

must not place socially harmful handcuffs on the LECs simply because the LECs' competitors, with no justification, want the regulatory process to handicap LEC competitiveness.

E. Price Cap Baskets And Bands Should Be Rationalized And Must Match LEC Competition Levels. (Baseline Issue 2, Transition Issue 3)

1. MCI Incorrectly Recommends Deferral To A Part 69 Proceeding.

MCI believes that the current composition of baskets provides the LECs with adequate pricing flexibility and urges the Commission not to make any changes to the LEC price cap structure at this time.<sup>162</sup> MCI rationalizes that "the only reason to modify the price cap baskets or bands would be in response to alterations to the underlying access service structure" and that "to the extent that competition develops and the carriers require further pricing flexibility, the issue of the appropriate rate structure should be considered separately in the context of a Part 69 review, and has no place in the instant proceeding."<sup>163</sup> SWBT strongly disagrees.

MCI's view ignores the rapid advances in technology, competition, industry structure and customer needs and expectations that have rendered the decade-old current access structure completely obsolete.<sup>164</sup> Numerous specific and legitimate requests to address rate structure, competition and pricing flexibility issues, have been filed, such as the individual

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<sup>162</sup> MCI, pp. 16-18 and fn. 22.

<sup>163</sup> MCI, pp. 17-18.

<sup>164</sup> The Commission staff agrees. Access Reform Task Force, "Federal Perspectives on Access Reform: A Staff Analysis," April 30, 1993, p. 16.

proposals of Ameritech,<sup>165</sup> NYNEX,<sup>166</sup> Rochester<sup>167</sup> and USTA.<sup>168</sup> SWBT fully supports the USTA proposal and urges the Commission to act on this proposal as a means of providing the necessary industry-wide reform.

2. The MFS Cost Consistency Test Is Unnecessary.

MFS argues for a "cost consistency test" to replace the current system of service categories, subcategories, and subindexes in the trunking basket.<sup>169</sup> Under MFS's proposal, the trunking basket would have only one service category, for the transport interconnection charge, and three zone pricing subindexes where applicable.<sup>170</sup> In lieu of the other categories and subindexes, all services within the trunking basket would be subject to MFS's "cost consistency" test. Under this test, the LECs would be required to report the unit cost associated with each rate element, using total service long run incremental cost.<sup>171</sup> The ratio of price to

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<sup>165</sup> As filed in the matter of a Petition for a Declaratory Ruling and Related Waivers to Establish a New Regulatory Model for the Ameritech Region by Ameritech Corporation on March 1, 1993.

<sup>166</sup> Petition for Waiver of the NYNEX Telephone Companies, filed December 15, 1993, in the matter of NYNEX Transition Plan to Preserve Universal Service in a Competitive Environment.

<sup>167</sup> Pleading Cycle Established for Comments on Petition for Waiver filed by Rochester Telephone Corporation, Public Notice (DA 93-687) (released June 15, 1993).

<sup>168</sup> The United States Telephone Association Interstate Access Reform Proposal, filed September 17, 1993.

<sup>169</sup> MFS, pp. 17-21.

<sup>170</sup> MFS, p. 17.

<sup>171</sup> The primary problem with the TS-LRIC methodology of MFS, AT&T and MCI is that it would inappropriately allocate volume insensitive costs (such as a fixed software development cost) to individual units of service. The price for any unit of service should exceed the volume sensitive costs; however, volume insensitive costs specific to a service need only be recovered

cost for any rate element within the basket (or within any of the three zone subindexes, for carriers under zone pricing) would not be permitted to vary from the basket or zone average ratio by more than 10 percent.<sup>172</sup>

The Commission should reject MFS's proposed restrictions on pricing flexibility under the guise of a "cost consistency test." Since the MFS cost consistency test necessarily ignores market demand information, which is crucial to the setting of efficient service prices, it is worthless for the pricing of telecommunications with emerging competition. Absent competition, a regulatory agency could maintain a uniform relationship between rates and costs if it wished, even though such an arrangement may not always be economically efficient. Competitive entry, however, makes it impossible to set regulated rates that have uniform relation to costs, meaning that the imposition of cost consistency test would represent a significant impediment to addressing customer demand. Due to competition, customers may have widely varying demand characteristics, while it may be the case that the cost to supply the same service to different customers may be relatively equal.<sup>173</sup> Thus, competition leads customers with identical costs of service to pay different rates, whether the LEC is also allowed to provide the discount or not. This differential in rates is in the public interest and is one aspect of the competitive process.

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from the total revenues of the service. The proposed TS-LRIC standard could create an artificially high price floor, which in turn, could deprive consumers of the benefit of lower (but not predatory) unit prices. In sum, while it is reasonable to expect that a service as a whole should recover its associated incremental cost, it is not reasonable to use TS-LRIC, or a mark-up above TS-LRIC, as the floor for the price of individual units of service.

<sup>172</sup> MFS, p. 18.

<sup>173</sup> The reverse may also be the case. Customers with differing costs may have similar demand characteristics.

To meet competition, LECs should be allowed to use market-based pricing, thereby collecting at least some contribution to overhead, even if the amount collected is not the full amount normally included in tariffed rates. Precluding the LECs from discounting prices via customer specific pricing, and collecting some contribution to overhead in the process, may cause customers with no competitive alternatives to pay higher rates in the long run. The Commission should reject MFS's cost consistency test, and any other similar pricing proposals, and instead allow market-based pricing in markets with competition.

