A Comment on Competition and Controversy in Local Telecommunications

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by

HOWARD A. SHELANSKI*

The principal goal of the Telecommunications Act of 1996 is to open the market for local telephone service to competition. So far, however, the statute has attracted headlines more for generating legal controversy than for creating economic competition. The disputes that have commanded such attention and colored public discussion of the Act involve, at their core, the Federal Communications Commission's interpretation of provisions requiring incumbent local carriers to make parts of their proprietary networks available for use by new entrants. While some observers blame litigation and non-compliance with these "network unbundling" provisions for delaying implementation of a generally sound piece of legislation, others contend either that the FCC's implementation of the unbundling requirements is impermissible and onerous or that regulators have not gone far enough to help new competitors.

Given the resources devoted to disputes over the Act, it would be easy to suppose, as a variety of commentators have, that the success of the 1996 Act depends on how courts and regulators resolve

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the detailed unbundling issues at the center of those disputes. Unbundling in some form is undoubtedly important for creating competition in certain markets. But to tie the Act's significance to implementation of the unbundling provisions is to undervalue two provisions of the statute that establish fundamental conditions for competition: (1) the preemption of state and local laws that create barriers to entry into local markets, and (2) the requirement that rival local networks interconnect to exchange traffic so that customers of one telephone network can call customers of another. Those two parts of the Act are responsible for transforming the regulatory structure of local telecommunications from one that protected monopoly franchises to one that invites competition.

This essay will first compare how different provisions of the 1996 Act affect the transition to competition in local exchange markets. It will then examine the importance of the Act's monopoly preemption and network interconnection requirements in light of the historical development of local telephone monopolies. Finally, it will discuss the empirical effect those provisions have had to date on competition in local exchange markets.

I. Necessary and Other Conditions for Local Telephone Competition

The 1996 Act brought fundamental reform to the legal environment of local telecommunications through two categories of provisions: those establishing necessary conditions for entry into the local exchange market and those facilitating and fostering such entry. The Act's monopoly preemption and interconnection provisions are in the first category. Without them, even a would-be competitor that built its own network could not enter the local exchange market. The unbundling and resale rules, in contrast, fit into the second category of rules that facilitate competition. Although a new carrier with its own facilities does not need unbundled elements or the ability to resell the incumbent's service, those options reduce entry costs by allowing other carriers to participate in the market without first investing in the physical infrastructure necessary to provide service.

Before passage of the 1996 Act, an entrepreneur who sunk new cables, strung new wires, and installed new switches in a franchise area would at best have had only limited uses for those assets. Offering local telephone service to the general public would not have been among them. Local telephone service throughout the United States had for decades been provided almost entirely by franchise monopolies under the jurisdiction of state public utility commissions. The economics of natural monopoly, preservation of cross-subsidies that support universal-service goals, and the ability of regulators to
ensure network development were cited to justify the exclusion of competition from local-service markets.\footnote{See, e.g., PETER W. HUBER ET AL., FEDERAL TELECOMMUNICATIONS LAW 539-50 (2d ed. 1999); THOMAS G. KRATTENMAKER, Telecommunications Law and Policy 349-52 (2d ed. 1997).}

The 1996 Act swept away those justifications and dismantled the entrenched system of state-sanctioned monopolies. Section 253 of the Act removes barriers to competitive entry into local exchange markets created by state and local laws.\footnote{See 47 U.S.C. § 253.} That provision broadly strikes down existing state grants of monopoly franchises: "No State or local statute or regulation, or other State or local legal requirement, may prohibit or have the effect of prohibiting the ability of any entity to provide interstate or intrastate telecommunications service."\footnote{Id. § 253(a).} The statute moreover gives the FCC continuing authority to preempt any contrary actions that a state or locality takes after passage of the Act.\footnote{See id. § 253(d).} These provisions radically changed the regulatory environment and uprooted a legal and administrative structure that had evolved over decades. A rule of protected monopoly gave way to a rule of open competition.

Removal of legal barriers to entry into local markets, while necessary, will in most cases not suffice to allow local exchange competition. The size of the incumbents' networks and the high value consumers place on being connected to every other person with a phone also create an economic barrier for new entrants. Even if a new carrier built a complete, state-of-the-art network, it would have trouble attracting new customers if it could not promise them that, upon switching, they could still call all the people they could call when they subscribed to the incumbent's service. Accordingly, the Act's mandate that telecommunications companies "interconnect" to exchange traffic moving between customers on their respective systems supplies the second condition necessary for competitive entry in local telecommunications.\footnote{See id. §§ 251(a), 251(c)(2).} The interconnection provisions require a telecommunications carrier to link its network with another carrier's facilities for purposes of exchanging telephone traffic,\footnote{See id. § 251(a)(1).} to do so on nondiscriminatory terms of price and quality,\footnote{See id. §§ 251(c)(2)(C)-(D).} and to forbear from installing equipment or network features that violate standards necessary for different networks to be interoperable.

