



The attached material is posted on regulation2point0.org with permission.

Designing Competition Policy for Telecommunications

GLEN O. ROBINSON

School of Law, University of Virginia

DENNIS L. WEISMAN *

Department of Economics, Kansas State University

Abstract

This paper explores the role of the essential facilities doctrine in circumscribing the scope of network sharing obligations in telecommunications. Among other things it argues that a proper application of the doctrine of essential facilities should recognize the prominence of dynamic over static efficiency in promoting consumer welfare. Regulators may be averse to recognizing these tradeoffs because unlike the behavior of prices the welfare losses from foregone innovation may be unobservable to the regulators' constituency. Moreover, an emphasis on dynamic efficiency requires the short-term regulator to take the "long view" – fostering the competitive process rather than emulating the competitive outcome.

1 Requiem for a paradigm

The shift from monopoly to competition in telecommunications over the past forty years tells a remarkable story – a Schumpeterian story in a way – about the capacity of modern industry to change in ways that defy anticipation. To be sure, in retrospect it is always easy to see how the interaction of economic and political forces produced the change. The introduction of competition at the fringes of the long-distance service and equipment supply in the late 1960s, is easily seen to lead to full scale competitive entry in both fields by the late 1970s. It requires a little more eyestrain to see how that in turn led to local competition in the 1990s, but in retrospect one can see some early movement in the development of local bypass services in the early part of that decade.

In hindsight it all seems natural, even inevitable. In foresight, on the other hand, it is quite a different matter. After all, there had been competition in the industry before, and it failed. When the Bell patents expired in 1893-94 competition emerged and for a score of years it appeared that it might be sustainable.¹ In the event it proved not to be – for a number

* Contact Author. Department of Economics, Kansas State University, 327 Waters Hall, Manhattan KS 66506-4001. E-mail: weisman@ksu.edu The authors served, respectively, as legal and economic experts for TELUS in connection with the CRTC's recent review of unbundled access rules in Telecom Decision CRTC 2008-17. The authors are grateful to the guest co-editor, Tim Tardiff, and an anonymous referee for helpful comments and to Yuan Gao for expert research assistance.

¹ The early competitive era and its decline is briefly chronicled in Gabel (1969) and more extensively in Mueller (1997).

of reasons, among them an aggressive campaign of acquisitions by AT&T combined with a refusal to sell equipment to independents or to interconnect with them. AT&T's practices were partially checked in 1913 when the Justice Department filed an antitrust action, leading later in that year to the so-called Kingsbury Commitment. By that settlement AT&T agreed to submit all acquisitions of independent companies (later interpreted to apply only to competing carriers) for Justice Department approval and to interconnect independent carriers with its long distance network. These commitments may have preserved the independent industry; they did not preserve competition. The interconnection requirement applied only to connecting the independents with Bell's long distance network, not to interconnection with independents in the same local market. Nor did the ban on acquisitions have any lasting effect since the Justice Department routinely approved acquisitions that eliminated competition in local markets by swapping territories – giving AT&T a monopoly in one, the independent a monopoly in another. The ban on acquisitions was lifted by the Willis-Graham Act of 1921, which gave to the ICC the power to approve, and immunize from antitrust challenge, all acquisitions.²

In the end, however, what proved fatal to competition was regulation. One could not say that the Mann-Elkins Act in 1910, which introduced federal regulation and in turn provided a model for state regulation, was facially hostile to competition, for the Act itself was entirely silent on the question and pertinent legislative history is non-existent.³ But AT&T, which had initially opposed regulation, came to see its strategic advantage as a substitute for – indeed a protection against – competition;⁴ and that premise came to be the received regulatory wisdom. The assumption of natural monopoly was at the heart of the regulatory regime introduced in 1910; Theodore Vail, the great architect of AT&T in its early monopoly years, had a vision of one system, one company (more or less) that prevailed for more than a half century after the introduction of regulation. Even when the paradigm was challenged, in the late 1960s, it was challenged only at the margins of the Bell System – private line service and supply of peripheral equipment. Not until the late 1970s would competition threaten to invade Bell's core service or equipment monopolies. And even then, after the basic switched long distance service and basic equipment markets were fully opened to competition, no one really doubted that there was still some part of the telephone system that was a natural monopoly. When the Bell System was broken up in 1984 in order to make telephone markets safe for competition, it was the long distance market and the equipment markets that were the object of concern. Divestiture was not intended to disturb the monopoly of local exchange carriers.

Exactly when the natural monopoly paradigm shifted to a competitive paradigm is impossible to trace with certainty; but we can say that, more or less Congress declared it officially moribund if not dead with the enactment of the 1996 Telecommunications Act. Of course, Congress did allow that certain network facilities might still be naturally monopolistic in supply. That is the basis for mandating access to unbundled network elements (“UNE”). However, this doesn't alter the fact that natural monopoly was no longer the reigning paradigm for the industry generally. To say that the natural monopoly paradigm

² See Mueller (1997, pp.129-49); Temin (1987, pp.10-11).

³ Mann-Elkins was originally crafted as purely railroad legislation, to give the Interstate Commerce Commission expanded authority over railroad rates. A provision to extend the ICC's general jurisdiction to interstate telephone and telegraph service was added on the floors of the House and Senate without any committee deliberation. Robinson (1989, p.6).

⁴ Brock, (1981, pp.158-159).

came to an end in 1996 is not, of course, to say that *monopoly* came to an end. The growth of competition in local markets has been more sedulous than was forecast in 1996. The initial flurry of new entry stimulated more competition in the market for bankruptcy lawyers than in the market for local telecommunications services. The collapse of the competitive local exchange carriers (“CLECs”) in 2000-2002 signalled that something clearly was amiss with the competitive game plan.⁵ And the recent disappearance of the two largest CLECs, AT&T and MCI, through mergers with the two dominant incumbent local exchange carriers (“ILECs”) (SBC and Verizon, respectively) could be taken to suggest that the promise of 1996 was a lost hope. That assessment is too dark. Measured by the number of competitive access lines, competition has recently declined. In the most recent period for which Federal Communications Commission (“FCC”) data are available, from June 2005 to June 2007, the CLEC share of end-user switched access lines decreased from 19.1 to 17.6 percent.⁶ However, what is more noteworthy is the growth of cable entry and the shift towards facilities-based competition.⁷ In the same period, for example, the percentage of CLEC access lines based on owned facilities increased from 26.9 percent to 38.4 percent, and the percentage of CLEC lines provided by cable rose from 13.5 percent to 26.9 percent.⁸ Being mindful of the recent past history, one should be cautious not to expect too much from such a few data points. At the same time, the recent trend is undeniably in the right direction insofar as it points to the possibility that, finally, competitive entry is being placed on a durable footing, one not dependent on the artificial stimulus of mandated unbundling and resale.

It is not, however, the purpose of this article to discuss competition trends, successes and failures. Our subject is about the means by which competition has been pursued as a regulatory policy. This is a subject that our honoree – Fred Kahn – knows more than a little something about. Throughout a long and distinguished career as an academic, public servant and social commentator,⁹ he has articulated, passionately and with unwavering conviction, a set of guiding regulatory/competition principles. These principles form the key themes of our discussion. First, competition, when it is durable in nature, is always to be preferred to economic regulation. Second, regulatory policies should not confuse mandating the competitive outcome with fostering the competitive process¹⁰ – dynamic efficiency always trumps static efficiency¹¹ Third, the regulator should not be in the business of second-guessing the marketplace or putting his proverbial hand on the scale *a la* competitive handicapping. Finally, the legacy to which every regulator should aspire is that of taking the “long view” and obviating, to the greatest extent possible, the need for a successor. Indeed,

⁵ On the collapse of the CLECs, see, e.g., Crandall and Waverman (2006, pp.115-120).

⁶ FCC Wireline Competition Bureau (2008, Table I).

⁷ See Tardiff (2007).

⁸ FCC Wireline Competition Bureau (2008, Tables 3 and 5).

⁹ Kahn served as Chairman of both the Civil Aeronautics Board (CAB) and the New York Public Service Commission. He also served as an economic advisor to the President (Carter) on inflation and Chairman of the Council on Wage and Price Stability.

¹⁰ In a particularly spirited rebuke of the FCC’s implementation of the 1996 Act, Kahn (2001, p. 9) declared that “the FCC’s decisions in 1996 through 1998 would have rated not an F but a zero from Joseph A. Schumpeter”. Nor did he pull his punches when he referred to the FCC’s costing methodology (“total element long run incremental cost” or “TELRIC”) as TELRIC-BS because it was based on the costs of a hypothetical, ideally-efficient, firm as if writing on a “blank slate” (pp.3-16).

¹¹ Kahn (2001, p.22) (“Second, wherever mandatory sharing, for the sake of jump-starting the entry of competitors, would interfere with the more creative and dynamic investment in facilities-based competitive entry and innovation by incumbents and challengers alike, it is the latter that must take primacy.”)

had Kahn assumed the chairmanship of the FCC rather than the Civil Aeronautics Board (“CAB”) some 30 years ago, much of the discourse that follows would probably not be necessary.¹² In a very real sense, every modern-day student of regulation and competition policy is a student of Kahn and his teachings – teachings that trace their lineage back to Joseph Schumpeter and his “perennial gale of creative destruction.”

2 From Monopoly to Competition in No Easy Moves

When Congress decided that local markets should be open to competition it could have simply declared that henceforth competition was official policy and preempted all anti-competitive policies by states (most of whom had historically opposed competition). For good measure it could have directed the FCC to monitor local markets to remove any obstacles to competition. It is not beyond imagining that such a simple action by Congress would have achieved the desired end – in the fullness of time, of course. After all the competition that characterized the industry in the couple of decades after the expiration of Bell’s patents had not been supported by affirmative governmental action. Granted, it had not been successful, but that lack of success surely had much to do with the combination of weak antitrust enforcement to check AT&T’s aggressive behavior and a newly enacted regulatory regime that was effectively premised on the absence of competition.

Be that as it may, Congress in 1996 was not disposed to think of long-term possibilities. It wanted immediate results, and it decided the way to get them was to force the incumbent ILECs to assist the CLECs by allowing them to lease existing local network facilities. Although the desired end goal was to have facilities-based competition, Congress believed that new entrants could not gain an effective competitive presence if they were expected to supply all of their own network facilities. Of course, one response to that problem might have been to require that ILECs resell their services, which Congress in fact did.¹³ Mandatory resale would allow competing entrants to ease their way into markets with a combination of their own facilities and resold services. However, resale alone was thought to be insufficient to accomplish the purpose of promoting quick entry. To give further assistance Congress devised a plan of requiring ILECs to lease individual network elements on an unbundled basis (“UNEs”). CLECs would thus get to pick and choose those network elements they “needed” to support entry.

Congress’ mandate to require incumbents to lease access to individual elements of their exchange network was a major step beyond the traditional interconnection requirements, which are designed to enable service across different network platforms. However, it was not wholly unprecedented. In its *Computer III* decision in 1986¹⁴ the FCC adopted rules to allow AT&T and the Bell Operating Companies (“BOCs”) to provide “enhanced services” (today, more or less synonymous with “information services”) without a previously imposed

¹² But then again, had this transpired we would all likely be paying a good deal more for air travel. The economic welfare gains from airline deregulation are conservatively estimated at some \$28 billion annually (Borenstein and Rose, 2008).

¹³ See 47 U.S.C. § 251(c)(4), which requires ILECs to offer for resale at wholesale rates any telecommunications service that the carrier provides at retail to non-telecommunications subscribers.

¹⁴ Amendment of Section 64.702 of the Commission’s Rules and Regulations, 104 FCC 2d 958 (1986). The Ninth Circuit court of appeals subsequently reversed and remanded the decision twice. *California v. FCC*, 905 F.2d 1217 (9th Cir. 1990) (“California I”) and *California v. FCC*, 39 F.3d 919 (9th Cir. 1994) (“California III”).

requirement of a separate subsidiary, subject to a requirement that they allow competing providers unbundled access to the basic network facilities required to support such services.¹⁵ This was a model (of sorts), but a model of both limited and uncertain scope. What network elements must be made available and on what terms? In 1996, Congress was stinting in its guidance to both questions. As to the scope issue, Congress directed that the “Commission shall consider, at a minimum, whether (A) access to such network elements as are proprietary in nature is necessary; and (B) the failure to provide access to such network elements would impair the ability of the telecommunications carrier seeking access to provide the services that it seeks to offer”.¹⁶ As to the terms, it specified that leased access be provided on “rates terms, and conditions that are just, reasonable, and nondiscriminatory” and that the rates shall be based on “the cost (determined without reference to a rate-of-return or other rate-based proceeding) of providing the interconnection or network element” with an allowance for a “reasonable profit”.¹⁷

The FCC’s implementation of these sparse directions was to be the basis for a sustained warfare in the courts for a decade after the 1996 Act.¹⁸ It would be bold to say that the legal battles over the scope of UNE access are over even after a decade. The Supreme Court’s *Verizon* decision¹⁹ ended the fundamental legal challenges to the principles of the FCC’s controversial pricing methodology – the “total element, long-run incremental cost” standard (“TELRIC”). And after a series of reversals by the Supreme Court and court of appeals the legal dust seems to be settling on the issue of what elements need to be unbundled. However, as Yogi said, “it ain’t over ‘til it’s over”. The basic legal questions of scope may have reached some kind of temporary equilibrium, but dispute about on-going applications will likely continue as long as there is a lawyer standing. And whatever the legal “equilibrium” there remains room for dispute about the principles that have been applied to reach it.

¹⁵ *Computer III* was designed to modify the earlier regime of structural separation, adopted in the FCC’s *Computer II* decision in 1980. In *Computer II* the FCC ruled that AT&T (and after the breakup the BOCs as well) could provide enhanced services only via a separate subsidiary. In *Computer III* the Commission ruled that AT&T and the BOCs could opt out of the structural separation requirements by adopting “non-structural” safeguards which required them to develop plans for “comparably efficient interconnection” (“CEI”) that allowed unaffiliated enhanced services providers to obtain unbundled access to “basic service elements” of the network on terms equal to those enjoyed by the BOCs. CEI plans were initially intended to be a transition to a broader scheme of “open network architecture” (“ONA”). The subsequent history of ONA and CEI is so complicated it would, in Mark Twain’s words, “tangle the head of the oldest man alive”. Suffice to say that despite two court reversals in 1990 and 1994, and the enactment in 1996 of an overlapping (but not completely duplicative) system of unbundling, the ONA/CEI scheme remains in force. Recently the FCC ruled that the rules would not be applied to BOC provision of wireline broadband services (currently labelled “information services” but part of the original category of enhanced services). See *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, 20 FCC Rcd 14853 (2005), affirmed, 507 F.3d 205 (3d Cir. 2007). But curiously it has refused requests to remove them generally. See *Petitions of the Verizon Telephone Companies for Forbearance*, 22 FCC Rcd. 21293 (2007) (denying requests to forbear from enforcement of ONA/CEI as well as UNE requirements).