Other commentators argue that the current basket structure and banding limitations afford LECs adequate pricing flexibility.<sup>174</sup> Another concludes that, in light of the lack of competition, the current structure should be retained to preclude excessive rates and cross-subsidies.<sup>175</sup> Another asserts that the current price cap structure is not sufficient to correct any discriminating existing prior to the inception of price caps.<sup>176</sup>

The implementation of price caps and zone pricing do not begin to address the vast changes occurring in the interstate access markets, and telecommunications markets in general. The limited flexibilities the LECs have under the current rules (i.e., baskets, service categories, subindexes, and zones) are not nearly enough to accommodate the evolution that is now occurring.

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<sup>174</sup> MCI, pp. 16-17; Teleport, p. 9; Ad Hoc, p. 17.

<sup>175</sup> AT&T, p. 40.

<sup>176</sup> WilTel, p. 19.

SWBT proposes a new price cap basket structure into which similar access functionalities can be grouped.<sup>177</sup> This structure for price caps baskets is compatible with the proposed Part 69 structural reforms proposed by the USTA Petition and supported by SWBT. With baskets structured along functional lines, price management of services should be implemented along those same functional lines.

Additional pricing flexibilities would be realized from the creation of market area categories within each of the proposed baskets. Market areas in which competition has not evolved to a point warranting relaxed regulatory oversight would be grouped into an appropriate number of market area categories based on the number of zones or study areas. Within the transport basket, these market areas would be separated into digital and non-digital market area categories as well. Market areas in which competition is in transition would be grouped into a single market area category for price management. Market areas in which competition has evolved would be removed from price cap regulation.

Market area categories containing those market areas in which competition has not evolved would be subject to the same (+/-5%) banding requirements in the current LEC price cap plan. Those market areas in which competition is in transition would be afforded greater downward pricing flexibility -- a legitimate response in any market where competition

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<sup>177</sup> SWBT, pp. 85-89, Appendix BASKET. See also USTA, pp. 66-72.

exists.<sup>178</sup> As explained before, competitive market areas would be removed from price cap regulation and therefore no banding requirements would apply.

The key to this proposal is that LECs are not automatically afforded greater pricing flexibility. Pricing flexibility is only realized after a demonstration that competition exists. If, as argued by some intervenors, competition does not exist, LECs will not realize the proposed pricing flexibilities. Furthermore, the flexibilities that are realized are legitimized by competition within that market area. By grouping market areas possessing similar competitive characteristics together, customers in less competitive market areas are protected from price shifts from more competitive market areas.

As long as the LECs continue to be regulated in a manner that results in geographically averaged rates over broad areas and are not allowed the opportunity to develop legitimate competitive responses in those areas where competition has begun to evolve, competitors will possess an uneconomic and potentially unlawful disadvantage over the incumbent provider. Such policies frustrate rather than promote competition and harm rather than benefit customers.

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<sup>178</sup> For agreement, see, AT&T 1988. "The lower band limits would operate effectively as price floors, impeding precisely those price changes most beneficial to consumers." p. 10. AT&T quotes Professor Phillip Areeda saying: "Although the possibility of price predation cannot be entirely denied, there are few documented instances of its occurrence. Moreover, as recognized by the Commission and the courts, an unduly relentless effort to prevent even the possibility of price predation will chill price competition -- a chilling effect that society can ill afford." pp. 14-15 and Appendix A, pp. 1-2.

V. LEC COMPETITIVENESS SHOULD NOT BE HANDICAPPED IN RESOLUTION OF OTHER ISSUES.

A. Service Quality Monitoring Should Not Be Expanded Because Service Quality Has Remained High Under Price Caps. (Baseline Issues 7a, 7b, Transition Issue 4)

TCA seems to agree with SWBT that there is no need for service quality reporting to be expanded, admitting that based on a survey of 144 of its members, "TCA is pleased to report that for the carriers [Pacific Bell and U S WEST] serving most TCA members, overall service quality does not appear to have suffered under price cap regulation."<sup>179</sup> Sprint stated that current reporting requirements are adequate: "additional reporting requirements could increase LEC costs, with no corresponding benefits, thereby decreasing efficiency and productivity."<sup>180</sup> Thus, there is no basis for TCA's recommendation that service quality monitoring be changed or expanded.

1. Expansion Of Service Quality Reporting To The Wire Center Level Would Be Unjustified.

Even though TCA admits that overall service quality has not suffered, TCA states that it: "now urges the Commission to direct the LECs to file exception reports regarding poorly performing wire centers."<sup>181</sup> TCA has based its opinion of poorly performing wire centers on its survey results of members served by Pacific Bell and U S WEST. More specifically, in its comments, TCA states that 41 % of U S WEST respondents and 25 % of Pacific Bell respondents

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<sup>179</sup> TCA, p. 2.

<sup>180</sup> Sprint, p. 20.

<sup>181</sup> TCA, p. 5.

indicated disparities in service quality between geographic areas served by the same carrier.<sup>182</sup>

TCA provides no rationale for requesting the Commission mandate more disaggregated reporting requirements for all price cap LECs. On the contrary, the Commission has stated:

continuing high service quality means that increased disaggregation of these data would place on the filing carriers and on the Commission resources a burden that could not be justified. We continue to believe, and the data collected so far confirm, that the existing high level of service quality and the LEC's responses to price cap incentives negate any need for disaggregated reporting or the establishment of national standards.<sup>183</sup>

Wire center level reporting of any kind is inappropriate, costly and unreasonable.

