

Entry Prices in Telecommunications Then and Now

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Abstract

I review the history of FCC attempts to come to grips with the nature of costs in the telephone network. I describe the regulatory history of AT&T's Telpak tariff in the 1960s, its ENFIA tariff in the 1970s, and the Telecommunications Act of 1996. I conclude that the language used by the FCC has changed, but the underlying analysis and confusion about policy toward common costs of different services has not. The same battles have been going on now for 30 years with many changes of language, but little advance in clarity or agreement.

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The Telecommunications Act of 1996 says that many prices need to be set according to costs. This appears to be a great advance over previous language that required only that prices be non-discriminatory, just and reasonable. I want to argue here that the advance is illusory. Regulatory battles over the meaning of costs show that they are no more concrete than the prior standard. The same battles have been going on now for 30 years with many changes of language, but little advance in clarity or agreement.

Current debates and political struggles over the price of entry into local service echo the debates of 20 and 30 years ago over the price of entry into private-line and switched interexchange services. The question was posed then as now in terms of costs. But the costs of what? This paper compares the debates about entry into private-line and switched interexchange service in the 1960s and 1970s with current debates about entry into local service. Debates in the 1960s and 1970s revolved around FDC and LRIC. Debates in the 1990s at the state level and in the implementation of the Telecommunications Act of 1996 revolve around ECPR, TSLRIC and TELRIC. Despite the change in nomenclature, the concepts and arguments are the same.

The FCC has been constant in these 30 years in its efforts to promote competition. But its position on pricing standards has changed. This paper tries to identify what has changed and what has not in this ongoing debate. I argue that the issues in question have remained the same--and unresolved--for over 30 years. The Commission's economic analysis has not increased in sophistication over these three decades. I will argue this position by analyzing the debates over Telpak in the 1960s, ENFIA in the 1970s, and the

Telecommunications Act of 1996 now. I focus particularly on the first of these both because it illustrates the terms of debate clearly and because it reveals that today's issues were current 30 years ago.

I

The story begins almost 40 years ago when the FCC decided that radio frequencies above 890 megahertz (microwaves) should be made available for private point-to-point communication.¹ Motorola, the primary supplier of microwave equipment, estimated that after ten years of private microwave systems, AT&T's revenues would fall by under 3%. This was regarded as a trivial loss to the great Bell System by both Motorola and the FCC.²

But while this loss may have appeared trivial to people observing AT&T from the outside, it hardly seemed insignificant within the telephone company. AT&T established a planning group to consider the implications of the FCC's *Above 890* decision and propose a response to it. AT&T's internal planning group recommended a dramatic reduction in AT&T's rates for private-line service to meet the competition from private microwave systems. AT&T's "offering was intended to be a mirror image of the economic characteristics of private microwave."³ It consequently was based on the cost structure of AT&T's competitors, not those of AT&T itself.

AT&T's proposed Telpak tariff allowed buyers to choose from a limited number of offered capacities and pay a fixed rate per mile for the capacity, regardless of use. Option A consisted of 12 voice-grade channels; Option B, 24; C, 60; D, 240. There also were terminal charges for active channels according to the way and the extent to which the channels were being used. The suggested rates from AT&T approximated the costs that a

firm would face if it built its own system. Options A and B reduced prices by about half; Option C, by three quarters; D, by seven eighths.⁴

The regulatory standard of non-discriminatory, just and reasonable prices has been interpreted over the years as precluding volume discounts. Value-of-service pricing allowed prices to vary by class of service, but not by the size of customers. No account was taken of the economies of serving large customers; the ideal of treating all customers alike was more powerful than the ideal of varying prices with costs. The Telpak tariff therefore was a sharp break from traditional regulatory pricing. AT&T wanted to vary prices by the costs of serving individual private-line customers, although it had no desire to make a wholesale switch from value-of-service pricing to prices that would reflect costs throughout the telephone network.

AT&T had opened a Pandora's Box by basing a particular price on costs. Given that AT&T's proposed rates did not reflect AT&T's physical facility, but rather the alternative physical facility that would have been employed if AT&T was not been supplying the service, the question of what costs to use would lead to enduring controversy. And if the expense of serving private-line customers was to determine the price of their services, why not use the expense of other services to set their prices? The Telpak controversy lasted for 15 years and revolved around the same issues that are now critical in the implementation of the Telecommunications Act of 1996.

AT&T, as threatened incumbent, was acting then as it does now as an aspiring entrant (into local service). It was then championing low prices in order to discourage entry of others; it now champions low prices to encourage its own entry. The difference, of course, is that it was on the selling side before; the buying side now. Telpak was not

the price charged for interconnection; it was the incumbent company's price for services competing with those of new entrants.

AT&T now supports the use of the Hatfield model in pricing access to the local loop.⁵ Like the calculations underlying the Telpak tariff, the Hatfield model is unrelated to any existing phone company's actual costs. It is a hypothetical cost structure, the cost of an alternate supply of telecommunications services if incumbent firms were not supplying them. This position is easier to maintain as an entrant than as an incumbent. It also is easier to use for a minor source of revenue like private lines than for a company's main business.