¹⁶ The general duty to provide unbundled access is set forth in 47 U.S.C. § 251(c)(3), the access standard in § 251(d)(2).

¹⁷ See 47 U.S.C. § 251(c)(3) and 252(d)(1).

¹⁸ Almost from the outset the FCC acknowledged that “unbundling is one of the most intrusive forms of economic regulation – and one of the most difficult to administer ...” *Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, 15 FCC Rcd 3696 141 (1999) (“UNE Remand Order”). Unfortunately, neither the intrusiveness nor the difficulty of administration caused the Commission to proceed with caution.

¹⁹ *Verizon Communications Inc. v. FCC*, 535 U.S. 467 (2002).

This article is about those principles, which is to say that it is not about identifying what particular elements are appropriate for mandatory sharing. Our focus is on the basic question of forced access – when is it appropriate to require one firm to share its assets with a competitor?²⁰ This question is primarily about the principles that should be applied in deciding *what* (if anything) should be shared, as distinct from the *terms* of sharing – notably the pricing issue. However, the two cannot be easily kept separate. In the end, the controversy over forced sharing is, as a practical matter, a matter of price. A firm might find it obnoxious to be told it has to deal with its competitors, but at some price, and on some set of terms, dealing with competitors might be no different from dealing with end customers. So, if the terms are right, most traders will simply shrug and say, let’s make a deal. That said, we will finesse the details of the pricing issue,²¹ in order to address the more general question of purpose and principle. More specifically the purpose we want to discuss is how to enable competition in an industry long dominated by monopoly; the principle we advocate is the essential facilities doctrine.

2.1 Judging essentiality: the FCC’s impairment standard

As we noted, the Commission’s attempt to define the parameters of mandated access under Congress’ ambiguous standards produced a running debate with the courts. It is perhaps a stretch to call it a debate. There is a school of thought that believes the relationship of court and reviewing agency is one of dialogic partnership.²² Whatever the plausibility of that conception generally, in this case the dialog was mostly just a series of rulings by one “partner” followed by another partner’s veto. Eventually the partners came to a meeting of the minds, which is to say eventually the FCC moved far enough in the direction the courts were demanding that they could call it quits. It took ten years, though, and it is anything but clear that the ten years were well spent.

The FCC first implemented its sharing rules in 1996 with an extraordinarily broad standard. The key was the definition of “impair”; the “necessary” term of Congress’ two part directive was never really controversial or important. As to the impair standard the FCC declared that a new entrant would be deemed impaired by denial of access to a network element if “the quality of service the entrant can offer, absent access to the required element, declines and/or the cost of providing the service rises”.

On appeal the Supreme Court in *Iowa Utilities Board*²³ reversed on the ground that the Act required a more limiting standard. In a separate opinion (concurring in part and dissenting in part) Justice Breyer suggested that the essential facilities doctrine might provide a model for a more limiting standard.²⁴ He also admonished the FCC for failing to distinguish between its role in emulating competition – wearing its traditional regulatory hat

²⁰ The FCC sought to put in place a “regulatory foundation that seeks to ensure that investment in telecommunications infrastructure will generate substantial, long-term benefits for all consumers”. UNE Remand Order 5.

²¹ For more on the pricing problem, see, e.g., Larson and Weisman (1998); Weisman (2002); Sidak and Spulber (1998); Armstrong (2002) and Vogelsang (2003).

²² The germinal statement of this idea is that of Judge Harold Leventhal, who made it in the course of reviewing a decision by the FCC. See *Greater Boston Television Corp. v. FCC*, 444 F.2d 841, 852 (1970) (“agencies and courts together constitute a ‘partnership’ in furtherance of the public interest”).

²³ *AT&T v. Iowa Utilities Board*, 525 U.S. 366 (1999) (“Iowa Utilities Board”).

²⁴ *Id.* at 428.

– and its role under the Act to enable competition, facilitating the competitive process rather than mandating the competitive outcome, so to speak.²⁵

On remand the Commission responded with more words but not more clarity. Under the new definition a carrier would be impaired if, “taking into consideration the availability of alternative elements outside the incumbent’s network, including self-provisioning by a requesting carrier or acquiring an alternative from a third-party supplier, lack of access to that element materially diminishes a requesting carrier’s ability to provide the services it seeks to offer”.²⁶ On appeal again, the court of appeals in *USTA I*²⁷ reversed and remanded the standard as insufficiently “nuanced” and overly expansive. Echoing Justice Breyer the court, per Judge Williams, suggested that the essential facilities doctrine might “offer useful concepts for agency guidance”.^{28, 29}

On remand, for the third time, the agency made yet another attempt.³⁰ It began by noting the distinction between the “necessity” standard applicable to proprietary elements and the “impair” standard applicable to all other elements and concluding that the former was intended to be the more rigorous standard. With that unexceptionable conclusion to one side it turned to suggestions that antitrust concepts might provide guidance as to how to interpret “impair”. Specifically, it reviewed various standards for defining barriers to entry and the essential facilities doctrine. It found that neither the barriers-to-entry standard or the essential facilities doctrine fully comports with the impairment concept. Of the essential facilities doctrine the Commission found that it was helpful as a “guide”, but it declined to adopt it as the controlling standard. Essentially, it gave two reasons for rejecting the essential facilities doctrine as a governing standard, one based on legislative history and one based on the textual “structure.”³¹ With respect to the former it concluded the legislative history shows that Congress was aware of the essential facilities doctrine yet chose to use the ambiguous word “impair” rather than suggesting that the existing law of essential facilities

²⁵ *Iowa Utilities Board* at 424: “The competition that the Act seeks is a process, not an end result; and a regulatory system that imposes through administrative mandate a set of prices that tries to mimic those that competition would have set does not thereby become any less a regulatory process; nor any the more a competitive one.”

²⁶ UNE Remand Order at p.3725.

²⁷ *United States Telecom Ass'n v. FCC*, 290 F.3d 415 (D.C. Cir. 2002) (“*USTA I*”).

²⁸ *Id.* at 428 & n.4.

²⁹ In *CRTC 97-8*, ¶ 74, the Canadian Radio-television and Telecommunications Commission (CRTC) adopted a network unbundling rule that was grounded in the first instance on an essential facilities doctrine. (“The Commission concludes that to be essential, a facility, function, or service must meet all three of the following criteria: (1) it is monopoly controlled; (2) a CLEC requires it as an input to provide services; and (3) a CLEC cannot duplicate it economically or technically.”) Nonetheless, the CRTC concluded that the unbundling of selected other network elements, though not technically essential, would quicken the pace of (“facilities-based”) competitive entry in local telecommunications markets *a la* the stepping-stone hypothesis. The Commission referred to these other elements as “near-essential” and ordered that they be unbundled for a period of five years, at which time they would be subject to a sunset provision. In *Order CRTC 2001-184* at 33, after expressing general discontent with the overall pace of competition in local telephone markets, the CRTC extended the sunset period for near-essential facilities without specifying a terminating date, but indicating that such unbundling would continue until such time as the market for such facilities is sufficiently competitive. Recently the CRTC completed a lengthy review of its rules on network unbundling, including the proper definition of an essential facility. Essentially it retained its definition of essential facilities, but identified a number of facilities access to which will be no longer mandated. *Telecom Decision CRTC 2008-17*.

³⁰ *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, 18 FCC Rcd. 16978 (2003) (“*Triennial Review Order*”).

³¹ *Id.* at 107

should determine which network elements should be unbundled. As to the latter, it interpreted the “necessity” standard to be the relevant analogue to essential facilities doctrine and since the “impair” standard was a less rigorous standard, it could not be equated to the doctrine. In addition, it noted that where Congress wanted to address points that are analogous to parts of the essential facilities doctrine, it did so by adopting specific mechanisms that were different from what the doctrine would entail.

The Commission was again unsuccessful in persuading the courts that it had adopted the right standard, or at least correctly implemented it. In *USTA-II*³² the court of appeals did not fault the Commission’s refusal to adopt a “standard that ... reaches beyond natural monopoly”³³ (hence one not grounded in the essential facilities doctrine). However, it held that the Commission had failed to introduce sufficient “granularity” to capture the economic conditions of particular markets. (It also held that the Commission could not delegate this task to state regulatory commissions.) The court also reversed certain specific impairment findings, notably a finding that the CLECs were impaired without access to mass-market switches and high capacity dedicated transport facilities.³⁴

Administrative law does not embrace the rules of baseball; a batter is not automatically retired after three strikes. The case returned to the FCC for another swing at “impairment”. The Commission made significant further changes in the direction of limiting the scope of access.³⁵ This time on appeal the court declared that the “fourth try is a charm” and affirmed the FCC’s new rules in their entirety.³⁶

The FCC’s approach in the *Triennial Review Order on Remand* can be fairly described as being in the spirit of the essential facilities doctrine though it continues to require sharing in circumstances where the essential facilities doctrine, in our view, would not.^{37,38} The

³² United States Telecom Ass'n v. FCC, 359 F.3d 554 (D.C. Cir. 2004) (“USTA-II”).

³³ Id at 41-42.

³⁴ Reversal of the mass market switching decision was particularly important because the ability to lease mass market switches was the linchpin that held together the so-called “UNE-P” (UNE-platform). UNE-P was a special type of resale in which the network inputs are combined for the entrant by the incumbent provider. The price for UNE-P was typically lower than that of pure resale because it is based on TELRIC (total element long run incremental cost) rather than avoided cost (of retail services), but the two were functionally indistinguishable otherwise. As a result of the court’s decision in USTA-II the FCC was forced to eliminate UNE-P.

³⁵ Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, 20 FCC Rcd 2533 (2005) (“Triennial Review Order on Remand”).

³⁶ Covad Communications Co. v. FCC, 450 F.3d 528 (D.C. Cir. 2006).

³⁷ Briefly summarized, the FCC’s Triennial Review Order on Remand provides that “impairment” will be found where it would be “uneconomic” for a “reasonably efficient” CLEC to compete without the particular network element (for this purpose the availability of tariffed special access services that would enable the CLEC to provide service without unbundled access is considered irrelevant). Reversing its earlier decision the Commission determined that a CLEC would not be impaired without access to mass market switches. With respect to local loop and transport facilities the FCC adhered to its previous ruling (which had not been contested in court) that CLECs would be impaired without access to DS0 lines (the basic voice-grade lines). With respect to high capacity loop and transport links (DS1, and DS3 lines the Commission identified two proxies for determining whether entry into a particular market would be economic without unbundled DS1 or DS3 facilities: (i) the extent of fiber-based collocation and (ii) business line density. The details of the standards are unimportant here beyond noting that the proxy rules permit a finding of impairment even where there is a facilities-based competitor operating in the market – which proves, of course, that the loop and transport links can be duplicated. In this respect, it differs from a properly applied essential facilities doctrine standard, which would ask simply, can the facility be practicably duplicated? The existence of a single facilities-based competitor with an apparently viable presence in the market should suffice to answer that question.

Commission's continued refusal to adopt the essential facilities doctrine is unfortunate. The Commission had earlier acknowledged its general relevance as a guide, but insisted that the legislative "impair" standard required a more liberal sharing rule. As a matter of statutory interpretation, this is questionable. The Commission's examination of the legislative history is disingenuous at best; the sources it cited on the point do not show any studied attention to, or even any familiarity with, the doctrine. The structural argument from the text is more plausible. One might infer from the existence of two distinct standards, necessary and impair, that if the former, more restrictive, standard is analogous to the essential facilities doctrine, the latter cannot be. But given the ambiguity of the text – which is beyond dispute³⁹ – we think the FCC was not foreclosed from adopting essential facilities principles. It is a fair inference that the FCC chose not to do so because, as a policy choice, it did not want to be constrained by those principles. That turned out to be precisely the point of conflict with the Supreme Court and the court of appeals. While the FCC has considerable discretion in implementing policy choices the discretion is always subject to standards of rational justification – that is the "dialogic" part we mentioned earlier. And, in passing, we should note the FCC failed to satisfy that standard three times out of four.

We do not argue that the FCC failed simply because it refused to adopt the essential facilities doctrine in its conventional formulation (on which more below). Despite the suggestions of Justice Breyer and Judge Williams that the doctrine could be an appropriate framework, it would be a stretch to argue that it was an abuse of agency discretion not to adopt it. The reasonableness constraints that bind agencies are not that tightly wound. But if the agency had started with that doctrine, it might well have avoided the series of rebukes it faced in the ten years of litigating UNE access. In all events we argue that the doctrinal framework of essential facilities, properly interpreted and applied, captures the appropriate economic and legal principles that should govern asset sharing.⁴⁰

³⁸ For example, in his concurring statement to the *Triennial Review Order on Remand* (p. 2712) FCC Chairman Powell characterized the revised set of FCC unbundling rules as a "workable set of rules that preserves access to the incumbent's network where there is, or likely will be no other viable way to compete". This characterization is charitable, reflecting perhaps the limiting principles that the chairman had hoped the order would contain but did not.

³⁹ As Justice Scalia observed in *Iowa Utilities Board*, "it would be gross understatement to say that the 1996 Act is not a model of clarity. It is in many important respects a model of ambiguity or even self-contradiction". 525 U.S. at 397.

⁴⁰ Kahn (2001, pp.17-19) seemingly disagrees with this policy prescription, at least at a theoretical level. ("I have myself argued ... that a reasonable case can be made in the context of the introduction of competition into public utility industries that typically an incumbent company not only will control some facilities truly 'essential' to its rivals but also will enjoy economies of scale or scope not because of superior enterprise on its part but merely because of its inherited franchised monopoly, and that requiring it to share the benefit of those facilities with rivals at a compensatory price would therefore not entail penalizing successful competitive efforts.") (footnote omitted) In our view, Kahn has not offered a convincing argument for going beyond the essential facilities doctrine. To the extent that economies of scale/scope preclude competition, the facility in question would constitute an essential facility and mandatory sharing would normally follow. In this case, the scale/scope economies enjoyed by the incumbent company would be reflected in a lower "compensatory price" paid by the entrant for use of that facility. To be fair, Kahn concedes that it may be impractical to soften the essential facilities doctrine in a public utility context simply because it may prove too difficult to administer. To paraphrase Professor Kahn's own words, we would argue that once you abandon the essential facilities doctrine, it is not difficult to find another standard to govern the scope of mandatory asset sharing. It is *hopeless*. "This is not a question of looking for a black cat in a room in which the lights have been turned out. There is no cat there." (Kahn, 1994, p.12).

2.2 Essential facilities as a regulatory principle

2.2.1 When is cooperative competition not an oxymoron?

At the outset it may be useful to locate the essential facilities doctrine within antitrust law generally. Unfortunately, courts and sometimes commentators have had some difficulty in identifying just where and how the doctrine fits with more general principles of monopolization under Section 2 of the Sherman Act or concerted action in restraint of trade under Section 1.