The foregoing rules prevent one network from putting competitors at an immediate competitive disadvantage by refusing to
pass traffic between its customers and a competitor's customers, and thereby narrowing the scope of service new entrants can offer. It is important to note that interconnection neither frees entrants from the costs of building facilities in areas they serve nor confers on them an advantage over incumbents or other carriers. Interconnection simply allows a new entrant to offer customers the same benefit—connection to anyone else who has a phone—that the incumbent offers. In that regard, interconnection is an economic necessity for local telephone competition. A new network that did not promise the same access to others that the incumbent offered would be of much lower value to consumers regardless of the entrant's price or quality of service. The larger "network benefit" enjoyed by customers of the incumbent would pose a virtually insurmountable economic barrier to entry for new competitors.

A. The Unbundling and Resale Provisions Distinguished

The 1996 Act's resale and unbundling provisions differ significantly from the law's preemption and interconnection requirements. Whereas the latter remove legal and economic barriers that would effectively keep competitors from entering the market, the former try to increase the number of carriers that will enter once those barriers are removed. They do so, in theory, by making the accumulated advantages of incumbency accessible to all upon compensation of the incumbent's costs of sharing its network and services. Two statutory options allow a firm to enter the local market without building many, or indeed any, of its own facilities: (1) resale of the incumbents' services and (2) use of the incumbents' facilities and equipment—"network elements"—to provide services to customers.11

With respect to resale, sections 251(b)(1) and 251(c)(4) require incumbent local exchange companies to sell their services in bulk and at wholesale prices to companies that will, in turn, resell those services under another brand name to consumers. The wholesale price is to be determined based on the retail price less the costs (e.g. of billing and marketing) the incumbent will avoid by not dealing with the retail customer.12 These resale provisions allow carriers that provide some telecommunications services, for example long-distance and/or mobile calling, to offer consumers a product bundle that includes local service without having to incur the costs of a building or acquiring facilities. They also might allow a company to develop the customer relationships necessary to compete successfully before

11. See id. §§251(c)(3)-(4).
12. See id. § 252(d)(3).
undertaking the financial risk of constructing its own network.

Section 251(c)(3) of the Act allows competitors to use elements of the incumbent network in combination with their own facilities to provide service. That provision requires incumbent local carriers to provide competitors or other telecommunications carriers with access to network elements on an unbundled (i.e., standalone) basis, at any technically feasible point, on nondiscriminatory and "reasonable" terms. Moreover, an incumbent local carrier must provide unbundled network elements in a manner that allows requesting carriers to combine them for the purposes of providing a telecommunications service.\(^{13}\)

The Act defines an "element" as any facility or equipment used to provide a telecommunications service, including any functions, features, or capabilities of the facilities or equipment.\(^{14}\) The most prominent network element, and the one that is most difficult for a new entrant to construct for itself, is the customer "loop," the line between a household and a phone company's central office, where its switches are located. Incumbent firms must allow new competitors to lease those loops and the switches (computers that route telephone calls) necessary to provide service over those loops. In essence, incumbents must allow access to the elements of their networks which are necessary\(^{15}\) to provide competing service, and must do so "based on cost" of providing the facility or equipment.\(^{16}\)

Although the preemption and basic interconnection rules have caused the greatest changes in the legal structure of local telecommunications regulation, the FCC's unbundling and resale rules (including the associated pricing rules) have generated the most controversy. This is not surprising. It is one thing to tell incumbent firms that competitors will be allowed into their markets; it is another issue altogether to tell them that they must cooperate, against their interests and for little if any profit, with those very competitors. As a legal matter, given that preemption of state monopoly protections is clearly within Congress' constitutional commerce power, there was little to challenge in that provision once the legislative battle ended. Interconnection is similarly difficult to challenge on its face. So long as carriers receive adequate compensation for the required use of their facilities and equipment, interconnection, too, is a constitutionally valid exercise of congressional power.

Of course, specific aspects of interconnection, such as how it

\(^{13}\) See id. § 251(c)(3).
\(^{14}\) See id. § 153(a)(29).
\(^{15}\) See infra text accompanying note 13 for a more precise statement of the unbundling standard.
should be priced and where in the network it should occur, may give rise to dispute. For example, the Act requires local carriers to establish "reciprocal compensation arrangements for the transport and termination of telecommunications." However, the Act fails to specify how to structure such compensation, how to set the rates, or how to address potential problems of asymmetric traffic. Whether interconnection is handled in a particular case by voluntary negotiation or by regulation, its resolution can therefore be difficult and contentious. But the interconnection requirement itself is less controversial, and promises more mutual benefit between carriers, than either unbundling or resale.

