence Marcus represented all consumers who purchased local phone and/or high-speed internet services (hereinafter “plaintiffs”) in the years following the 1996 Telecommunications Act. The *Twombly* complaint was twofold:

1. The RBOCs conspired to hinder the success of competitive entrants.
2. The RBOCs agreed not to compete with each other for local phone service consumers.

These allegations – if true – violated § 1 of the Sherman Act, which prohibits “every contract, combination, ... or conspiracy, in restraint of trade.”²⁸ The first element of the *Twombly* complaint was in part addressed by the *Trinko* decision, where the Court ruled that failing to fully cooperate with CLECs did not expose an RBOC to antitrust liability.²⁹ The second element was supported by circumstantial evidence of collusion; namely, the fact that the RBOCs did not compete with each other for wireline telephone consumers although they would have individually profited by doing so.³⁰ Plaintiffs alleged that,

“Although the RBOCs contend that CLECs are hurting them by leasing network components at below-cost rates, the RBOCs have refrained from engaging in meaningful head-to-head competition in each other's markets.”³¹

The plaintiffs also pointed to a 2002 comment by Qwest CEO Richard Notebaert as evidence of an illegal agreement between the RBOCs. On the topic of competing with another RBOC, Notebaert said, “It might be a good way to turn a quick dollar, but that doesn't make it right.”³²

²⁸ 15 USC § 1

²⁹ 540 U.S. 398 (2004). Also see R. Blair and C. Piette, *The interface of antitrust and regulation: Trinko*, 50 ANTITRUST BULLETIN 665 (2006).

³⁰ Note that the RBOCs *did* compete with each other in mobile and long distance markets, where they held less market power.

³¹ *Twombly* amended complaint, *supra* n. 26 at 12

³² J. Van, *Ameritech Customers Off-Limits: Notebaert*, CHICAGO TRIBUNE (10.31.2002)

The U.S. District Court for the Southern District of New York dismissed the *Twombly* case at the pleading stage in October of 2003.³³ Judge Gerard Lynch acknowledged that “direct evidence of [conspiracy] is often impossible to obtain, ... and so an illegal agreement must often be inferred from circumstantial evidence,” but emphasized the distinction between conscious parallelism and conspiracy, citing *Theater Enterprises, Inc. v. Paramount Film Distribution Corp.*³⁴:

“... while plaintiffs may allege a conspiracy by citing instances of parallel business behavior that suggests an agreement, courts must be cognizant of the fact that ... `conscious parallelism has not yet read conspiracy out of the Sherman Act entirely.”

The plaintiffs appealed, alleging that the District Court applied a heightened pleading requirement normally reserved for summary judgment or trial stages. The U.S. Court of Appeals for the Second Circuit reversed³⁵, following the language of *Conley v. Gibson*:

“A complaint should not be dismissed for failure to state a claim `unless it appears beyond doubt that the plaintiffs can prove no set of facts in support of his claim which would entitle him to relief.”³⁶

The U.S. Supreme Court reversed the decision of the Appeals Court, and set a higher pleading standard for antitrust cases involving parallel conduct.³⁷ Justice Souter's

³³ *Twombly v. Bell Atlantic Corp.*, 313 F. Supp. 2d 174 (S.D.N.Y. 2003)

³⁴ 346 U.S. 537, 540, 98 L. Ed. 273, 74, S. Ct. 257 (1954)

³⁵ *Twombly v. Bell Atlantic Corp.*, 425 F. 3d 99 (2nd Cir 2005)

³⁶ 355 U.S. 41, 47 (1957)

³⁷ *Bell Atlantic v. Twombly*, 127 S. Ct. 1955, (2007)

opinion emphasized the fact that the Court had “previously hedged against false inferences from identical behavior at a number of points in the trial sequence,”³⁸ and he justified doing the same at the pleading stage because of (1) the enormous expense of discovery in antitrust cases and (2) “the common lament that the success of judicial supervision in checking discovery abuse has been on the modest side.”³⁹ That is to say, the Court had little faith in the ability of the lower courts to identify meritless conspiracy cases during discovery.

