data, is approximately 5 to 1. As shown in Table 2, NYNEX's data appear to be outliers because the ratios of its outside plant and NTS costs for PRI ISDN to standard analog service are almost twice those of other incumbent LECs. NYNEX's data, therefore, are excluded from the calculation of the average ratio for PRI ISDN to standard analog service.

**TABLE 1**

**Ratio of costs of standard analog service to BRI ISDN service**

| | Outside Plant (loop only) costs | All NTS costs |
|---|---|---|
| Ameritech | 1:1.07 | 1:1.45 |
| Bell Atlantic | 1:1.01 | 1:1.36 |
| NYNEX | 1:0.85 | 1:1.23 |
| Pacific Bell | 1:1.05 | 1:1.13 |
| US West | 1:0.80 | 1:1.07 |
| | | |
| Average ratio of costs | **1:0.96*** | **1:1.24*** |

**TABLE 2**

**Ratio of costs of standard analog service to PRI ISDN service**

| | Outside Plant (loop only) costs | Outside Plant (loop only) costs (excluding NYNEX data) | All NTS costs | All NTS costs (excluding NYNEX data) |
|---|---|---|---|---|
| Ameritech | 1:5.68 | 1:5.68 | 1:8.9 | 1:8.9 |
| Bell Atlantic | 1:4.13 | 1:4.13 | 1:15.80 | 1:15.80 |
| NYNEX | 1:10.94 | excluded | 1:27.74 | excluded |
| Pacific Bell | 1:4.67 | 1:4.67 | 1:8.70 | 1:8.70 |
| US West | 1:5.33 | 1:5.33 | 1:10.60 | 1:10.60 |
| | | | | |
| Average ratio of costs | **1:6.5*** | **1:4.95*** | **1:15.13*** | **1:10.5*** |

*Averages may differ due to rounding.

114. We incorporated by reference, in the current proceeding, all pleadings filed in response to the 1995 ISDN SLC NPRM, as listed in Appendix A of that order.[147] In the NPRM for the current proceeding, we invited comments on the effect of the 1996 Act on determining how many SLCs should be applied to ISDN services. We also sought comment on whether mandatory rate structures or rate caps should be prescribed for ISDN service or other derived channel services.[148]

**b. Discussion**

115. Consistent with the goal of this Order of realigning cost recovery in a manner that more closely reflects the manner in which those costs are incurred, we conclude that we should establish separate SLC rates for ISDN service based on the NTS loop costs of BRI and PRI ISDN service. We agree with the majority of commenters that a SLC for ISDN service equal to a SLC for single-channel analog service multiplied by the number of derived channels exceeds the NTS costs of ISDN service and therefore artificially discourages efficient use of ISDN. We find that basing ISDN SLCs on relative costs is most likely to assign costs of ISDN service to customers who subscribe to, and benefit from, that service. Further, we find that the current SLC-per-derived channel rule requires LECs to assess charges that are not related to the NTS costs of the service provided.

116. As set out above, the record indicates that the NTS loop costs of PRI ISDN service, excluding switching costs, reflect a cost ratio of approximately 5:1 compared to the NTS loop costs of single-channel analog service. We therefore conclude that we should amend our rules to establish, effective July 1, 1997, a SLC rate for PRI ISDN service equal to five times the incumbent LEC's average per-line interstate-allocated common line costs, subject to a ceiling of five times $9.00, adjusted annually for inflation. Similarly, the record shows that the NTS loop costs of BRI ISDN service, excluding NTS switching costs, when rounded to the nearest half SLC, reflect a 1:1 cost ratio relative to the NTS loop costs of single-channel analog service. Therefore, we here amend our rules to provide for a SLC rate for BRI ISDN service equal to the incumbent LEC's average per-line interstate-allocated common line costs, subject to the same ceilings otherwise applicable to non-primary residential lines. Thus, beginning January 1, 1998, the SLC ceiling for BRI ISDN service will be set at the lesser of the incumbent LEC's average per-line interstate-allocated costs, or $5.00. Each subsequent year, beginning January 1, 1999, the SLC ceiling will be adjusted for inflation and increased by $1.00 per line, until the ceiling equals that permitted for multi-line business lines.

[147] All pleadings filed in response to the 1995 *ISDN SLC NPRM* will be so noted.

[148] NPRM at ¶ 70.

117. The cost data submitted by the BOCs in response to our request for information includes information about all NTS cost components, including components located in the central office, such as line cards and trunk cards. The data confirm that line cards and trunk cards for PRI ISDN service in particular constitute a significant portion of the total NTS costs that are dedicated to the provision of service to the subscriber, and that ISDN line cards and trunk cards are many times more expensive than the cards used for standard analog service. As discussed in Section III.B, below, LECs will be required to recover the difference between the cost of an ISDN line card and the cost of a line card used for basic, analog service through a separate charge assessed directly on ISDN end users. For purposes of determining the rate levels for ISDN SLCs, therefore, we considered only the NTS loop costs associated with providing ISDN service.

118. As with other non-primary residential and multi-line business lines, incumbent price cap LECs may assess flat-rated PICCs on ISDN service to the extent necessary to recover the shortfall of common line revenues caused by SLC ceilings. Incumbent price cap LECs are permitted to assess one PICC for BRI ISDN service and five PICCs for PRI ISDN service. It is necessary for incumbent LECs to be able to assess up to five PICCs on PRI ISDN service because, as discussed above, the record indicates that the NTS loop costs of providing PRI ISDN service, excluding switching costs, reflect a cost ratio of approximately 5:1 compared to NTS loop costs of single-channel analog service. Because the PICC recovers NTS common line costs not recovered through the SLC, prohibiting incumbent LECs from charging as many as five PICCs for PRI ISDN service could prevent them from recovering the common line costs associated with providing PRI ISDN service in cases where the common line costs exceed the SLC ceiling.

119. Incumbent LECs shall assess PICCs on BRI and PRI ISDN services in conjunction with those on the non-primary residential and multi-line business lines. For the first year, the BRI ISDN PICC will be capped at $1.50 per month, and the PRI ISDN PICC will be capped at $2.75 per month. Each subsequent year these two PICCs shall increase by no more than an inflation adjustment, plus $1.00 and $1.50, respectively.

120. The record does not contain sufficient information to enable us to determine the relative NTS costs of derived channel services other than ISDN. We therefore limit our decision to BRI and PRI ISDN service. We agree with NYNEX that we should not apply the rules we adopt here regarding SLCs when the LEC uses derived channel technology but the end user has not requested derived channel service. Unless a subscriber orders ISDN or another service that requires derived channel technology, we see no reason to vary from our

general rule that the incumbent LEC should charge one SLC for each channel regardless of how it is provisioned.[149]

121. We are not persuaded by PacTel's argument that ISDN service is not an interstate service and should not, therefore, be regulated by the Commission. ISDN lines are not directly assigned to the intrastate jurisdiction, but are treated as common lines. The Commission's jurisdiction thus includes the interstate-allocated portion of the costs of the ISDN lines. The rules we adopt in this order govern only the manner in which LECs recover the interstate-allocated common line costs associated with providing ISDN service.

