

A Lerner Index Analysis of AT&T's Performance in the Wireline Long Distance Markets After Divestiture

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Having been present at the creation of “divestiture”, as the next witness for the defense scheduled to be called before the court the day after the surprise settlement, and therefore never heard, I had a seat at the table to listen to what was to be forthcoming. It was evident to me that AT&T management expected to become the dominant long distance (LD) wireline service provider in nationwide business and residential markets, free of price controls at the Federal Communications Commission. The Antitrust Division never said that LD divestiture from the local exchange companies was expected to result in effective LD competition. Instead, the divestiture process plus open entry in LD markets was meant to create as many LD carriers operating as far away from regulation as possible in numerous duplicative carrier networks¹. But the Antitrust Division made no connection made between numbers of networks and competition among long distance service suppliers..

The antitrust court, Judge Greene's district court, had plans to manage the process of creating duplicative national networks. The local exchange companies were forced to build out their interconnection nodes to provide parity for all old and new LD carriers in picking up and delivering calls. In the transition period before parity was achieved, beginning in 1984, the regulated charges for interconnection favored the other carriers, and these new carriers then expanded relative to AT&T. AT&T lost a third of its 90% plus share of call revenues, in both residence and business service national markets. Accounting for revenue shares of AT&T, and the entrants MCI and SPRINT, with then comparable national service offerings, the Herfindahl Index fell from close to 0.9, indicative of a market structure in which there were 1.1 firms, to 0.5, similar to that for two equally sized firms by the end of the first dozen years of the court remedy process. The prices in AT&T's tariff were still subject to caps set by the Federal Communications Commission, because AT&T was still defined as a “dominant firm” by the Federal Communications Commission while MCI and Sprint were not. While the caps were seldom limiting, the FCC process allowed the three carriers to set the same prices by AT&T submitting its tariff to the FCC and the other two following.

The Judge Greene Court in effect was implementing the regulatory reform programs of the Ford and Carter Administrations in the other network industries. These (a) separated ownership of the product at the entry node from transport services from that node to the exit node (b) regulated prices for link and node utilization where there were open entry “bottlenecks”. By legislation or agency rule making the gas networks or power grids were restructured into newly defined, open entry regional markets subject to price caps at key nodes. These partial deregulatory policies proceeded through the mid 1980's to the late 1990's changing only to add auction markets in place of some price controls. The Greene Court's antitrust policy in the AT&T divestiture went in that direction.

The AT&T revenue share from wireline services declined by two to five percent per year from 1984 to 1991, then stabilized at 65% which held plus or minus a percent until 1997. To lose a third of total revenue share in any of these network industries, presaged a decline in price relative to the costs of service. In fact, both residential and business charges declined, but so did the (regulated) interexchange switching charges that constituted the largest share of long distance costs. Wireline long distance prices for services throughout the country went down, but not by as much as did marginal costs for these services in this fifteen year period. Price net of marginal cost, as a % of price, -- the Lerner Index -- increased on standard plan services to in excess of 60%. Even on discount plans, contracts for service to which large numbers of residential subscribers were switching, these margins increased from 65% to 68%².

The AT&T share of wireline revenues which was close two-thirds ceased declining in the 1990's, while shares of the two other firmly established carriers with national networks, MCI and Sprint, ceased increasing. Demand functions were negatively sloped for the two main residential services, standard and discount, with elasticities less than one. The high and increasing price-cost (Lerner) margins were not indicative of competitive pricing; they were too high, and were increasing after market shares stabilized. Demands for business services were highly interactive, with change in prices and service packages customized to lure large corporate clients; these patterns of interactive prices and fast changing service packages did not fit those of a competitive pricing system either.

