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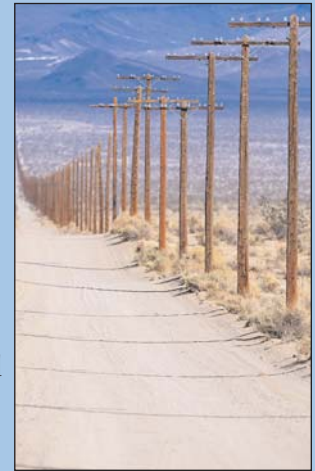
## The Uncertain Future of the Telecommunications Industry

ROBERT E. LITAN AND ROGER G. NOLL

The U.S. telecommunications industry is riding a roller coaster. For most of the 1990s, the industry's future looked promising. The growth of Internet use, the promise of a broadband network, and a less restrictive regulatory environment that was expected following passage of the 1996 Telecommunications Act led industry experts to forecast rapidly growing demand for core network services along with high-margin business opportunities in an expanding array of new information services. The industry backed these expectations with massive investments to expand the capacity of both wireless and wire line networks as well as to facilitate the expected boom in high-speed data transmission.

But in the years following enactment of the law and the investment boom, demand for both standard telephone and broadband services, while strong, did not explode as the industry had anticipated. As capacity expanded more rapidly than demand and competition began to take hold, prices fell. Not surprisingly, a few major and many minor players fell into bankruptcy.

The growing gap between expectations and reality in industry performance has given rise to new calls to rethink national communications policy. In this brief, we address several issues that are now or should be front and center in the debates over future policy.



### THE STATE OF THE INDUSTRY

It is important to understand how new technology and the greater competition introduced by the 1996 law have interacted with the industry's investment

boom of the late 1990s. In the good old days of regulated monopoly in telecommunications services, investment probably would not have exploded as it did, but even if it had, regulators probably would have allowed firms to recover their



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costs through price increases. Because regulation no longer provides a floor for service prices in long distance and wireless when capacity is increased, providers compete much more intensely on price. The beneficiaries of this competition are service users; however, investors sometimes see their profits disappear as prices fall, which is what happened extensively in long distance and to new entrants in local access, and to a lesser degree to wireless carriers.

The regulatory environment also changed for incumbent local telephone companies—the Regional Bell Operating Companies (RBOCs) and other incumbent access companies that formerly had been monopolies. These firms are still subject to price regulation, but until the 1990s had been insulated against competition. The 1996 law formally ended the era of franchised monopoly telephone service by requiring that states let competitors into the market, develop mandatory interconnection rules to facilitate this entry, and allow entrants to lease for resale at reasonable rates the incumbent’s “unbundled network elements” (UNEs). The purpose of allowing the leasing of UNEs was to allow entrants to either lease all of facilities of the incumbent local telephone company or just the unbundled, or individual, elements of that network. Those elements could include, for example, the switches that allow calls to be routed from the central telephone company office to a customer’s home.

These requirements introduced new forms of price regulation. One new regulated price was the fee that one local

telephone company would pay to complete calls to customers of its competitor. The other new regulated prices were the charges to lease each UNE. The 1996 law did not specify exactly how these prices ought to be calculated, but it did detail how not to do it: prices must not be based on historical costs, or the traditional method that was used to assure that regulated companies would be able to recover their costs and to earn at least a competitive return on their investments. As we discuss shortly, extensive litigation has ensued over the UNE leasing requirement and method of setting UNE prices.

The incumbent carriers faced still another competitive threat—this one from wireless. Digital technology has simultaneously vastly improved service quality and vastly reduced the average cost of capacity in a wireless network. Moreover, intense competition among numerous carriers had led to falling prices, so that the price premium for wireless has been shrinking—and for some users has essentially disappeared.

As a result of competition from both wire entrants and wireless, beginning in 2000, incumbent local wire access companies actually began to lose customers. Between 1999 and 2002, incumbent wire access carriers lost over 18 million access lines, competitive wire carriers added over 16 million, and wireless carriers added almost 60 million.