122. Before the Commission initiated CC Docket No. 95-72, Bell Atlantic, Pacific Bell, GTE, Cincinnati Bell, U S West, and Bellsouth sought waivers of Section 69.104 of the Commission's rules as it applies to ISDN service.[150] In their petitions, these LECs urged the Commission to amend its rules regarding the application of SLCs to ISDN service. We have amended our rules regarding the applications of SLCs to ISDN service. We therefore dismiss the waiver petitions of Bell Atlantic, Pacific Bell, GTE, Cincinnati Bell, U S West, and Bellsouth on the grounds that they are moot.

## B. Local Switching

### 1. Non-Traffic Sensitive Charges

#### a. Background

123. The local switch connects subscriber lines both with other local subscriber lines and with interoffice dedicated and common trunks. A local switch consists of (1) an analog or digital switching system; and (2) line and trunk cards, which connect subscriber lines and interoffice trunks, respectively, to the switch. Because all of this equipment is deployed

[149] This is consistent with our prior treatment, in other contexts, of derived channel technology. International Business Machines Corporation, Petition for Declaratory Ruling that LADT Services be Offered only through Telephone Company Organizations Separate from Network Operations, Memorandum, Opinion and Order, FCC 85-292 (rel. June 11, 1985) (*LADT Order*); *recon.*, FCC 86-122 (rel. Mar 25, 1986).

[150] The Bell Atlantic Telephone Companies Petition for Waiver of Section 69.104 of the Commission's Rules in Connection with ISDN Services (filed February 10, 1995); Pacific Bell Petition for Waiver of Part 69.104 as Applied to Derived Channel Services such as ISDN (filed February 21, 1995); The GTE Telephone Companies Petition for Waiver of Section 69.104 of the Commission's Rules in Connection with ISDN Services (filed March 2, 1995); Cincinnati Bell Telephone Company's Petition for Waiver of Section 69.104 of the Commission's Rules in Connection with ISDN-BRI Services (filed March 16, 1995); U S West Communications, Inc., Petition for Waiver of Section 69.104 of the Commission's Rules as Applied to ISDN Services (filed April 4, 1995); BellSouth Telecommunications, Inc. Petition for Waiver of Section 69.104 of the Commission's Rules in Connection with ISDN Services (filed April 5, 1995).

within the central office, all of its costs are assigned to the central office switching accounts of the Commission's Uniform System of Accounts and to the local switching category of central office expenses for jurisdictional separations purposes.[151] The interstate portion of these costs is currently recovered through per-minute local switching charges levied on IXCs.[152]

124. In the NPRM we observed that a significant portion of local switching costs may not vary with usage. For example, the cost of line cards or line-side ports appears to vary with the number of loops connected to the switch, not with the level of traffic over the loops. We tentatively concluded that LECs should not recover these costs through per-minute charges. Instead, we tentatively concluded that it is more reasonable and economically efficient to recover costs of equipment dedicated to individual customers, such as line-side ports and trunk ports associated with dedicated transport, through flat-rated charges. Trunk-side ports not associated with dedicated transport and the central processing portion of the switch, on the other hand, are shared among multiple carriers. We asked if these costs are driven by usage or by the number of lines and trunks served by the switch. We sought comment on whether rate structures for shared local switching facilities should consist of usage-sensitive, flat-rated, or a combination of both flat-rated and usage-sensitive rate elements. We asked commenters to recommend methods of identifying non-traffic-sensitive (NTS) local switching costs.[153]

**b. Discussion**

125. We conclude that, consistent with principles of cost-causation and economic efficiency, NTS costs associated with local switching should be recovered on a flat-rated, rather than usage sensitive, basis. The record before us indicates clearly that the costs of the line side port (including the line card, protector, and main distribution frame)are NTS. We conclude, therefore, that these costs should be recovered through flat-rated charges. Accordingly, for price-cap LECs, we reassign all line-side port costs from the Local Switching rate element[154] to the Common Line rate elements.[155] For price cap companies,

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[151] 47 C.F.R. §§ 32.2001(j), 36.125.

[152] 47 C.F.R. § 69.106.

[153] NPRM at ¶¶ 72-73.

[154] Currently, NTS costs of line-side ports are recovered through per-minute local switching charges assessed under section 69.106 of our rules, 47 C.F.R. § 69.106.

[155] Part 69 establishes two common line elements, the End User Common Line element, 47 C.F.R. § 69.4(a), and the Carrier Common Line element, 47 C.F.R. § 69.4(b)(2). Price cap LECs currently calculate adjustments to these charges in accordance with 47 C.F.R. § 61.46. Other LECs currently compute these charges in

these costs will be recovered through the common line rate elements, including the SLC and flat-rated PICC, described in Section III.A., above.

126. LECs incur differing costs for line ports used in the provision of different services. The SLC and PICC cost recovery mechanisms will recover only the cost of a line port used to provide basic, analog service, whether the end user has basic, analog service, or another form of service. As discussed above, data submitted in response to the ISDN SLC NPRM show that ISDN line cards cost significantly more than line cards associated with a basic, analog, subscriber line.[156] To the extent that the costs of ISDN line ports, and line ports associated with other services, exceed the costs of a port used for basic, analog service, price cap LECs will recover this excess amount through a separate end-user charge.

127. We conclude that the costs of a dedicated trunk port (including the trunk card and DS1/voice-grade multiplexers, if needed) should be recovered on a flat-rated basis because these costs are also NTS in nature. These costs should be recovered from the carrier purchasing the dedicated trunk terminated by that port. Similarly, we conclude that the costs of shared trunk ports should be recovered on a per-minute of use basis from the users of common transport trunks. We therefore establish two separate rate elements for recovery of these costs. Price cap LECs may recover the costs of each dedicated trunk port on a flat-rated basis from the purchaser of the dedicated trunk terminating at the port. In order to ensure that these purchasers of dedicated trunks do not pay the costs of shared trunk ports that they do not use, price cap LECs must also establish a usage-sensitive rate element for recovery of the costs of shared trunk ports. The costs of these shared trunk ports will be recovered on a per minute-of-use basis from users of common transport trunks terminating at these ports. We therefore add a separate category for all trunk port costs within the traffic sensitive basket, 47 C.F.R. § 61.42(e)(1). As with the other categories within this basket, the "trunk ports"

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accordance with 47 C.F.R. §§ 69.104 - 69.105.