It has long been a baseline principle of antitrust law that firms – even monopolists – have no duty to deal with others, including competitors. The absence of a duty to deal with rivals is sometimes cited as part of the “long recognized right of trader or manufacturer engaged in an entirely private business, freely to exercise his own independent discretion as to parties with whom he will deal”.⁴¹ The principle that traders/manufacturers have a right to deal with whomever they choose starts as a principle of economic liberty. However, its application to dealing with *competitors* is a principle of competition economics: to the extent that firms are cooperating with one another they are not competing.

As with virtually all general principles, there are exceptions. One exception falls under the amorphous concept of strategic exclusionary behavior. A firm with monopoly power may be guilty of monopolization,⁴² if its refusal to deal with rivals is undertaken for the purpose of excluding the rival from the market. The same principle applies to exclusionary conduct by a group of firms. In both the unilateral and the collective refusal cases, the precise scope of the exception is ambiguous. However, the Supreme Court has indicated that the exclusion must be without reasonable business justification, which equates to anticompetitive purpose. The leading case on unilateral refusals by a monopolist is *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*,⁴³ involving the refusal by a dominant ski operator to sell tickets to its ski slopes to a rival operator. The Court found evidence of the absence of business justification and exclusionary purpose from the fact that defendant had dealt with the plaintiff rival in the past, but had refused to continue to deal, refusing even to sell tickets for the use of its ski slopes to a rival at retail prices. The willingness to forego profitable ticket sales suggested to the Court that the defendant was acting only for an exclusionary purpose.⁴⁴ With respect to collective refusals to deal, the liability rule is basically similar in that the refusing firms must be (collectively) dominant and must act without valid business justification.⁴⁵

⁴¹ See *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 602 (1985) (citing, *inter alia*, *United States v. Colgate & Co.*, 250 U.S. 300, 307 (1919)).

⁴² The canonical description of anti-competitive acts is that of *United States v. Grinnell Corp.*, 384 U.S. 563, 570-71 (1966): “the willful acquisition or maintenance of that [monopoly] power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident”. This very general formulation is invariably translated to require some form of exclusionary conduct – conduct that excludes rivals and has no economic justification that is consistent with consumer welfare. See, for example, Hovenkamp (2005, § 6.4). This covers a range of practices that have, alas, resisted precise specification.

⁴³ 472 U.S. 585 (1985). See also *Eastman Kodak Co. v. Image Technical Services, Inc.*, 504 U.S. 451 (1992).

⁴⁴ See *Verizon Communications, Inc. v. Law Offices of Curtis V. Trinko*, 540 U.S. 398, 409 (2004), (emphasizing this feature of *Aspen Skiing* in order to show the limited scope of that decision).

⁴⁵ See *Northwest Wholesale Stationers, Inc. v. Pacific Stationery & Printing Co.*, 472 U.S. 585 (1985); *FTC v. Indiana Federation of Dentists*, 476 U.S. 447 (1986). At one time the Supreme Court purported to adopt a rule of per se liability. See, for example, *Fashion Originators’ Guild of America, Inc. v. FTC*, 312 U.S. 457 (1941) (group boycott of retailers who sold women’s clothing that used pirated designs held illegal). It was always doubtful whether that meant a court should never investigate the business reasons for refusal or whether it was

A second exception to the no-duty rule is the essential facilities doctrine, which requires that a firm that has monopoly control over a tangible or intangible asset that is a required input into a good or service that cannot be duplicated or obtained from sources other than the owner. The relationship between the general rule imposing liability for strategic refusals to exclude competitors and the doctrine of essential facilities is vague. On its face the latter doctrine is more precise, and more limited, than the former. However, the U.S. courts have not always been precise in how or where the line is drawn between the one and the other. For example, discussions of the essential facilities doctrine sometimes cite the *Aspen Skiing* decision⁴⁶ even though the Court in that case explicitly declined to rely on that doctrine.⁴⁷

Although the U.S. Supreme Court has never formally recognized the essential facilities doctrine, it is conventional to trace its origin to a series of Supreme Court decisions involving single-firm or collective refusals to deal with rivals. The seminal decision is *United States v. Terminal R.R. Ass'n*⁴⁸ which held that that terminal facilities owned by a group of railroads must be opened to rail competitors on a non discriminatory basis. The Court offered no theoretical or doctrinal generalizations beyond observing that for a group of railroads to own the only practically available terminal facilities would violate the antitrust law unless it provided reasonable access to other railroads.

Because the Court did not articulate a doctrine, or even a clear set of standards, for liability it is hard to give a complete account of the doctrinal evolution after *Terminal Railroad* since it is hard to know what cases should be counted as part of that evolution. The next two Supreme Court decisions that are generally identified as part of that evolution, *Associated Press v. United States*⁴⁹ in 1945 and *Otter Tail Power Co. v. United States*⁵⁰ in 1973, were both analyzed under conventional antitrust doctrine. In the first, the Court held that an association of newspaper publishers violated the antitrust laws by forbidding members from selling news to non-member competitors. In the second, the Court ruled that an electric power utility's refusal to sell wholesale power or transmission services to a competing municipal utility constituted monopolization.⁵¹ In neither case did the Court hint that it was following a doctrine of mandatory access to essential facilities. In *Associated Press*, the lower court did cite *Terminal Railroad* for the proposition that there should be non-discriminatory access to the news pool, but the basis for the obligation was not otherwise articulated.⁵² In any case, the Supreme Court's opinion did not rest on any notion

simply based on the fact that none was apparent in the cases presented to the Court. In all events, after *Northwest Wholesale Stationers* concerted refusals are treated under a rule of reason, which incorporates both market power and anticompetitive purpose into the liability rule.

⁴⁶ See, for example, *City of Anaheim v. Southern California Edison Co.*, 955 F.2d 1373, 1379 (9th Cir. 1992) (discussing essential facilities doctrine as an aspect of an "overarching concept" of refusing to deal without legitimate business reason" and citing *Aspen* as an example of the latter).

⁴⁷ *Aspen Skiing* at 611 n.44. The lower court did rest its decision on the essential facilities doctrine. *Aspen Highlands Skiing Corp. v. Aspen Skiing Co.*, 738 F.2d 1509, 1520-21 (10th Cir. 1984).

⁴⁸ 224 U.S. 383 (1912).

⁴⁹ 326 U.S. 1 (1945).

⁵⁰ 410 U.S. 366 (1973).

⁵¹ The competition in question was competition *for* the market not on-going competition *in the market* since there was only one utility in each town, and the particular markets were considered to be natural monopolies. 410 U.S. at 369-70. On the distinction between the two types of competition see Demsetz (1968).

⁵² *United States v. Associated Press*, 52 F.Supp. 362, 374 (S. D. New York, 1943) (L. Hand, J.) Although Judge Hand's reference to *Terminal Railroad* appears to be a casual one, Judge Swann in dissent treats it as central and challenges its application on the ground that AP did not have a monopoly of news gathering and was not otherwise subject to a duty to serve all persons. *Id* at 377.

that the AP news pool was an essential facility. The key point for the Court seems to have been simply the fact that a group of competitors acted in concert in refusing to deal with others. The decision is best understood as simply one of a several collective refusal to deal cases that were in that era treated as inherently suspect if not per se illegal.⁵³

Although its decisions in *Terminal Railroad* and *Otter Tail* are invariably cited as models of the essential facilities doctrine, the Supreme Court has repeatedly refused to adopt the doctrine as its own. As recently as 2004, the Court in the *Verizon Communications, Inc. v. Law Offices of Curtis V. Trinko*⁵⁴ declined to recognize or repudiate the doctrine as a matter of antitrust law. The issue in *Trinko* was whether the failure of an incumbent local exchange carrier to provide adequate access to unbundled elements of its local exchange network, as required by the Telecommunications Act of 1996, could provide a basis for an antitrust claim of monopolization under section 2 of the Sherman Act. The Court answered in the negative. The Court held that the alleged failure to provide access did not come within the limited scope of the refusal to deal requirements of *Aspen Skiing*. It also declined to recognize the essential facilities doctrine as a basis for imposing *antitrust* liability to correct a problem that was within the control of – and had indeed been resolved by – regulatory action. It did not accept or reject the doctrine but simply held that it served no purpose where regulatory remedies were available.⁵⁵

Despite the Supreme Court's cautious stance towards the doctrine it has been accepted by lower federal courts in every circuit. The absence of an imprimatur by the Supreme Court is a bit puzzling given its recognition that unilateral or group refusals may sometimes be a basis for charging monopolization or concerted action in restraint of trade. However, the Court's recent *Trinko* decision suggests a possible explanation. It suggests that the Court is concerned that a crystallized "doctrine" of sharing essential facilities might be manipulated beyond its limited purposes and used to instate a general rule of cooperative dealing between competitors. Other antitrust authorities have expressed that concern. As stated by one leading commentator:

[I]f the doctrine is restricted to refusals calculated to create or perpetuate monopoly power, then the more general antitrust rules respecting refusals to deal seem quite adequate to do the job. But if the limitation is not imposed, then the essential facility doctrine ... begins to operate as a 'fair access' statute that forces one set of private firms to accommodate another set even when competition is not improved.⁵⁶

As we will discuss further below, this concern about forced sharing of assets is understandable, but the quoted statement is misdirected. Contrary to the view that "the more general antitrust rules" (monopolization or concerted action in restraint of trade) are adequate to handle the problem, experience shows that those more general antitrust rules are

⁵³ In his opinion for the majority, Justice Black treated the *AP* case as similar to *Fashion Originator's Guild of America, Inc. v. FTC*, 312 U.S. 457 (1941), which was generally interpreted as supporting a rule of per se illegality. As noted above the Supreme Court in *Northwest Wholesale Stationers v. Pacific Stationery and Printing Co.*, 472 U.S. 284 (1985), repudiated the view that collective refusals to deal are per se illegal.

⁵⁴ 540 U.S. 398 (2004).

⁵⁵ *Id.* at 411. Not only was a regulatory remedy available in *Trinko*, it had in fact been exercised. The FCC had already ordered Verizon to provide the access sought, and had fined the company for violating FCC access rules. *Id.* at 413. Thus, the only effect of granting an antitrust remedy in this case would have been to allow recovery of private compensation by the plaintiff. (Moreover, under conventional antitrust doctrine it was questionable whether the plaintiff here had standing to recover, as noted in the concurring opinion by Justice Stevens. *Id.* at 416-17).

⁵⁶ Hovenkamp (2005, p.313).

the problem – an invitation to impose sharing rules without meaningfully limiting criteria. The *Aspen Skiing* case, in which the “more general antitrust rules” were applied, makes the point. That case has been much criticized by antitrust commentators. The Supreme Court itself, in the *Trinko* case, noted that “*Aspen Skiing* is at or near the outer boundary of § 2 liability.” The fundamental problem with the more general refusal to deal rules (if one can correctly call them “rules”) is that they are, as Thomas Macaulay once said of the U.S. Constitution, “all sail and no anchor”. Properly defined and carefully applied, the essential facilities doctrine can provide an anchor to the sail of vague and ad hoc obligations to deal that *Aspen Skiing* seemed to sanction under the general rubric of monopolization.

2.2.2 A primer on essential facilities

Among the lower courts in the United States, there is virtually unanimous agreement about the basic elements of an essential facilities antitrust claim, although one finds some variation in what the courts choose to elaborate. An influential formulation is that of *MCI Communications Corp. v. AT&T*,⁵⁷ involving MCI’s demand for interconnection with AT&T’s local exchange network.⁵⁸ The court set forth four basic elements of the doctrine: “(1) control of the essential facility by a monopolist; (2) a competitor’s inability practically or reasonably to duplicate the essential facility; (3) the denial of the use of the facility to a competitor; and (4) the feasibility of providing the facility”.⁵⁹ For analytical purposes, it is useful to separate the first element into two distinctive requirements, monopoly and essentiality, and to add a further requirement that is implicit in the doctrine – adverse effect on competition.

Monopoly.⁶⁰ It is a commonplace that the offense of monopolization does not require a literal monopoly but only monopoly power (defined conventionally as the ability to exercise a power to exclude competitors or raise prices) and that such power can exist in a firm with less than one hundred percent of the market. Mere monopoly power in its usual antitrust sense of market dominance is not, however, the proper standard for applying the essential facilities doctrine.⁶¹ The underlying premise of the doctrine is that the firm controlling an

⁵⁷ 708 F. 2d 1081, 1132-33 (7th Cir.1983).

⁵⁸ The essential facility in *MCI* was interconnection with the local switched network and access to certain tariffed services that AT&T provided some customers. It did not involve unbundled access to specific network facilities.

⁵⁹ Pitofsky *et. al.* (2002, p.460) provides a more abbreviated summary, that omits the feasibility element (presumably because it is taken for granted): “The Courts require only that the plaintiff prove that the facility is indispensable for competition in the relevant product market, is controlled by a monopolist who could practically make access available, and is not capable of duplication”.

⁶⁰ The monopoly issue is addressed to power in the upstream market, but there is a separate question of monopoly power (market dominance) in the downstream market where the facility is used as an input. U.S. courts focus on the upstream market and ignore the question of downstream market on the reasonable assumption that if the facility in question is in fact essential to competition in the downstream market, a denial of access will eliminate competition in the downstream market. Cf. *Alaska Airlines, Inc. v. United Airlines, Inc.*, 948 F.2d 536, 544 (9th Cir. (1991) (a facility that is controlled by a single firm will be considered “essential” only if control of the facility carries with the power to eliminate competition in the downstream market) Note that the owner of the facility must operate in both markets because the essential facilities doctrine applies only to refusals to deal with *competitors*. *Intergraph Corp. v. Intel Corp.*, 195 F.3d 1346, 1363 (Fed. Cir. 1999).

⁶¹ Canadian regulators seized, initially at least, on this very point in circumscribing the scope of network unbundling obligations imposed on incumbent providers. In Telecom Decision CRTC 97-8 at 74, the Commission expressly rejected as “inappropriate” a proposal to define an essential facility as “a facility that is provided by a dominant firm with market power because it would require facilities to be treated as essential

essential facility has a complete monopoly of that facility. This is entailed by the requirement of non-duplicability. If the relevant facility has in fact been duplicated, then perforce it cannot be said to be non-duplicable. Indeed, we think the non-duplicability requirement implies the existence of a natural monopoly.⁶² Admittedly, the decisions are not as clear as they might be on the point; in most cases the question whether the monopoly is natural or not simply is not addressed. However, this may be simply a semantic issue since the controlling question will be whether the facility in question can be practicably or economically duplicated, regardless of whether such duplication is necessarily technically efficient. That is to say, the essential facilities doctrine is not a license for antitrust authorities to search for the ideal (“most-efficient”) market structure.