IV. TWOMBLY AND THE ECONOMICS OF CONSCIOUS PARALLELISM

The *Twombly* complaint was dismissed for citing a set of ambiguous facts which singly and collectively failed to rule out conscious, independent, legal parallelism. But no one – not even RBOC executive Richard Notebaert – denied that competing with another RBOC could have been profitable, at least in the short run. Why, then, would the RBOCs want to refrain from head-to-head competition, and how is this ambiguous evidence of an illegal agreement between firms? In this section, I present a simple two-firm model that illustrates the conditions under which conscious parallelism is rational.⁴⁰ I go on to discuss the difficulty of inferring collusion from parallel conduct.

Consider an industry with two firms: 1 and 2. The firms operate in two geographically distinct, identical markets: A and B. Initially, firm 1 has monopoly power

³⁸ *Id.* at 1964

³⁹ *Id.* at 1967

⁴⁰ This model is adapted from a classic illustration of the difference between static and repeated interaction. *See, for instance, M. R. Baye, MANAGERIAL ECONOMICS AND BUSINESS STRATEGY* 365.

in market A, earning Π_1^M . Likewise, firm 2 has monopoly power in market B and earns Π_2^M . Each firm has an opportunity to compete in the other firm's market. If two firms operate in the same market, the incumbent is required to accommodate the rival.⁴¹

If both firms choose not to compete, they retain monopoly power in their home markets, earning Π_1^M and Π_2^M . Suppose firm 1 competes against firm 2 in market B. Then let the profit earned in that market be represented by Π_1^B for firm 1 and Π_2^B for firm 2. Similarly, if firm 2 competes in market A, profits in that market will be Π_1^A and Π_2^A for firms 1 and 2, respectively. I assume that profits from competing with another firm are strictly positive.

$$\Pi_i^j > 0 \quad i = 1, 2 \quad j = A, B$$

This is consistent with the stylized facts of the *Twombly* complaint. The plaintiffs, along with Qwest's CEO, believed that competing in another region would have been profitable for an RBOC.

The firms choose one of two strategies: *Compete* (C_i) or *Do Not Compete* (DNC_i) for $i = 1, 2$. Figure 2 is a payoff matrix representing the outcomes from each of the four possible combinations of the firms' strategies. In each cell, the top entry is the payoff for firm 1 and the bottom entry is the payoff for firm 2.

⁴¹ I could also incorporate a competitive fringe subject to capacity constraints to represent CLECs. Doing so will not change results if markets are identical or if the CLECs' market share is very small.

Figure 2

Two-player Payoff Matrix

| | | <i>Firm 2</i> | |
|---------------|-----------------------|-----------------------------------|---|
| | | <i>Do Not Compete</i> | <i>Compete</i> |
| <i>Firm 1</i> | <i>Do Not Compete</i> | $\Pi_1^M,$ Π_2^M | $\Pi_1^A,$ $\Pi_2^M + \Pi_2^A$ |
| | <i>Compete</i> | $\Pi_1^M + \Pi_1^B,$ Π_2^B | $\Pi_1^A + \Pi_1^B,$ $\Pi_2^A + \Pi_2^B$ |

If this were a static, one-shot game, the Nash equilibrium would be (C_1, C_2) , even though (DNC_1, DNC_2) might maximize industry profits. To see why, consider firm 1's best move, given that firm 2 chooses *Do Not Compete*. Clearly, $\Pi_1^M < \Pi_1^M + \Pi_1^B$, so firm 1 would want to choose *Compete* in that scenario. If instead firm 2 chooses *Compete*, firm 1 realizes that $\Pi_1^A < \Pi_1^A + \Pi_1^B$, and again the best strategy is *Compete*. No matter what action firm 2 takes, firm 1's best reply is to *Compete*. Therefore, firm 1's dominant strategy is *Compete*, and the same holds for firm 2. This game is a variant of the classic prisoner's dilemma; both firms choose to compete in equilibrium, even though they may be better off by jointly choosing not to compete.