[156] In response to our request for information in *End User Common Line Charges*, CC Docket No. 95-72, all of the BOCs submitted information on the NTS costs of providing ISDN service. *See* Letter and attachments from Anthony M. Alessi, Director, Federal Relations, Ameritech, to William F. Caton, Acting Secretary, Federal Communications Commission, October 23, 1995; Response to Data Request from Bell Atlantic, October 18, 1995; Letter and attachments from W.W. Jordan, Executive Director, Federal Regulatory, BellSouth, to Kathleen Wallman, Chief, Common Carrier Bureau, October 18, 1995; Letter and attachments from Joseph Di Bella, Counsel, NYNEX Government Affairs, to Kathleen M.H. Wallman, October 24, 1995; Letter and attachments from Sheryl L. Herauf, Director, Federal Regulatory Relations, Pacific Telesis, to William F. Caton, October 18, 1995; Letter and attachments from Paul Walters, Attorney, Southwestern Bell, to William F. Caton, October 11, 1995; Letter and attachments from Cyndie Eby, Executive Director, Federal Regulatory, US West, to William F. Caton, October 18, 1995. BellSouth, NYNEX, and Southwestern Bell requested confidential treatment for some of the information they submitted. In concluding that there are greater NTS costs associated with ISDN line cards, however, we did not rely on the allegedly confidential data because data adequate to support our conclusion was not subject to any request for confidential treatment.

category will have an upper service band index of +5 percent and no lower service band index.

128. We do not establish a fixed percentage of local switching costs that incumbent LECs must reassign to the Common Line basket or newly created Trunk Cards and Ports service category as NTS costs. In light of the widely varying estimates in the record, we conclude that the NTS portion of local switching costs likely varies among LEC switches. Accordingly, we require each price cap LEC to conduct a cost study to determine the geographically-averaged portion of local switching costs that is attributable to the line-side ports, as defined above, and to dedicated trunk side ports. These amounts, including cost support, should be reflected in the access charge elements filed in the LEC's access tariff effective January 1, 1998. Once established, this service category, like all others in the traffic sensitive basket, shall be subject to price cap adjustments for inflation and productivity. Although some LECs have obtained authority to geographically deaverage transport rates under a zone density pricing plan, because the costs of trunk ports will remain within the Traffic Sensitive basket, we conclude that trunk port costs should remain geographically averaged for now. We will consider deaveraging of these costs in connection with our assessment of other forms of pricing flexibility in a subsequent Order in this proceeding.

129. We direct all price cap LECs to include in their tariff filings implementing this Order an exogenous downward adjustment to the Traffic Sensitive basket, 47 C.F.R. § 61.42(d)(2), and corresponding exogenous upward adjustment to the Common Line Interstate Access Elements basket, 47 C.F.R. § 61.42(d)(1) to reflect the recovery of the interstate NTS costs of line-side ports from the Common Line rate elements.

130. USTA, SNET, and BA/NYNEX argue that we should not codify any specific local switching rate elements. We disagree. In the NPRM, we proposed to eliminate local switching rate elements only when an actual competitive presence is established for an exchange access service in a relevant geographic area, as measured by (1) demonstrated presence of competition; (2) full implementation of competitively neutral universal service support mechanisms; and (3) credible and timely enforcement of pro-competitive rules.[157] We tentatively concluded in the NPRM that, in the absence of actual competition, the mere availability of unbundled network elements under efficient rate structures would not provide incumbent LECs with sufficient incentive to adopt efficient, cost-causative access rate elements or structures.[158] The record before us indicates that flat-rated pricing for line ports and dedicated trunk ports is efficient, and reflective of cost causation. We will first amend the baseline switched access rate structure to reflect this determination. Then, in a subsequent

[157] NPRM at ¶¶ 201-02.

[158] NPRM at ¶ 214.

Report and Order in this docket, we will determine when and under what circumstances we will allow incumbent LECs greater flexibility in designing interstate access rate structures.

131. In addition, despite arguments from BA/NYNEX to the contrary, we find that the benefits to be gained from a more efficient, cost-causative rate structure outweigh the burden of establishing these flat-rate elements. Independent estimates from Cable & Wireless and USTA, both using NYNEX data, indicate that as much as, or even more than, half of local switching costs may be NTS.[159] Since the current, per-minute rate structure for the local switch was established, digital switches have become increasingly predominant in the network.[160] Given USTA's estimate that six percent of the costs of an analog switch and 51 percent of the costs of a digital switch are NTS,[161] we find that local switching costs have become increasingly NTS and now warrant the creation of a NTS recovery mechanism. Including NTS local switching costs in per-minute access charges contributes significantly toward unnecessarily high per-minute long distance rates for all customers. Restructuring rates to reflect more accurately cost-causation will promote competition, reduce per-minute charges, stimulate long-distance usage, and improve the overall efficiency of the rate structure.

132. We also reject proposals to recover the entire NTS portion of local switching costs from the new universal service support mechanisms.[162] In the *Universal Service Order,* we agreed with the Joint Board that we should establish a "nationwide benchmark based on average revenues per line for local, discretionary, interstate and intrastate access services, and

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[159] USTA Comments, Attachment 2 at 31; Cable & Wireless Comments at 12-13.

[160] We adopted the current, per-minute rate structure for local switching in 1983, *MTS and WATS Market Structure*, Phase I, Third Report and Order, 93 F.C.C.2d 241, 304-07 (1983). On reconsideration, we considered AT&T's proposal to redefine the local switching element to provide carriers with flexibility to establish a "transport termination" category, containing all equipment in the switch that terminates the line to trunk facilities from the IXC's POP, and a "common switching" category, containing the traffic sensitive local exchange switching used by a carrier. *MTS and WATS Market Structure*, Phase I, Memorandum Opinion and Order, 97 F.C.C.2d 682, 735-37 (1983). In response, we stated that, "[t]he flexibility that AT&T specifically requests for pricing the Local Switching element reflects a belief that our access charge plan should be revised to permit telephone companies to recover their costs for both end user and traffic sensitive access elements through a mixture of non-recurring charges and flat and usage-based periodic charges and that the carriers rather than this Commission should determine what that mixture should be . . . . While we believe that the access charge rules should evolve over time to reflect the menu of access services that AT&T foresees, we believe that the broad discretion AT&T proposes must await the development of the costing tools that can support the additional disaggregation of costs. Therefore we reject this proposal." *Id.* at 736. As digital switches have become increasingly prevalent within the network, we conclude that the time has come to establish some NTS elements for the NTS costs of line and dedicated trunk ports. We will consider questions of additional flexibility in connection with our assessment of the market-based approach to access reform.

[161] USTA Comments, Attachment 2 at 31.