Unbundling on its face probably poses no greater constitutional questions than does interconnection. But it does involve an additional layer of administrative decision-making that has caused substantial conflict within the industry. Much of this conflict involves the vague "necessary and impair" standard the FCC must apply to determine whether incumbents must unbundle a given network element, and the cost-based standard it must apply in setting prices for those elements. Under that standard, the Commission must determine whether "access to proprietary elements is necessary, and whether the failure to obtain access to nonproprietary elements would impair the ability to provide services." Challenges to the FCC's orders implementing the Act's unbundling and resale provisions have arisen in a variety of forums. Administrative proceedings have taken place at the FCC. Constitutional and administrative challenges have been brought in federal district court. And numerous disputes over pricing have been fought before state utility commissions. The pivotal case stemming from the 1996 Act is Iowa Utilities Board v. FCC, which went two rounds in the Eighth Circuit before the Supreme Court decided it at the end of 1998. The case arose after several States and private entities filed separate petitions in various federal circuits to review the FCC's

17. Id. § 251(b)(5).
21. The list of such proceedings is enormous. A prominent recent example of state regulatory decisions implementing the local competition provisions of the 1996 Act is that announced by the Pennsylvania Public Utilities Commission on August 26, 1999. See Pennsylvania PUC Passes Rules to Jumpstart Local Competition, PR Newswire, Aug. 16, 1999.
massive local competition order of August 8, 1996.\textsuperscript{23}

The challenges to the FCC's order fell into two principal categories: jurisdictional disputes over the Commission's authority to make certain rules, and substantive challenges to the rules themselves. On the jurisdictional side, petitioners argued that the FCC did not have authority to promulgate rules on pricing of elements, wholesale services, and interconnection because the Act reserved those functions for the States.\textsuperscript{24} On the substantive side, the parties challenged, among other things, the number of elements the FCC required incumbent carriers to provide on an unbundled basis, the method for setting prices of those elements, and the method for setting prices of service purchased at wholesale pursuant to the Act's resale provisions.\textsuperscript{25}

The Supreme Court vacated the FCC's rule on the scope of required unbundling and remanded the issue to the agency for reconsideration.\textsuperscript{26} The Court ruled that the Commission had misinterpreted the statutory "necessary and impair" standard for unbundling. At this writing, the Commission has just completed its proceedings on remand and adopted a new unbundling order. That order in some ways goes farther, but in other ways retreats, from the original order.\textsuperscript{27} Whether or not the FCC's remand order is challenged, unbundling will remain a live dispute as the details of the order's implementation are worked out.

There also remains active controversy over how network elements will be priced. Although the Supreme Court upheld the Commission's jurisdiction to set pricing rules for network elements and wholesale services, it remanded the issue of whether those rules comply with the Act's substantive requirements to the U.S. Court of Appeals for the Eighth Circuit. That case was recently argued and, at this writing, the Eighth Circuit has yet to issue its decision.

As regulations governing access to network elements and resale have been challenged and reviewed, the interconnection and preemption provisions of the Act have been in continuous force and local competition has begun to develop. To appreciate the importance of those provisions to competition, it is helpful to look at both the historical evolution of local exchange markets and recent

\begin{footnotes}
\item 23. The cases were consolidated and assigned by lottery to the Eighth Circuit.
\item 25. \textit{See} \textit{id.}; Iowa Utilities Bd. v. FCC, 109 F.3d 418, 422 (8th Cir. 1996) (opinion granting stay of FCC's competition order); Iowa Utilities Bd. v. FCC, 120 F.3d 753 (8th Cir. 1997) (final opinion vacating relevant portions of the FCC's competition order and vacating pricing rules).
\item 26. \textit{See} 119 S. Ct. at 737-38.
\end{footnotes}
empirical developments since the 1996 Act.

II. The Development of Local Monopoly

The historical movement of local exchange markets from competition to monopoly in the first decades of the twentieth century highlights the current importance of the 1996 Act's monopoly-preemption and interconnection provisions. In the early years of telephony, rival telephone companies in the same service area failed to interconnect their networks. This section will discuss how that failure led to the demise of competition among local exchange carriers and, more briefly, how the rise of monopoly franchises for local telephone service followed as a direct result.

A. Early Competition for Local Customers

Although local telephone monopolies came to be taken for granted, the early history of telephony strongly suggests that monopoly was not economically inevitable. When AT&T's exclusive hold on the Bell patents expired in 1893-94, numerous independent companies entered the telephone business. Telephony spread rapidly. The number of Americans with telephones more than doubled in five years and, by 1920, more than one-third of all households had service. New, independent (of the Bell System) carriers garnered much of the expanding telephone traffic. Part of the entrants' success came from serving markets ignored by AT&T. As a result, in 1894 only three percent of the Bell system's subscribers were in rural areas, even though sixty-two percent of Americans at the time lived in communities defined as rural. Small independent phone companies, farming organizations, and rural cooperatives availed themselves of these unreached markets and established thousands of local exchanges in rural areas.

As AT&T extended its network from the biggest cities to smaller population centers, the independent systems moved from rural areas towards urban centers. The independents—many of whom had joined in coalition—accumulated enough customers in the urban periphery to make access to their systems valuable to the urban


30. See id. at 356.

31. See id. at 360.
customers targeted by AT&T. The dense population centers that AT&T sought to monopolize became contested ground.

During the first two decades of the twentieth century, AT&T and the independents eventually invaded each others' territories to the point that over half of the U.S. population could choose between rival local telephone carriers.\textsuperscript{32} In some areas the Bell company, not the independent carrier, was the newer market entrant. Available data show that traffic was about equally divided between AT&T and the independent carriers by 1908, when the Bell system carried an average of 16,029,000 conversations per day while independents together carried 15,956,000.\textsuperscript{33} At least by this measure, the market share of competitive carriers had gone from zero to nearly fifty percent in only fifteen years.