TCA stated that exception reporting by wire center would be "minimally burdensome, since the LECs already collect such information."<sup>184</sup> TCA is wrong. SWBT evaluates service quality in a variety of ways such as statewide results and/or market area service quality results. SWBT does not measure service quality, however, by wire center.<sup>185</sup> In fact, for valid and compelling business reasons, SWBT is strongly opposed to measuring customer service based solely on geographic measures such as wire centers. Customer service results are evaluated based on providing service from customer point A to point B. Often, point A and point B cross wire centers, LATA boundaries and state boundaries. Therefore, good customer service means providing all customers, regardless of size or geographic location, with high quality, reliable service. SWBT does that today.

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<sup>182</sup> TCA, pp. 3-4.

<sup>183</sup> Policy and Rules Concerning Rates for Dominant Carriers, 8 FCC Rcd 7474 (1993), para. 12.

<sup>184</sup> TCA, p. 8.

<sup>185</sup> SWBT has over 1,300 wire centers companywide.

Should the Commission begin requiring wire center level data, SWBT would have to make significant and costly changes to its systems. Requiring such changes would serve no purpose and would not be in the best interest of customers. The Commission must recognize that providing excellent service quality is a fundamental business philosophy and must not mandate modifications to current service quality reporting that do not make good business sense.

2. Expansion Of Service Quality Reporting To Digital Data Transmission Would Be Unjustified.

Competition in the digital data transmission arena is the best guarantee that service quality will remain high. Therefore, there is no justification for TCA's request that price cap LECs begin reporting data transmission error statistics. Further, TCA's recommended method for such performance monitoring (i.e., their request that LECs report deployment for extended superframe technology and digital cross connects) is unreasonable.

TCA's rationale for requesting that price cap LECs expand the monitoring reports to include data transmission quality is partly based on the assumption that it is "technologically simpler" and "reasonably priced" to monitor data transmission non-intrusively.<sup>186</sup> TCA also requests that the Commission require LECs to disclose the extent of their deployment of extended superframe and digital cross connects technology because it is TCA's understanding that "most LECs have implemented significant deployment of digital cross connects, which are essential to facilitate non-intrusive monitoring of data transmission quality."<sup>187</sup>

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<sup>186</sup> TCA, p. 10.

<sup>187</sup> TCA, p. 11.

TCA's rationale is premature. "Performance monitoring," that is, monitoring bit error rates of digital circuits is neither technologically simpler nor reasonably priced. Today, SWBT cannot do performance monitoring on digital circuits (DS1s and DS3s) without interrupting service. Some equipment is in place that has the capability to monitor performance using "live" traffic. However, SWBT does not have the resources to actually do performance monitoring. Performance monitoring would be costly because various network elements (multiplexers, digital cross connects, test access devices) must be upgraded or placed in use. Further, there is no known way to collect the data other than manually -- and this would be costly and burdensome.

SWBT continues to evaluate a performance monitoring using "live" traffic. At this time, it is not economical for SWBT to widely deploy extended superframe technology or digital cross connects or SONET. It is premature, inappropriate and unreasonable for TCA to request that the LECs provide deployment of extended superframe technology and digital cross connects. Further, the Commission should not dictate the manner by which local exchange carriers perform testing (i.e., extended superframe technology deployment, digital cross connects deployed, SONET). Competition in transport markets will dictate how service quality and monitoring services will be best provided.

The issue of error rate monitoring has been discussed in response to a Commission Public Notice, dated July 7, 1992. As a result, "high speed data transmission" was added to Table I, Interexchange Access Installation and Repair Intervals of the Quarterly Service Quality Reports, ARMIS 43-05. This allows parties to observe any indications of degradation

of service quality for high-speed data transmission services. No such degradations have been observed.

SWBT understands that businesses of all sizes are users of data transmission and that they are concerned about data transmission quality.<sup>188</sup> However, digital transmission performance objectives are available in various technical publications. There is no reason for price cap LECs to publish bit error rates since the performance objectives for services are already published.

B. Exogenous Cost Issues (Baseline Issues 6a, 6b, 6c)

1. Arguments On The Scope Of Exogenous Cost Treatment Should Be Dismissed.

Several parties suggest exogenous cost treatment for the expiration of amortization of equal access network reconfiguration (EANR) costs.<sup>189</sup> The Commission has already addressed and rejected such treatment in its Order on Reconsideration of the LEC price cap plan<sup>190</sup> and, most recently, in its orders on the LECs' 1994 Annual Access Tariff Filings.<sup>191</sup> AT&T argues that because the amortization of EANR costs was completed last year, and because these costs have been fully recovered by the LECs, it is appropriate to treat the

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<sup>188</sup> TCA, p. 10.

<sup>189</sup> AT&T, p. 46.

<sup>190</sup> See Policy and Rules Concerning Rates for Dominant Carriers, 6 FCC Rcd 2637 (1991) Order on Reconsideration, para. 67, n. 77.