Essential facilities doctrine is treated generally under the heading of monopolization.⁶³ However, monopolization covers a range of practices that each has its own distinctive liability elements. The essential facilities doctrine is one of those distinctive practices within the general category of monopolization. Thus, it should not be assumed that it automatically incorporates the same criteria as are used for other monopolization offenses. In particular, it does not follow that the same standards for defining market power in monopolization cases generally should be applied to essential facilities cases in particular. We believe they should not be. In the case of essential facilities, there is a special reason for a strict definition of the monopoly element and that is the fact that asset sharing among competitors is not generally a norm of competition. The very oddity of requiring competitors to cooperate compels stringent limitations on the scope of the duty. The non-duplicability requirement – which we translate as “natural monopoly” – fulfils this function.

even in the face of the demonstrated feasibility of alternative provision, including self-supply”. Alternatively stated, a retail market being forborne or deregulated in the absence of mandatory network sharing is sufficient to establish that there are no essential facilities, but the converse is not true.

⁶² See *Blue Cross & Blue Shield of Wisc. v. Marshfield Clinic*, 65 F.3d 1406, 1412-13 (7th Cir. 1995). See also Hovenkamp (2005, pp.310-11). Hovenkamp offers two other categories of cases: assets that are part of a regulatory regime, whether or not they are naturally monopolized; structures owned or subsidized by the government. We refer to monopoly control of the *facility* rather than monopoly power over the upstream *market*. If there is a separate market for the facility itself the two will be identical. This is typically true in antitrust contexts, but it may not be the case in regulatory settings, such as telecommunications networks where the relevant facility is usually an unbundled element of a network that is not separately marketed. However, while the absence of a separate retail market for the facility does, as noted below, complicate the problem of pricing the facility, it does not affect the analytical framework in any important way. The key in all events is monopoly control of a facility that is essential to sustaining competition in a separate (“downstream”) market.

⁶³ However, notice that in the case where two or more firms collectively control and refuse to share an essential facility it may also be a combination in restraint of trade under Section 1 of the Sherman Act.

Essentiality. An essential facility is a tangible or intangible asset⁶⁴ that is a necessary input to providing a good or service in market downstream from the market for the facility itself. The word “asset” is used here in a loose sense. More precisely, the essentiality should be defined by reference to the functionality not the form of the facility. For example, in the context of telecommunications networks the essentiality of a local loop should be addressed not in terms of any particular technology, such as the existing copper wire medium, but in terms of all available technology that will provide the same functions in a reasonably practicable manner. Essential” is not the same as “convenient”. All U.S. courts are agreed on this point. The fact that a competitor deprived of a particular facility/functionality might suffer a cost disadvantage is not enough to make the facility essential.⁶⁵ As bluntly stated by one court: “The plaintiffs then are asking us to equip them with [defendant’s] competitive advantage. This is not a function of the antitrust laws. The antitrust laws are not intended to support artificially firms that cannot effectively compete on their own”.⁶⁶

Non-duplicability. As we have suggested above, non-duplicability is the core of the doctrine. Non-duplicability can be a product of a number of different constraints that make self-provision impractical. For example, there might be technical or legal constraints (such as a patent) on self-provisioning. However, the usual ground for finding that a particular functionality cannot be duplicated is that it is not feasible to do so because market conditions do not make it economical to do so (the demand for the end services enabled by the facility will not support the cost of duplicating a particular facility). Consistent with the definition of essentiality above, non-duplicability is an objective condition of the market, not the financial status of a particular rival. If it is practical for a reasonably efficient competitor to self supply the facility in question, it is not relevant whether a particular entrant can do so.

As with the element of essentiality, the non-duplicability inquiry is an instrumental one and should not be tied to any particular means of obtaining it. Especially in a field of changing technology – telecommunications is a particular apt example – it will often be possible to provide a particular product or service with alternative inputs even though

⁶⁴ There is no doubt that “facility” includes both tangible and intangible assets. However, some scholars have argued that essential facilities do not include proprietary assets protected by intellectual property law. See Burling, Lee and Krug (1999) (arguing against a duty to deal in the area of intellectual property, whether under essential facilities doctrine or the more general refusal to deal rubric). There is no persuasive reason to distinguish among types of assets for purposes of applying essential facilities doctrine. In all cases, the key inquiry is whether the assets are truly essential, whether they can be duplicated and whether it is feasible to share them. The argument made by some scholars that access to intellectual property will undermine the incentive to innovate, (see Lipsky and Sidak, 1999, p.1219), does not distinguish intellectual property from other forms of property. Innovation is just one form of investment in wealth creating activity. Whatever the form of the investment, the ultimate task is to find an accommodation between the general laws of property and the special laws of antitrust. There may be a reason to distinguish intellectual property from other assets in some particular cases because it would create special problems. For example, sharing of trade secrets would destroy competition not enable it. However, such cases are appropriately dealt with under the feasibility criterion.

⁶⁵ See, e.g., *Midwest Gas Services, Inc. v. Indiana Gas Co., Inc.* 317 F.3d 703, 714 (7th Cir. 2003) (interconnection to pipeline was not essential just because it was the most economical). See also *Alaska Airlines* at 544 (absence of facility must create a “severe handicap” for the rival); *Twin Labs., Inc. v. Weider Health & Fitness*, 900 F.2d 566, 568 (2d Cir.1990) (same).

⁶⁶ *Seagood Trading Corp. v. Jerrico, Inc.* 924 F.2d 1555, 1573 (11th Cir. 1991). See also *Morris Communications Corp.*, 364 F.3d 1288, 1298, 1297-98 (11th Cir. 2004) (finding a valid business justification in refusing to deal on terms that would allow the rival to free ride on defendant’s investment); *Laurel Sand & Gravel v. CSX Transp.*, 924 F.2d 539, 545 (4th Cir. 1991) (the “reasonable standard of access factor can not be read to mean the assurance of a profit” for the rival).

conventionally the product or service was provided by an asset that cannot be replicated. The point is perhaps obvious, but the obvious is sometimes ignored when our minds are grooved to think about things in patterns shaped by past experience. When cellular telephony was introduced in the early 1980s, no one could foresee that wireless telephony would compete with wireline service.⁶⁷ No one would have any difficulty foreseeing it today.⁶⁸ In considering the availability of alternative functionality, one should take into account evolving, as well as traditional, technologies. In other words, competition policy should be technology neutral in the sense of not locking in any particular technology that happens to be in prevalent use at the time the policy is implemented.

Denial. Denial is obvious in cases involving an outright refusal to deal. The more difficult question is presented when the owner of the facility purports to be willing to share but only on financial and/or technical terms that are so unreasonable as to amount to a refusal.⁶⁹ This question imports into the doctrine a need to define what are the reasonable price and other conditions of sharing. In this regard, the denial element overlaps with feasibility.

Feasibility. Sharing must be practicable within the framework of the dominant firm's existing business operations. This means that a firm or group of firms is not required to incur unusual costs or suffer distortions in the way it does business in order to share. As one court expressed it, "the feasibility providing access ... must be analyzed not in terms of all the possibilities of [the defendant as a railroad], but in the context of its normal course of business".⁷⁰ Feasibility requires an inquiry into all relevant business justifications for refusal to deal. Among other things, this means that lack of existing capacity to accommodate

⁶⁷ Certainly AT&T did not imagine it. As part of the 1984 reorganization plan implementing the antitrust breakup of the Bell System, AT&T blithely agreed to have its newly developed cellular business assigned to the Bell Operating Companies in the belief that cellular telephony would remain a minor supplement to the basic wireline service, growing to no more than a million users. Cauley (2005, pp. 36-37). Everyone has trouble predicting the future, of course, but when a business misestimates the demand for its product by more than two orders of magnitude, one might predict that it will face a hard future. As it happens that precisely defines AT&T's future trajectory after the breakup – as Cauley narrates.

⁶⁸ At the end of 2006, there were 241.8 million mobile telephone subscribers in the United States, representing 80 percent of the total population. Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services. 2008 WL 312884. Incidentally that 80 percent accounts for roughly the entire population over age 14. When one adjusts for an unknown number of very senior citizens, old-order Amish, and children too young to talk, it appears we are approaching a point where everyone who can use a cellphone has one. It is not simply that wireless penetration is high, though. Increasingly, wireless has become a substitute for wireline. The latest survey by the Center for Health Statistics shows during the last half of 2007 14.5 % of adults lived in wireless-only households. Among adults 18-24 the percentage was nearly 31%. Moreover, the *rate* of wireless substitution increased in the latest period reported. (Blumberg and Luke, 2008). It should be noted that there is likely a type of reverse *cellophane fallacy* at work here. To the extent that the regulators' pursuit of universal service has pegged wireline prices below competitive levels, the substitutability between wireless and wireline telephony is likely understated.

⁶⁹ See, for example, *City of Chanute v. Williams*, 955 F.2d 641, 648-49 (10th Cir. 1992) (plaintiff failed to show that access terms were equivalent to denial); *Laurel Sand & Gravel*, at 545 (offer of access priced just above variable cost was reasonable).

⁷⁰ See, for example, *Laurel Sand & Gravel* at 545 (not feasible for railroad to provide access to rail tracks where to do so would require altering its relationship to feeder lines on which it depended for profitable traffic); *David L. Aldridge Co. v. Microsoft Co.*, 995 F. Supp. 728 (S.D. Tex. 1998) (operating system manufacturer not required to maintain shortcomings in its software simply to provide business opportunity for a competitor who sold enhancement software); *Town of Massena v. Niagara Mohawk Power Corp.* 1980 WL 1889 (N.D.N.Y. 1980) (significant engineering concerns justified refusal to transmit power until concerns were addressed).

sharing is a valid business justification for refusing to share. Thus, where the owner of an essential facility is fully utilizing it to serve its own customers, it is not required to disadvantage its customers in order to accommodate the customers of its competitor.⁷¹

Despite the widespread acceptance of the doctrine by lower federal courts, they have been restrained in applying it. A successful essential facilities doctrine claim is exceptional; most claims do not, in fact, survive the pleading stage.⁷² This has not daunted private litigants who continue to bring such claims with some regularity – on the apparent assumption that there is “no harm in asking”.⁷³ For their part, however, the courts have recognized that a liberal application of the doctrine would undermine rather than preserve the competitive process, would distort investment incentives and would saddle the courts with the burden of defining the terms of dealing and monitoring on an on-going basis.

3 Benefits and costs

3.1 Competition long and short

While recognizing that the focus of competition policy is properly placed on maximizing consumer welfare over the long run, inevitably there will be tradeoffs between static and dynamic considerations. This trade-off is particularly acute when it comes to forced sharing obligations associated with purported essential facilities. For example, at any given point in time across the economy, there will likely exist opportunities in which forced sharing would serve to place downward pressure on extant prices. Nonetheless, as a matter of competition policy, we do not observe pervasive forced sharing obligations and for good reason. In practice, the consumer-welfare gains expected from forced sharing in the form of allocative efficiency are likely to pale in comparison with the consumer-welfare losses due to dampened incentives to invest in innovation in new products and services – gains in dynamic

⁷¹ *City of Anaheim* at 1380 (where the owner of a power transmission network could use the entire capacity to provide inexpensive service to its own customers, it was reasonable to refuse access to the facility).

⁷² In earlier work, one of us reported the results of a review of federal cases that expressly disposed of “essential facilities” claims from 1980-2000. Of 28 court of appeals decisions that addressed the merits of the claim, 5 held that there was at least a cognizable claim that could not be dismissed on the pleadings or pretrial affidavits. Of 43 district court cases (excluding those that were appealed and counted in the above inventory) a triable issue was found in 6. Robinson (2002, p.1207). The earlier search was updated by surveying federal cases from 2000 through 2006. A search of opinions in Westlaw disclosed 17 court of appeals decisions expressly addressing the merits of an essential facilities claim. Of that number only two held there was a triable issue on the claim; one was reversed by the Supreme Court’s decision in *Trinko* and the other was vacated by the court of appeals based on *Trinko*. There were 24 district court decisions (again eliminating those that were appealed and counted in the above list) of which 7 found a triable issue on the claim.

⁷³ This should not be surprising when one notes three salient features of this litigation. One, essential facilities claims are invariably made by private litigants. If one disregards the three “proto-essential facilities” decision by the Supreme Court, discussed in the main text, the only government case we know of where the doctrine was applied is the case that led to the breakup of AT&T. See *United States v. AT&T*, 524 F.Supp. 1336 (D.D.C.1981). Thus, there is no official screening of claims. Two, the claims are almost invariably joined with other claims (including, but not limited to antitrust), and the marginal cost of adding the essential facilities claim is negligible regardless of probability of success. Three, there is no effective discipline of groundless claims in U.S. antitrust law. Under U.S. Federal Rules of Civil Procedure, Rule 11, an attorney presenting groundless or frivolous claims is subject to sanction by the court, but the latitude given attorneys, coupled with the vague contours of antitrust law, makes Rule 11 an ineffectual constraint in most antitrust cases.

efficiency. That is to say, in the vast majority of cases, the expected benefits of forced sharing fall short of their opportunity cost.

The traditional definition of an essential facility is inherently static in nature in the sense that it is a snapshot of the marketplace at a given point in time.⁷⁴ And yet, the telecommunications industry is the quintessential example of a technologically dynamic industry.⁷⁵ Hence, a facility that might reasonably be considered an essential facility today may well not be an essential facility tomorrow. In addition, the degree of market and technological convergence in the telecommunications industry today renders the determination of what facility actually constitutes an essential facility potentially problematic, not only because it is likely to vary dynamically over time, but because it invariably entails tradeoffs between imitation and innovation or between static and dynamic efficiency.⁷⁶

A dynamic perspective in defining what constitutes an essential facility must also duly account for the possibility that the declaration of a particular facility as an essential facility endogenously increases the likelihood that it will remain such going forward. In this sense, the essential facility classification becomes a *self-fulfilling prophecy* of sorts because actual and potential market participants will be less inclined to invest in the research and development requisite to discovering potentially viable alternatives. The tradeoff between static and dynamic efficiency lies at the heart of the regulator's policy deliberations regarding the scope of unbundling obligations. Any decision on the part of the regulator to require forced sharing of a facility presumably has its foundation in reducing barriers to entry in telecommunications markets because such barriers to entry can give rise to the exercise of market power in the adjacent (downstream) market. Whereas barriers to entry may temporarily sustain prices above competitive levels – leading to losses in static efficiency – the complete absence of all barriers to entry can serve to discourage investment in innovation – leading to losses in dynamic efficiency, an insight that underlies the policy of intellectual property protection. Hence, while barriers to entry can be a source of market power, the complete absence of barriers to entry may constitute the ultimate barrier to entry.