[162] *E.g.*, BellSouth Reply at 10.

other telecommunications revenues that will be used with either a cost model or a cost study to determine the level of support carriers will receive for lines in a particular geographic area."[163] We find that it would be inconsistent with the Joint Board's recommendation if we were to mandate recovery of NTS local switching costs directly from universal service support mechanisms, independent of the revenue benchmark, and the percentage of high cost support recoverable from the federal universal service mechanisms at this time.[164]

133. It is not necessary to await action by the Joint Board on Separations[165] before revising the recovery mechanisms applicable to the interstate portion of the costs attributed to line ports and dedicated trunk ports. Our revision of the mechanisms used to recover the interstate portion of the costs in Part 32 local switching accounts that the jurisdictional separations process allocates to the interstate jurisdiction will have no direct effect on that allocation because these costs will continue to be separated in Part 36 based on relative dial-equipment-minutes of use. The fact that local switching costs are apportioned between jurisdictions based on a relative interstate and state usage is irrelevant to the choice of pricing structure for recovering those costs, however. Economic efficiency does not require the jurisdictional separation of NTS costs be based on an NTS (flat) factor. The jurisdictional separations process only determines whether the billed charges (flat or variable) are characterized as intrastate or interstate. Economic efficiency does require that NTS costs, regardless of how they are separated, be recovered in each jurisdiction through flat charges. Thus, there was no loss of economic efficiency when the Commission, agreeing with the recommendation of the Joint Board, simplified the separation of local switching by eliminating the former distinction between NTS and traffic-sensitive costs and creating a single switching category that is assigned to the jurisdictions based on dial equipment minutes.[166]

134. On the other hand, economic efficiency will be increased if local switching costs (regardless of the jurisdiction to which they are assigned) are recovered through a combination of flat charges for NTS costs and traffic sensitive charges for the remainder. Because, at the time that the Commission established the current jurisdictional separations process, it did not consider the distinction between the switch and the port that we address today, the current jurisdictional separations process does not distinguish port costs from the costs of the local

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[163] *See Universal Service Order* at Section VII.C.5.

[164] *Id.* at Section VII.C.6.

[165] In allocating costs between the intrastate and interstate jurisdictions, the Commission consults with the states through the operation of the Joint Board on Separations. *See* 47 U.S.C. § 410(c); *Amendment of Part 67 of the Commission's Rules and Establishment of a Joint Board,* Notice of Proposed Rulemaking and Order Establishing a Joint Board, 78 F.C.C.2d 837 (1980).

[166] *MTS and WATS Market Structure*, Report and Order, 2 FCC Rcd 2639, 2642 (1987).

switch itself.[167] We have the authority and obligation, independent from the Joint Board, to establish appropriate rate structures for recovering the costs the jurisdictional separations process allocates to the interstate jurisdiction.[168] We take steps today to address the fact that the costs of line ports and dedicated trunk ports are more properly recovered for Part 69 purposes from the Common Line and Direct-Trunked Transport rate elements as NTS charges, instead of from the traffic sensitive Local Switching element. We will, however, examine any jurisdictional separations issues presented by NTS switching costs in our upcoming separations NPRM.

135. Costs may vary for shared local switching facilities according to the number of lines connected, or the traffic over those lines.[169] In the former case, the costs of the shared facility may be recovered in the most cost-causative manner by imposing a proportionate share of the costs on each line while, in the latter case, usage-sensitive charges may better reflect cost causation. With respect to such shared local switching facilities, including the switching matrix and shared trunk ports, we gave states flexibility in our interconnection proceeding to establish either per-minute usage charges, or flat-rated charges, as appropriate.[170] In the access context, however, we will continue to require price cap incumbent LECs to recover the costs of shared local switching facilities, including the central processor, switching matrix, and shared trunk ports, on a per-minute basis. On the basis of the information in the record before us, it would be difficult to identify the NTS and traffic-sensitive portions of the costs of shared switching facilities and to verify the accuracy of LEC studies attempting to do so.[171] Therefore, until we gain more experience with rate structures for unbundled network elements that are implemented pursuant to Sections 251 and 252 and that segregate these costs

[167] 47 C.F.R. § 36.125(b). *See MTS and WATS Market Structure*, Report and Order, 2 FCC Rcd at 2642 (adopting Joint Board recommendation). The Commission subsequently explained that digital switches use concentrators to allow a small number of components to serve a large number of lines, taking advantage of the fact that most lines are unused most of the time. Because increased usage volume per line reduces the concentration level and increases the number of switch components required, the Commission concluded that "the costs of modern digital switches is actually predominantly [traffic sensitive]." *MTS and WATS Market Structure*, Order on Reconsideration and Supplemental Notice of Proposed Rulemaking, 3 FCC Rcd 5518, 5526 (1988). In performing this analysis, therefore, the Commission did not indicate that it gave specific consideration to the costs associated with of line ports and dedicated trunk ports. These components must be provisioned in a 1:1 ratio with lines and trunks, respectively, and their costs do not vary with traffic levels.

[168] *E.g.*, 47 U.S.C. §§ 151, 152, 154(i-j).

[169] *Compare* Cable & Wireless Comments at 12-13 *and* Citizens Utilities Comments at 30 *and* GSA/DOD Comments at 4 *and* Texas Commission Comments at 11-12 *with* BellSouth Comments, Attachment 2 at 14.

[170] *Local Competition Order* at ¶¶ 810-18.

[171] MCI Comments at 80-82.

into traffic-sensitive and NTS components, we will continue to adhere to the current, per-minute rate structure for shared switching facilities.

### 2. Traffic Sensitive Charges

136. In the NPRM, we sought comment on several alternative rate structures for recovery of usage-sensitive local switching costs. Specifically, we sought comment on whether the Commission should require or permit LECs to establish a separate charge for call setup, and if so, whether the charge should be levied on all call attempts, or only completed calls.[172] We also sought comment on whether the Commission should require or permit incumbent LECs to establish peak and off-peak pricing structures for shared local switching facilities,[173] and whether the existing per-minute rate structure adequately reflects the manner in which traffic-sensitive local switching costs are incurred.[174]

#### a. Call Setup Charges

137. Among price cap carriers today, most call setup is performed with out-of-band signalling, generally using the SS7 signalling network.[175] In light of the widely varying estimates of the costs of call setup in the record,[176] we conclude that these costs may be more than a *de minimis* portion of the costs of local switching. The record indicates that these call setup charges are incurred primarily on a per-call rather than a per-minute basis.[177] By requiring recovery the costs of call setup on a per-minute basis, our current rate structure mandates an implicit subsidy running from customers that make lengthy calls to those that

[172] NPRM at ¶¶ 75-76.

[173] NPRM at ¶¶ 77-78.