<sup>191</sup> 1994 Annual Access Tariff Filings, Memorandum Opinion and Order Suspending Rates, CC Docket No. 94-65, (DA 94-706), paras. 54-56 and 1994 Annual Access Tariff Filings, Memorandum Opinion and Order Suspending Rates, CC Docket No. 94-65, (DA 94-707), paras. 36-38, both released on June 24, 1994.

expiration of the amortization as an exogenous cost change just as the Commission treats the expiration of LEC amortizations of depreciation reserve deficiencies as exogenous.<sup>192</sup>

AT&T's argument is incorrect. It fails to recognize that the Commission also excluded from exogenous treatment additional costs that the LECs would incur to implement new and continuing equal access obligations (such as for pay phone providers) which were not embedded in the initial equal access rates.<sup>193</sup> Having treated all equal access costs as endogenous, including those incurred after the start of price caps, the Commission cannot now treat the expiration of the amortization of EANR costs as exogenous. The Commission's June 24, 1994 orders on the 1994 Access Tariff Filings confirm this.

MCI asks that the Commission delete from its list of exogenous costs, tax and "other" exogenous changes which the Commission has discretion to allow.<sup>194</sup> The Commission has already rejected an argument by MCI that increased utility-specific taxes should be denied exogenous treatment absent a specific showing that the tax change is not reflected in the GNP-PI.<sup>195</sup> MCI presents no new arguments on this issue.

MCI also argues that, absent waiver, exogenous cost treatment should be limited to "Commission-ordered cost changes that shift costs between the interstate and intrastate

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<sup>192</sup> AT&T, p. 48.

<sup>193</sup> See Order on Reconsideration, *supra* at paras. 65-66. ("We decline to carve out exceptions to our requirement that equal access costs be treated as endogenous.")

<sup>194</sup> MCI, p. 43.

<sup>195</sup> See Bell Atlantic Telephone Companies, Tariff FCC No. 1, 7 FCC Rcd 2165 (1992).

jurisdictions or between regulated and nonregulated operations.<sup>196</sup> As an example, MCI states that had its proposal been in place, "exogenous cost treatment would not have been extended to regulatory fees and costs associated with the Telecommunications Relay System."<sup>197</sup> MCI claims that other segments of the telecommunications industry also pay fees, and "they have no mechanism for automatically passing them through to their customers."<sup>198</sup> Firms like MCI do not have an explicit "mechanism" because they do not need one. MCI's prices are not constrained by regulation as LECs' are under price caps.<sup>199</sup> MCI and the other IXCs can, and do, raise prices to recover new costs.<sup>200</sup> Because price cap LECs cannot increase their prices to recover additional costs (except to the extent that prices are below the cap), it is critical that

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<sup>196</sup> MCI, p. 45. Ohio goes further, claiming that all cost changes are "endogenous." Ohio states, however, that if the Commission retains exogenous cost treatment, "it should be limited to material factors impacting only the LEC . . . ." Ohio, p. 10.

<sup>197</sup> MCI, p. 47.

<sup>198</sup> *Id.* MCI correctly observes that it would be difficult for the Commission to administer its proposed "economic cost" criterion for determining exogenous cost treatment. *See Id.* p. 45, n. 78.

<sup>199</sup> The fact that MCI operates in what it might consider to be a "competitive" market, does not constrain MCI's ability to pass on industry-wide cost increases that are beyond its control. This is so because all firms in the market will likely raise their prices accordingly.

<sup>200</sup> This is underscored by the recent "lock-step" price increases in the IXC industry. For example, AT&T proposed increases to its rates to reflect, among other items, the impact of the Commission's new regulatory fees. (*See* AT&T 1994 Annual Filing letter dated May 17, 1994, from M.F. Del Casino, AT&T's Administrator - Rates and Tariff, to William F. Caton, Acting Secretary of the Commission, Attachment, pp. 9-10.) MCI and Sprint are quick to match AT&T's increases. *See Business Communications Review*, "Network Services Pricing Update," February 1993, p. 16.

LECs continue to be allowed to adjust their price cap indices to reflect all costs that are beyond their control.<sup>201</sup>

2. Exogenous Treatment of Accounting Changes

Both MCI<sup>202</sup> and Sprint<sup>203</sup> agree with SWBT that it would be very difficult to administer the proposal in the NPRM to narrow the list of items considered for exogenous treatment to only those accounting changes that are accompanied by changes in economic costs. AT&T did not specifically address this issue in its Comments, but since 1990 has advocated exogenous treatment of mandated accounting changes in the context of its own price cap plan.<sup>204</sup>

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<sup>201</sup> MCI states that the Commission should not grant exogenous cost treatment for SFAS-106 costs because it does not meet MCI's new exogenous cost "standard." MCI, p. 46, n. 79. SWBT has explained extensively in other proceedings why exogenous treatment of increased costs imposed by adoption of SFAS-106 is appropriate. See generally, SWBT's filings in CC Docket Nos. 92-101 and 93-193.

<sup>202</sup> MCI, p. 45, fn. 78.

<sup>203</sup> Sprint, pp. 18-19.

<sup>204</sup> See for example, Letter from M. F. Casino, Administrator - Rates and Tariffs, AT&T to William F. Caton, Acting Secretary, FCC, dated May 17, 1994, pp. 6-10 that provides the AT&T description and justification for exogenous treatment of: Statement of Financial Accounting Standards (SFAS) No. 112, Employers' Accounting for Postemployment Benefits; flow back of excess deferred taxes and the change in the level of amortization of unamortized investment tax credits; the Commission's new regulatory fees; the increased costs associated with the Commission's payphone compensation plan; and revising exogenous amounts for SFAS 106, Employers' Accounting for Other Post-retirement Benefits (OPEBs). Other relevant examples include: Letter from M. F. Casino, Administrator - Rates and Tariffs, AT&T to Secretary, FCC, dated June 30, 1993, pp. 2-3, exogenous treatment for SFAS 106; and Letter from C. E. Link, Administrator - Rates and Tariffs, AT&T to Secretary, FCC, dated May 17, 1990, Transmittal No. 2034, Description and Justification, pp. 10-15, exogenous treatment of changes to Part 32 rules increasing expense limits from \$200 to \$500 for selected items, state tax law changes, and changing from pay-as-you-go accounting to accrual accounting for OPEBs.