\textit{(1) The Question of Interconnection}

There was, however, an inherent instability in the way local telephone competition had developed. In general, customers of independent carriers and customers of AT&T could not call each other because the competing networks did not interconnect to exchange customers' local calls. When phones were relatively rare and the bulk of one's calls went to one or a few parties whose service decisions could be coordinated, the fact that customers could only call those people served by the same carrier may have been only a modest inconvenience. But as the telephone became a more basic and ubiquitous tool for business and personal communication, people increasingly came to value not just connections between parties in regular contact who could coordinate to be on the same network, but also, in the words of AT&T President Vail, "communication with some other one, who, until the particular necessity arose, might have been unknown and unthought of."\textsuperscript{34} Implicit in Vail's observation was the idea that, as more people can be reached through a given communications system, the more valuable that system becomes to any individual consumer. Competition pulling subscribers to different systems undermined this customer-side economy of scale.

Vail's basic argument, while grounds for increasing the number of telephones any given subscriber could reach, did not necessarily support monopoly. Mandatory interconnection of competing networks could have accomplished the same goal. The precedent for such a mandate was mixed, however. The Post Roads Act of 1866\textsuperscript{35}

\textsuperscript{32} See \textit{id.} at 359.
\textsuperscript{33} See \textsc{Historical Statistics}, \textit{supra} note 28, at 783.
\textsuperscript{34} Mueller, \textit{supra} note 29, at 364 (quoting Theodore Vail, 1910 AT&T Annual Report 39).
\textsuperscript{35} Post Roads Act, Ch. 230, 14 Stat 221 (1866), \textit{repealed by} Act of July 16, 1947, ch.
required interconnection among competing or non-overlapping telegraph systems, but neither the statute nor its underlying principle extended to common carriers generally. Indeed, the Supreme Court made clear in the 1886 Express Cases that common carriage did not generally encompass the traffic of other carriers—in the Court's words, that there was no obligation to be a "common carrier of common carriers." When the Mann-Elkins Act of 1910 deemed telephone companies to be common carriers, it did not specifically impose on them any interconnection obligations towards other phone companies and thus left them to be governed by the more general Express Cases precedent.

Although the Bell companies and independents could have chosen to interconnect, they did not. Perhaps each side hoped that by standing its ground, it would eventually gain an edge that would make its network the most valuable to subscribers and push the competing network out of business. But the impetus for refusing interconnection likely came from AT&T, which was comparatively well situated to exert its financial might to pursue dominance of the telephone market. AT&T was greatly helped in this quest by its acquisition of the patents for amplification technology that vastly improved long-distance service. With its new ability to offer better service, AT&T began to recover market share lost to independents since the expiration of the original telephone patents in the early 1890's. Just as rival telephone carriers did not interconnect their local networks, AT&T refused to allow independents to interconnect to this improved long-lines network. Customers who desired AT&T's long-distance service thus had incentive to choose AT&T for local service. Because the independents could neither connect their customers to AT&T's long-distance services nor purchase the

256, 61 Stat. 327.

36. See Western Union Tel. Co. v. Pub. Serv. Comm'n., 129 N.E. 220, 222 (1920) ("Each [telegraph carrier] represents the public when applying to the other for service and no discrimination can be made by either against the other, but each must render to the other the same services it renders to the rest of the community under the same conditions.").


38. In 1916, when relevant data for independents first became available, independent companies' combined book value was just over a quarter billion dollars while AT&T's was nearly $1 billion, independents' profits were just under $10 million while AT&T's were over $50 million, and independent networks contained roughly 4 million miles of wire while AT&T's had about 20 million miles. See HISTORICAL STATISTICS, supra note 28, at 785, 787.

necessary equipment from AT&T to provide such service themselves, many either merged into the Bell system or went out of business.40

As the Bell system acquired rivals, accumulated market share, and refused to interconnect either its local or long-distance networks with competitors, the enterprise not surprisingly attracted the trust-busting zeal of the times. The U.S. Department of Justice filed an antitrust suit against AT&T in 1913 alleging that AT&T had improperly leveraged its dominance in the long-distance market to force competing local carriers into closing or merging with the Bell System.

Ultimately, in what has come to be called the “Kingsbury Commitment” (for the AT&T Vice President who negotiated with the government), the parties settled in 1914 on terms that proved enormously favorable for the Bell System. In return for the government’s dropping the case, AT&T promised to submit to a degree of regulatory oversight, to cease acquiring independent competitors, and to interconnect all surviving competitors to AT&T’s long-distance network.41 The Kingsbury Commitment contained numerous other provisions, such as AT&T’s divestiture of Western Union, that gave the agreement an appearance of substance. But it also contained built-in flexibility that ultimately undermined some of the settlement’s central features, such as the non-acquisition provision. By time the government’s case was settled, AT&T had secured its dominance and avoided action that would have slowed its growth or reintroduced viable competition.