[174] NPRM at ¶ 79.

[175] Ameritech comments that it uses SS7 for over 95 percent of its customers, that its use of SS7 is increasing, and that other large incumbent LECs probably have comparable figures. Ameritech Comments at 16. For a more detailed description of the operation of the SS7 signalling network, *see* Section III.E.

[176] While Sprint estimates that call setup costs represent approximately two to six percent of the costs of a typical call (Sprint Reply at 14), PacTel estimates that it costs five times more to set up a call than it does to provide a minute of use (PacTel Comments at 68). Using the industry average call duration cited by the California Commission (Reply at 3) of 3.86 minutes, call setup charges would represent a much larger percentage of the total costs of a typical call than Sprint estimates.

[177] *E.g.*, Excel Comments at 12; TRA Comments at 37; Ameritech Comments at 15; PacTel Comments at 69; Citizens Utilities Comments at 30; Frederick & Warinner Comments at 6-7; Minnesota Independent Coalition Comments at 15; Alabama Commission Comments at 8; California Commission at 2-3; Texas Commission at 14; TCI Comments at 12.

make many short-duration calls. Therefore, we find that we should not continue to require the price cap LECs to recover costs of call setup from per-minute local switching charges.

138. Accordingly, we will revise Section 69.106 of our rules[178] to permit, but not to require, price cap LECs to establish a separate per-call setup charge assessed on IXCs for all calls handed off to the IXC's point of presence (POP). As noted earlier, because an incumbent LEC originating an interstate call incurs call setup costs even if the call is not completed at the called location, we permit these LECs to recover call setup charges on all originating interstate calls that are handed off to the IXC's POP, and on all terminating calls that are received from an IXC's POP. With respect to originating call attempts, we agree with the California Commission that, when the call is handed off to the IXC's POP, the incumbent LEC's switches and signalling network have performed their functions and the incumbent LEC has incurred the full cost of call setup.[179] We also permit incumbent LECs to impose a setup charge for terminating calls received from an IXC's POP, whether or not that call is completed at the called location, because the incumbent LEC signalling network in either case must perform its setup function.

139. We conclude that the call setup charge should not be mandatory because some incumbent LECs may determine that call setup costs either are in fact *de minimis* or are otherwise outweighed by the costs of the network and operations support systems (OSS) upgrades necessary to install measurement and billing systems. In such cases, it would be economically inefficient to mandate a separate call-setup charge because the costs of collecting the charge might exceed the revenue collected from the charge itself. We are aware that, by making the call-setup charge permissive only, we may allow certain incumbent LECs' rate structures to continue to subsidize short-duration calls. We nevertheless conclude that we should not mandate separate collection of a call-setup charge in cases where the LEC determines that the costs of eliminating this subsidy exceed the benefits to be gained. In contrast, we find that those incumbent LECs that either have or obtain the ability to implement a call-setup charge should have the flexibility to adopt this cost-causative rate structure.

140. No party disputes the fact that incumbent LECs incur costs of call setup for call attempts, in addition to completed calls. Some parties, however, argue that call setup charges should be assessed only on completed calls in order to reduce customer confusion. We anticipate that consumer confusion will be minimal, however, because the call setup charge we permit will be imposed on IXCs, not end users. We find it unlikely that IXCs would choose to pass this charge along to their customers in the form of a separate charge per call

[178] 47 C.F.R. § 69.106.

[179] California Commission Reply at 2.

attempt. For instance, IXCs today generally charge their customers for completed long distance calls even though they incur access charges for many uncompleted calls as well.[180]

141. Other commenters state that setup charges imposed on call attempts will result in charges being imposed on a caller that has not received service. LCI asserts that "customers do not expect to pay for uncompleted call attempts, and the carriers are not entitled to recover their costs of uncompleted call attempts,"[181] citing the Commission's decision in *VIA USA, Ltd.*[182] The text cited from that order, however, addresses only customer expectations that have arisen because our current rules make no explicit provision for the recovery of costs of an uncompleted call. We now find that a call setup charge, assessed to an IXC, should not be prohibited because a rate structure that recovers some switching costs through a per-call setup charge on all call attempts is more cost-causative than one limited to the recovery of costs only from completed calls.

142. Still other commenters argue that, if we permit call setup charges to be imposed for call attempts, we will, at best, open the door to unauditable billing errors or, at worst, facilitate incumbent LEC fraud and duplicity. These commenters argue that the incumbent LEC will be able to generate additional revenue, or degrade the service of IXC competitors, by blocking calls at its own switch. Based on this record, we conclude that these concerns are not well-founded. By permitting a setup charge only for originating call attempts that are handed off to the IXC's POP, we minimize the originating incumbent LEC's incentive to engage in this type of activity because the incumbent LEC will receive no compensation for calls blocked at its own switch. In addition, incumbent LECs have compelling incentives to deliver interstate calls to an IXC's POP. As competition develops for local service, it appears doubtful that an incumbent LEC would find it advantageous to block deliberately interstate calls placed by their end user customers. Such practices would encourage entry by new competitors and increase the interest of affected end users in finding a more reliable service provider. We also find it unlikely that either originating or terminating incumbent LECs

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[180] IXCs today incur access charges for originating access minutes of use from the time when the originating LEC hands a call off to the IXC's POP, regardless of whether the call is completed at the called location. 47 C.F.R. § 69.2(a). As a result, originating *access* minutes of use are approximately seven percent greater than originating *conversation* minutes of use. IXCs today do not generally choose to bill their customers directly for access minutes of use charged by the LEC for uncompleted calls or for the interval before the called party answers. *See* Federal Communications Commission, Com. Car. Bur., Industry Analysis Division, Telecommunications Industry Revenue: TRS Fund Worksheet Data, 8, fig. 3 (Estimates of Toll Rates and Access Costs per Conversation Minute) (Dec. 31, 1996).

[181] LCI Comments at 26 n.41.

[182] In *VIA USA*, the Commission stated as a factual matter that, "*in the system as currently structured* by facilities-based carriers, customers do not expect to pay for an uncompleted call. Nor do carriers expect to be compensated." 10 FCC Rcd 9540, 9545 (1995) (emphasis added).

would intentionally risk the collection of often significant per-minute access charge revenues on a completed long-distance call in order to collect additional, much smaller per-call setup charges. Finally, we know of no significant allegations of degraded service quality attributable to the very similar current regime, under which incumbent LECs collect at least a full minute of originating access revenues on uncompleted calls delivered to the IXC's POP. We are prepared, however, to investigate claims that an incumbent LEC is blocking calls in an intentional or discriminatory manner.