AT&T presented the Telpak tariff to the FCC staff in December, 1960. Motorola and Western Union, competitors whose business was being threatened, attacked the Telpak rates as discriminatory, not compensatory--that is, not high enough to cover the Bell System's costs--and designed to destroy competition. These were serious charges; the Communications Act specified that "any unjust or unreasonable discrimination in charges" was unlawful.⁶ The Commission, attempting to structure the arguments for and against Telpak, defined three possible ways in which Telpak would be lawful. First, Telpak would not be discriminatory if the Telpak service was functionally different from other private line service. Second, Telpak would be not unreasonably discriminatory if it functionally the same as other services, but the rate differences arose from different costs. Third, Telpak service would be sufficiently dissimilar from other private-line service to justify different rates even if the costs were the same, if non-Telpak customers would benefit from the tariff through retention of otherwise lost income, that is, the surplus of revenues over costs.⁷

AT&T, replying to the FCC's explicit criteria, asserted that Telpak service was indeed different and--even if it wasn't--AT&T's costs of furnishing it were different. The FCC rejected both claims. The question then boiled down to the third possibility, whether Telpak imposed a burden on the other users of the telephone network. A decade later, this would become known as "the burden test" associated with William Baumol, who was an economic consultant to AT&T after 1966. The FCC did not explicitly adopt this test in 1961, referring to it only as "the principal argument of AT&T," but it still used the burden test in evaluating whether or not Telpak was discriminatory.⁸ Since the income available to pay common costs or to provide income to stock holders was dependent on the costs of services, the FCC's criterion required the calculation of costs.

The burden test now goes by the name of the Efficient Component Pricing Rule (ECPR), also associated with Baumol.⁹ It is a more severe test than most economists would impose for a test of predatory pricing. For them, the question is whether the price exceeds the relevant costs, that is, whether the rates are compensatory. In the burden test and ECPR, if the service being repriced takes away business from other services furnished by the incumbent which earn a surplus of revenue over costs, then the gain from selling more of the repriced service must outweigh the loss from the other services. The burden test and ECPR both start from the revenue flows that are the focus of Rate-of-Return regulation. They give the rate payers a property right in the surpluses generated by the existing rate structure, formalizing an enduring characteristic of telephone and other utility prices.

Once the FCC ruled that criteria for the lawfulness of AT&T's Telpak rates depended on their relation to costs, the way in which costs were calculated moved to the

center of the regulatory stage. The traditional role of costs in the regulatory process had been to determine the overall rate of return of the telephone system and to separate interstate and intrastate assets. This separation was used to divide revenues and expenses between intrastate and interstate regulatory jurisdiction, generating payments from AT&T's Long Lines to the Bell Operating Companies. The costs were the total costs of the system as a whole or of the interstate and intrastate parts of it. And they were historical; they represented the costs of the existing plant as it had been accumulated over the years.¹⁰

AT&T anticipated an expansion of its private line services at Telpak rates. It therefore would be constructing new equipment to provide these services, a process in which it was continually engaged, but which would be accelerated by the new low rates. To decide whether Telpak was compensatory, AT&T calculated the costs of supplying these services. The company argued that Telpak revenue should be compared with the cost of the new equipment that would be used to provide the new services, reasoning that "so long as the Telpak rates covered the costs of that additional plant, the business we in turn obtained by offering the service would be profitable to the Bell System."¹¹ Phrased differently, rates calculated on this basis would pass the burden test. In modern terms, they also were forward looking.

Anticipating possible FCC objections to the use of current costs, AT&T furnished both these costs and "in plant" or historical costs, even though only current costs were used in the initial Telpak filing. AT&T's preferred costs, current or incremental costs, were derived from a study of the actual construction costs by the Bell System in 1958-1960, the years immediately prior to the investigation. The "in plant" costs were

calculated from the historical record as represented by the data and methodology used for the separation process. As in the separations process, all costs were distributed among the telecommunications services.

The FCC's response to all of the cost estimates it received was complex. It first applied the burden test. With the aid of several rough assumptions about demand elasticities and cost-price ratios, the FCC concluded that Telpak would generate less net revenue to AT&T than sales at individual private-line rates. In other words, the lower per-unit profit under Telpak would reduce profits more than the expansion of sales from these lower rates would increase them.¹² Telpak failed the burden test.

The FCC could have stopped there. If it believed the burden test was the appropriate regulatory standard, it should have ordered AT&T to revise the Telpak rates. But the Commission either did not like the burden test or was unwilling to rely on the assumptions used to implement it. It went on to apply the less stringent test proposed by Motorola and Western Union: was Telpak compensatory? This decision would lead the FCC into a new world of cross subsidization.

The Commission was faced with several different cost estimates. It had received two sets of costs from AT&T and another set from Motorola, representing the costs of independent microwave systems. The FCC used AT&T's "in plant" (historical) costs to estimate that the overall rate of return on Telpak was 6.5% as of October 1, 1961, a reasonable rate in light of AT&T's total allowed interstate rate of return of 7.4%. After some manipulation of these data, however, the FCC found that the returns varied for the different categories of Telpak. Telpak A realized 10%; B less; C, still less; and D actually had a 1% loss.¹³ Telpak D therefore didn't simply flunk the burden test; it was predatory

pricing. Because regulatory pricing did not allow quantity discounts, the FCC regarded these categories of Telpak as separate services.