If not competitive, then what? The market structure was characterized by one large carrier and two others each able to provide full service of limited scale essentially that of an oligopoly. There were not enough different sources of comparable service, only "two" according to the Herfindahl Index, to force price levels down to the near zero competitive Lerner margin. There were limited price differences, mostly associated with discount packages, for AT&T and MCI, but SPRINT copied the prices in AT&T's tariff. Then the "what" question is what kind of oligopoly. With tariffs at the FCC putting in place one shot price schedules that held for most of a year, the "kind" or classification of oligopoly was Cournot, which implied that an HHI equivalent two firms would result in a Lerner Index half of that with an LD monopoly.

Consider that these pricing margins were in fact the result of a concerted strategy on the part of AT&T. Then the AT&T Lerner Index would be the product of market share multiplied by the "strategic factor" divided by the market demand elasticity. That "factor", the coefficient of conjectured variation "V", determined that repetitive responses of the two smaller network service providers would either complement ($V=+1$) or substitute ($V=-1$) for service initiatives of AT&T. Complementary responses, to every change in AT&T's service offerings, produced "defined" collusive margins. Substituting responses, in which the two followers increased service when AT&T reduced service, render the Lerner margin convergent to zero, the replication of "competitive pricing."³

The changes in Lerner margins from the mid 1980's to 1997 were neither large positive or negative. The second and third carriers did not follow in lock step to undercut

AT&T, nor to provide the expansive support necessary to allow AT&T to set tariff prices at monopoly levels. From year to year the AT&T conjectural variation “V” ranged from zero to negative 0.3, values associated with setting out a strategy to disregard the responses of the other two providers. But the large service provider was not able over this long time period to totally ignore the others. The Lerner margin even though increasing was too low, by twenty percent, and the elasticity of demand was not sufficiently large (negative), to validate a strategy of collusion.

In 1996, with passage of a new Telecomm Act, the framework in which AT&T set its strategic pricing changed. The last vestiges of tariffs, for the three carriers, disappeared, rendering it difficult for the largest carrier to take the lead in the continued pattern of reductions too small to pass on cost reductions. The merchandising practices of the companies to stabilize share turned to simplification of pricing with announcements of “cents per minute” packages containing numerous featured services. The mechanics for knowing what all three major providers were doing, sufficient to practice Cournot, were still there.

But there were other determinants of price formation moving against stable to increasing price cost margins. The rapid expansion of cell phone service, not only by the three carriers but also by at least three independent service providers, provided the option for both commercial and residential customers to shift out of wireline services at prices lower or comparable to those of discount service packages. The price elasticity of wireline service demands was increasing from in the range of -0.7 to at least half again, more than -1.1, in the few field tests made in that period. Greater price sensitivity, and difficulty in preventing shifting to other wireless carrier service providers, put pressure on the Cournot strategy.

Even so, significant pressure was exerted by the FCC implementing the Telecomm Act for the three wireline carriers to increase Lerner margins extensively. The new funds necessary to provide universal service to be collected from LD service subscribers called for increasing price-cost margins to “pass through” a universal funds tax. With Cournot pricing these carriers however had to absorb some % of the tax and would be left in too weak a profit position to sustain services, never mind expand the long called for broadband access, or so they argued.

This argument of the carriers on “pass through” was correct. A continuation of Cournot would require a two to four percent reduction in Lerner margins to collect a 10% universal service tax. Only a more collusive pricing arrangement would result in the larger cash flow necessary to cover a 10% surcharge.

In this post Telecomm Act period, from 1997 to 2004, AT&T’s Lerner margins increased from 60% to the low 90% range for standard residential service, (a rapidly declining class of service). Its Lerner margins on discount plan services increased also on average, (on this increasing class of service.) The Lerner Index estimates were in excess of those consistent with Cournot plus pass through of the USF charges levied by the FCC. The opportunity provided by USF recovery plans fostered by the Commission

to jointly increase prices more collusively was there. That all three carriers succeeded in more than full recovery from increased Lerner margins was indicated by an April 2003 FCC order limiting recovery surcharges only to the required contribution.