If $\Pi_i^A + \Pi_i^B \leq \Pi_i^M$ for $i = 1, 2$, each firm would prefer the (DNC_i, DNC_i) outcome to (C_i, C_i) . It is not unreasonable to assume that a one-market monopolist's profits would be greater than a two-market duopolist's profits. A regional monopolist maximizes the available producer surplus (profit) in its home market. Under typical assumptions about the nature of competition, duopolists will split a producer surplus that is less than what a monopolist's profit would have been.⁴² Because of this, we would not see a case where $\Pi_i^A + \Pi_i^B > \Pi_i^M$ for *both* firms. If one firm has a substantial competitive advantage over the other – meaning that it could gain a large market share as a rival in the outside market and it does not stand to lose the same amount to a rival in its home market – that firm may prefer two-market duopoly to one-market monopoly. But then we would never see the outcome (DNC_1, DNC_2) , the two-firm analogue of the RBOCs' non-competitive behavior. Parallel conduct of this sort would not be rational if it did not benefit all of the alleged conspirators.⁴³

If we observe (DNC_1, DNC_2) and $\Pi_i^j > 0$ for firms $i = 1, 2$ and markets $j = A, B$, then we know that $\Pi_i^A + \Pi_i^B \leq \Pi_i^M$ for both firms, and that (DNC_1, DNC_2) is the product of an agreement between the two firms. Such an agreement (which could be explicit or unspoken) could not be sustained in the one-shot game, because there are no penalties for

⁴² If a duopoly increased the size of the regional market, for instance, by attracting new consumers through product differentiation, producer surplus with duopoly could exceed the surplus under monopoly. But this would require an explanation for why the incumbent could not increase market size.

⁴³ An interesting exception is the case where the firm(s) who benefit from collusion can compensate those who would prefer to compete.

breaking the agreement. But in a repeated game the firms may be able to collude and increase profits relative to the competitive outcome (C_1, C_2) .

Suppose that the game is repeated indefinitely. As the time horizon disappears, the firms will be more willing to collude.⁴⁴ Assume that the firms adopt an agreement (again, not necessarily a formal, illegal agreement) to maximize profits by refraining from head-to-head competition in either market. Each firm faces a strong incentive to break this agreement and compete, especially if the other firm has promised not to compete. The agreement can be supported, but only if the incentives to comply are at least as great as the incentives to cheat. One compliance incentive is the prospect of retaliation by the firm who is a victim of cheating by its co-conspirator. I formalize the firms' retaliation methods by giving them trigger strategies. Assume that each firm will choose *Do Not Compete* forever, as long as the other firm never chooses *Compete*. If any firm chooses *Compete* in one period, the other will retaliate in the next period, and (C_1, C_2) will be the outcome for all future periods. Let r represent the real interest rate, compounded annually, and let δ represent the discount factor:

$$\delta = \frac{1}{1+r}$$

For firm 1, the present value of choosing *Do Not Compete*, given that the other firm does the same, is calculated like so:

⁴⁴ If the game were repeated a finite number of times, it is clear that the equilibrium would be (C_1, C_2) in the last period. Realizing this, the firms would also choose (C_1, C_2) in the next-to-last period, and in the period before that, and so on. If the game has a known number of iterations, the firms will compete in every period.

$$PV_1(DNC_1, DNC_2) = \Pi_1^M + \delta \Pi_1^M + \delta^2 \Pi_1^M + \dots = \sum_{t=0}^{\infty} \delta^t \Pi_1^M$$

So long as $\delta < 1$ (which is satisfied if $r > 0$), the series converges to,

$$PV_1(DNC_1, DNC_2) = \Pi_1^M \left(\frac{1}{1-\delta} \right).$$

Choosing *Compete* will earn firm 1 $\Pi_1^M + \Pi_1^B$ this period, but retaliation by firm 2 will yield a payoff of $\Pi_1^A + \Pi_1^B$ in subsequent periods. Then the present value of choosing *Compete* this period, given that firm 2 chooses *Do Not Compete*, is,

$$PV_1(C_1, DNC_2) = \Pi_1^M + \Pi_1^B + \sum_{t=1}^{\infty} \delta^t (\Pi_1^A + \Pi_1^B).$$