The Commission, faced with a choice of cost standards, had opted for those used traditionally in rate-of-return regulation and the separations process. These costs fully distributed AT&T's costs among its many services. The FCC reached back into its regulatory tradition and ignored AT&T's argument that the tradition was becoming irrelevant. The FCC, consistent with its initial estimate that only a tiny portion of the Bell System's network was at risk, argued implicitly through its choice of an average cost standard that AT&T should be considered as a protected monopoly. The telephone company, by contrast, argued that it was already a competitive firm. Both positions were overstated.

The FCC compared Telpak A and B to Motorola's estimates of private microwave costs for the appropriate number of channels. It concluded that private microwave systems could not compete with AT&T's normal private-line service for these relatively small capacities. It therefore ruled that Telpak A and B were not justified by competitive necessity.¹⁴ By itself, this was not unwelcome to AT&T since the demand for the smaller options had fallen short of expectations. But it left Telpak C and D, neither of which earned a rate of return even close to AT&T's total rate of return by the FCC's preferred accounting and one of which actually was making losses. As the FCC saw it, there could be no clearer case; Telpak was unlawful in the terms of the Communications Act, and the FCC ordered AT&T in 1964 to file new rates.¹⁵

Telpak users, as well as AT&T, appealed the decision. Their effort signaled the arrival of a new political force: Telpak users who resisted the Commission's efforts to raise

AT&T's private-line rates. The burden test would have empowered users of ordinary telephone services. No such calculation was needed for Telpak customers. They quickly had acquired a property right in these low rates

The FCC gave AT&T until the following September to eliminate Telpak A and B. It deferred action on Telpak C and D, asking AT&T to submit new cost data justifying the two larger options. AT&T appealed to the U.S. Court of Appeals. The Court reaffirmed the FCC decision in 1966, but the FCC deadline was put off until August 1, 1967.¹⁶ The original Telpak rates therefore were in force for six years despite the FCC's finding that Telpak A and B were not justified on one basis, and that Telpak C and D were unjustified on another. (Telpak C and D rates did not change even in 1967.) The delay allowed AT&T to continue offering service at rates designed to limit competitive inroads into its private line business..

While Telpak was in the courts, AT&T's disaggregated cost data were discussed in the context of "The Seven Way Cost Study." The FCC requested AT&T to allocate revenues and *book cost* among a variety of services in 1963 as part of the Commission's investigation of domestic telegraph tariffs. The FCC was concerned in this inquiry to protect Western Union from unfair competition, but in light of the other questions before it at the time, the Commission broadened its study to all interstate services, divided into seven categories.

AT&T argued that book costs--which distributed costs to services by rules similar to those employed in the separations process--were inappropriate for the questions under consideration. Nevertheless, AT&T complied with the FCC's request: "As a matter of practical necessity the principles of the [separations] manual were used as the basis of the

seven-way split.”¹⁷ AT&T’s new cost study was based on the year ending August 31, 1964, and presented to the FCC in September, 1965. The FCC concluded that the overall rate of return for the seven categories of interstate services was 7.5%, but the earned rate of return for Telpak was only 0.3%.¹⁸ AT&T, it seemed, was not making any profit on Telpak; it was furnishing this service to preempt the competition by discriminatory pricing.

AT&T also computed its own set of costs based on current costs. Telpak earned a 5.5% return in AT&T’s calculation, near the company’s overall interstate return of 7.5%. It was lower than the average return because demand was skewed more toward the larger size categories of Telpak than had been anticipated in 1961. If the demand had developed in the proportions forecast in 1961, Telpak’s earnings on a current cost basis-would have been 9.5%.¹⁹ To AT&T, the variation between realized Telpak profit and average interstate profits was well within a normal error. To the FCC, it was out of the ballpark.

The FCC’s version of AT&T’s rate of return on Telpak--0.3%--would haunt the telephone company for years to come. It appeared to be such a clear signal of the company’s predatory practices that it was cited often.²⁰ AT&T’s demurs about the Commission’s methodology fell on deaf ears, and its preferred calculations went unnoticed. The company had given the Commission the ammunition with which to shoot at it, and the Commission had been unable to resist.

It was clear that the rates for Telpak C and D would have to be raised substantially when parts A and B were canceled in order to keep the rates compensatory, even though the FCC and AT&T had not agreed on a costing methodology. AT&T was willing to raise Telpak rates by 1967. The competitive threat from Motorola and its customers had been deflected temporarily, and rising costs made entry unprofitable even with higher

Telpak rates. AT&T decided to propose the Telpak rate increase early in 1967, but to defer filing the increase in order to give the customers time to react. The issue by then was not AT&T's desires, but the ability of Telpak users to prevent their rates from going up. The new rates were filed in 1968 and again in 1969 and became effective, after several legal delays and suspensions, on February 1, 1970.²¹

Opposition showed that the property rights of customers were real--whether the users were the consumers of AT&T's traditional services or of its new and innovative ones. Property rights also came into being very quickly. But the property rights of users in specific rates were limited. They were able to delay the rise in Telpak rates for two or three years, not to stop them.