143. Several large business customers that make substantial numbers of short-duration calls, such as those associated with credit card authorization, automatic teller machine operation, or other transaction-oriented data transfers, argue that imposing a call setup charge will be disruptive to their businesses and may force them to use alternatives to the public switched network.[183] These commenters are the primary beneficiaries of the subsidy that is implicit in the current recovery of call setup costs on a per-minute basis, running from customers that make lengthy calls to those that make many short-duration calls. The existing rate structure may well have encouraged users who make many short duration calls to use the public-switched network in inefficient ways. Rate structures that are aligned with cost causation, on the other hand, should encourage economically-efficient use of the telecommunications network. Transaction-oriented users of the network may be motivated to develop more economically efficient processing methods, with resulting economic benefits. Because this group of IXC customers may need time to adjust to the new rate structure, however, incumbent LECs choosing to impose a per-call setup charge on IXCs may do so, at the earliest, in their access tariff filings effective July 1, 1998. This gives a customer over one year to make any necessary adjustments. This time should be sufficient to mitigate any potential disruptive effects of this rate structure change.[184]

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[183] CompuServe/Prodigy Comments at 25-29, Reply at 11-12; Bankers Clearing House Comments at 7-8; Ad Hoc Comments at 19-20, Reply at 3-4.

[184] Our experience with Ameritech's tariffed unbundled SS7 signalling charges indicates that a call setup charge, if implemented, may in fact be relatively small. For call setup purposes, Ameritech has established separate signalling rate elements for SS7 call setup for both direct-trunked and tandem-switched traffic. The first of these, the "ISDN User Part (ISUP) Signal Formulation Charge," is a "per signalling message charge for the formulation of the ISUP message at end offices and tandems" in the amount of .06¢ ($0.0006) per message assessed for both direct-trunked and tandem-switched traffic. The second, the "Signal Transport Charge," is a "per-signalling message charge for the transmission of signalling data between the local STP and an end office SP/SSP" in the amount of .012¢ ($0.00012) per message. The third, the "Signal Switching Charge" is a "per signalling message charge for switching an SS7 message at the local STP" in the amount of .025¢ ($0.00025) per message. The Signal Transport Charge and the Signal Switching Charge are assessed on direct-trunked traffic only. For tandem switched traffic, the "Signal Tandem Switching Charge" is a "per signalling message charge for the bundled provision of multiple instances of signal switching and signal transport for the situation in which tandem routed facilities are provided to the end office" in the amount of .055¢ ($0.00055). The Signal Tandem Switching charge incorporates three instances of transport and two instances of switching at the STP. Both the Signal Switching and the Signal Tandem Switching rate elements include the costs of measuring device and

144. MCI asserts that there may be costs of call setup in addition to those associated with signalling,[185] such as a portion of the switch central processor costs.[186] We limit the costs that an incumbent LEC may recover through call setup charges, however, to those associated with signalling because we agree with MCI that it would be extremely difficult to separate the costs of the switch CPU and other traffic-sensitive costs into per-message and per-minute portions and to verify that the allocation has been done properly.[187]

145. Several commenters caution that, if we permit a call setup charge, we should also ensure that the charge does not overlap with any SS7-related charges now permitted or developed in this proceeding.[188] Because call setup is one function of the SS7 network, some of these costs may already be recovered through the current Part 69 SS7 rate elements.[189] Currently, Section 69.125 of our rules permits LECs to recover from IXCs only (1) a flat-rated signalling link charge for the Dedicated Network Access Line (DNAL); and (2) a flat rated Signal Transfer Point (STP) port termination charge.[190] While these elements recover the costs of some dedicated SS7 facilities, they do not include the usage-based signalling costs of call setup, including the costs incurred to switch messages at the local STP, to transmit messages between an STP and the incumbent LEC's end office or tandem switch, and to process or formulate signal information at an end office or tandem switch.[191]

146. Currently, the setup costs of certain calls may be recovered through database query charges, either for the line information database (LIDB)[192] or the 800 database.[193] In

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billing system changes. *See Ameritech Operating Companies Tariff FCC No. 2*, Tariff Transmittal No. 982, filed July 5, 1996.

[185] MCI Comments at 82.

[186] MCI Comments at 82-83.

[187] *Id.*

[188] *E.g.*, AT&T Reply at 29; Bankers Clearing House Comments at 4-5; Ad Hoc Comments at 23-25; TCI Comments at 12-13.

[189] 47 C.F.R. § 69.125.

[190] 47 C.F.R. § 69.125.

[191] Neither section 69.125 nor any of our other signalling-related cost recovery rules, discussed below, provide for recovery of the costs of these functions. As a result, these costs are recovered through per-minute charges assessed on completed calls. 47 C.F.R. § 69.106. As discussed below, LECs choosing to adopt a separate SS7 signalling rate elements, similar to those established by Ameritech under waiver, may recover a large part of their call setup costs through that mechanism.

[192] 47 C.F.R. § 69.120.

addition, incumbent LECs recover some costs associated with the provision of certain signalling information necessary for third parties to offer tandem switching through the "signalling for tandem switching" rate element.[194]

147. Imposing a call setup charge for interexchange calls should not overlap with any of these existing rate elements. Nevertheless, we clarify that an incumbent LEC choosing to impose a call setup charge may not include in that charge any costs that it continues to recover either through other local switching charges, through charges for dedicated SS7 facilities, or through other signalling charges. In this Order, we also permit incumbent LECs to adopt a more detailed SS7 rate structure, modeled on that currently used by Ameritech under waiver.[195] This SS7 rate structure may permit LECs to recover a significant portion of their call setup costs without an additional call setup charge. Given estimates in the record that SS7 is used to provide signalling for more than 95 percent of the large LECs' customers,[196] we conclude that, in the ordinary case, a price cap LEC will not need to use both the optional SS7 rate structure and a separate call setup charge to recover the costs of call setup. We recognize, however, that some call setup is still performed using in-band, multifrequency (MF) signalling, rather than out-of-band signalling systems. Because SS7 charges will not recover costs of call setup using MF signalling, we do not prohibit the use of both SS7 and call setup charges. We caution LECs adopting both the optional SS7 rate structure and an additional call setup charge, however, that cost support filed with access tariffs must clearly indicate the allocation of individual costs of call setup between these two recovery mechanisms; the same costs cannot be double-recovered using both mechanisms.

### b. Peak and Off-Peak Pricing

148. We conclude that we should not now mandate a peak-rate pricing structure for local switching. The record reflects significant practical difficulties that may make it difficult or impossible to establish and enforce a rational, efficient, and fair peak-rate structure as a matter of regulation. For example, the record outlines a variety of difficulties that incumbent LECs will confront in determining peak and off-peak hours with any degree of certainty, based on geographic, user-type, service, and other variations. Moreover, peak usage periods may shift over time as usage patterns change, and as competitors enter the market. Based on

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[193] 47 C.F.R. § 69.118.