After factoring δ from the summation and simplifying, we have,

$$PVC_1(C_1, DNC_2) = \Pi_1^M + \Pi_1^B + (\Pi_1^A + \Pi_1^B) \left(\frac{\delta}{1-\delta} \right)$$

Firm 2 will have an equivalent perspective on the value of competing versus not competing.

$$PV_2(DNC_1, DNC_2) = \Pi_2^M \left(\frac{1}{1-\delta} \right)$$

$$PV_2(C_1, DNC_2) = \Pi_2^M + \Pi_2^A + (\Pi_2^A + \Pi_2^B) \left(\frac{\delta}{1-\delta} \right)$$

We will perpetually observe the collusive outcome (DNC_1, DNC_2) if the present value of competing is less than the present value of not competing. For firm 1, this means,

$$\Pi_1^M + \Pi_1^B + (\Pi_1^A + \Pi_1^B) \left(\frac{\delta}{1-\delta} \right) < \Pi_1^M \left(\frac{1}{1-\delta} \right)$$

This simplifies to,

$$\frac{\Pi_1^B}{\Pi_1^M - \Pi_1^A - \Pi_1^B} < \frac{\delta}{1-\delta}$$

Here, it is useful to note that $\delta/(1-\delta) = 1/r$. The above inequality lends some insight into the economic conditions that facilitate collusion in this model. Given that firm 2 is colluding (tacitly or otherwise), firm 1 will collude if,

$$\Pi_1^B < \frac{1}{r}(\Pi_1^M - \Pi_1^A - \Pi_1^B). \quad (1)$$

And likewise for firm 2,

$$\Pi_2^A < \frac{1}{r}(\Pi_2^M - \Pi_2^A - \Pi_2^B). \quad (2)$$

The firms will refrain from head-to-head competition if conditions 1 and 2 hold. For firm 1, the term Π_1^B is the immediate gain from competing, and $\Pi_1^M - \Pi_1^A - \Pi_1^B$ is the difference between monopoly profits from one market and duopoly profits from both markets (which is positive by assumption). That is, $\Pi_1^M - \Pi_1^A - \Pi_1^B$ is the penalty incurred in each future period from competing this period. If the gain from competing (cheating on the unspoken agreement) is less than the present value of all future penalties, the firm will choose *Do Not Compete* in each period. If the firm values the present very highly (perceiving a large r), or if potential profit in the outside market is large relative to the penalty for entering that market, the firm is more likely to choose *Compete*. Consider some numerical examples. If the real interest rate is $r = 0.05$, the agreement would be broken only if the gain from cheating was at least twenty times the annual penalty. With $r = 0.25$, the gain need only be four times the annual penalty for cheating to occur.

This intuition applies to a market with more than 2 firms, or a game with different rules, so long as there are meaningful penalties for cheating. If the present value of future

penalties is greater than the present value of cheating, firms will find it in their best interest to maintain the agreement and refrain from competing with another incumbent.

Perhaps this stylized illustration offers some insight into Notebaert's controversial comment in the *Chicago Tribune*. Qwest may have been able to “turn a quick dollar” by competing with Ameritech, but at what future cost to Qwest? The *Tribune* article offers another interesting justification for the RBOCs' parallel conduct. An industry analyst was interviewed, and he was paraphrased as saying that the future of UNE pricing was uncertain.