As Telpak rates finally were being raised, Alfred Kahn published his classic, *The Economics of Regulation*. Kahn forcefully advocated the use of marginal or incremental costs in his book, but he was far more careful and cautious than AT&T. He confronted the problem of common costs in a Marshallian analysis. He concluded that, "the economically efficient solution does involve equating the price of each joint product to its marginal *opportunity* cost."²²

In other words, the price of each product has to equal the marginal cost of supplying an additional unit of that product, given the existing production of the other products with joint or common costs. If a product is in low demand, so that some of the jointly produced product is being discarded, then the price for that product is simply the marginal cost of retrieving that which was to be discarded. (This was AT&T's position for Telpak.) But if a product is in high demand, so that an increase in demand for it would require additional production of all the joint products, then consumers of this product

must pay the entire joint cost. At the margin, the common cost is incurred for its benefit alone; the other jointly-produced products are discarded. The marginal opportunity cost includes the common cost.

Marginal opportunity costs therefore can vary from including none of the joint costs to including all of them. It depends on demand. Happily, Kahn's analysis did not generate a knife-edge solution of all or nothing. In many cases, the demands of all jointly produced products are such that they are all demanded (at positive prices) in the relevant range of output. Then the marginal opportunity cost is shared among the products. In economics jargon, the vertical sum of the demand curves for each product equals the marginal cost curve of production--including the joint costs and any other additional costs for individual products--at a point indicating equal consumption of all products at each product's price. Each product's price also equals the marginal opportunity cost at this point. The marginal opportunity cost depends on the location of the demand curve, on the intensity of demand.²³

Kahn's rule therefore implies that demand considerations affect the applicable cost of any service. The traditional distinction between demand and supply so beloved of economists is not useful here. Employing incremental costs without consideration of joint costs will not cover common costs. And the efficient prices that cover these costs cannot be derived from costs alone; no fully distributed costs of the sort discussed in the Telpak debates will generate the marginal opportunity cost. This opportunity cost can only be derived from an examination of both costs and demands of all jointly-produced products or services.

The next few years saw a variety of further cost discussions between Baumol, AT&T representatives, and the FCC staff. No reference was made to Kahn's analysis, just as Telpak was not mentioned in Kahn's book. The regulatory discussions took place in a continuing series of informal meetings in which AT&T's and the FCC's economics experts explored their differences, punctuated by various formal proceedings. Throughout these discussions, AT&T's expert, Baumol, argued for the use of Long Run Incremental Costs (LRIC), as he preferred to label current costs, in the presence of competition. The FCC's expert, William Melody, countered that Long Run Incremental Costs were arbitrary. Since Fully Distributed Costs (FDC) had been accepted and agreed to by both a variety of regulatory jurisdictions and AT&T for the purpose of dividing revenues and costs for separation purposes, they should be used also for rate-making purposes.²⁴ The discussions clarified the difference between these two points of view, but generated no agreement.

The FCC followed the recommendations of its Common Carrier Bureau Chief, Bernard Strassburg, and terminated its Telpak investigations "without opinion on the merits" in 1970. It incorporated the record it had accumulated into a new investigation that Strassburg later regarded as "a waste of time and effort."²⁵ The FCC did not decide whether to use LRIC or FDC in evaluating rates until 1976, although it did not gather any new information after the hearings pitting Baumol and Melody against each other.

Hearings on costs were held in 1971 that anticipated the arguments these economists would make a decade later in the U.S. antitrust suit against AT&T. Baumol formalized the burden test first mentioned a decade previously and argued strenuously for the use of LRIC. He also reiterated a position articulated by James Bonbright five years earlier that LRIC could not be used for all services when there were large common fixed

costs.²⁶ He therefore was in the position of advocating LRIC for some purposes while agreeing to use Fully Distributed (historical) Costs for other purposes. In particular, Baumol approved the use of FDC for determining the rates of monopoly services that would provide the revenue anticipated under Rate-of-Return regulation. He was taken to task for this apparent inconsistency in his views five years later when the FCC finally expressed its opinion on the matter of cost methodology.²⁷

Entrants advocating the use of incremental costs do not have to worry about the incumbent's common costs. AT&T did not have that luxury in the 1970s as it tried to lower its service prices to deter entry. It has that luxury now as it tries to get the RBOCs to lower interconnection prices to encourage entry. Given the level of the regulatory discussions, Kahn's analysis may have been too complex to be used. It nevertheless provides a way to avoid the arbitrary assignment of joint costs to products, and it is simple compared to current economic analysis.

The FCC's delay was caused by internal debate. Strassburg had on his desk at the time of his retirement in 1973 a draft decision supporting the use of LRIC.²⁸ The FCC was not as steadfast in its commitment to average costs as its published opinions in the 1960s and 1970s suggest. The staff of the Common Carrier Bureau had recognized after a decade of debate that the introduction of competition altered the context in which AT&T operated and called for new cost allocation methods. This view, however, was not that of the new Chief of the Common Carrier Bureau, Walter Hinchman, who did not send Strassburg's draft up to the Commission. He called for a new draft reaffirming the applicability of average costs, and the FCC formally adopted FDC as its cost standard in

1976, fifteen years after the introduction of Telpak created a need for a disaggregated cost standard.²⁹

II

At almost the same time that the Telpak debate wound down to its anticlimactic end, MCI moved its offerings and the debate from private lines to switched service; it began to offer its Execunet service. The FCC agreed with AT&T that its earlier decisions allowing private-line competition did not extend to MCI's Execunet service. But the court ruled that the FCC had failed explicitly to restrict MCI to private-line services. In the absence of a specific exclusion, the court did not see any regulatory barrier to MCI's new service.³⁰