If the Kingsbury Commitment was intended to preserve local competition from further erosion by prohibiting AT&T from acquiring additional local companies, it was destined to fail from the outset. Because the settlement required Bell to interconnect independents to its long-distance network, but not to its local system, existing competition was left in a precarious position. Subscribers to competing systems still found themselves unable to call people on AT&T’s local networks, and vice versa. This inherent inefficiency burdened consumers. And to reduce that burden, federal authorities began to allow consolidation of competing carriers. The Department of Justice approved most of AT&T’s special applications to acquire local companies in the years the consent decree was in force.42 And, in 1918, Congress and the President gave the Postmaster General emergency powers over the phone system which led to further consolidations.43 Finally, in 1921 Congress permanently suspended

40. See HUBER, supra note 4.
41. See Anticompetitive Uses, supra note 39, at 293.
42. See HUBER, supra note 4, at 27 and n.113.
43. See id.
the non-acquisition provisions of the Kingsbury Commitment and gave the Interstate Commerce Commission authority to exempt telephone company mergers from the antitrust laws. The resulting statute, the Willis-Graham Act, was expressly aimed at eliminating the inefficient fragmentation of the phone system.

On its face, the Willis-Graham Act did not create an open season for acquisitions. The Act only withheld antitrust enforcement for consolidations that were “of advantage to the persons to whom service is to be rendered and in the public interest.” In practice, however, the hurdle proved a low one and competing local telephone service fell into rapid demise. An important effect of the Willis-Graham Act was to link the Bell system’s conduct to concepts of public service, leading in time to a system of regulated monopoly franchises. This transition has its roots in the rationale for consolidations permitted under the Kingsbury Commitment and the brief period of Postmaster control. The consumer benefit ascribed to consolidation was connection to the whole universe of other telephone subscribers without subscribing to multiple service providers. From this emphasis on consumer benefits arose the more general public policy goal of increasing the spread of telephony by ensuring that telephone service was affordable to all Americans. Monopoly franchising thus became increasingly entrenched in state and federal regulatory policy. As one lively commentary puts it, regulators aimed to put “a telephone within arm’s reach of the chicken in every pot.”

Although a full discussion of the rise of monopoly franchises and the division of regulatory jurisdiction over local services is beyond the scope of this essay, the development of a system of implicit subsidies to keep residential rates low was an important part of the story. That system developed over time in a manner that made competition and entry into the local exchange market incompatible with public policies pursued mostly at the state level. For example, regulators favored the averaging of rates between urban (low cost) and rural (high cost) customers so that no one would pay too high a price for local service. New entrants were blocked from the market under the theory that they would have incentive to “cherry pick” the high-revenue/low cost customers, leaving the less desirable customers to

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46. Id.
47. See HISTORICAL STATISTICS, supra note 28, at 783.
48. HUBER, supra note 4, at 21.
49. See THOMAS G. KRATTENMAKER, TELECOMMUNICATIONS LAW AND POLICY 349 (2d ed. 1997).
the incumbent and simultaneously eroding the incumbent's revenue base. The result was a system of regulated monopolies that persisted until Congress adopted section 253 of the 1996 Act and abruptly eliminated state-created barriers to entry into local exchange markets.

III. Empirical Evidence of Local Competition

The discussion above demonstrates two things: that monopoly franchising became deeply entrenched in telecommunications policy, and that it did so in large part to pursue efficiencies and network benefits that could have been accomplished by interconnection. Had the latter been required in the first decades of the century, the system of franchised territories might never have developed. History thus shows preemption and interconnection to be indispensable conditions for a competitive market in local telecommunications. This section reinforces that historical lesson by examining the current empirical effect of the 1996 Act's preemption and interconnection provisions.

Limited entry into the local telephone market began several years before the 1996 Act. Most early entrants competed with the incumbents only in providing business customers with connections to long-distance carriers, a service known as "competitive access." Competitive access providers offered bypass of the local network for long-distance calls—not an alternative system for local calls between customers—as early as 1994, but little competing service was actually offered. A carrier must obtain a "numbering code" for each switch it wants to use to provide local exchange service. Only 15 such codes had been issued to competitive entrants by the end of 1994.

After the 1996 Act and its market-opening provisions became law, new local carriers began to acquire necessary authorizations to provide local exchange service. Within one year of the date Congress passed the Act, over 150 numbering codes had been obtained by enterprises planning to offer competing service. Three years after passage of the Act, that figure stood at over 450. To be sure, paper authorizations do not necessarily translate into physical facilities. But by the latter measure, too, the 1996 Act sparked substantial change.

50. Id. at 352.
53. See id. at 45.
54. See id.
55. See id.
For example, the number of switches owned by competitive local carriers, which stood at only sixty-five when Congress passed the Act in 1996, grew to nearly seven hundred by the end of 1998. With these switches, competitors could direct customers' calls not only past the local exchange to the long-distance network, but between customers within the exchange itself—true local telephone service.