“The Federal Communications Commission is studying current wholesale pricing policies and will likely adjust them, he said. A company would be wise to wait until that happens before making a move, he said.”⁴⁵

Incumbents resisted the TELRIC pricing methodology from its inception. They argued that access prices derived from TELRIC rates were lower than the unit costs of maintaining their networks. It is feasible that the TELRIC estimates understated reality, and that the incumbents were selling network elements at a loss. *Twombly's* plaintiffs point out that if the CLECs had such a cost advantage over incumbents, the incumbents should have been “scrambling to compete with each other as CLECs, thereby benefitting from inexpensive access to their competitors' networks.”⁴⁶

This logic does not consider the unstable state of the competitive advantage fabricated by TELRIC pricing and the UNE platform. At the time of *Twombly's* amended complaint, the U.S. Supreme Court had recently upheld the Federal Communication

⁴⁵ J. Van, *supra* n. 32

⁴⁶ *Twombly*, 425 F 3d 99 (2nd Cir. 2005), 103

Commission's authority to use the TELRIC methodology, after a long legal struggle.⁴⁷ The incumbents, however, were not planning on giving up their campaign against the forward-looking TELRIC rates or the requirement to sell below-cost unbundled network elements. The RBOCs lobbied Congress and the FCC directly for relief from UNE.⁴⁸ The incumbents made every effort to reduce the competitive advantages granted to CLECs by the Telecommunications Act, and they would have fully understood that the future of those advantages was uncertain, rendering some doubt on the profitability of competing in another market as a CLEC. And with good reason: the FCC relented in December 2004, voting 3-2 to weaken UNE sharing requirements.

It bears emphasizing that many models of dynamic competition, including the one presented above, are consistent with both conscious parallelism (synonymous with tacit collusion) and explicit, overt collusion. Both forms of parallel conduct generate similar economic symptoms (restricted output, supra-competitive prices, and/or market allocation), and both may entail large damages to social welfare. The distinction is that explicit collusion, as the product of a formal agreement between ostensible competitors, is the only form of collusion that can be prosecuted under the Sherman Act. Proving that parallel conduct is a result of an agreement can be very difficult, since this same behavior could be the product of legal, tacit collusion. This is the “Oligopoly Problem,” and the judicial quandary it evokes has been well-documented.⁴⁹

⁴⁷ *Verizon Communications, Inc. v. FCC et al.*, 122 U.S.C. 1646 (2002)

⁴⁸ See J. K. Glassman, *The telecom wars: Competition vs. monopoly*, THE WASHINGTON TIMES (3.8.2004)

⁴⁹ See, for instance, J. B. Baker, *Two Sherman Act Section 1 Dilemmas: Parallel Pricing, the Oligopoly Problem, and Contemporary Economic Theory*, 38 ANTITRUST BULLETIN 143 (1993); K. Hylton,

The judicial remedy to the oligopoly problem has been to emphasize the importance of “plus factors,” circumstantial pieces of evidence that rule out competitive, independent behavior.⁵⁰ The bulk of the *Twombly* claim relied on the observation that RBOCs simultaneously avoided business opportunities (namely, competition with another RBOC) that would have been profitable. By itself, this observation is inadequate proof of an agreement, but plaintiffs argued that their claim met the pleading standard and warranted further investigation.

The *Twombly* opinion acknowledged the ambiguity of parallel conduct, “consistent with conspiracy, but just as much in line with a wide swath of rational and competitive business strategy.”⁵¹ The RBOCs' competitive strategy in the wake of the Telecommunications Act was inertia – a stubborn maintenance of the regional monopolies carved out by the 1984 AT&T divestiture. This particular form of parallel conduct was a low-cost, low-risk strategy for the RBOCs. Recognizing the nontraditional nature of the local phone industry, the Court lucidly offered its own theory:

“In a traditionally unregulated industry with low barriers to entry, sparse competition among large firms dominating separate geographical segments of the market could very well signify illegal agreement but here we have an obvious alternative explanation. In the decade preceding the 1996 Act and well before that, monopoly was the norm in telecommunications, not the exception. ... The ILECs were born in that

ANTITRUST LAW 73 (2003); J. E. Lopatka, *Solving the Oligopoly Problem: Turner's Try*, 61

ANTITRUST BULLETIN 843 (1996); and R. A. Posner, ANTITRUST LAW, 2nd ed. 51 (2001)

⁵⁰ See G. A. Hay, *Horizontal agreements: Concepts and proof*, 51 ANTITRUST BULLETIN 877 (2006).