This decision raised the question what rates AT&T would charge MCI for the interconnection needed to operate Execunet service. If MCI was allowed to subscribe to local service at ordinary business rates, it would be doubly favored in its competition with the Bell System. It would receive the local service for rates subsidized by AT&T's long-distance service through the separations process. In addition, it would not be obligated to set prices on its long-distance service to earn a return on part of the local plant, as message toll service by the Bell System was required to do. Using the same equipment as AT&T, MCI's capital costs would be over one-third lower.³¹

AT&T was not about to let this happen without a struggle. In Telpak, AT&T had charged a low price to retard entry. But now AT&T wanted to charge a high price to retard entry. The different position reflected different circumstances. The controversy over Telpak involved the part of the Bell System that handled interexchange service. This corresponds to AT&T today. The controversy over MCI's Execunet service involved the

part of the Bell System that provided local service. This corresponds to the Regional Bell Operating Companies (RBOCs) today. AT&T acted consistently in seeking to limit entry, but inconsistently in terms of pricing rules. Because it operated an integrated network, it had to adapt its rule to the part of the network under attack. It championed LRIC in the 1960s; FDC in the 1970s.

Recalling the reasoning that led to the separations process, AT&T argued that long-distance service offered by MCI, no less than long-distance service by AT&T, had to pay part of the cost of the local network. The Bell System filed its Exchange Network Facilities for Interstate Access (ENFIA) tariff with the FCC in May 1978. The tariff imposed charges on specialized common carriers like MCI equal to the charges for local interconnection assigned to AT&T's long-distance service by the separations process. It was an early example of what is now called imputation. It also was an application of FDC, newly approved in another context--Telpak--by the FCC.

From the point of view of pricing standards, AT&T and the potential entrants had switched sides. In the debate over private lines, AT&T had championed incremental costs or LRIC while entrants had supported average costs or FDC. Now AT&T wanted to charge FDC to potential entrants. MCI wanted to pay existing consumer prices, without arguing that they were incremental prices or that they fit any other normative standard. The difference between this conflict and Telpak is in the entrants' relation to AT&T's network. In Telpak, entrants were competing with the network; in ENFIA, they were interconnecting. Telpak was the price charged by AT&T to customers choosing between entrants and the Bell System. ENFIA was the price charged by AT&T to its competitors.

Not only did interconnection allow this change of pricing rules, the magnitude of AT&T's message toll service (MTS) demanded it. Private lines were a small part of the Bell System's business. Long-distance service was its bread and butter. AT&T could charge LRIC for many services, but not for all, as noted above, because it needed to cover its common cost. AT&T could forego the contribution to common costs from private lines because they were small. But it could not forego the contribution from MTS. AT&T therefore was consistent in terms of its higher logic, although it was championing different costing standards in separate proceedings.

The FCC was in an anomalous position. It had insisted that AT&T base its prices on FDC as a way of encouraging entry. But if AT&T could use FDC as advocated in its proposed ENFIA tariff, entry into MTS would be discouraged. The Commission was not forced to articulate a position about common costs, and it did not have to choose explicitly between competing objectives. The FCC switched sides on this issue without having to make an explicit statement. Only now has the FCC made its new position explicit.

Various pressures forced AT&T to negotiate with its putative competitors in 1978 about the price they would pay for interconnection. AT&T started from its proposed tariff and admitted that some discount might be warranted for the inferior service of the competitors. Customers using Execunet, for starters, had to dial many more digits than users of the Bell System's MTS. MCI and its colleagues acknowledged in turn that they should pay something toward the costs of local networks, but the two parties were still far apart. They eventually agreed that the new entrants would pay 35 percent of the charge paid by the Bell System's MTS for local interconnection until their combined revenues

exceeded \$110 million. The price would rise to 45 percent until the combined revenues reached \$250 million. They would be 55 percent thereafter. AT&T anticipated that the interconnection charge would continue to rise as the entrants' business increased, but this was not spelled out in the agreement.³²

ENFIA therefore was a compromise with the advantages and disadvantages of all compromises. From a theoretical point of view, ENFIA acknowledged the importance of joint costs and the obligations of interconnectors to contribute to them. Incremental costs were not the cost standard behind ENFIA; some kind of distributed cost was. But the nature of the distributed cost was not set in the compromise. The FCC had debated endless variants of FDC a decade earlier, and the negotiations that produced ENFIA did not advance the discussion. Because the new tariff was a compromise, the questions of how to determine the size of common costs and appropriate contributions to them were swept under the rug.

The principle underlying the compromise was clear, however. All interexchange (IX) carriers had to contribute something toward the joint costs of the local network. The questions of how much and whether all IX carriers should pay the same amount were not addressed in any general way, and theoretical clarity was not sought. But the compromise clearly rejected the LRIC standard. The FCC held to the FDC principle without confronting the problems of its implementation.

III

Everything changed with the MFJ and divestiture and again with the Telecommunications Act of 1996. But the cast of characters only has been reshuffled to make the same arguments to each other--rather like *Six Characters in Search of an*

Author. The positions today are expressed in new language, but the new terms are simply reruns of familiar concepts.