It is in this sense that competition policies in the form of forced sharing that focus exclusively on the elimination of barriers to entry and reducing market power necessarily entail trade-offs between imitation and innovation (respectively, between static and dynamic

⁷⁴ Kahn (1970, p.12) recognized this crucial distinction between a static and dynamic perspective nearly forty years ago: “What parts of these industries are natural monopolies, what parts not? Might they be natural monopolies in some static, efficiency sense but “unnatural” ones in terms of the prerequisites for innovation and growth?” See also Kahn and Dirlam (1954, pp.33-34). “Difficulty of entry, when not deliberately devised or imposed, ... scarcely provides a sufficient basis for antitrust action against firms whose monopoly power they may enhance. Similarly, there are serious dangers in setting upper limits to business size or market shares, *ex ante*. They include the difficulty of defining products and markets in such a way that will be generally acceptable and stay put ... ”

⁷⁵ See, for example, Neuchterlein and Weiser (2005).

⁷⁶ Static efficiency entails both allocative and productive (technical) efficiency. Allocative efficiency refers to the relationship between the price of the service and the underlying marginal (incremental) cost of the service at any given point in time. Productive (technical) efficiency is concerned with production at the lowest possible cost. A firm is technically efficient if it (i) uses the minimum possible amount of inputs to produce its output; or, equivalently, (ii) produces the maximum possible amount of output from any given quantity of inputs. Dynamic efficiency is concerned with the optimal investment over time in capital formation, cost-reducing innovation and product innovation. Dynamic efficiency is particularly critical in infrastructure industries that serve as key drivers of economic growth.

efficiency).⁷⁷ To wit, forcing incumbents to share non-essential network elements with rivals, particularly at unduly favorable prices, invites those new entrants to become *de facto* clones of the incumbent provider.⁷⁸ This policy decision sacrifices innovation for imitation in the sense that artificially encouraging entry via the reseller model may have the effect of “crowding out” facilities-based entry.⁷⁹ Policies that reward imitation rather than innovation will attract those market entrants adept at imitation, predominantly arbitrageurs, while driving away genuine innovators.⁸⁰

In this very context, an outstanding question concerns whether the entry of the cable companies into the market for local telephony was exclusively a technological phenomenon – the advent of the IP platform – or whether it was driven in part by the perceived failure of the reseller model. It is not inconceivable that the perceived failure of the reseller model provided the cable companies with stronger incentives to enter on a facilities basis (invest in appropriate network upgrades and in refining VoIP technology so it was a genuine substitute for ILEC voices-grade service) absent concerns that the market for local exchange telephone service would be commoditized at the hand of the regulator through liberal forced sharing policies and non-compensatory rates for competitor services.⁸¹ In other words, these market events may have led the cable companies to infer that the risk of cost recovery was correspondingly reduced.

The courts have grappled with these very issues as they concern the implementation of the 1996 Telecommunications Act. As the DC Circuit explained in *USTA-I*:

Each unbundling of an element imposes costs of its own, spreading the disincentive to invest in innovation ... At the same time – the plus that the Commission focuses on single-mindedly – a broad mandate can facilitate competition by eliminating the need for separate construction of facilities where such construction would be wasteful. Justice Breyer concluded that fulfillment of the Act’s purposes therefore called for ‘balance’ between these competing concerns.⁸²

Forced-sharing obligations require that the ILECs unbundle their networks and provide these inputs to rivals at “cost-based” rates. These innovation “spillovers” serve not only to reduce the expected returns that the ILECs obtain from innovations, but they also promote a “uniformity” of networks between the ILECs and the CLECs which, in turn, limits the range of service choices available to consumers.⁸³ These obligations also give rise to problems of asymmetric risk-bearing.

⁷⁷ See Gilbert (2005) and Baxter (1984) for further discussion of the prominence of dynamic efficiency over static efficiency in terms of consumer welfare.

⁷⁸ See, for example, Kahn *et al* (1999, pp.319-365) and Weisman (2000, pp.195-211).

⁷⁹ A recent study by Hazlett and Havenner (2003, p.447) concludes that the share price of both the ILECs and telecommunications equipment manufacturers declined upon announcement of the FCC’s decision to liberalize unbundling rules. They rightly conclude that this is inconsistent “with the view that UNE-P helps facilitate competitive entry that will result in increased network investment.”

⁸⁰ Former FCC chairman Michael Powell assigned part of the blame for the telecommunications boom and bust on the regulators attempt to drive the price of entry close to zero in telecommunications markets which had the effect of attracting primarily arbitrageurs rather than genuine innovators. See *Telecommunications Reports*, 1 April 2001, p. 10.

⁸¹ Hazlett (2006, pp.489-491).

⁸² *USTA –I* at 427.

⁸³ The *Telecommunications Policy Review Panel*, Final Report, 2006, duly notes this concern at pp.3-35:

The more extensive the scope of network elements that are shared, the greater the uniformity of the networks used by both ILECs and entrants. Because ILECs are forced to share network innovations with competitors, these innovations do not advance the ILECs’ competitive position. This in turn reduces the ILECs’ incentives to innovate in those areas. The broader the scope of mandated

Suppose, for example, that an incumbent provider of telecommunications services undertakes a substantial, risky investment in a new technological platform that enables it to offer a wide range of new services. This investment is risky because consumer demand for the new services that this new technological platform makes possible is highly uncertain. In the “good state of the world” consumer demand for these new services is strong, whereas in the “bad state of the world” consumer demand for these new services is weak. It is reasonable to believe that in the “good state of the world” CLECs would appeal to the regulator for access to this new technological platform at “favorable” rates. The question then concerns whether the regulator should necessarily make sharing mandatory even if it is conceded that such sharing would make competition possible when it would not be otherwise.⁸⁴ In such cases, the regulator would be prudent to deny such access if it credibly believed the consumer welfare gains from granting access were dominated by the consumer welfare losses associated with discouraging the risk-taking and innovation requisite to the development of new products and services – dynamic efficiency.⁸⁵

3.2 Distortion of investment incentives

Probably the most common criticism of forced sharing is that it distorts investment incentives for both the firm required to share and the firm seeking it. The distortion argument has two distinct, albeit interrelated, parts. The first concerns the investment incentives of the owner of the facilities who is required to put them at the disposal of a competitor. Justice Breyer articulated the first part succinctly in his separate opinion in *Iowa Utilities Board*:⁸⁶

[A] sharing requirement may diminish the original owner’s incentive to keep up or to improve the property by depriving the owner of the fruits of value-creating investment, research, or labor. And as one moves beyond the sharing of readily separable and administrable physical facilities, say, to the sharing of research facilities, firm management, or technical capacities, these problems can become more severe ... The more complex the facilities, the more central their relation to the firm’s managerial responsibilities, the more extensive the sharing demanded, the more likely these costs will become serious. And the more serious they become, the more likely they will offset any economic or competitive gain that a sharing requirement might otherwise provide.

The incentives distortion depends, of course, not only on the scope of the required sharing but on the terms that govern it. Any price or other term that does not match the full opportunity cost to the owner can be expected to have a negative effect insofar as it creates an asymmetric risk between incumbent and rival. The incumbent incurs costs to build facilities in the face of two risks, a risk that future demand for the service will not support the investment, and a risk that future technology will make it obsolete. A rival who is able to lease these elements on an as-needed basis faces neither risk. It has the advantage of electing between self provision and resale based on actual, not projected, market conditions.

wholesale access, the broader the scope of network components for which incentives to innovate may potentially be reduced.

⁸⁴ To grant access under these conditions, depending upon the effective prices, would amount to something akin to an “anti-patent”. It would bestow upon the imitator a competitive advantage that intellectual property laws have traditionally conferred upon the innovator. It would be difficult to imagine a practice more antithetical to the development of new products and services, the very sort of innovation that sound competition policy should seek to encourage. Weisman (2000, pp.209-210).

⁸⁵ Werden (1987, p.476) (“In such cases, granting access ... is inappropriate for the same reasons that granting access to the intellectual property is inappropriate.”)

⁸⁶ 525 U.S. at pp.428-29.

The problem is especially severe in telecommunications where the costs of capital investment in new telecommunications facilities are commonly irretrievable because of rapid technological change, among other things. (There is unlikely to be much of a market for equipment made functionally obsolete by new technology.)⁸⁷ A firm contemplating new investment in such circumstances obviously will take that risk into account in its capital budgeting. Among other things, it will attempt to calculate the alternatives, including the alternative of deferring the investment until it has greater information about the market, technology or other relevant conditions. But no such calculus avoids the risk itself. Consider, though, the CLEC that enters by leasing facilities on a short term basis. Not only does the low lease price mitigate any risk of loss if market conditions prove to be unfavorable, but the short term commitment makes it possible to hedge its bets either way. If it turns out that investment in new facilities would be favorable, it can invest. As many critics of leased access have observed the CLEC's ability to defer any decision on investment until more information is available is the equivalent of an option. It is a real option rather than a financial option because it is not traded, but it has "real" value. To the extent the CLEC does not pay the real option value it avoids a cost that the ILEC incurs – irreversible investments.⁸⁸

The flip side of the disincentives coin concerns the incentives of competitors. It is a commonplace in all the antitrust and regulatory commentary that forced sharing will undermine the incentive of rivals to invest in new technology or seek new means of providing service.⁸⁹ As with future investments by incumbents the biasing of rival's

⁸⁷ In some cases, the distinction has been made between access to "legacy" facilities, wherein the incumbent's costs are supposedly sunk, and access to "greenfield" facilities, wherein the incumbent provider has yet to incur the sunk costs associated with service provisioning. This type of pigeon-holing of investments may have some superficial appeal, but it is nonetheless incorrect for the following reasons. First, the idea that forced sharing of legacy facilities causes no disincentive for investment is based on the premise that once these costs are sunk, there are no additional costs to be incurred. In fact, ongoing maintenance, repair and network upgrades are the norm. Second, under this principle, the incumbent provider would surely recognize that once the "greenfield" investment is made, it automatically moves into the legacy category and forced sharing may follow on the familiar *by-gones* principle of elementary economics. It will surely give the incumbent provider pause in making the "greenfield" investment if its "reward" for the irreversible investment triggers a requirement that it share these facilities with rivals at regulatory prescribed rates. With respect to the associated pricing issues, whereas there is no guarantee in a competitive market that a firm will be able to recoup its sunk costs, this does not imply that regulatory rules for network sharing designed to enable competition should explicitly preclude the recovery of the incumbent's sunk costs. See Pindyck (2007, pp.257-258). Indeed, claims by incumbent providers that they are necessarily entitled to full recovery of their sunk costs and counterclaims by entrants and regulators that competitive markets do not allow for such recovery can only be characterized as countervailing ignorance and dismissed accordingly. See Weisman (2002).

⁸⁸ For more on real options in the context of leased access, see, for example, Pindyck (2007); Guthrie (2006); Hausman and Sidak (1999, pp.458-459); Crandall, Ingraham and Singer (2004). With respect to the magnitude of this distortion, shortly after the passage of the 1996 Act, Jerry Hausman (1997, pp.31-35) estimated that based on the assumptions embedded in the FCC's TELRIC methodology the correct price of access incorporating the real option value would be roughly twice the current level. Whatever the value of the option, it does not appear that the TELRIC model accounts for it. The TELRIC cost-of-capital component does include a risk component that reflects both competitive conditions in the market and any other "unique" risks associated with supplying a particular UNE. See Triennial Review Order, 18 FCC Rcd 16978 at 677- 684 (2003). This compensates the ILEC for the costs of making the investment, but it does not account for the cost of making the investment at time 1 as opposed to deferring it to time 2. See Pindyck (2007, pp.293-294).

⁸⁹ Crandall (2005 p.37), provides some evidence from experience with unbundled network access in the United States where the heavy reliance by non-cable competitive carriers on resale of incumbent facilities has been accompanied by a decline in facilities investments by the competitors.

investment choices is, of course, a function of the comparative costs of leasing versus self-provision. However, the biasing of investment incentives can affect even those entrants that would prefer self provision if other entrants enjoy an advantage from leasing incumbent facilities on highly favorable terms. One might think of this as a kind of Gresham's law in which the coin of bad competition (subsidized by lease terms that do not reflect the full costs of supply) drives out the good.⁹⁰

In addition, it is quite possible that reseller CLECs are drawn disproportionately from those market providers with relatively inferior business plans – that is to say, those CLECs with business plans that the capital markets declined to finance for facilities-based entry. This observation should not be construed to suggest that all reseller CLECs necessarily have inferior business plans, but merely that a decision to enter as a reseller rather than a facilities-based provider may be a signal that the business plan for facilities-based entry failed to pass muster with potential investors and the CLEC was forced to enter as a reseller by default. If this should be the case, there will be excessive demand for regulatory protection as market providers look to the regulator to compensate for their ineptitude. This excessive regulatory protection, likely in the form of a broader unbundling regime and unduly low prices for network elements, will further discourage investment in facilities-based networks, even by those entities that are capable of such deployment.

4 Stepping stones to “real” competition

Facilities-based competition is the first-best objective of competition policy, whether that policy is enabled by antitrust or by regulatory mechanisms. Mandatory resale of services and unbundled network facilities is a second-best solution that may be justified by the practical inability to replicate certain facilities, either in the short term or the long term. However, it appears to have been the expectation of both Congress and the FCC that market forces would drive the system towards facilities-based competition in the long run. Resale or UNE-leasing options were seen as means to enable firms to enter markets quickly and grow their own networks gradually. Over time, new entrants would wean themselves from dependence on leased facilities as they gained acceptance in the market.⁹¹ By a series of steps, new entrants would replace leased facilities with owned facilities as their evolving economic strength in the market permits. This has come to be known as the “stepping-stone” model of competitive growth.⁹² The stepping stone model was always under-theorized. Congress never expressly articulated it, and the FCC's own statements on this point are

⁹⁰ This effect is similar to adverse selection but not precisely the same. Adverse selection – aka the “lemons problem” – is a problem of asymmetric information about product quality variables. Akerlof (1970). The good-coin, bad-coin problem identified here is not informational in character since it occurs whether or not capital markets can distinguish between resale and facilities-based competitors. The problem rather is that giving UNE-access resellers significant cost advantages will make that mode of entry the dominant market strategy for *all* new entrants. In effect it creates a pooling equilibrium among new entrants in favor of resale provision even when facilities-based provision is practicable.

⁹¹ It is noteworthy that regulators had previously invoked similar arguments, under the general rubric of “asymmetric regulation”, as a rationale for restraining incumbents in responding to new entrants so that these new entrants could gain a foothold in the market. See Weisman (1994, pp.499-505).

⁹² Hausman and Sidak (2003, pp.188-90). It has also been called the “ladder of investment” model. Cave (2006).

casual.⁹³ Nevertheless, it has become quite widely accepted as the desired and expected result of mandated access for at least most network elements.