⁵¹ *Bell Atlantic v. Twombly*, 127 S. Ct. 1955, (2007) at 1964

world, doubtless liked the world the way it was, and surely knew the adage about him who lives by the sword.”⁵²

The purpose of the Telecommunications Act was to modify that world and achieve social welfare gains from increased competition. Not surprisingly, the RBOCs resisted change. The plaintiffs in *Trinko* and *Twombly* argued that in doing so, the uncooperative incumbents undermined the goals of the Telecommunications Act. That may be so, but in both cases the Court found that the RBOCs had not violated antitrust law.

V. CONSEQUENCES OF *TWOMBLY*

The *Twombly* decision implicitly allowed the RBOCs' regional segmentation to continue, barring any future evidence of a formal agreement. This is important for the local phone markets, particularly because the horizontal and vertical consolidation of incumbent firms has continued apace. In 1997, FCC chairman Reed Hundt declared the prospect of a merger between an RBOC and a long distance carrier to be “unthinkable”, but the commission allowed it just two years later.⁵³ Currently, there are three dominant local phone service providers: AT&T, Qwest, and Verizon.⁵⁴ Taken together, these mergers, the RBOCs' entry into long distance and mobile markets, modifications to the

⁵² *Id.* at 1970

⁵³ See Seth Schiesel, “Sound of F.C.C. Silence in a Big Merger,” *NEW YORK TIMES* (5.18.1999).

⁵⁴ SBC acquired Bell South, AT&T, Inc., and Cingular in 2006 and chose to name the combined company AT&T. Focus groups identified “AT&T” with bundled consumer packages (a holdover tendency from the era of AT&T's vertically integrated monopoly), so the name was a natural fit for a company selling a variety of telecommunications services. See S.N. Mehta, “Meet the New AT&T,” 155 *Fortune* 58 (5.28.2007); and J. Puzanghera, “FCC clears AT&T merger,” *LOS ANGELES TIMES* (12.20.2006).

UNE regime, and the *Twombly* and *Trinko* opinions signal the latest shift in telecom regulation, which appears to be deemphasizing the Act's lofty goals of competition among local phone service providers and allowing a more concentrated, vertically integrated structure.

But vertical integration may not be the best way to characterize the telecommunications market any longer, even though a handful of firms controlling wireline networks are also large providers of local exchange, Internet, and wireless services. The scope of the communications industry at large has become multi-modal, expanding beyond wirelines to include cable, fiber optic, wireless, and satellite technologies. If the providers of alternate modes of communication can meaningfully compete with the RBOCs, then any market power gained from vertical integration will be weakened.

Twombly will have far-reaching consequences for cases outside of the ongoing telecom disputes and even outside of antitrust.⁵⁵ Plaintiffs in § 1 cases need to satisfy the heightened pleading standard:

“Stating a [§ 1] claim requires a complaint with enough factual matter (taken as true) to suggest an agreement was made. Asking for plausible grounds to infer an agreement does not impose a probability requirement at the pleading stage; it simply calls for enough fact to raise a reasonable expectation that discovery will reveal evidence of illegal agreement...”⁵⁶

⁵⁵ Scott Dodson, “Pleading Standards After *Bell Atlantic Corp v. Twombly*” VIRGINIA LAW REVIEW IN BRIEF, available at <http://www.virginialawreview.org/inbrief.php?s=inbrief&p=2007/07/09/dodson>

⁵⁶ *Bell Atlantic v. Twombly*, 127 S. Ct. 1955, (2007) at 1965

This will deter cases that rely exclusively on ambiguous evidence of collusion prior to discovery. The Court's opinion specifically pointed to unmerited, rent-seeking claims as cause for raising the pleading standard. Otherwise, “the threat of discovery expense will push cost-conscious defendants to settle even anemic cases before reaching those proceedings.”⁵⁷ It is important to note that *Twombly* will also deter justified claims of conspiracy, particularly those that need discovery to reveal specific incriminating facts. Among conspiracy cases with ambiguous evidence, *Twombly* reduces the probability of a Type II judicial error at the pleading stage, in that false claims are less likely to move forward. But the higher pleading standard also increases the probability of a Type I judicial error, meaning that valid cases lacking the benefit of unambiguous claims are more likely to be rejected.⁵⁸ A careful analysis of the judicial consequences of *Twombly* would postulate the outcome of pre-*Twombly* antitrust cases as if *Twombly* were in effect. The number and scale of (hypothetically) avoided Type II errors could then be compared to the number and scale of incurred Type I errors.