MCI<sup>205</sup> and others contend that other segments of the telecommunications industry experience cost increases that are beyond their control but do not have a mechanism for passing these "exogenous" costs to their customers. MCI is wrong. All but one IXC<sup>206</sup> and all CAPs and other telecommunications providers are free to reflect accounting cost changes or any other exogenous cost changes in the prices they charge their customers because nothing prevents them from doing so. For example, in July of 1993, when AT&T reflected exogenous price increases for SFAS-106 by raising its basic long distance prices by almost 4%, MCI, Sprint, LDDS and other IXCs also chose to increase their basic long distance prices by almost identical percentages.

Referencing a prior Commission order, MCI incorrectly contends that designation of a cost as exogenous removes the incentive for efficiency that is the principal goal of price caps.<sup>207</sup> MCI is incorrect in its blanket assertion which fails to recognize that exogenous treatment applies only to costs over which the regulated carrier has no control. If a cost is imposed on a company and is beyond its control, then the incentive to be efficient is no greater or no less as a result of that cost being treated as exogenous. By definition, the incentives to be efficient can be utilized only on those costs over which the firm has control.

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<sup>205</sup> MCI, p. 47.

<sup>206</sup> As noted earlier, in the context of AT&T's price cap plan AT&T has justified exogenous treatment for accounting changes, tax law changes and regulatory fees.

<sup>207</sup> MCI, p. 42.

3. Sales and Swaps of Exchanges. (Baseline Issue 10)

SWBT has already explained its view regarding the treatment of sales and swaps of exchanges.<sup>208</sup> No changes are necessary in the existing price cap rules covering sales and trades of exchanges. NRTA and NTCA have stated that such transactions can improve efficiency and service quality<sup>209</sup> and the NPRM states that such transactions "can promote better infrastructure development by placing exchanges in control of another LEC whose business plan makes it more committed to developing improved service in the exchange."<sup>210</sup>

AT&T and MCI claim that an exogenous cost adjustment be required for such transactions. That adjustment is one of the options available to any LEC but need not be required as the only option. Case-by-case review is the appropriate means of addressing this issue.

VI. CONCLUSION

As one of our Nation's founders wrote many years ago:

I am not an advocate for frequent changes in laws and constitutions. But laws and institutions must go hand in hand with the progress of the human mind. As that becomes more developed, more enlightened, as new discoveries are made, new truths discovered and manners and opinions change, with the change of circumstances, institutions must advance also to keep pace with the times. We might as well require a man to wear still

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<sup>208</sup> SWBT, pp. 64-65.

<sup>209</sup> NTCA, 7-8; NRTA, 3.

<sup>210</sup> NPRM at para. 88.

the coat which fitted him when a boy as civilized society to remain ever under the regimen of their barbarous ancestors.<sup>211</sup>

Just as Jefferson noted, the Commission must recognize the new discovery present in the current and future competitive circumstances in access markets and must advance telecommunications regulation to adapt in pace with the times. The old coat of ROR regulation no longer fits. SWBT respectfully requests that the Commission adopt the changes to LEC price cap regulation detailed here and in its Comments in order to promote economic growth and national productivity.

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<sup>211</sup> Letter regarding law and progress from Thomas Jefferson to Samuel Kercheval, dated July 12, 1816 (inscribed on the southeast panel of the Jefferson Memorial).

**THE ETI STUDY ON THE BENEFITS  
OF INFRASTRUCTURE DEVELOPMENT  
SHOULD BE DISMISSED AS SERIOUSLY FLAWED**

Ad Hoc makes use of a study by Economics and Technology, Inc. (ETI). This study discusses the effect of price caps on macroeconomics, reaching the following conclusions:

Telecommunications investment causes economic growth in less developed countries, but not in developed countries. Increased LEC investment will have a negative impact on U.S. output after five years.<sup>1</sup>

Two other studies on the effects of infrastructure development submitted in this docket (WEFA<sup>2</sup> and DRI<sup>3</sup>) both demonstrate three types of benefits from increased telecommunications investment. First, consumer welfare is enhanced by substantial job creation related to telecommunications construction activity and related economic ripple effects. Second, large employment gains are generated by the productivity improvements made possible by telecommunication infrastructure investment. Third, consumer welfare is further enhanced because economy-wide productivity improvements reduce the rate of price inflation for virtually all goods and services produced in the economy.

Others also clearly recognize the profound benefits of infrastructure investment. For example, the Japanese Ministry of Posts and Telecommunications clearly believes that investment in telecommunications infrastructure development will spur economic growth and create new jobs. The Japanese Telecommunications Council issued a report in May of 1994 that concluded that:

the high-performance info-communications is the most important type of social infrastructure one can acquire as it works to solve

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<sup>1</sup> Ad Hoc, Attachment A, LEC Price Cap Regulation: Fixing the Problems and Fulfilling the Promise, Economics and Technology, Inc. (ETI Paper).