Of course, the most significant evidence of local competition lies in actual service offerings to customers. The data on acquisition of customers by local competitors show that entry since passage of the Act has focused principally on full-service, local telephony for urban businesses. Residential local service has seen some competitive entry but has not developed in a manner comparable to business service. The 1996 Act has also spurred entry by firms providing high-speed data services to local exchange customers over unbundled loops leased from the incumbent carriers. It is estimated that competing carriers providing local service over their own facilities, through resale, and through use of the incumbent's unbundled network elements have captured about three percent of local lines from the incumbent local providers. Because competitors have focused on serving the largest and most profitable customers first, the business they have won represents about six percent of the local services market measured by revenues. Recent data compiled from publicly-traded competitive local exchange carriers show them to be gaining between 600,000 and 700,000 customer lines per quarter, mostly from business customers. Although these figures purport to capture only true local exchange lines, they may be somewhat inflated, perhaps by inclusion of special access lines or by counting branch extensions from a single business line as separate lines. But even with that caveat, the competitive companies' quarterly line acquisition is substantial and may be even higher than reported given that the above numbers do not include the customers of non-public firms.

The data discussed above aggregates different forms of competitive local-exchange service—i.e. service through resale, unbundled elements, and the entrants' own facilities. The paradigm case of entry is competition by a firm that builds its own facilities to rival incumbents in a given market. For example, when Southwest

56. See generally id.
57. See id. at 5.
58. See id.; see also id. tbl. 3.2 (showing that even resellers served more business than residential customers.).
60. See id.
61. See id.
Airlines went into business, it obtained its own planes, landing slots, and support facilities, and put them into service against the established air carriers. Similarly, MCI entered the long-distance telephone business by constructing its own microwave transmission facilities. And, when competitive access providers began to compete against local exchange incumbents to connect customers to long-distance telephone networks, they did so over their own fiber lines and electronics. The 1996 Act goes beyond the paradigm case of entry and creates opportunities for competitors to participate in the local market even without investing in their own facilities, either by reselling an incumbent provider's services or by using all or part of an incumbent's facilities. For purposes of examining the effects of the monopoly preemption and interconnection requirements on local competition, this section focuses on entry by firms using their own facilities.

A. Facilities-Based Entry

Although many of the 1996 Act's local competition provisions address competitors' access to incumbent carriers' networks and services, such provisions are irrelevant to a sizable proportion of local competition. Data from publicly traded local competitors show that they collectively serve nearly one-third of their customers entirely over their own facilities, a share that has been growing. As new entrants continue to build their systems, the growth of such facilities-based service will likely accelerate. Several sources of data, albeit sketchy and incomplete, show competitive local carriers to be building out their networks at a fast clip. Merrill Lynch estimates from its survey of public local companies that those competitors have recently been adding over 50,000 route-miles of fiber line to their networks every quarter and that the rate of fiber deployment has been increasing. FCC data show the amount of fiber cable deployed by new entrants to have tripled from 1993 to 1997, with particularly rapid deployment from 1994 to 1997. The more physical infrastructure the competing carriers have, the less they need to obtain from incumbents, and the more customers they can serve on their own networks.

The strategy some major long-distance carriers are pursuing in
the local exchange market reflects the importance of facilities-based entry for local competition. AT&T, for example, initially sought to compete through resale or use of the incumbents’ unbundled elements. The company filed regulatory applications to provide local service nationwide and by the end of 1998 had been certified to do so in forty-five states. It received final decisions on interconnection arbitrations from twenty-five state regulatory agencies and has signed numerous interconnection agreements. AT&T’s actual local service offerings through resale or unbundling have, however, been extremely modest. The company offers local residential service in only a few small and mid-sized markets. Its business offerings are somewhat broader, but are limited to the densest commercial markets.

AT&T recently radically changed its strategy to pursue full, facilities-based competition through existing cable networks. AT&T’s acquisition of TCI, one of the largest multi-system cable operators, was approved in early 1999 and immediately gave AT&T the ability to have a direct wire into tens of millions of households. The company has announced plans to upgrade the plant to two-way capability and begin offering broadband and voice services to most of those households within a few years. AT&T is trying to expand the reach of this strategy by purchasing additional cable operators, and by forging alliances with others. A variety of reasons have been offered for AT&T’s change in strategy. Some attribute the carrier’s abandonment of large-scale resale and use of unbundled elements to being “fed up with the Baby Bells’ refusal to let [it] into local markets.” More likely, AT&T perceived the need to meet the rapidly changing telecommunications markets by developing a system capable not only of conventional voice service, but of high-speed data services and video as well. Conventional phone lines are limited in their broadband capabilities and AT&T’s strategy perhaps fit better with entry through cable systems. But whether technology or legal disputes spurred AT&T’s decision to enter the market through its

68. See id.
69. See AT&T Local Service Overview, supra note 52. AT&T offers residential service in Rochester, NY, Grand Rapids, MI, Sacramento, CA, and Waukegan and Libertyville, Ill. It also provides such service to SNET customers in Connecticut. See id.
70. For example, AT&T agreed in May 1999 to acquire MediaOne, approximately the fifth largest cable operator, for $58 billion.
71. See, e.g., Editorial, AT&T Grows Larger, N.Y. TIMES, May 6, 1999, at A32 (reporting that AT&T has reached agreements with Comcast and Time Warner to offer AT&T brand local phone service over their cable networks).
own facilities is irrelevant here. What is relevant is that AT&T is making a substantial step towards entering the local exchange market without resort to the controversial statutory provisions to which much rhetoric and commentary have tied the prospects of local competition.