To illustrate consider the following scenarios. The first might be thought of as a *priming the pump type* of argument and is illustrated in Figure 1. In this scenario, broad vis-à-vis narrow unbundling leads to both lower prices and greater innovation (as illustrated by the shift out of the demand curve from D_N to D_B), hence a level of consumer surplus (CS) greater than that which would be realized under a more circumscribed unbundling policy. This scenario is perhaps most consistent with the stepping stone model as originally posited.

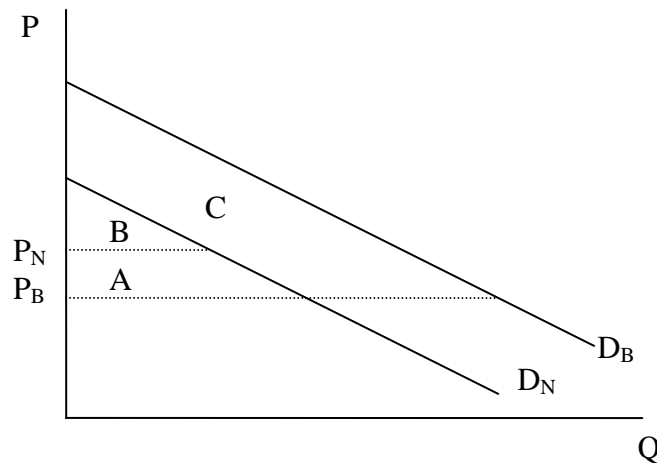


Figure 1. CS under broad unbundling (A+B+C) exceeds CS under narrow unbundling (B)

A second possibility, as illustrated in Figure 2, is that broad unbundling leads to lower prices, but only at the cost of reduced innovation as illustrated by the inward shift of the demand curve from D_N to D_B . In this case, the CS gains from lower prices dominate the CS losses from foregone innovation.

⁹³ The clearest statement of this from the FCC appears in *UNE Remand Order*, 15 FCC Rcd at 6 (“Although Congress did not express explicitly a preference for one particular competitive arrangement, it recognized implicitly that the purchase of unbundled network elements would, at least in some situations, serve as a *transitional arrangement* until fledgling competitors could develop a customer base and complete the construction of their own networks”). We note, however, that this statement is qualified by the words “at least in some situations”.

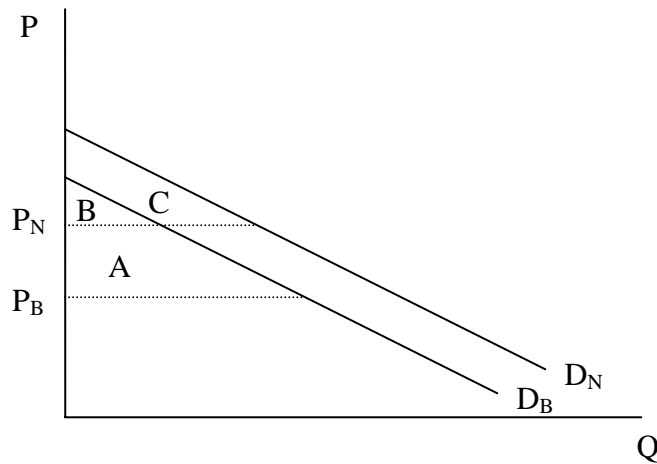


Figure 2. CS under broad unbundling (A+B) exceeds CS under narrow unbundling (B+C)

The third possibility, and the one most consistent with the empirical evidence and any theory that emphasizes dynamic over static efficiency, is illustrated in Figure 3. In this scenario, the CS gains from somewhat lower prices that may follow from broad unbundling are strictly dominated by the CS losses from foregone innovation due to circumscribed unbundling as reflected in the shift of the demand curve from D_N to D_B .

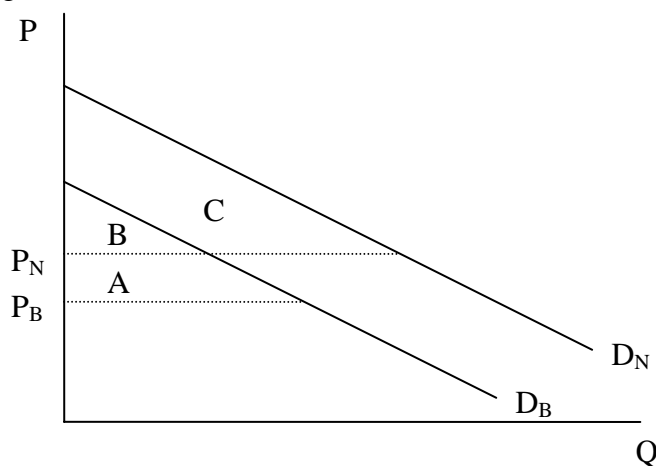


Figure 3. CS under narrow unbundling (B+C) exceeds CS under broad unbundling (A+B)

Unfortunately for all the above theoretical possibilities recent studies have shown that leased access has not led to a level of CLEC investment in facilities greater than that which would have obtained otherwise.⁹⁴ Quite the reverse: access dependence turns out to be

⁹⁴ Hausman and Sidak (2003); Crandall and Waverman (2006); Hazlett (2006); and Waverman *et al* (2007). See Willig *et al* (2002) and Hassett and Kotlikoff (2002) for earlier studies that contend that more pervasive unbundling at lower prices leads to increased competition and this increased competition leads to higher levels of investment. Hence, while there are studies that support both sides of the argument, we do not believe that the weight of the credible empirical evidence supports the stepping-stone hypothesis. See, for example, Crandall (2005) and Jung *et al* (2008).

economically addictive, leading to increased reliance on leased access. Perhaps we should not call this an addiction for in fact it is rational economic behavior. It is also quite predictable. As we noted earlier, it is a commonplace that mandated access can distort investment incentives by new entrants. If the (lease) price is right, no one will invest if they can lease at a fraction of the risk-adjusted cost of investment. It should be emphasized at this point that the stepping stone model is not overtly based on the conventional infant-industry argument that calls for explicit or implicit subsidies for new enterprises. At least the current access regime does not purport to rest on such a basis. The FCC has always maintained that the access prices are fully and fairly compensatory. If the FCC had sought to justify its TELRIC pricing rules as a means of subsidizing (infant) competitors, the Supreme Court in *Verizon* almost certainly would have reached a different result on the constitutionality of TELRIC.^{95, 96}

Contrary to some critics the problem with the stepping stone model is not theoretical. In theory there is no reason to believe that leased access could not lead to a greater level of facilities-based competition. It depends entirely on the terms of the leasing. The reason the stepping stone model has failed is that the rules used to implement it ignored the key assumption on which the model depended, a set of economic incentives to invest in facilities. By mandating access on price and other terms that were cheaper than the cost (including risk) of new investment, the FCC effectively ensured that new entrants would not follow the yellow brick road to facilities-based construction.

It is possible that one might still rescue some part of the stepping stone model by specifying the limiting conditions, but to specify those conditions is to strip the model of its practical importance. For example, one version of the stepping stone model might be the simple service-resale option that we have discussed. Under this option any new entrant is allowed to resale incumbent *services* based on ILEC retail prices minus avoided retail costs. This is not a model for robust competition in the long run since it limits competition to a

⁹⁵ In *Verizon*, 535 U.S. at pp.524-29, the Court rejected a constitutional claim that TELRIC pricing violated the Fifth Amendment's proscription on taking property without "just compensation". Basically, the claim was premature because the constitution does not require any particular type of methodology and it had not been shown that the TELRIC methodology would in fact not allow adequate compensation. The Court went on to hold that recovery of "historically anchored costs" was not necessarily required. However, the Court did not question the long-standing principle that the regulated firm must be allowed recovery of costs (including capital costs) according to some reasonable costing standard. See, for example, *Duquesne Light Co. v. Barasch*, 488 U.S. 299, 314-15 (1989). If prices were set below cost in order to subsidize another firm, it is difficult to see how they could satisfy the constitutional requirement of just compensation unless there were offsetting compensation from some other source. That said, the Court's decision in *Verizon* did not speak to the question of whether TELRIC-based prices were subsidized prices. ("Whether the FCC picked the best way to set these rates is the stuff of debate for economists and regulators versed in the technology of telecommunications and microeconomic pricing theory. The job of judges is to ask whether the Commission made choices reasonably within the pale of statutory possibility in deciding what and how items must be leased and the way to set rates for leasing them. The FCC's pricing and additional combination rules survive that scrutiny.") *Verizon* Id at 539.

⁹⁶ Infant industry type arguments might have inspired the adoption of liberal access policies apart from any price subsidy. We do not know of any evidence on this point, but assuming it could be descriptively true, we think it is normatively objectionable for the reasons we have explained. Economics is not biology. The moral imperatives that animate our support for human infants to increase the likelihood of their survival do not apply to infant firms. In fact, to the extent that such nurturing artificially increases the likelihood of survival of infant firms, it can, and we believe does, undermine the vigor of the competitive process to the detriment of consumer welfare. At a minimum there must be a reasonable expectation that the social benefits of such nurture for infant firms exceed the costs.

fairly small retail component of the service and essentially ignores the benefits of competition in deployment of new network facilities. However, it would at least allow a reasonably efficient CLEC an opportunity to provide full service throughout a market without a complete set of network facilities. There would be no distortion of incentives since the new entrant pays the ILEC the full cost of the facilities that are being used.

The importance of resale for this purpose is hard to gauge. Consider the case of cable competition. Cable television systems now pass nearly every household in the United States. The overwhelming percentage of these systems is capable of providing two-way broadband service that will support voice telephony.⁹⁷ Where a cable system is capable of providing broadband the only essential facility that is lacking for service is interconnection with the local network and access to the ILEC's operation support system. Access to both is unproblematic under any scheme.⁹⁸ While cable operators might wish to resell wireline in areas where their system is not configured to provide voice service, one would expect that this would be a very short term strategy – unless, of course, the pricing of resale were set artificially low (as would be the case if resale were available under the guise of UNE-P). The same point can be made about the other principal alternative to incumbent wireline carriers – mobile wireless. It is not clear why a wireless provider would need to resell incumbent wireline services at all. As we noted earlier, mobile wireless is now not only ubiquitous, it is increasingly being used as a substitute for wireline. The FCC regards wireless to be robustly competitive,⁹⁹ but it has been cautious about recognizing wireless as a fully competitive alternative to wireline.¹⁰⁰

5 Regulatory “cheating” in managed competition

Students of antitrust are wont to observe the ease with which an antitrust policy designed to protect competition can be twisted into a program for protecting competitors.¹⁰¹ The fact that

⁹⁷ The exact penetration rate is the subject of different estimates, and the published data are several years old. Based on Kagan World Media and Nielson Media Research for 2004, the FCC estimated that cable systems passed 99 percent of households having a television set. The percentage of households having television in that year was estimated (by Kagan) at about 98 percent, which means that 97 percent of *all* households were capable of receiving cable. Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, 21 FCC Rcd 2503, 30 (2006). The FCC estimated that in 2004 high speed Internet access (two-way broadband) was available to 93 percent of the homes passed, which brings the relevant penetration rate for cable-enabled voice telephony down to about 90 percent of total households. This is modestly less than the number of households that subscribe to telephone service, which in 2004 fluctuated between 93.5 and 94.2 percent. See Federal-State Joint Board on Universal Service, Universal Service Monitoring Report, Table 6.1(2007).

⁹⁸ Interconnection was treated as an essential facility under antitrust precedents that antedate the 1996 access regime. See *MCI Communications Corp. v. AT&T*, discussed above.

⁹⁹ See Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services, 2008 WL 312884. Among other things the FCC reports that 98 percent of the total population is served by at least three wireless providers, while 94 percent live in counties served by four. *Id.* at 44.

¹⁰⁰ The FCC does purport to take into account wireless substitution. For example, wireless substitution has been cited favorably in approving recent BOC mergers. See, for example, AT&T Inc. and BellSouth Corporation Application for Transfer of Control, 22 FCC Rcd 5662 95 (2007). However, to date the FCC has been reluctant to accept pervasive use of wireless as a basis for forbearing from access or other dominant carrier regulation. See, for example, Petitions of Verizon Telephone Companies for Forbearance, 22 FCC Rcd. 21,293 (2007).

¹⁰¹ Competition policies that mistake protecting competitors with protecting the integrity of the competitive process give rise to a problem of “moral hazard” in which new entrants and/or incumbents develop an

American antitrust law permits private enforcement has been thought to be a significant cause of this tendency, but one should not discount that even official enforcement is susceptible to this error. In truth, it is not always easy to draw the line between harm to competitors and harm to competition. The problem of discrimination between private and public harm is exacerbated in the regulatory environment by a political element that is (largely) absent in official antitrust enforcement policy. By political element, we do not mean to invoke the hoary spectacle of what an older generation of political scientists call “interest group” politics. Quite the contrary; the lesson of the traditional interest group politics suggests that regulatory officials would align themselves with powerful entrenched groups, which in the present framework would be the entrenched incumbent firms not the fledgling competitors. A more sophisticated understanding of political incentives must be imagined. It is at this point that the appeal of public choice theory appears since it is the burden of that theory to move beyond a naïve model of interest group capture to present a richer tableau of political self-interests as motives for public action.¹⁰²

Public choice theory is too general to be a reliable predictor of official action (as with every other theory it works best in reverse), and we will not pretend that it provides a precise set of guidelines of what to expect from the typical regulator. We offer instead the following observations about regulator motivations and incentives.

The first observation is that regulators have a natural preference for short term results. The political basis for such a preference is partly framed by the short-term tenure of most regulators and paternalistic protection for new entrants. At the FCC, for example, four chairmen have presided over the agency’s implementation of the 1996 Telecommunications Act. Not counting the present chairman (who has to date been chairman for approximately three and a half years), the average tenure was less than four years (the official full term is five). The FCC’s wireline competition bureau (formerly the common carrier bureau) which is the principal staff entity with responsibility for telecommunications policy has had eight chiefs since the 1996 Act was passed; the average tenure (again not counting the incumbent) was less than two years. To put that in perspective, recall that it took more than six years for the FCC to obtain a final Supreme Court approval of its pricing rules (in *Verizon*, 2002). Its basic unbundling rules were in litigation for a decade before the court of appeals finally approved them (in *Covad*, 2007). A typical FCC chairman, commissioner or bureau chief will not only not see the long term effect of a rule for which they vote, he or she may not even see the final rule that goes into effect.

unnatural dependence on the regulatory process for their very survival. For example, market providers may have limited incentives to operate efficiently or to bear the risks associated with facilities-based entry if they know that they can always appeal to regulators for relief. They do so because they understand that regulatory agencies do not want to see competitive experiments fail.