[194] 47 C.F.R. § 69.129.

[195] *Ameritech Operating Companies Petition for Waiver of Part 69 of the Commission's Rules to Establish Unbundled Rate Elements for SS7 Signalling*, Order, 11 FCC Rcd 3839 (Com. Car. Bur. 1996) (*Ameritech SS7 Waiver Order*). *See* Section III.E.

[196] Ameritech Comments at 16. Ameritech states that, "SS7 technology is currently used for more than 95% of customers in the Ameritech network. This figure is probably comparable for other large [incumbent LECs.]"

these difficulties, some incumbent LECs may find it too costly or too difficult to develop, implement, and maintain a peak-rate structure that will allow them to capture all or most of the benefits this structure could offer.

149. We do recognize the possible efficiency of a peak-rate structure.[197] Accordingly, we will consider whether LECs should have the flexibility to develop such peak and off-peak rate structures for local switching on a permissive basis when we consider other issues of rate structure flexibility in a subsequent Report and Order that we will adopt in this proceeding.

## C. Transport

150. Transport service is the component of interstate switched access consisting of transmission between the IXC's point of presence (POP) and LEC end offices.[198] Currently, incumbent LECs offer two basic types of interoffice transport services. The first, direct-trunked transport, uses dedicated circuits for transport between a LEC end office and the LEC serving wire center, or between any other two points the direct-trunked transport customer requests. The second, tandem switched transport, uses common transport facilities to connect the end office to a tandem switch. Common transport circuits may be used to transmit the individual calls of many IXCs and even the incumbent LEC itself. Transport circuits dedicated to a particular access customer connect the tandem switch to the serving wire center. Dedicated entrance circuits carry traffic between the IXC POP and the serving wire center, whether the IXC uses direct-trunked transport or tandem-switched transport.

151. In the NPRM, we expressed concern that some of our current Part 69 rules[199] may require LECs to recover transport costs through rate structures that do not reflect accurately the way these costs are incurred. We sought comment on possible revisions to many of these rate elements.[200]

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[197] *Local Competition Order* at ¶ 755.

[198] *Transport Rate Structure and Pricing*, Third Memorandum Opinion and Order on Reconsideration and Supplemental Notice of Proposed Rulemaking, 10 FCC Rcd 3030, 3033 (1994) (*Third Transport Reconsideration Order*).

[199] *See, e.g.*, 47 C.F.R. §§ 69.110, 69,111, 69.112, 69.124.

[200] See NPRM at ¶¶ 80-95.

### 1. Entrance Facilities and Direct-Trunked Transport

#### a. Background

152. Entrance facilities are dedicated circuits that connect an access customer's POP with the LEC's serving wire center. Direct-trunked transport facilities are dedicated trunks that carry an access customer's traffic from the LEC end office to the serving wire center without switching at the tandem switch. In the *First Transport Order*, we mandated an interim rate structure under which entrance facilities and direct trunked transport are priced on a flat-rated basis, which may be distance sensitive.[201] Initial rate levels for direct-trunked transport and entrance facilities were presumed reasonable if they were set equal to the rates for corresponding special access service components (special access service and special access channel termination, respectively).[202] In the NPRM, we tentatively concluded that, because direct-trunked transport and entrance facilities appear to be dedicated to individual customers, a flat-rated pricing structure accurately reflected the way LECs incur the costs of these facilities.[203] We sought comment on this tentative conclusion and on whether incumbent LECs should be permitted to offer transport services differentiated by whether the LEC or the IXC is responsible for channel facility assignments (CFAs).[204] We also sought comment on whether any rules in addition to the interim rules are necessary to govern rate levels for these services.[205]

#### b. Discussion

153. We conclude that both entrance facilities and direct-trunked transport services should continue to be priced on a flat-rated basis and that charges for these services may be distance-sensitive. In the *First Transport Order*, we found that such a flat charge would facilitate competition in the direct-trunked transport market and encourage incumbent LECs to

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[201] *Transport Rate Structure and Pricing*, Report and Order and Further Notice of Proposed Rulemaking, 7 FCC Rcd 7006, 7016-7017 (1992) (*First Transport Order*); *see also* 47 C.F.R. § 69.110.

[202] *Transport Rate Structure and Pricing*, First Memorandum Opinion and Order on Reconsideration, 8 FCC Rcd 5370, 5375 (1993) (*First Transport Reconsideration Order*).

[203] NPRM at ¶ 86.

[204] A channel facility assignment is the actual designation of the routing that a circuit takes within the incumbent LEC network. This assignment may be made either by an IXC purchasing a dedicated circuit, or the incumbent LEC itself.

[205] NPRM at ¶ 86.

make efficient network decisions.[206] For the same reasons, and because this pricing structure is reflective of the manner in which incumbent LECs incur the costs of provisioning these facilities, we confirm that the interim rate structure the Commission adopted for these facilities should be made final.

154. U S West and Sprint make a persuasive showing that, as carriers expand their use of fiber-optic ring architecture and other modern network designs, transport costs should become less distance sensitive because LECs may transport a call along any one of many paths to its destination based on transient network traffic levels.[207] We conclude, however, that we need not amend our Part 69 rules now to reflect the decreasing sensitivity of transport costs to distance. Our rules permit, but do not mandate, the use of distance sensitive transport charges. Therefore, if an incumbent LEC determines that its transport costs have become less distance sensitive, it may reduce or eliminate the distance-sensitivity of its direct-trunked transport rates. For two reasons, we expect that incumbent LECs will adjust their rates to reflect any change in the distance sensitivity of transport costs. First, as U S West states, ring architecture will be most prevalent, and therefore, will reduce the distance sensitivity of rates most dramatically, in densely populated areas.[208] When an incumbent LEC obtains authority to deaverage access rates geographically, therefore, it may choose to offer a less distance-sensitive pricing structure in more densely populated areas than it does in less densely populated areas. Such a structure would properly reflect the reduced distance sensitivity of the incumbent LEC's costs in more densely populated areas. Second, as competition develops, incumbent LECs will come under increasing market pressures to maintain rates that reflect the nature of the costs underlying the service. If they choose not to do so, we expect that new market entrants will develop competitive service offerings at prices more reflective of underlying costs.

155. We decline Ameritech's request in its comments for immediate flexibility to offer new technologies to switched access customers without obtaining a Part 69 waiver or passing a public interest test.[209] In our Third Report and Order in the *Price Cap Performance Review for Local Exchange Carriers* (*Price Cap Performance Review Third Report and*

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[206] *First Transport Order*, 7 FCC Rcd at 7022.