In addition to using cable facilities to attempt to reach residential consumers on a large scale, AT&T and MCI have been constructing their own facilities in urban, commercial centers. AT&T is building a network in Chicago and is collaborating with competitive access providers in other cities. MCI is offering service entirely on its own network—"the ability to transport traffic end-to-end over one network"—to businesses in select markets.73

There is no guarantee that facilities-based competitors in urban areas will soon expand their systems to less dense neighborhoods or that cable will succeed as the answer to true local exchange competition for residential customers. Fiber networks that are economical in cities may prove less so in the suburbs. The technical hurdles to upgrading existing systems to reliable, two-way capability are substantial and the solutions expensive. But data on current competition and the investment being made to facilitate future competition make clear that significant entry into the local exchange market is taking place that does not depend on the unbundling provisions of the 1996 Act. The Act is thus having an important impact unrelated to the primary sources of the controversy and litigation surrounding its implementation. This impact will only magnify as new technologies for local exchange service—technologies that are not dependent on existing telephone infrastructure—enter the market. Cable telephony is the most imminent example. Another technology currently in limited trials is fixed (as opposed to the more familiar mobile) wireless service. Several carriers, including major firms like AT&T, are investing in developing fixed wireless technology that will enable them to bypass the incumbent carrier's loops into customers' homes and businesses.74 Several carriers are already providing such fixed wireless services to business customers in a number of markets.75 The entry of these technologies into the local market is dependent on the right to provide service and on interconnection with the incumbent, but not on access to unbundled elements of incumbent networks.

74. See Elizabeth Clark, Pulling the Plug on the Local Loop, NETWORK, June 1, 1999.
B. Local Competition: The Overall Picture

Some suggest that the 1996 Act has failed in its central mission because, on the whole, development of local competition since the law was passed has been insignificant. One response to this suggestion is that changes take time in markets so long structured as regulated monopolies. Furthermore, examined in context, developments to date in local competition are not as disappointing as often portrayed.

Entrenched market structures do not change instantly in response to legislative or judicial fiat. This is especially so in a capital-intensive, partially integrated, and heavily-regulated industry that, on top of everything else, contains a complex system of cross subsidies that makes some market segments unattractive to new competitors. The economics of residential local service, with its regulated rates, geographical cross subsidies, and comparatively lower sales of, arguably do not make pursuit of the average residential customer a tantalizing economic prospect when there is lower-hanging fruit in the business market.

Indeed, history indicates that rollout takes time and generally starts, for sound economic reasons, with higher-revenue customers. For example, carriers can generally charge businesses higher base rates than they can charge residential customers. Business customers will also generally generate more revenues from profitable, vertical services like voice messaging or caller identification and from access charges, the payments that long-distance carriers pay to local networks for originating and terminating calls. But the costs of providing a phone line are about the same for residential and business customers, making the latter a source of higher profit margins.

The construction of the original Bell System itself is a lesson in the move from commercial centers to more rural areas. And Bell was merely repeating a strategy followed decades before by Western Union in building out its telegraph network. MCI's entry into the long-distance market similarly started with private business service, went to public business service, and eventually to residential offerings. The aggressive entry by competitive local carriers into the business market, and their construction of facilities for both voice and data, are likely to have benefits for residential customers over time. As the most profitable customers provide the new competitors with the revenue necessary for effective entry into the local market, competitors will be able to expand service offerings to customers from which they earn less return.

A second reason why current developments in local competition

76 See, e.g., TOM STANDAGE, THE VICTORIAN INTERNET 63 (1999).
should not be dismissed is that they are comparable with relevant historical episodes of telecommunications competition. For example, it would take the competitive local exchange carriers about ten years to capture half of the sixty million business lines now in service if they continue to add lines at the current pace of about 700,000 per month, all else remaining the same. As a comparison, it took more than a dozen years after the 1984 divestiture for long-distance competitors to gain a fifty percent share of market revenues, and their shares of pre-subscribed lines and long-distance access minutes has not yet reached that level.\textsuperscript{77} To be sure, this example leaves out residential customers. But it is nonetheless an instructive look at the pace of competition for profitable telecommunications customers.

For another comparison, as discussed above,\textsuperscript{78} it took fifteen years after AT&T's patents on the telephone expired in 1893-94 for the independent companies entering the market to carry fifty percent of telephone traffic and to serve fifty percent of telephones.\textsuperscript{79} In the first three years of telephone competition, from 1894 to 1896, the independent companies' market share grew from five to nine to twelve percent when measured by the percentage of all telephones served.\textsuperscript{80} Over that same period, however, the number of telephones grew by over fifty percent. To be sure, the new entrants one hundred years ago had to build their facilities before providing service, but they also were often entering areas that were unserved and in which they faced no competition for customers in the rapidly growing market. Competitors' market share since passage of the 1996 Act has grown more slowly, but not necessarily disproportionately so considering the much slower annual rate of line growth (about five percent) and the fact that a competitor must woo almost every customer it gains from an incumbent.

There are, of course, possible anticompetitive explanations for the apparently slow overall pace of competition and for why entry has been slower to develop in the residential local service market than in the business market. Some point to problems with the incumbents' compliance with the 1996 Act—the FCC has not yet found any of the incumbent carriers to have satisfied all of the Act's market-opening requirements. But there is good evidence that the pattern and pace of local competition is more strongly affected by underlying economic


\textsuperscript{78} See \textit{supra} text accompanying notes 28 to 33.