The Telecommunications Act said that the “just and reasonable rate for the interconnection of facilities and equipment...and...for network elements...(A) shall be (i) based on the cost (determined without reference to a rate-of-return or other rate-based proceeding) of providing the interconnection or network element...and (ii) nondiscriminatory, and (B) may include a reasonable profit.”³³ This provision clearly breaks with the old rate-of-return process, but substitutes a directive that harks back to the debates under the old standard. All the prices debated in connection with Telpak and ENFIA were based on costs. The question always was what was meant by costs. The 1996 Act was not specific about what alternate process should be used to calculate costs.

The FCC interpreted these directives in two stages. The Notice of Proposed Rule Making (NPRM) stated the Commission’s intent to use incremental costs in one of its many variants as its definition of costs. The FCC cited the authority of Alfred Kahn in this interpretation. Their reference carried a 1988 date, but the cited book is only a reprint of the 1970 book discussed above. Kahn was joined or echoed by other authors in the FCC’s footnote who must be regarded in this context as secondary sources.³⁴ By basing its current position on a book published in 1970, the FCC implicitly acknowledged that progress on these issues in the past 30 years has been virtually nil. More recent contributions to the academic literature emphasizing incentives and imperfect information were ignored.³⁵ In addition, no mention was made of Kahn’s marginal opportunity cost.

MCI and AT&T proposed to implement the Commission’s directive by means of the Hatfield Model. This model, as noted above, is not a description of the existing

telecommunications network, but rather a design for a theoretical network that would provide the same services. In this model, common costs appear seldom if at all. Like Telpak, the Hatfield Model is a “greenfield” model--or in the latest version a “scorched node” model--giving the hypothetical costs that a putative entrant would incur.³⁶ AT&T and MCI, as entrants into local service, can make this point more easily than AT&T could 30 years earlier as the incumbent supplier of private-line services. They do not need to explain the difference between their forward-looking costs and actual current costs because they do not currently have any costs of local operations. And they do not need to worry about recovering common costs because the costs in question are the RBOCs’, not theirs.

Baumol supported this position on behalf of AT&T as he did 30 years ago. The question of common costs was disposed of in a footnote claiming, “there are no significant common or shared costs among the groups of network elements.” Baumol and his co-authors argued in the text of their affidavit, however, that RBOCs can misallocate costs in anticompetitive manners.³⁷ It would be hard--though not impossible--to do so if there were not common costs to be allocated.

Even at this preliminary stage, the FCC rejected the use of ECPR in setting the cost-based prices called for in the Act. The Commission admitted that ECPR was based on costs, but asserted that its use would “not drive prices toward competitive levels.”³⁸ Rather inconsistently, however, the Commission also said, “We believe the costs of shared facilities should be recovered in a manner that efficiently apportions costs among users that share the facility.”³⁹ This is exactly what FDC, ECPR, and marginal opportunity costs try to do.

Baumol and his co-authors argued that the Hatfield use of TSLRIC is consistent with *appropriate* ECPR. The FCC was right to reject ECPR applied to current prices because current prices “depart systematically from pertinent costs.”⁴⁰ This claim muddies the water because the earlier statement of ECPR stated that the regulated firm must have an over-all profit constraint, not a constraint on individual prices. In addition, by invoking “pertinent costs,” the claim becomes circular. The whole discussion is directed to the question of which costs are pertinent. It has lasted 30 years without clarifying issues like this.

The RBOCs naturally opposed this initiative and branded the Hatfield Model nonsense. They took the position that AT&T took in the ENFIA negotiations, acting then as a supplier of local services, that entrants who interconnect with the telephone network need to contribute to the common costs of maintaining the existing network. They face the same suspicion and hostility at the FCC that the Bell System faced two decades ago. Without the clear evidence of the separations process, however, they now are hard-pressed to identify common costs.

After considering the comments from these various parties, the FCC then issued its rules. The Commission confirmed the suggestion in the NPRM that forward-looking LRIC was the appropriate basis on which to calculate costs.⁴¹ This was AT&T’s position in proposing the Telpak tariff in 1961. The company wanted to use incremental costs based on anticipated investments; the FCC at that time insisted on using historical data and some form of distributed-cost pricing. The FCC today agrees with AT&T’s position in 1961. No additional clarity or subtlety appears to have been introduced.

The FCC acknowledged in its rules that there might be common costs:

We conclude that forward-looking common costs shall be allocated among elements and services in a reasonable manner, consistent with the pro-competitive goals of the 1996 Act. One reasonable allocation method would be to allocate common costs using a fixed allocator, such as a percentage markup over the directly attributable forward-looking costs. We conclude that a second reasonable allocation method would allocate only a relatively small share of common costs to certain critical network elements, such as the local loop and collocation, that are most difficult for entrants to replicate promptly (i.e., bottleneck facilities). Allocation of common costs on this basis ensures that the prices of network elements that are least likely to be subject to competition are not artificially inflated by a large allocation of common costs. On the other hand, certain other allocation methods would not be reasonable. For example, we conclude that an allocation methodology that relies exclusively on allocating common costs in inverse proportion to the sensitivity of demand for various network elements and services may not be used. We conclude that such an allocation could unreasonably limit the extent of entry into local exchange markets by allocating more costs to, and thus raising the prices of, the most critical bottleneck inputs, the demand for which tends to be relatively inelastic. Such an allocation of these costs would undermine the pro-competitive objectives of the 1996 Act.⁴²