¹⁰² The public choice literature is extensively reviewed in Mueller (2003). Legal applications of public choice are explored in Farber and Frickey (1991). For public choice perspectives on regulation, see, for example, Stigler (1971). The relationship between public choice and the earlier political science writing on interest groups is discussed in Posner (1974) and Robinson (1991). Posner (1971) also proffers the idea that regulation serves as a type of public finance function aimed at wealth distribution. For example, regulators may restrict entry into a market – an action seemingly inconsistent with the view that regulation serves as a surrogate for competition – in order to facilitate a level of cross-subsidization and/or rate averaging that may not be sustainable otherwise. A case in point is that of AT&T’s willingness to maintain artificially high long distance rates in order to cross-subsidize basic local service rates. Crandall (1989, p.122) contends that AT&T tolerated such price distortions in order to increase the cost of the regulator (measured in terms of subsidies foregone) associated with allowing competitive entry. Notably, it was the state regulators – those with direct political accountability for rising local service rates – that were steadfastly opposed to long distance competition.

Of course, it is conceivable that public officials will think about results that do not appear within their tenure. At the end of every presidential term it is a journalistic cliché to speculate on what the President will do to ensure his “legacy”. But no one says that about the typical regulatory official. Their “legacy” usually consists of some future career in one of the client industries (the proverbial “revolving door”) or at least in some related field where they can monetize their acquired experience. We do not criticize this behavior; it is, after all, one way of compensating officials. Our point is that the typical regulator does not spend much time thinking about future credit or blame beyond their tenure. What counts is the credit or blame that is *recognized* during the term of their service

Political oversight reinforces the short term perspective. The ways and means by which regulators are influenced by political oversight is admittedly somewhat mysterious. Federal regulators are insulated from direct political accountability, of course, since they are not easily removed, even for cause. Some regulators may want reappointment, but at the FCC and most other federal regulatory agencies this is the exception. In fact, the average FCC commissioner does not even serve a full term. (The “legacy” of other rewards beckons before then.) Yet it is widely believed that regulators do respond to political pressures from, *inter alia*, congressional oversight committees.¹⁰³ If that is so – and we believe there is some evidence to support this belief – the effect of that pressure is almost always to strengthen short term preferences. Political overseers are themselves responding to short term pressures, from industry lobbyists and other political constituencies. There is always an election coming up, or at least a campaign fund-raising effort in play, and these are not likely to be concerned with the long term in which, as Keynes reminded us, we are all dead. We do not mean that no one has a regard for the future; every one does to some extent. But long term effects are easily obscured by the short term effects.

Case in point: for a prolonged period of time the FCC severely restricted AT&T’s ability to reduce prices in response to long distance competition out of concern that lower prices would place new entrants in financial jeopardy. These policymakers ultimately came to realize that these asymmetric regulatory policies succeeded only in forcing consumers to pay higher prices than would otherwise have been necessary. As one former FCC chairman remarked:¹⁰⁴

It can be argued, for instance, that some of the Commission’s regulatory actions in the interexchange market that were designed to promote competition during transition, such as restrictions on competitive pricing responses by AT&T, will have resulted in substantial, unnecessary costs for society that never would have been incurred in a truly competitive marketplace. Moreover, this approach will have directly increased consumer costs by requiring regulated firms to charge higher prices to protect competitors during the transition.¹⁰⁵

In the meantime, both regulator and politician have to contend with the immediate interests of competitors who will perish without that support or the immediate clamor of consumers who want lower prices *now* and are not particularly interested in how they get them. It

¹⁰³ When the FCC attempted to implement rate-rebalancing through subscriber line charges, a rate reform designed to reduce the cross-subsidization of local telephone service and improve long-run efficiency in telecommunications markets, state regulators and the Congress, public officials that were on the front lines in terms of political accountability to consumers, reacted with great hostility toward the FCC and its chairman. The FCC was ultimately forced to temper somewhat its zeal for economic efficiency. For an illuminating discussion of the political battles that ensued over this rate-rebalancing policy, see Fowler (1983) and Brock (1994).

¹⁰⁴ For a critique of the FCC’s role in promoting competition in long-distance markets through competitive handicapping, see MacAvoy (1996).

¹⁰⁵ Fowler *et al* (1986, pp.193-194).

probably goes without saying that this kind of political environment is not congenial to the Schumpeterian cycles of creative destruction, which are inherently long term.

The focus on short term results is also tied closely to a second observation about regulatory biases, the bias to favor policies the effects of which are measurable by the agency's political overseers.¹⁰⁶ This is a tendency of any organization that does not produce an objectively measurable product.¹⁰⁷ Of course, with modern technical tools we have learned to measure a lot of things. However, the counting that matters is that which is readily understood by those who are evaluating results (political overseers, in particular). The number of competitors is one such easy thing to measure.¹⁰⁸ This is not necessarily a bad metric. We typically cite the number of competitors in a market as a measure of competitiveness, though we also usually employ a more sophisticated concentration metric, such as the Herfindahl-Hirschman Index or comparable measure. However, the number of competitors is a useful measure only where it is a product of normal market forces.¹⁰⁹ If competitors are induced to enter the market by affirmative action policies designed to promote competition, it is pointless to measure the success of those policies by looking at the increased number of competitors it has produced.¹¹⁰ Raymond Gifford, a past chairman of the Colorado Public Utilities Commission, has opined on the incentives that regulators have to encourage entry, albeit artificially, in local telephone service markets by creating profitable opportunities for prospective market entrants.

While this incentive to create a margin may not be “real competition”, the behavior comports with the regulators' incentives and abilities. A short time horizon, political pressure to show gains in competitive entry, and a plastic rate methodology – all this gives the regulator ample room to furnish the aesthetics of competition.¹¹¹

On the flip side, it is equally pointless to attempt to measure the lack of success by a decline in the number of competitors. The wave of telecommunications bankruptcies in the years between 2000 and 2002 was a perfect storm of convergent regulatory and market failures, but it was not a failure of competition. On the contrary, if we do not see competitors fail, we do not see real competition. However, the fate of individual competitors creates what some cognitive psychologists have called the “availability heuristic” in which one's perception of some general phenomenon is skewed by the most salient samples which are available to us.¹¹² There is nothing more salient than the bankruptcy of nearly an entire industry of new competitors.

¹⁰⁶ Noll (1985, pp.60-61).

¹⁰⁷ Aranson (1981 pp.468-472). Some theorists have defined bureaucratic organization by the absence of a monetizable output. Downs (1967, p.25).

¹⁰⁸ This may also explain why dynamic efficiency typically gets short shrift relative to static efficiency. To wit, regulators and their overseers can directly observe the behavior of prices, but products and services that do not find their way to market but would have otherwise are often unobservable, at least in the short-run which is the tenure of most regulators.

¹⁰⁹ Landes and Posner (1981, p.975) strike a similar chord in pointing out that the standard relationship between market share and market power does not hold in a regulated setting because these market shares are not the outcome of a market process, but rather the outcome of a regulatory (“command and control”) process.

¹¹⁰ To paraphrase an observation that one of us made some years back, counting the number of competitors that enter a market “under conditions of asymmetric regulation probably says as much about welfare-enhancing competition as placing \$100 bills on the sidewalk says about the propensity of pedestrians to congregate randomly”. Weisman (1994, p.503, note 17).

¹¹¹ Gifford (2003, p.475).

¹¹² Kahneman and Tversky (1973).

The conflation of competition with competitors underlies our third observation of regulatory bias. We noted earlier the ease with which competition is identified with the activities of individual competitors. Like most people, regulators do not identify naturally with abstractions. Intellectually, they may understand competition as a process that stands apart from the participants who engage in it. When a regulator is charged with the task of ensuring that the competitive process works, it is not always easy to abstract the process from the participants in it. One firm complains that another has engaged in unfair competition – predatory pricing, exclusionary practices, denial of an essential facility required for competition. The complaint is always put forward as a harm to competition, not just the competitor.

And in fairness to the complainants it is not always easy to tell which it is. It is not enough for the regulator to say, “well, we see a lot of other competitors in the market so we cannot worry about you.” If a particular practice is outside the boundaries of fair competition, it cannot be ignored merely because it does not *at once* affect all competitors. The easy way out is simply to paper over this problem of identification by ignoring it. The distinction between harm to competitors and harm to competition has always been a problem at the FCC, one that extends over the full range of its jurisdiction (and perhaps more apparent in the field of mass media than telecommunications). The FCC may embrace competition as a theory, but it does not embrace the “gale of creative destruction” that Schumpeter famously defined as real competition.¹¹³ That kind of competition is messy and it is not politically palatable when the bodies of failed competitors pile up on its watch. As a former chief economist of the FCC observed in the context of long distance competition in the United States:

A firm does not have to possess a large market share to exercise economic power. The OCCs [other common carriers] do not possess large market shares, but they can certainly exercise power by threatening to make government officials who have inflicted huge costs on consumers to promote competition look bad. They can do this by threatening to fail. A small market share and low profits can be assets in such an extortion campaign. They can make the threat of failure more compelling and thus make it more likely that government officials will yield to extortionate demands. And as is always the case with extortionists, giving in merely encourages additional blackmail attempts.¹¹⁴

Cries of “unfair competition” are sometimes reinforced with demands for “fair regulation” in which all parties are placed on a “level playing field.” Level playing field arguments are hard to resist, particularly where regulation has designed the playing field. The problem is that the seductive appeal of even-handedness too easily becomes an excuse for more regulation, as Fred Kahn astutely recognized: “Regulators move from trying to assure a fair and equal start to ensuring an equal finish; to preserve whatever the regulator conceives to be the proper market shares of the various competitors.”¹¹⁵ To the extent there are legitimate concerns about uneven regulation,¹¹⁶ there is no reason why the playing field

¹¹³ Schumpeter (1975, ch. VII).

¹¹⁴ Haring (1985).

¹¹⁵ Kahn (1984, p.9).

¹¹⁶ The level playing field argument presupposes that economic conditions do not require different treatment of the competitors. Where incumbents control essential facilities on which new competitors depend, the incumbent is properly subject to regulations that would not apply to competitors – with respect to use of those facilities. See Farrell and Weiser (2004). However, this is not really a problem of uneven playing fields; treating like market contestants alike necessarily assumes that the contestants are alike in all relevant respects. For example, Microsoft and Red Hat supply competing operating systems, but that fact alone would not justify imposing the same access obligations given their greatly disparate market positions.

cannot be made level by lowering it for all parties. And sometimes this happens.¹¹⁷ More often, though, the playing field is levelled upwards because another regulatory habit kicks in – the habit of control.

Regulatory agencies are sometimes said to be risk averse,¹¹⁸ and control is the usual form of insurance for regulatory risks. All else being equal, this means that regulatory agencies are predisposed to attempt to avoid unplanned contingencies such as those that occur in competitive markets, particularly markets that are technologically dynamic. The FCC is a poster child for this regulatory paradigm. The examples can be seen in all parts of its jurisdiction, from its mind-bending regulations governing cable television operations in the 1960s and 1970s, to its exceedingly detailed regulation of telecommunications access rules after 1996.¹¹⁹ It is all a matter of controlling uncertainty – the risk that something might occur in the marketplace that has not been anticipated.

Admittedly to ask regulators to forego control and accept the risk of uncertain economic outcomes is perhaps a heroic aspiration – a little like asking cats to bark, to borrow Milton Friedman’s memorable quip. If so, it is all the more reason to put in place some set of meta-rules that limit what regulators can get their hands on. Competition is supposed to be a trigger for such rules: as competition enters, regulation exits. Unfortunately, it has not quite worked out that way in the case of telecommunications. We have more competition in every sector of telecommunications. We also have more regulation.¹²⁰ The regulation is supposed to be temporary – designed to secure a safe environment for the new competition. It might turn out that way. The FCC recently granted ILEC petitions for forbearance in a couple of markets.¹²¹ On the other hand it has also recently indicated that there is not going to be any

¹¹⁷ The spirit of even-handedness forces us to acknowledge a noteworthy FCC example of equally lowering regulatory burdens in its recent wireline broadband order, placing local telephone carriers on the same unregulated footing as cable operators. *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, 20 FCC Rcd 14853 (2005), *aff’d*, 507 F.3d 205 (3d Cir. 2007).

¹¹⁸ Aranson, (1981, p.461).

¹¹⁹ It is somewhat ironic that the court of appeals in *USTA II* faulted the Commission for adopting rules that were not sufficiently “granular” to capture the relevant economic conditions of particular markets. The court’s criticism was well taken, but it does not contradict our point about the FCC’s penchant for detailed control. A rule may be insufficiently granular in failing to take account of real economic conditions and yet still be too granular in the degree to which it manages competition within a prescribed set of regulatory parameters. Telecommunications is not the only field where this penchant for detailed control is evident. The FCC’s cable television rules are equally if not more fine grained in defining cable obligations like must-carry and retransmission consent. Interestingly, they are equally detailed in regulating other regulators – notably the power of local franchise authorities to regulate aspects of cable television. Unplanned intervention by other regulators is basically no different from uncontrolled market contingencies.

¹²⁰ This is hard to quantify, but one can get a sense of the general magnitude from a simple page count of the agency’s output of decisions, reports and orders (as reported in the FCC Record). This has doubled in the past 20 years notwithstanding claims by both Congress and the FCC favoring deregulation. (The growth rate in page count is not quite monotonic; it peaked in 2002 and declined thereafter for four years; however, the count for 2007 indicates that the volume is on its way back up.) No one will think that a simple page count of regulatory output is a precise measure of regulation. Still, unless one assumes that the FCC’s literary production function has changed, it is hard to avoid the conclusion that the overall regulatory activity level has increased, which in turn suggests more rules. The fact that some of the new rules may be designed to promote competitive conditions that can survive without regulation does not alter the fact that to date more competition has not meant less regulation.

¹²¹ See *Petition of Qwest Corporation for Forbearance*, 20 FCC Rcd 19415 (2005) *aff’d*, 482 F.3d 471 (D.C. Cir. 2007); *Petition of ACS of Anchorage, Inc.*, 22 FCC Rcd 1958 (2007).

wholesale forbearance any time soon.¹²² Habits of risk aversion die hard. The aversion towards uncertain outcomes is fundamentally at odds with the dynamic character of robust competition. And yet, it is only in relinquishing such control – operating without a net, if you will – that competitive markets can function as they were intended. It was just such a realization that led Fred Kahn to come down firmly and unequivocally on the side of “letting go”.¹²³

6 The last Schumpeterian

Fred Kahn lays claim to being the last surviving student of the renowned economist Joseph Schumpeter, a lineage that has shaped his long career as economist, teacher and regulator. But what does this mean in terms of competition and regulatory policy? It means that the policy focus is on competition as a dynamic process rather than competition as a static outcome. Much like his teacher, he believes that governmental policy should focus on unleashing the power of existing markets and the creation of new ones rather than the control of market power, *per se*. As a regulator, Kahn was always willing to take the “long view” even if it should result in some transitory market disruptions, and it often did. For him, the pursuit of economic efficiency was the path to maximizing consumer welfare over the long run. Of course, he was not your typical regulator. His focus was never on the next job or in currying favor with particular interest groups or constituencies, but in putting in place policies that eliminated the need for economic regulation where market conditions could sustain durable competition. When he took over the CAB – though the chairmanship of the FCC was reportedly the job he really wanted – he famously quipped that, to him, “an airplane is just marginal cost with wings”. Perhaps this was simply the familiar Kahnian humor or just maybe it was code that economics would rule the day at the CAB. He knew a little something about regulatory agencies – in particular, their cyborg-like (ala *Terminator* fame) qualities in which the smallest regulatory function quickly morphs into a sprawling government bureaucracy. This is precisely why Kahn made sure to turn off the proverbial lights at the CAB when he walked out the door. His integrity and impartiality in deregulating the process of deregulation are underscored by his policy of non-discrimination: he was more than willing to confront anyone that got in the way of his economic principles – including President Carter.¹²⁴ For Kahn, the marketplace was the final arbiter and no market participant or labor union could expect any guarantees.