\textsuperscript{79} See \textit{Historical Statistics}, \textit{supra} note 28, at 783. These figures include independents that did not compete head-to-head with the Bell companies, and therefore may overstate the share independents had of competitively served markets. See \textit{id}.

\textsuperscript{80} See \textit{id. at} 784.
factors. Because of the long institutional history of local monopoly and the economic complexity of entry into the local residential market, the uneven development of competition does not in itself show that the 1996 Act's market-opening provisions are a failure or should be changed. Indeed, the developments to date, when considered in light of history and the underlying economics, suggest otherwise.

C. A Note on Resale and Unbundling

In emphasizing the Act's monopoly preemption and interconnection provisions, this essay does not mean to suggest that the unbundling and resale provisions are unimportant. This section briefly discusses several competitive developments resulting from resale and unbundling, the means by which competing local carriers are serving more than two thirds of their customer lines.

The effects of the Act's unbundling and resale requirements appear most notably in the residential service and high-speed data markets. As suggested earlier, because residential areas are not as densely populated as commercial areas and tend to yield lower telephone revenues, the residential market has proven less attractive to new competitors than the business market.81 Entry into the local residential market has occurred mostly through resale of the incumbent's services. The Telecommunications Resellers Association (TRA) represents numerous competitors, 94 percent of whose residential business is through pure resale.82 The United States Telephone Association, the industry association for incumbent local carriers, reports that new entrants were reselling about 1.3 million residential lines three years after the Act was passed.83 The FCC made a similar estimate of 1.2 million lines.84 The FCC found that, while competitors served 1.2 million residential lines through resale, they served about 260,000 customers through a combination of their own facilities and unbundled network elements leased from the incumbents.85

Unbundling has been more critical to competitors' provision of

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81. For example, Comptel, an industry association representing CLECs, recently surveyed its members about local competition. Twelve of seventeen respondents reported providing residential service in at least one state. Overall, of the roughly five million lines estimated to be served by CLECs, less than one third probably belong to residential customers.

82. See THE TELECOMMUNICATIONS RESSELLERS ASSOCIATION, REPORT SUBMITTED TO THE HOUSE COMMERCE COMMITTEE (1998).

83. See UNITED STATES TELEPHONE ASSOCIATION, LOCAL MARKET WIDE OPEN TO COMPETITION (1998).

84. See generally LOCAL COMPETITION, supra note 51.

85. See id.
"advanced services" like high-speed Internet access over the existing, copper-wire, telephone plant. Numerous companies have taken advantage of the 1996 Act to lease customer lines ("loops") and space in the incumbents' switching centers ("collocation") in order to offer customers digital subscriber line (DSL) service, primarily for high-speed access to the Internet.\textsuperscript{86} DSL technology uses special modems to transmit digital information over existing copper lines. Most of the new data carriers are still relatively small. But competition in data services over the telephone network shows promise as data carriers continue to invest heavily in facilities and push DSL prices down. Given the very high cost of building new lines to individual customers, competitive DSL providers would not have been able to enter the market and deployment of the service would likely have occurred more slowly.

The above are only examples of where unbundling and resale have altered the competitive landscape of local telecommunications. Other uses of those entry options abound. New carriers that have substantial networks of their own might nonetheless lease trunk lines from the incumbent to transport traffic between switching centers. A competitor with a fiber network that reaches a customer's offices on one side of town may not reach the customer's other offices, and may use unbundled elements to complete its service offerings. More generally, unbundling and resale allow a competitor to benefit from existing scale economies and embedded investment in providing service, and can be used differently by different carriers depending on the services they offer and the extent of their proprietary facilities.

There are potential downsides as well to unbundling. If the network elements are not priced right, new entrants may have incentive to use them even where constructing their own networks would be more efficient. Entrants would effectively receive a subsidy from the incumbent. Similarly, incumbents' incentives to develop new technology and to invest in their networks will be affected by the prices they can charge for access to their networks. A full discussion of unbundling is well beyond the scope of this essay. For current purposes, it suffices to say that properly designed unbundling can perform an important transitional role in markets moving from embedded monopoly to a more competitive structure, and that unbundling is an important feature of competition in local exchange markets today.

\textsuperscript{86} For a description of DSL technology, see Howard A. Shelanski, \textit{The Speed Gap: Broadband Infrastructure and Electronic Commerce}, 14 BERKELEY TECH. L.J. 721, 725 (1999).
Conclusion

This essay argues a modest point, but one that is often lost in the controversy surrounding the Telecommunications Act of 1996: the Act has importance for competition that transcends the difficult unbundling and resale provisions that have dominated public attention to the statute. To be sure, access to unbundled network elements and the ability to resell an incumbent carrier's service are important transitional mechanisms. But perceived difficulty with those mechanisms should not be equated with failure of the 1996 Act. Monopoly preemption and mandatory interconnection establish more fundamental conditions for competition, conditions that would have led to a very different market structure had they been in place historically, and that are giving rise to a growing portion of the new competition that is developing today.