I have quoted this extended paragraph in full because it reveals the extent of FCC confusion. The Commission announced that it will be happy with two ways of dealing with common costs. The first is to “allocate common costs using a fixed allocator” like a fixed mark-up on incremental costs. This is a form of FDC, the FCC’s approved costing method in the 1960s and 1970s. It has no beneficial efficiency properties, and it will lead to the same kind of controversy I have described above. The second approved costing method is to allocate the common costs to services where competition is pending. Prices for competitive services would be high; for monopoly services, low. This is the opposite of the two-tier pricing scheme proposed by Baumol on behalf of AT&T in the 1970s. It was criticized then as arbitrary. It is arbitrary today as well. And it is hard to see how high prices for competitive services can be maintained.

The FCC then goes out of its way to reject Ramsey pricing, that is, basing prices on the elasticity of demand as well as costs. This mode of pricing has beneficial efficiency

properties, as economists have known since the 1920s. The FCC cites Ramsey's original paper and then the recent book by Mitchell and Vogelsang. Their book is distinguished by the disjunction between its two halves on the theory and practice of telecommunications pricing. The FCC cites them for their description of Ramsey pricing, and it effectively turns their description of the industry into a normative rule.⁴³

The FCC argues that Ramsey prices for "bottleneck facilities" would be too high to promote competition.⁴⁴ This position ignores the question of whether competition is desirable if the facilities in question are truly bottlenecks. It also disregards the progress of technology which tends to eliminate existing bottlenecks. In the specific case cited by the FCC of the local loop, wireless technology is the obvious candidate. Ramsey pricing, by making it attractive to develop new technologies, may be a good way to promote competition.

These rules have now been overturned by the court, and their eventual fate is unclear. My point is not who is right or wrong in these ongoing disputes. It is that the same issues are still being disputed and litigated. The issues were set up more than 35 years ago when AT&T introduced the Telpak tariff. The FCC, then as now, evaluated the tariff by its relation to costs. The issues, then as now, were whether historical or prospective costs should be used and how an allowance for common costs should be included. These issues were not resolved then and are still open now.

IV

Plus ça change, plus ç'est la même chose. The issue of common costs bedevils regulators and legislators trying to introduce competition into previously monopolized markets. Incumbents always say that these costs are large and can be ignored only at the

customers' peril. Entrants by contrast say they are figments of the incumbents' imagination. The debates--clothed in industry-specific jargon--restate familiar positions over and over again.

The FCC has been very hostile to incumbents for a generation. It was eager to reduce the Bell System's monopoly when the Bell System existed. And it is now eager to reduce the RBOCs' monopoly. The FCC started this task initially by emphasizing the importance and magnitude of these fixed costs. When AT&T wished to reduce the price for private lines to discourage entry, the FCC argued that it was short-changing other customers who had to pay for the fixed cost. The FCC now has changed sides. It urges the RBOCs to charge low prices for interconnection on the basis that joint fixed costs are too small to worry about.

Other regulatory bodies have not been so sanguine. Electric power is being opened up to competition in a race with telecommunications. Pricing decisions are being made at the state level in that industry, overseen by the Federal Energy Regulatory Commission (FERC). In Massachusetts and California, prices are being reduced only slowly so that incumbent utilities can phase out their fixed common costs. In both states, the regulators have created a new actor, the Independent System Operator (ISO), who will perform many of the centralized functions formerly provided by the utility. In particular, the ISO will configure the network, decide on new capacity, and contract for independent supplies. FERC, unlike the FCC, recognizes that there are important common costs in the provision of network services.⁴⁵

Thirty years of debate in telecommunications have failed to clarify the issues involved or to remove regulators from the issue of telecommunications pricing.

Regulators continue to rehearse traditional arguments as they set prices. They are as insistent today as they were in the early 1960s that incumbent market power requires a heavy regulatory hand. Although relative prices are changing, there is no evidence that regulation decreases as prices approach “costs.” We might do well to consider whether a lighter regulatory hand would be more appropriate to increasingly competitive conditions.⁴⁶

Footnotes

¹ 27 FCC 359, Docket 11866 (1959).

² 27 FCC 359, at 389 (1959).

³ Henry M. Boettinger, "Testimony," US v. AT&T, CA 74-1698, T. 24,896.

⁴ 38 FCC 373, at 385-86, Docket 14251 (1964).

⁵ Hatfield Associates, "The Cost of Basic Network Elements: Theory, Modeling and Policy Implications," unpublished document, prepared for MCI, Inc., March 29, 1996.

⁶ 48 Stat. 1064 (1934), Sec. 202(a).

⁷ 38 FCC 373, at 376 (1964).

⁸ Ibid.

⁹ William J. Baumol and J. Gregory Sidak, *Toward Competition in Local Telephony* (MIT Press, 1994),

¹⁰ Separations were the processes of distinguishing assets used in interstate and intrastate services. Separations payments were made by Long Lines to the Bell Operating Companies for the use of intrastate plant in the origination and completion of interstate calls. See Peter Temin, *The Fall of the Bell System* (New York: Cambridge University Press, 1987), Chapter 1.

¹¹ Albert M. Froggatt, "Testimony," US v. AT&T, CA 741698, p. 8.