Kahn’s focus as a regulator (and as an economist) was to put in place a code of conduct – meta rules, if you will – that ensured fair play for the competitive battles that would ensue. He knew that the regulator’s search for the competitive outcome was not only futile, but also distortionary. In this regard, he took particular delight in identifying the fatal flaw in the FCC’s approach to the pricing of unbundled network elements upon its implementation of the 1996 Telecom Act. He railed against the FCC’s TELRIC methodology, in part, because it was based on the standard of an “ideally-efficient” firm. With tongue in cheek, he referred

¹²² See Petitions of the Verizon Telephone Companies for Forbearance, 2007 WL 4270630 (denying forbearance requests for six Verizon markets).

¹²³ Kahn (1998, pp.56-58).

¹²⁴ McCraw (1984, pp.270-292).

to the FCC's costing methodology as TELRIC-BS. The "BS" supposedly stood for "blank slate," but everyone who heard it knew what he really meant.¹²⁵

As a regulator, Kahn had no interest in micro-managing the industry or in serving as a central planner. This last surviving student of Schumpeter had learned his lessons well. He brought to the practice of economic regulation the very sort of "creative destruction" that his teacher had long advocated; and he remained unequivocal and unapologetic in his counsel; it's the *process*, stupid!

7 References

Akerlof, George A. (1970) "The Market for 'Lemons': Quality, Uncertainty and the Market Mechanism," *Quarterly Journal of Economics*, 84: 488-500.

Aranson, Peter H. (1981) *American Government: Strategy and Choice*. Winthrop: Cambridge, MA.

Areeda, Philip (1989) "Essential Facilities: An Epithet in Need of Limiting Principles," *Antitrust Law Journal*, 58: 841-853.

Armstrong, Mark (2002) "The Theory of Access Pricing and Interconnection" in Martin Cave, Summit M. Majumdar and Ingo Vogelsang (ed.), *Handbook of Telecommunications Economics*, Amsterdam: North-Holland.

Baxter, William F. (1984) "The Definition and Measurement of Market Power in Industries Characterized by Rapidly Developing and Changing Technologies," *Antitrust Law Journal*, 53: 717-732.

Blumberg, Stephen J. and Luke, Julian V. (2008) "Wireless Substitution: Early Release of Estimates Based on Data from the National Health Interview Survey, July – December 2007." <http://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless200805.pdf>

Borenstein, Severin and. Rose, Nancy L. (2008) "How Airline Markets Work ... or Do They? Regulatory Reform in the Airline Industry" in Nancy L. Rose (ed.), *Economic Regulation and Its Reform: What Have We Learned*, National Bureau of Economics Research: Boston, MA. (forthcoming).

Brock, Gerald W. (1981) *The Telecommunications Industry: The Dynamics of Market Structure*. Harvard University Press: Cambridge MA.

Brock, Gerald W. (1994) *Telecommunications Policy for the Information Age*. Harvard University Press: Cambridge MA.

Burling, James C., Lee, William F. and Krug, Anita K. (1999) "The Antitrust Duty to Deal and Intellectual Property Rights," *Journal of Corporation Law*, 24: 527-552.

¹²⁵ Kahn (2001, pp.3-16).

- Cauley, Leslie (2005) *End of the Line: the Rise and Fall of AT&T*. Free Press: New York.
- Cave, Martin (2006) “Encouraging Infrastructure Competition Via the Ladder of Investment,” *Telecommunications Policy* 30: 223-237.
- Crandall, Robert W. and Waverman, Leonard (2006) “The Failure of Competitive Entry Into Fixed-Line Telecommunications: Who Is At Fault?” *Journal of Competition Law and Economics*, 2: 113-148.
- Crandall, Robert W. (2005) *Competition and Chaos: U.S. Telecommunications Since the 1996 Telecom Act*. Brookings: Washington, D.C.
- Crandall, Robert W., Ingraham, Allan T., and Singer, Hal. J. (2004) “Do Unbundling Policies Discourage CLEC Facilities-Based Investment,” *Topics in Economic Analysis & Policy*, 4: 1-21.
- Crandall, Robert W. (1989) “The Role of the U.S. Local Operating Companies.” in Robert W. Crandall and Kenneth. Flamm (ed.), *Changing The Rules: Technological Change, International Competition, and Regulation in Telecommunications*, The Brookings Institution: Washington D.C.
- Demsetz, Harold (1968) “Why Regulate Utilities?” *Journal of Law & Economics*, 11: 55-65.
- Downs, Anthony (1967) *Inside Bureaucracy*. Little Brown: Boston.
- Farber, Daniel A. and Frickey, Philip P. (1991) *Law and Public Choice: A Critical Introduction*. University of Chicago Press: Chicago.
- Farrell, Joseph, and Weiser, Phillip J. (2003) “Modularity, Vertical Integration, and Open Access Policies: Towards a Convergence of Antitrust and Regulation in the Internet Age,” *Harvard J. on Law and Technology*, 17:85-134.
- Federal Communications Commission (2008) *Local Telephone Competition: Status as of June 30, 2007*, p.4, Table 1.
- Fowler, Mark S, Halprin, Albert and Schlichting, James D. (1986) “‘Back To The Future’: A Model For Telecommunications,” *Federal Communications Law Journal*, 38: 145-200.
- Fowler, Mark S. (1983) Testimony Before The Joint Hearings of the Committee on Commerce, Science and Transportation and the Committee on Energy and Commerce, U.S. Senate and House, 98th Congress, July 28, 1983.
- Gabel, Richard (1969) “The Early Competitive Era in Telephone Communication, 1893-1920,” *Law and Contemporary Problems*, 34: 340-359.
- Gifford, Raymond L. (2003) “Regulatory Impressionism: What Regulators Can and Cannot Do,” *The Review of Network Economics*, 2: 466-479.

- Gilbert, Richard J. (2005) “New Antitrust Laws for the ‘New Economy’,” Testimony Before the Antitrust Modernization Commission, Washington D.C.
- Guthrie, Graeme (2006) “Regulating Infrastructure: The Impact on Risk and Investment,” *Journal of Economic Literature*, XLIV: 925-972.
- Haring, John (1985) “The FCC, the OCCs and the Exploitation of Affection,” *FCC Office of Plans and Policy Working Paper No. 17*.
- Hassett, Kevin A. and Kotlikoff, Laurence J. (2002) “The Role of Competition in Stimulating Telecom Investment,” Mimeo.
- Hausman, Jerry A. and Sidak, J. Gregory (2003) “Did Mandatory Unbundling Achieve Its Purpose? Empirical Evidence from Five Countries,” *Journal of Competition Law & Economics*, 1: 173-245.
- Hausman, Jerry A. and Sidak, J. Gregory (1999) “A Consumer-Welfare Approach to the Mandatory Unbundling of Telecommunications Networks,” *Yale Law Journal*, 109: 417-505.
- Hausman, Jerry A. (1997) “Valuing the Effect of Regulation on New Services in Telecommunications,” *Brookings Papers on Economic Activity: Microeconomics*, 1-54.
- Hazlett, Thomas W. and Havenner, Arthur M. (2003) “The Arbitrage Mirage: Regulated Access Prices with Free Entry in Local Telecommunications Markets,” *Review of Network Economics*, 2: 447-450.
- Hazlett, Thomas W. (2006) “Rivalrous Telecommunications Networks With and Without Network Sharing,” *Federal Communications Law Journal*, 58: 477-509.
- Hovenkamp, Herbert (2005) *Federal Antitrust Policy*, 3rd edition, Thompson-West Publishing: St. Paul.
- Jung, Inung, Gayle, Philip G. and Lehman, Dale E. (2008) “Competition and Investment in Telecommunications,” *Applied Economics*, 40: 303-313.
- Kahn, Alfred E., Tardiff, Timothy J. and Weisman, Dennis L. (1999) “The 1996 Telecommunications Act At Three Years: An Economic Evaluation of Its Implementation by the FCC,” *Information Economics and Policy*, 11: 319-365.
- Kahn, Alfred E. (1998) *Letting Go: Deregulating the Process of Deregulation*. Michigan State University Press: East Lansing, MI.
- Kahn, Alfred. E. (1984) “The Uneasy Marriage of Regulation and Competition,” *Telematics*, 1: 1-17.
- Kahn, Alfred E. (2004) “Lessons from Deregulation” in *Airlines and Telecommunications After the Crunch*. AEI-Brookings Joint Center for Regulatory Studies: Washington D.C.

- Kahn, Alfred E. (2005) "Reforming the FCC and Its Mission: Lessons from the Airline Experience," a paper presented at the Silicon Flatirons Conference, *The Digital Broadband Migration: Rewriting the Telecom Act*, in Boulder, Colorado, February 14, 2005, *Journal on Telecommunications and High Technology Law*, 4: 43-58.
- Kahn, Alfred E. and Dirlam, Joel B. (1954) *Fair Competition*. Greenwood Press: Westport, Conn.
- Kahn, Alfred E. (1970) *The Economics of Regulation: Principles and Institutions*. Vol. I New York: John Wiley and Sons.
- Kahn, Alfred E. (2001) *Whom the Gods Would Destroy, or How Not to Deregulate*. AEI-Brookings Joint Center for Regulatory Studies: Washington D.C.
- Kahneman, Daniel and Tversky, Amos (1973) "Availability: A Heuristic for Judging Frequency and Probability," *Cognitive Psychology*, 5: 207-232.
- Landes, William W. and Posner, Richard A. (1981) "Market Power in Antitrust Cases," *Harvard Law Review*, 94: 937-995.
- Larson, Alexander C and Weisman, Dennis L. (1998) "The Economics of Access Pricing, Imputation, and Essential Facilities with Application to Telecommunications," *Communication Law and Policy*, 3: 1-33.
- Lipsky, Abbott B. and Sidak, J. Gregory (1999) "Essential Facilities," *Stanford Law Review*, 51: 1187-1248.
- MacAvoy, Paul W. (1996) *The Failure of Antitrust and Regulation to Establish Competition in Long-Distance Telephone Services*. MIT Press: Cambridge MA and AEI Press: Washington D.C.
- McCraw, Thomas K. (1984) *Prophets of Regulation*. Harvard University Press: Cambridge MA.
- Mueller, Dennis C. (2003) *Public Choice III*. Cambridge University Press: Cambridge.
- Mueller, Milton L. (1997) *Universal Service*. MIT Press: Cambridge MA and AEI Press: Washington D.C.
- Neuchterlein, Jonathan E. and Weiser, Philip J. (2005) *Digital Crossroads, American Telecommunications Policy in the Internet Age*. The MIT Press: Cambridge MA.
- Noll, Roger G. (1985) "Government Regulatory Behavior" in R. Noll (ed.), *Regulatory Policy and the Social Sciences*, University of California Press: Berkeley.
- Pitofsky, Robert, Patterson, Donna and Hooks, Jonathan (2002) "The Essential Facilities Doctrine under U.S. Antitrust Law," *Antitrust Law Journal*, 70: 443-462.

- Posner, Richard A. (1974) "Theories of Economic Regulation," *Bell Journal of Economics and Management Science* 5: 335-358.
- Posner, Richard A. (1971) "Taxation by Regulation," *Bell Journal of Economics*, 2: 22-50.
- Pindyck, Robert S. (2007) "Mandatory Unbundling and Irreversible Investment in Telecom Networks," *Review of Network Economics*, 6: 274-298.
- Robinson, Glen O. (1991) *American Bureaucracy: Public Choice and Public Law*. University of Michigan Press: Ann Arbor.
- Robinson, Glen O. (2002) "On Refusing to Deal With Rivals," *Cornell Law Review*, 87: 1177-1232.
- Robinson, Glen O (1989) "The Federal Communications Act: An Essay on Origins and Regulatory Purpose" in Max Paglin (ed.), *A Legislative History of the Communications Act of 1934*, Oxford University Press: New York.
- Schumpeter, Joseph A. (1975, 1942) *Capitalism, Socialism and Democracy*: Harper Torchbooks: New York.
- Sidak, J. Gregory and Spulber, Daniel F. (1998) *Deregulatory Takings and the Regulatory Contract*. Cambridge University Press: Cambridge.
- Sidak J. Gregory and Spulber, Daniel F. (1998) "Deregulation and Managed Competition in Network Industries," *Yale Journal on Regulation*, 15: 117-147.
- Stigler, George J. (1971) "The Theory of Economic Regulation," *Bell Journal of Economics and Management Science*, 2: 3-21.
- Tardiff, Timothy J. (2007) "Changes in Industry Structure and Technological Convergence: Implications for Competition Policy and Regulation in Telecommunications," *International Economics and Economic Policy*, 278-301.
- Temin, Peter (1987) *The Fall of the Bell System*. Cambridge University Press: Cambridge.
- Vogelsang, Ingo (2003) "Price Regulation of Access to Telecommunications Networks," *XLI: Journal of Economic Literature*, 830-862.
- Waverman, Leonard, Meschi, Meloria, Reillier Benoit and Dasupta, Kalyan (2007) "Access Regulation and Infrastructure Investment in the Telecommunications Sector: An Empirical Investigation," LECG, Mimeo.
- Weisman, Dennis L. (2000) "The (In)Efficiency of the 'Efficient-Firm' Cost Standard," *The Antitrust Bulletin*, 45: 195-211.
- Weisman, Dennis L. (1994) "Asymmetrical Regulation," *Telecommunications Policy*, 18: 499-505.

Weisman, Dennis L. (2002) “Did The High Court Reach An Economic Low in *Verizon v. FCC?*” *Review of Network Economics*, 1: 90-105.

Werden, Gregory J. (1987) “The Law and Economics of the Essential Facility Doctrine,” *St. Louis University Law Review*, 32: 433-480.

Willig, Robert D., Lehr, William H., Bigelow, John. P. and Levinson, Stephen B. (2002) *Stimulating Investment and the Telecommunications Act of 1996*, Princeton University, Mimeo.