Did AT&T, in this last stage of its existence, conspire with the FCC to set LD joint monopoly prices? Its Lerner Index values clearly resulted from a new collective strategy (i.e. a value of $V > 0$). In most years the estimate of conjectural variation increased to greater than 1.0 indicative of a strategy to jointly set the monopoly price level. Given a market share of 0.40 and the Lerner Index at 0.88, the conjectural variation coefficient had to exceed 1.5.⁴ In line with the 1997-2004 data the average “V” equaled 1.2 for standard plan wireline and 0.90 for discount plans in place. In standard plan service, while that service was in decline, AT&T had prices up to monopoly levels, while in discount plans, where price-sensitive customers migrated to wireless in large numbers, prices were not quite at monopoly levels.

In a speech to the “people” of AT&T on November 18, 2005 the CEO put the current condition succinctly “the old business we had worked fine with much higher price levels” leaving out the words “standard plan” but noting that with the shift out of old business to discount plans and wireless “we have serious trouble given the direction prices (are) headed”. He put it another way that was even more illuminating “our customers needed what we provided them, but competitive price levels made it impossible for us to make a profit with the cost structure.” What the customers “needed” were “new service offerings to create new revenue streams.”⁵ Broadband waited to be funded, and monopoly level prices inclusive of a USF tax would provide those funds.

In the twenty years from 1984 to 2004 the court-initiated implementation process was intended first to structurally separate local acquisition of calls from long distance delivery, and second to add to the number of networks independent of AT&T. Whether this was ever expected to result in competitive market performance is unknown to me. By 2004 specialized common carriers and wireless service providers had achieved the structural part but with either Cournot oligopoly prices or with the FCC “inspired” joint monopoly pricing. At that point in time an industry wide reversal of this structural change took place, sending AT&T back into the southwest and south local Bell operating companies, attached to the second leading wireless company. That series of mergers reversed direction against the structural goals of the 1984 Antitrust Court and Justice Department whatever those goals had been.

This has to have brought the case for a divestiture antitrust remedy inquiry to an end. At least in this industry and perhaps in others, the structured fragmentation goal has been shelved. There are at least three reasons (1) resort by the court in complex antitrust proceedings to settlement between the parties does not remake market structures consistent with the competitive model (2) that in fact can’t be done -- conditions of scale and scope inherent in networks work against structural remedies seeking to set a dozen service providers in place, and (3) the resort to bottleneck price controls provides compelling incentive for introducing bundling of services that make it impossible to use price to monitor performance.

Given that, after numerous papers and books on oligopoly and regulation in this industry this is my last inquiry into the failure of antitrust and regulation in telecommunications. I cannot work without being able to define markets, and prices, to unravel industry performance, and they are now gone. One can no longer tell what the oligopoly is doing.

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¹ See Paul W. MacAvoy and Kenneth Robinson, "Winning by Losing: The AT&T Settlement and Its Impact on Telecommunications", 1 Yale Journal on Regulation 1983

² See MacAvoy "The Failure of Antitrust and Regulation to Establish Competition in Long Distance Telephone Services" (MIT Press, 1966, page 131). Cf also, Paul W. MacAvoy "The Unsustainable Costs of Partial Deregulation" (Yale University Press, 2007) available on the Social Science Research Network as <http://ssrn.com/abstract=1090826>

³ With the conventional profit maximizing model, for firm i , in which product levels q_i and q_j are interactive, then first order conditions for Lerner "L" or price-cost margin for firm "i" $(p_i - c_i)/p_i = [(q_i/Q)(I + V_i)]/e$.

⁴ With the Lerner Index of 0.88 in residential service markets, demand elasticity of 1.1 and market share of firm i AT&T equal to $q_i/Q = 0.40$ then $0.88 = 0.40(I + V)/1.1$ and the estimated value of $V = 1.2$. The monopoly value of V equals the solution of $S_i(I + V) = 1$ which here is 1.5.

⁵ Speech circulated in AT&T, November 18, 2005.