<sup>2</sup> The WEFA Group, The Economics of Revising the Interstate Price Cap Formula for Local Exchange Carriers, Attachment 7, USTA Comments, May 9, 1994. The WEFA study quantified the consulting work of Dr. Robert Harris, Dr. Vanston, Dr. Larry Derby also submitted by USTA.

<sup>3</sup> SWBT, Appendix DRI-ARK, Telecommunications Network Modernization and the Arkansas Economy, Dr. Francis J. Cronin, Project Director, DRI/McGraw Hill, August 1993. (DRI Arkansas Study).

its problems and build the intellectually creative society of the 21st century.<sup>4</sup>

In contrast to overwhelming empirical evidence produced by WEFA, DRI and the extensive body of research referenced by these and other studies, ETI presented very limited and incorrect analyses. The Commission should reject ETI's attempted quantification because it is fraught with fundamental and significant flaws.

First, the infrastructure investment under discussion in this proceeding is only tangentially related to the measure of infrastructure development used in the ETI claim -- access lines per 100 residents. Thus, even if the ETI causality test results were compelling -- which they are not -- the use of access lines per 100 residents is not suitable for discussion of infrastructure development in this proceeding. ETI has completely ignored more appropriate infrastructure measures such as those used by DRI in its landmark 1991 study of the contribution of telecommunications to economic growth,<sup>5</sup> and used by Dr. Vanston in his examination of the link between investment and productivity.<sup>6</sup>

ETI wrongly opines that telecommunications investment encourages output growth only up to a certain level of network infrastructure, a level which ETI calls a "platform for future economic gains."<sup>7</sup> Nothing beyond this level is "economic," according to ETI. Countries with high rates of telephone penetration cannot hope to enhance productivity and economic growth by upgrading their networks, according to ETI.<sup>8</sup> This is an incredibly one-dimensional and incorrect view of technology. It is like saying that after a computer user has acquired a computer and has learned the basics, there will never be further benefits from more efficient use of computers.

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<sup>4</sup> "Reforms Toward the Intellectually Creative Society of the 21st Century: Program for Establishment of High-Performance Info-Communications Infrastructure," Report (Summary), May 1994, Telecommunications Council Ministry of Posts and Telecommunications, Japan, p. 1.

<sup>5</sup> DRI/McGraw-Hill, "The Contribution of Telecommunications Infrastructure to Aggregate and Sectoral Efficiency" February 1991, Appendix F, p.3. In this study DRI includes in its measure of telecommunications investment the investment in telecommunications structures reported by the Bureau of Economic Analysis and the non-consumer goods output of U.S. telecommunications purchase in the U.S.

<sup>6</sup> USTA, Attachment 8.

<sup>7</sup> ETI Paper, p. 23.

<sup>8</sup> ETI Paper, p. 22. ("Those countries with a moderate to well developed telecom network will not necessarily benefit merely by committing additional capital resources to the telecommunications sector.")

ETI provided no support for its claim that the 1991 DRI analysis is flawed,<sup>9</sup> but proceeds to present its own flawed and misleading analysis. The Commission should thus ignore the ETI analysis and look to the WEFA and DRI studies in conjunction with numerous other sources which support the strong link between telecommunications investment and economic growth.

1. Cause and Effect Relationship.

ETI states that it used a sample of 136 countries to test the claim "that there is a direct -- and causal -- link between telecommunications investment and economic growth."<sup>10</sup> In fact, ETI used 136 countries to study the cross-country correlation between these variables, but only 14 to study the cause and effect relationship using Granger causality tests. ETI is very careful to note the difference between correlation and causality,<sup>11</sup> so one might wonder whether ETI's initial description of its sample was intentionally misleading. ETI's sample for the Granger causality tests consists of countries for which data exists on telephone density for the years 1981-1990. Ten data points for each country is a very small sample over which to perform a meaningful test for causality. As ETI notes, Granger causality tests require the examination of lagged effects. However, ETI allowed for very few lagged observations from which to discern any relationships. As a result, ETI had only three degrees of freedom associated with the required "F tests."<sup>12</sup> ETI's presumption and selection of data "severely stacked the deck" in favor of not being able to isolate a statistically significant effect.

2. Impact of Telecommunications Investment On U.S. Output

ETI's analysis of the macroeconomic benefits of LEC investment assumes that if the investment doesn't take place, consumers of telecommunications services will see a matching reduction in prices. ETI is flat wrong.

ETI's approach to incentives for investment suggests that encouraging productivity growth is best achieved by punishment in the form of forced price reductions, rather than rewards for higher productivity. ETI defines a productivity offset that is allegedly set too low as an excise tax on telecommunications users.<sup>13</sup> ETI assumes that the setting of a drastically

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<sup>9</sup> Ad Hoc, Attachment A, p. 17, fn. 23.

<sup>10</sup> Ad Hoc, Attachment A, p. 13.

<sup>11</sup> Id., pp. 17-20.

<sup>12</sup> By simply adding a single data point to its analysis, the relationships would have been statistically significant in at least another two of the more developed countries in ETI's analysis.

<sup>13</sup> ETI Paper, p. 14.

higher productivity offset and achievement of that punitive target can be accomplished without accelerated deployment of new network infrastructure.