¹² 38 FCC 373, at 390 (1964).

¹³ 38 FCC 373, at 392 (1964).

¹⁴ 38 FCC 373, at 386 (1964).

¹⁵ 38 FCC 373, at 396 (1964).

¹⁶ *American Trucking Association v. FCC*, 126 US App DC 236, 377 F 2d 121 (1966), cert. denied 386 US 943 (1967); 7 FCC 2d 30-31, Docket 16258 (1966).

¹⁷ Froggatt, "Testimony," AT&T Exhibit 90, Docket 14650 (1965), p. 5.

¹⁸ 9 FCC 2d 30, at 37, Docket 16258 (1967).

¹⁹ Froggatt, "Testimony," US v. AT&T, p. 29.

²⁰ Gerald W. Brock, *The Telecommunications Industry* (Cambridge: Harvard University Press, 1981), p. 210; Stephen Breyer, *Regulation and Its Reform* (Cambridge: Harvard University Press, 1982), p. 305.

²¹ 20 FCC 2d 393, Docket 18128 (1969); *Associated Press v. FCC*, 148 US App DC 172, 448 F 2d 1095 (1971).

²² Alfred E. Kahn, *The Economics of Regulation: Principles and Institutions* (New York: Wiley, 1970), p. I, 83 (emphasis added).

²³ The demand curve for each product equals its supply curve at this point, where the supply curve is constructed on the assumption that other products are produced and sold at the same volume. Each supply curve is constructed by examining the demand curve for other products to see how much of the joint costs their consumers would pay at this volume. The supply curve shows in each case how much of the joint costs remains to be paid by the product in question. This is not a normal supply curve for a product, but it is a

supply curve in the sense of showing what must be paid to obtain an additional unit of each product. It shows the marginal opportunity cost at each level of output.

²⁴ See, for example, Baumol, "Testimony," FCC Docket 16258 (1966); William H. Melody. "Testimony," FCC Exhibit 52, Docket 16258 (1968).

²⁵ Bernard Strassburg, "Testimony," US v. AT&T, CA 74-1698, T. 23450.

²⁶ James C. Bonbright, "Testimony," AT&T Exhibit 89, Docket 14650 (1965).

²⁷ 61 FCC 2d 587, at 613, 617, 626, Docket 18128 (1976).

²⁸ FCC, Second Draft of Working Group in Docket 18128, Defendant's Exhibit S-2825C, SPCC v AT&T, CA 78-0545.

²⁹ 61 FCC 2d 587, at 589 (1976).

³⁰ MCI v. FCC, No. 75-1635, 561 F. 2d 365 (D.C. Cir.), *cert. denied* 434 U.S. 1040, 1978.

³¹ Peter Temin, "Cross Subsidies in the Telephone Network After Divestiture," *Journal of Regulatory Economics*, 2: 349-362 (December 1990).

³² FCC, *Memorandum Opinion and Order*, FCC CC Docket No. 78-371, April 12, 1979, 71 FCC 2d 440.

³³ 1996 Act, sec. 101, para. 252(d)(1).

³⁴ FCC, *Notice of Proposed Rulemaking*, CC Docket No. 96-98, April 19, 1996, p. 43n. Even though one of the cited authors, Stephen Breyer, is now a Supreme Court Justice, he does not aspire to being a professional economist.

³⁵ For example, Jean-Jacques Laffont and Jean Tirole, *A Theory of Incentives in Procurement and Regulation* (Cambridge: MIT Press, 1993).

³⁶ Hatfield Associates, "Hatfield Model, Version 2.2, Release 2: Model Description," unpublished document, September 4, 1996.

³⁷ William J. Baumol, Janusz A. Ordovery, and Robert D. Willig, "Affidavit," submitted to the FCC in response to the NPRM, April 9, 1996, pp. 3-4.

³⁸ FCC, *Notice of Proposed Rulemaking*, CC Docket No. 96-98, April 19, 1996, p. 54.

³⁹ FCC, *Notice of Proposed Rulemaking*, CC Docket No. 96-98, April 19, 1996, p. 55.

⁴⁰ *Ibid.*, p. 8.

⁴¹ FCC, *First Report and Order*, Docket 96-325, August 1, 1996, Section 7, paras. 672-78.

⁴² *Ibid.*, Section 7, para. 696.

⁴³ Bridger M. Mitchell and Ingo Vogelsang, *Telecommunications Pricing: Theory and Practice* (Cambridge, England: Cambridge University Press, 1991).

⁴⁴ The FCC clearly does not think this way. It closed the pricing section of the rules with a strong assertion that any prices dependent on demand--or other factors other than costs--would be discriminatory under the Act. FCC, *First Report and Order*, Docket 96-325, August 1, 1996, Section 7, paras. 861-62.

⁴⁵ "Ferc Approves Framework for California Restructuring, Defers Tough Details," *Electric Utility Week*, December 2, 1996, p. 7; "Massachusetts Competition Rule Affirms Rights of Distribution Firms to Franchises," *Electric Utility Week*, January 6, 1997, p. 1; "California Regulators Still Debating Extent of Direct Access Next January," *Electric Utility Week*, April, 28, 1997, p. 10.

⁴⁶ Peter Linhart and Joseph H. Weber, “On Cost-Based Pricing for Regulation,” paper prepared for this conference.