Another major beneficiary of the old regulated monopoly structure was cable television. But cable also has seen growing competition. Due to advances

in technology, satellite television services vastly increased their capacity and lowered their costs. As a result, cable's share of television households has begun to decline for the first time since the technology was developed in the 1950s. Meanwhile, although cable has been winning the race for high-speed Internet access customers, this could change in the future if the RBOCs (now free from requirements to share their high-speed facilities with competitors) become more aggressive and if various forms of wireless high-speed service become effective competitors.

### POLICY ISSUES

The poor financial performance of the telecommunications industry since 2000 has led to a variety of policy proposals advanced by industry experts and policy-makers. We first deal with two suggestions that we believe are largely misguided—subsidies to bail out failing firms and a lax merger policy. Then we turn to regulatory policies that ought to be changed because they contribute to the industry's financial problems, reduce its efficiency, and harm its customers.

**Subsidies:** The most important policy question that can be inferred from the preceding discussion is whether the telecommunications sector, or any important part of it, is on the verge of collapse and, if so, in need of some kind of subsidy.

Because the telecommunications industry developed significant excess capacity, many firms are likely to be unprofitable, some so much that they enter bankruptcy. But under Chapter

11, which is where we find the large, bankrupt telecommunications firms, companies continue to operate. Indeed, Chapter 11 firms typically generate more revenues than their operating costs, but not enough to pay off all of their debt, so bondholders take losses and shareholders get wiped out. But consumers continue to be served.

In extreme cases, a firm takes in so little revenue that it cannot continue in business, even under Chapter 11 protection, and so it is dissolved. Like most industries, telecommunications delivers many benefits to its customers, and the value its firms deliver to society exceeds the revenues that it collects. If a large fraction of the firms in the industry somehow were to disappear, stockholders and employees would suffer—and so would their customers. A dissolved firm's assets are sold one by one to the highest bidder, and the funds are used to pay off creditors—typically at the rate of a few cents on the dollar. In telecommunications, dissolution is rare, but owing to the specialized nature of telecommunications companies, even when dissolution occurs, the assets are sold to other telecommunications firms and services continue.

In short, we do not find plausible the doomsday scenario that millions of customers will wake up one day to find that they no longer have telephone service, let alone no way to acquire any service that they want quickly at a reasonable price. For this reason, we do not find a compelling case for government intervention to forestall what the market may require by handing

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out subsidies to existing players in the hope that one or more may survive.

**Telecommunications mergers:** Another policy option that has been floated as a way to address the industry’s financial woes is to encourage mergers among telecommunications companies. Recognizing that all merger proposals must be judged on a case-by-case basis, it is nonetheless useful to set forth the general principles that should be applied to decide how different types might or should be treated.

One possible set of mergers is between current long-distance providers. Only a short time ago, WorldCom and Sprint wanted to merge, but the Department of Justice stepped in to stop them. WorldCom, now MCI, has become much weaker financially (in the wake of large losses and a \$9 billion accounting scandal), while Sprint remains financially troubled, and AT&T is experiencing financial pressures. If two of the Big Three seek to merge, should the authorities allow it?

Such a merger would lead to a much more concentrated long-distance industry. Furthermore, because many wireline and wireless “local access providers” simply resell the long-distance services of the Big Three, a merger among two of them would substantially reduce wholesale competition. This result could change if local access companies build their own long-distance facilities, rather than lease the facilities of the Big Three, and thus provide strong competitors in long distance. In this event, a merger of two of the Big Three

would be less problematic.

A second type of merger would be among one or more of the remaining RBOCs, which would bring the nation closer to putting the old AT&T Humpty Dumpty together again. The antitrust authorities face a difficult challenge in mounting a successful legal challenge to RBOC marriages purely on the basis of the immediate effects of a merger on local access markets. In both local and retail long-distance services, the RBOCs have chosen not to compete with each other, and thus a merger would be treated, in part, as a conglomerate combination, which the courts have been very hesitant to stop.

But there is another basis for a potentially serious antitrust challenge. In interstate long-distance service, the RBOCs are resellers of wholesale capacity from the facilities-based long-distance carriers. An RBOC merger would create monopsony power (market power limited to a single buyer) for the merged entity in leasing capacity in wholesale long-distance markets, and this might be reason enough to halt such a combination.