ETI suggests that the Commission compare the benefits of increased LEC investment with the benefits of government programs such as education, health and safety, and public infrastructure. Apparently ETI rejects the widely held view that expanding the availability of advanced telecommunications applications is a primary way in which many sectors of the economy, including education and health care, will improve the quality, and expand the availability of, their products. In regard to education, ETI has overlooked the Pennsylvania Public Utilities Commission's extensive infrastructure study. This study, and numerous other studies in several states, concluded that, among other things, distance learning capabilities made possible by advanced telecommunications is highly beneficial to urban and rural students, higher education, and school district budgets.<sup>14</sup> In regard to health care, ETI has overlooked the Arthur D. Little study which estimates \$36 billion in annual savings could be generated by improved integration of the health care infrastructure and advanced telecommunications infrastructure.<sup>15</sup>

### 3. ETI Uses An Incorrect Model.

Another significant flaw in ETI's analysis is the use of the Klein I model of the U.S. macroeconomy. ETI presents a botched attempt to simulate the effects of a so-called "tax" on consumers from a low productivity offset and the alleged corresponding effects on LEC investment.

The choice of the Klein I model shows that ETI never intended to give LEC investment a chance to yield macroeconomic benefits, other than through initial outlays for construction and equipment purchases (which ETI claims are more than offset by the impact of the "tax" after five years). These outlays have important effects, but the real point of studying the effects of LEC investment is to examine their effects on the economy's growth potential through higher productivity, which the Klein I model does not and cannot address.

Today, the Klein I model is famous as a rudimentary example of a simultaneous equation model with dynamic effects through lagged endogenous variables. It was designed in an era when many economists, including Klein, were preoccupied only with the demand side of the economy. As a result, the capital stock does not influence output in the Klein I model, except negatively through the demand side.

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<sup>14</sup> Deloitte & Touche and DRI/McGraw Hill, Pennsylvania Telecommunications Infrastructure Study, Executive Summary, March 31, 1993, p. 9.

<sup>15</sup> Arthur D. Little, Inc., Telecommunications: Can It Help Solve America's Health Care Problems? (July 1992) (unpublished study).

Today, any serious macroeconomic modeler would include an explicit production function to describe the technical relationships between inputs and output. These relationships have a strong bearing on the economy's short-term movements, and they determine the economy's path in the long-term. The Klein I model is therefore inappropriate to study any policy issue with implications for investment spending.

ETI implies that "the true simultaneous nature of economic relationships are taken into account"<sup>16</sup> in its analysis. There is no way this is even remotely possible using an economic model that is completely without an appropriately-specified supply side to the economy.

Dr. Vanston demonstrates that increased telecommunications investment results in reductions in the quality-adjusted price of telecommunications services.<sup>17</sup> The increased deployment of advanced network capabilities actually reduces the effective price of telecommunications service to customers. The ability of a regulated carrier to achieve a reasonable productivity target is contingent upon its ability to invest profitably. Increased investment, and an upgraded network, will help drive future productivity growth.

ETI boasts that the Klein I model is "widely-respected and understood, and sufficiently sophisticated to model the dynamics of economic activity."<sup>18</sup> In fact, it is not. Klein featured this model in work he published in 1950.<sup>19</sup> Economists generally believe that he later improved greatly upon this early effort to model the macroeconomy. Moreover, the Klein I model is widely recognized today as an inappropriate tool for examining the very policy question that ETI attempts to pose.

In the version of the Klein I model used by ETI, the only negative tax effect in the consumption function is through a tax subtracted from profits. Then, either the additional tax assumed by ETI is subtracted from profits, or it enters as a negative error term in the equation for private wages.

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<sup>16</sup> ETI Paper, p. 15.

<sup>17</sup> USTA, Attachment 8, pp. 8-11.

<sup>18</sup> ETI Paper, p. 25.

<sup>19</sup> Klein, L.R. (1950) *Economic Fluctuations in the United States, 1921-1941*. New York: John Wiley and Sons, Inc. The use of this model by ETI represents an implicit assertion that advances made in economic analysis over the last four decades should be ignored by the Commission in its consideration of changes to the LEC price cap plan.

In ETI's "experiment," the full proceeds of the "tax" are invested in new infrastructure by the LECs. This is accomplished by introducing a positive error term in the equation for investment demand. The stock of capital rises, but there is no lasting positive effect on output because there is no link between the capital stock and output in the Klein I model. There is an indirect impact on demand through a lagged capital term in the investment equation, which carries a negative coefficient. However, except through this negative demand-side effect, the capital stock has no influence on output. Output is exclusively demand-determined in the Klein I model. It is little wonder, then, that ETI found a negative impact of telecommunications investment on economic output.

4. ETI Is Not Concerned About Long-Term Impact.

Another fact that makes ETI's choice of the Klein I model particularly egregious is that the type of investment in question embodies new technologies. These technologies are capable of unleashing a surge in economy-wide productivity and economic growth. Over time, this impact is likely to swamp any alleged effect of the "tax" and the initial investment outlays.

The Commission is aware that a five-year horizon is unacceptable for studying the long-term impact of productivity-enhancing investment. This horizon was apparently chosen by ETI because the demand-side dynamics of the Klein model are largely worked out after five years. The long-term orientation of Commission policy making is a stark contrast to the ETI assertion that "the objective of government policy in this instance should be to produce some near term benefit."<sup>20</sup> It is difficult to imagine a stronger bias against expenditures that generate long-term benefits than the approach taken by ETI. Nonetheless, when the real, productive side of the economy is considered, the adjustments are much more protracted, and the benefits of higher productivity go on indefinitely.