Conspiracy cases that make it past the pleading stage will state enough facts to rule out independent, competitive behavior on the part of the alleged conspirators. Some cases have already done so. For instance, in *P&G Co. v. Stone Container Corp.*, purchasers of corrugated cardboard products allege that manufacturers strategically took plant downtime to reduce production and subsequently raise prices. The U.S. District

⁵⁷ *Id.* at 1967

⁵⁸ A related conjecture holds that *Twombly* will increase the likelihood of tacit collusion (or quiet agreements of a more explicit nature) by reducing the conspirators' expected probability of prosecution.

Court for the Eastern District of Pennsylvania denied the defendants' motion for summary judgment, citing *Twombly* and concluding:

“Plaintiffs offer extensive and interconnected evidence – parallel conduct, pretextual explanations, opportunities to conspire, and abnormal contact between competitors – which tends to exclude the possibility of independent action.”⁵⁹

P&G litigation is at later stages than *Twombly* was able to reach, but it is clear that P&G's conspiracy claims were better suited to rule out independent behavior. The defendants' downtime was documented, expensive, and highly unusual, whereas *Twombly*'s conspiracy claims against the RBOCs were abstract. The *Twombly* opinion frowned on claims with “no specific time, place, or person involved in the alleged conspiracies.”⁶⁰

VI. CONCLUSIONS

Legislators and regulatory authorities spent most of the last century shortening the vertical monopoly inherent in the Bell System, arguably to good effect. Consumers, competitors, and innovators benefitted when AT&T lost regulated control of in-home telephone equipment⁶¹, and again when long distance was deregulated. The Telecommunications Act promised to push competition even further upstream, into the

⁵⁹ *In re Linerboard Antitrust Litigation: Proctor & Gamble, et al. v. Stone Container, et al.*, 504 F. Supp. 2d 38

⁶⁰ *Bell Atlantic v. Twombly*, 127 S. Ct. 1955, (2007) at 1971

⁶¹ *Hush-a-Phone Corp. v. United States*, 238 F.2d 266, 269 (D.C. Cir. 1956) and *Carterphone*, Message Toll Telephone Service, 13 F.C.C.2d 420, 424 (1968)

very networks supporting local telephone connection. But in spite of the Act, and in some ways because of it, the RBOCs are still dominant, segmented, regional monopolists of local phone services. *Twombly*, along with *Trinko* and weakened UNE regulations, reinforces their competitive advantages and diminishes the threat posed by potential entrants. It is important to recognize, however, that the *de facto* monopolization of wirelines and local phone services will not be as harmful to consumers as it would have been in the absence of rapidly developing substitute technologies. It is doubtful that the RBOCs could sustain a collusive agreement or abuse their dominant market positions to the detriment of consumers when those same consumers could take advantage of alternate communication technologies.

From a procedural standpoint, the *Twombly* opinion is well-founded in economic reasoning. A simple model of dynamic competition illustrates how the prospect of retaliation could have deterred the RBOCs from competing with each other. Furthermore, the future of UNE rates was uncertain, so the subjective profitability of competing as a CLEC was also uncertain from an incumbent's perspective. More generally, a bare assertion of parallel conduct is not enough to distinguish conscious parallelism from illegal collusion, and the Court ruled that it is insufficient justification for letting a case move into expensive discovery phases. The heightened pleading standard will deter unmerited, rent-seeking § 1 claims as well as valid claims lacking specific allegations that rule out independent behavior. Evaluating whether *Twombly*'s efficiency gains in the judicial process outweigh any foregone antitrust victories is an important topic for future research.