A third category of telecommunications merger would entail an RBOC buying a major long-distance provider. In fact, just such a merger—between SBC and AT&T—reportedly was in the works in the late 1990s, when then-FCC Chairman Reed Hundt pronounced it “unthinkable.” When Hundt issued this opinion, the FCC had not given any RBOC the legal authority to offer long-distance service, and thus an RBOC purchase of a long-

distance provider would have been considered a “conglomerate” merger that was unlikely to be challenged by the antitrust authorities. But presumably Hundt thought such a marriage was unacceptable because it would not be in the “public interest.”

Now that RBOCs are allowed to offer long-distance service in virtually every state, an RBOC takeover of one of the larger long-distance companies today would be more problematic on antitrust grounds alone. In part, it would be treated as a horizontal combination since RBOCs are now in the long-distance business, and within an RBOC’s region, a merger between an RBOC and one of the Big Three could significantly reduce competition in that market. In addition, because RBOCs still have dominant market positions in their service territories, they have an incentive to favor their affiliates in many ways, such as quality of connections and speed of repairs.

In theory, this form of discriminatory behavior can be stopped by “equal access” conditions that can be (and frequently are) attached to mergers where this is a problem. But if past is prologue, policing equal access requirements is, at best, an intensely regulated activity that is unlikely to be very effective. Consequently, until local access competition becomes more widespread, we believe that antitrust and regulatory authorities should be very skeptical about a proposed RBOC marriage with a long-distance provider.

A final type of merger would involve consolidation among the six leading

wireless carriers. We see no good reason to follow this path. The financial analysts who advocate wireless mergers do so because they want to reduce competition in order to make the remaining firms more profitable, and thereby to cause their stock prices to increase. From the standpoint of economic efficiency and consumer welfare, this argument is not a valid basis for further concentrating an already reasonably concentrated industry. To the extent that wireless carriers have been poor financial performers, the cause is overbidding for their operating licenses in the FCC’s auctions for spectrum assignments. These firms have no trouble recovering their operating costs, and so are not in danger of disappearing. Moreover, to subsidize carriers for overbidding in a spectrum auction would destroy the integrity of future spectrum auctions, thereby undermining one of the best policy innovations that the FCC has ever adopted.

#### **UNE pricing and interconnection:**

The most important unresolved policy problem is that the pricing rules for UNEs and interconnection of competing networks remain incompletely developed. The reason is litigation—every FCC decision to implement the 1996 law has been contested to the hilt. Obviously, firms are not going to go all out to develop new competitive telecommunications services if they do not know what the regulatory rules are going to be. Although the FCC finally, seven years after the law was passed, obtained Supreme Court approval of its incremental pricing approach to UNEs, the details remain contested and unsettled.



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Future reformers should derive an important lesson from the UNE experience. In the U.S. legal environment, substantial pro-competitive reforms that require regulatory supervision of pricing in a competitive or potentially competitive market are very difficult to implement, and probably should be avoided. For the valid reason of protecting investors against indirect expropriation of their property through regulation, the U.S. legal system gives firms many opportunities to demand independent judicial review of regulatory decisions. These reviews inevitably cause delays in implementing highly contentious regulations that allocate market advantage among major players. As a result, in an industry like telecommunications, where technology and the composition of demand are rapidly changing in unpredictable ways, effective regulatory rules simply cannot be adopted and implemented as fast as market developments require. Thus, while the UNE concept was theoretically brilliant, it has proved impossible to implement and so has been a practical failure.

Our reading of the failure of UNEs to generate very much competition in wire line access after eight years of trying is that the UNE policy will never work as a permanent feature of the telecommunications system. Because UNE price regulation is so complex and contentious, a permanent commitment to UNEs will lead to enduring distortions in the provision of local service.

Thus, we propose putting a time limit—perhaps three years—on the ability of competitors to obtain UNEs. But the

clock for this limit would only start running from the date that an incumbent agrees to the FCC’s system for defining and pricing UNEs, and stops fighting it in court. Once the limit is in place, it should concentrate the minds of local access resellers on building their own facilities, which would provide much greater competition to the RBOCs than simple resale.