5. ETI's Model Has No Linkage Between Capital Stock and Output.

The way that ETI modeled the economic effects of the so-called "tax," and the spending of the proceeds, is inconsistent with their thinking on the redistributive issue. The redistribution they have in mind is clearly from consumers to LEC shareowners, but with the Klein I model, it is impossible to show that the owners of LEC capital gain anything. The increase in the capital stock presumably represents an increase in the wealth of LEC shareowners. For this to be true, the flow of profits must be higher than before the investment,

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<sup>20</sup> ETI Paper, p. 26, fn. 36. Interestingly, ETI notes on p. 27 fn. 38, that the author of the article concerning the Klein I model that contains the parameter estimates utilized by ETI presents estimated results and time horizons that directly contradict ETI's results.

**PRODUCTIVITY GAINS CANNOT BE INFERRED FROM  
ANNUAL EARNINGS RESULTS**

I. **Earnings and TFP Measure Different Aspects of a Firms Performance.**

AT&T, MCI, and GSA all propose a higher productivity offset that would have resulted in LEC interstate earnings of 11.25 percent had it been in effect during the price cap review period. These and other comments echo the Commission's underlying premise that there is a strong and direct correlation between annual total factor productivity (TFP) and earnings results.<sup>1</sup> This premise is seriously flawed because it ignores the basic fact that while both measurement concepts utilize several of the same data elements, these shared data elements are utilized to achieve different objectives.

The objective of productivity analysis is the measurement of the quantity of input and output. Quantity measures, viewed over several years, provide a means for identifying the long-term growth in efficiency of production in terms of changes in the physical units of input required to produce a unit of physical output. In contrast, the objective of earnings measurement is the approximation of the dollar value of profits created by a firm over a year or quarter. Several data elements, which are discussed below, are unique to each measurement concept precisely because of the objective of the measurement concept. In summary, measures of productivity are not bound by the accounting rules which tightly control the measurement of both total company earnings and jurisdictional earnings.

Since the 1970s, a substantial body of economic literature has examined the relationship between accounting rate of return and economic rate of return. Although economic rate of return and TFP are not identical concepts, both concepts share a common theoretical basis. Moreover, this literature concludes "accounting rate of return . . . is a misleading measure of economic rate of return . . . [and] it is impossible to infer either the magnitude or direction of differences in economic rates of return from differences in accounting rates of return."<sup>2</sup> Thus, the academic literature suggests that inferences concerning productivity growth based on accounting rate of return are unreliable.

In the context of the LEC price cap plan, the objective of interstate earnings measurement is to provide a reasonable estimate of the monetary impact of interstate operations on LECs. Earnings and rate of return as reported on the FCC Form 492 (Interstate Earnings

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<sup>1</sup> NPRM, para. 44.

<sup>2</sup> Franklin M. Fisher and John J. McGowan, "On the Misuse of Accounting Rates of Return to Infer Monopoly Profits", American Economic Review, Vol. 73, No.1, March 1983,p.89.

Report) represent accounting results that have been assigned to the interstate jurisdiction by application of the separations process. Thus, fluctuations in interstate earnings reflect the combined impact of fluctuations in revenues generated from products and services assigned to the interstate jurisdiction, total operating expenses, and separations ratios. To avoid also having to isolate complex issues related to the separations process, the general references to earnings in this report are to total company net income rather than interstate earnings.

The TFP measurement process represents an extension of the traditional account structure that forms the basis of financial earnings reporting. TFP analysis rearranges this traditional structure into four categories: output, capital, labor and materials. Each category is subdivided into price, quantity, and weighting components. The weighting components are used to aggregate the revenue-based output measures into an aggregate output index and operating expense-based input quantities of capital, labor and materials into an aggregate input index.

Only the aggregate weighting components -- not the outputs -- are comparable to accounting-based components of earnings. However, the weighting components play a minor role in determining the growth rates of the aggregate input quantity index, the aggregate output quantity index, and TFP. While these are elements common to the calculation of both earnings and TFP, these common elements are used primarily as weighting components rather than quantity components of TFP calculation. The evaluation presented below clarifies some of the most important reasons for the Commission to disregard all attempts to justify alterations in the productivity offset based on the inference that short term changes in earnings correspond in either magnitude or direction to changes in either short-term or long-term TFP growth.

## II. Accounting vs. Productivity Measurement

### A. Revenue and Output Measurement

Revenue amounts reflected in earnings reports are based on the accurate recording of the dollar value of product sales and an accurate reflection of the revenue from ancillary activities such as the sale of company assets or investment income. Output reflected in TFP studies is an index of the physical volume of business associated with revenues from product sales. In telecommunications productivity studies, the volume of business is the ratio of product revenue to the appropriate price index.<sup>3</sup> Basic microeconomic theory indicates that price changes, price elasticity and cross price elasticity of each of the firm's products will cause changes in the mix of products sold and differences in the magnitude and direction of short-term growth rates of revenues and TFP output. Additional discrepancies between earnings and

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<sup>3</sup> A more complete explanation of output price index development is provided in Laurits R. Christensen, Philip E. Schoech, and Mark E Meitzen, "Productivity of the Local Operating Telephone Companies Subject to Price Cap Regulation," USTA, Attachment 6, (Christensen), Appendix 2.