**Interconnection charges:** Another major policy problem is the persistence of usage-based origination and termination charges for long-distance carriers. In the first six months of 2003, AT&T’s 10-Q report shows that it paid \$5.4 billion in access and other connection charges out of its \$17.8 billion in revenues. That amounted to 30 percent of costs, and larger than the \$4.0 billion that AT&T spent in actually producing its services and products. These charges are ludicrously high. The cost of the local connections at each end of a call cannot possibly be more than the costs of transporting the call across the nation and then billing for it. These charges distort the decision between toll calls and other means of electronic communication.

In fact, there are over one hundred different configurations of origination and termination charges (depending on whether the calls originate or terminate with a long-distance provider, a local landline incumbent, a competitive entrant in local wire access, or a wireless provider). A key distinction in the charging system is that while some kind of interconnection charges are levied if a call originates or terminates with a wire line provider, there are no such charges on calls routed both ways through

wireless carriers. These distinctions are not just inequitable; they also are horrendously inefficient.

It is time to remove these distinctions among types of providers. The best solution is to implement the “bill and keep” system for all companies, which means eliminating interconnection charges between carriers altogether. This would also eliminate the transaction costs of regulating, collecting, and disbursing these charges. Second best is a uniform charge for all interconnections, regardless of the identities of the carriers. Either would be a vast improvement over the present system.

**Universal service fees:** Advancing “universal service” has long been a goal of telecommunications policy, for reasons of both efficiency (if more users are hooked-up to the network, service is more valuable for everyone) and equity (some users are located in low-density areas where it may cost more to provide service). Toward this end, state regulators historically have jiggered telephone rates so that urban users subsidize rural users, and business users subsidize residential users—a scheme that is now unraveling due to advance of competition (which is making it impossible to sustain the higher, subsidizing rates).

The 1996 telecommunications law expanded the scope and size of the “Universal Service Fund” (USF) that pays telecommunications charges to low-income households, customers in high-cost areas, schools, libraries, hospitals and other public facilities. The fund is supported so far by a percentage surcharge—now 9.5

percent—on interstate calls.

The USF as currently designed is highly inefficient. Economists definitively have shown that USF subsidies are poorly targeted. Relatively little of the fund is spent on low-income households or even communities with a large number of poor residents, and much of the subsidy goes to high-income communities with low population density, such as wealthy suburbs with large minimum lot sizes or ski resorts. Indeed, much of the subsidy goes to the same people from whom the tax is collected. Yet despite its gross inefficiency, the USF is politically popular because it has an array of constituencies that receive a net subsidy.

If the USF is too popular to be killed, the question is how to reduce its inefficiency. In its present form, the fund has two major problems: expenses continue to grow, while interstate calling revenues shrink (because of plummeting prices and declining numbers of calls due to the substitution of Internet services for phone services). The interstate revenue base has been falling even though some portion of wireless revenues—a minimum of 28 percent—is included in the assessable base. The mismatch between revenues and expenditures will only worsen as the price of long-distance calling continues to fall towards zero and as more consumers switch to e-mail, instant messages, and voice-over-internet calls. The inevitable result of these two trends is that if the fund is to continue in its present form, the percentage surcharge must rise well into double digits—and that is both an economic and a political problem.

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One solution is to shrink the scope of the program, which would lead to a politically charged, though entertaining, game of musical chairs among the various groups that are now receiving subsidies. If shrinkage proves politically intractable, a second option is to expand the assessable revenue base by applying the same surcharge to all telecommunications services, including local and long-distance calls and Internet access. This approach allows a large reduction in the percentage surcharge and makes the USF tax less distorting.

We favor a third option: make the surcharge a fixed dollar tax on each phone number, whether wireless or landline. This approach minimizes the distorting effect of the USF on prices and utilization of services and also makes the tax more transparent. Hopefully greater transparency will increase the political feasibility of

shrinking the program and making it more targeted to the relatively small number of customers who can not afford service.

CONCLUSION

If there is one certainty in these uncertain times for telecommunications, it is that this sector will continue to experience difficult change. Disruptive change is a necessary consequence of rapid technological innovation and the removal of decades-long regulatory restrictions. In the process, we safely predict that even more telecommunications providers will face financial turmoil, and some even bankruptcy. But the assets of these firms will continue to be deployed to provide telecommunications services. Consumers will benefit from this turmoil, although how much will depend on the policy choices that are made in the five realms discussed here.



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