[207] As Sprint explains, LECs are moving toward ring configurations in response to customer demands for the increased service reliability gained from this architecture's route diversity and self-healing qualities. "With the ring configuration, the tandem-routed traffic and direct-trunked traffic will all be moving in the same ring, and the distance traversed will simply be a function of the provisioning path selected by the LEC for individual traffic. Utilization of available bandwidth between two nodes at any point in time will become a higher priority in the economic determinant of cost than the distance between the two nodes." Sprint Comments at 24.

[208] *See* U S West Reply at 30.

[209] *See* Ameritech Comments at 17-18.

*Order*), adopted along with the NPRM in this proceeding, we eliminated the need for a Part 69 waiver for new services, and instead required incumbent LECs to file a petition demonstrating that introduction of the new service would be consistent with the public interest.[210] Such petitions will give LECs that desire to do so the opportunity to make their cases and receive the requested flexibility.[211] This procedure significantly streamlined the prior waiver process, and we conclude that the public interest will not suffer if we do not grant incumbent LECs additional immediate flexibility in this area as part of our basic rate structure modifications. We will give further consideration to Ameritech's request for additional flexibility to offer new technologies to switched access customers as part of our assessment of other aspects of pricing flexibility in a subsequent Report and Order in this proceeding.

156. We also will consider whether LECs should be permitted to offer direct-trunked transport services that are differentiated by whether the incumbent LEC or the transport customer is responsible for performing channel facility assignments in connection with our evaluation of other forms of pricing flexibility in a subsequent Report and Order in this proceeding. As MCI argues in its comments, it is unclear whether rates for direct-trunked transport where the LEC controls the CFA should be higher or lower than the rates that apply where the IXC controls the CFA.[212] Although the LEC may be able to make more efficient use of its network facilities when it controls the CFAs itself, this efficiency benefit may be offset by the additional costs the LEC incurs in performing the CFA function. We agree with MCI that an incumbent LEC may be able to increase its network efficiency by retaining or assuming control of CFAs, particularly if an IXC orders a relatively large amount of transport capacity. In those cases, however, rate differentiation based on CFA control appears to be the functional equivalent of a volume discount. As a result, we will consider this issue, along with other pricing flexibility issues, in a subsequent Report and Order planned in this docket.

157. In its comments, USTA requests that we forbear under Section 10 of the Communications Act[213] from regulating services in the interexchange basket, special access, collocated direct-trunked transport, and directory assistance.[214] We will address USTA's request along with other pricing flexibility issues, in a subsequent Report and Order planned in this docket.

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[210] NPRM at ¶¶ 309-310 (contained within the *Third Report and Order* portion of that item). The rule changes implementing this procedure will become effective on June 30, 1997.

[211] *See* 47 C.F.R. § 69.4(g).

[212] MCI Comments at 84-85.

[213] 47 U.S.C. § 160.

[214] USTA Comments at 35-48.

## 2. Tandem-Switched Transport

### a. Background

158. Tandem-switched transport uses trunks that are shared among many IXCs and the LEC itself to carry traffic between the end office and a tandem switch. The tandem switch routes IXC traffic onto an appropriate dedicated trunk that runs between the tandem switch and the serving wire center.[215] An IXC may use tandem-switched transport either as its primary form of transport in lieu of direct-trunked transport, or to carry traffic that overflows from its direct-trunked transport facilities at peak periods. In 1982, the *Modification of Final Judgment* (*MFJ*) established an interim rule that required, until September 1, 1991, BOC charges to IXCs to be "equal, per unit of traffic" of a given type transported between end offices and facilities of the IXCs within an exchange area or within reasonable subzones of an exchange area.[216]

159. The Commission replaced the "equal charge" rule in 1993 with an interim rate structure for tandem-switched transport. This interim structure allows IXCs to choose between two rate structures for the purchase of tandem-switched transport. Both options provide for a per-minute tandem switching charge. Under the first option, an IXC may elect to pay "unitary" per-minute charge for transmission of traffic from the end office, through the tandem switching office, to the serving wire center. This charge may be distance sensitive, with distance measured in airline miles from the end office to the serving wire center. Under the second option, the "three-part rate structure," in addition to the charge for the tandem switch, an IXC may elect to purchase transmission on a bifurcated basis, with the end office-to-tandem portion charged on a per-minute basis, and the tandem-to-serving wire center portion charged as direct-trunked transport facilities, *i.e.*, on a flat-rated basis. Under the three-part rate structure, both portions of the transmission charge may be distance sensitive based on the airline mileage to the tandem office.[217]

160. In adopting the interim rate structure, the Commission stated that initial direct-trunked and tandem-switched transport rates would be presumed reasonable if set based on

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[215] An end office local switch may also serve as a tandem switch with certain software upgrades. Therefore, the tandem switching office is also often an end office in its own right. Similarly, an IXC typically uses a large end office, upgraded with additional trunking capacity to handle the IXC's traffic, as its serving wire center.

[216] *United States v. American Tel. and Tel. Co.*, 552 F. Supp. 131, 233-34 (AT&T Consent Decree, Appendix B, Section B(3)), *aff'd sub nom. Maryland v. United States*, 460 U.S. 1001 (1983).

[217] *See First Transport Reconsideration Order*, 8 FCC Rcd at 5372.

special access rates in effect on September 1, 1992 using a DS3 to DS1[218] rate ratio of at least 9.6 to 1.[219] Per-minute tandem-switched transport rates were presumed reasonable if set using a weighted average of DS1 and DS3 rates reflecting the relative numbers of circuits of each type in use in the tandem-to-end office link, and assuming circuit loading of 9000 minutes of use per month per voice-grade circuit.[220]

161. Under the interim rate structure, whether a tandem-switched transport customer elects to purchase tandem-switched transport under the unitary or the three-part rate structure, the LEC imposes a separate, per-minute charge on the tandem-switched transport customer for use of the tandem switch. The Commission set this charge initially to recover only twenty percent of the tandem revenue requirement, in order to: (1) protect small IXCs that use tandem-switched transport as their primary transport mechanism from substantial increases in tandem-switched transport rates;[221] (2) ensure that the interim rate structure did not "endanger the availability of pluralistic supply in the interexchange market" that had developed under the equal charge rule;[222] and (3) allow IXCs a transitional period to reconfigure their networks to eliminate inefficiencies that had developed under the equal charge rule and to prepare for a fully cost-based rate structure.[223] Unlike the direct-trunked and tandem-switched transport rates, which are set using overhead loadings based on special access, the tandem switching rates used higher overhead loadings applicable to switched access.

162. As part of the interim rate structure, the Commission also created the TIC to recover on a per-minute basis from all switched access customers the difference between the Part 69 transport revenue requirement and the revenues projected to be recovered under the interim rate structure.[224] The TIC was explicitly intended to make the transition to the interim

[218] A DS1 line is capable of transmitting 24 voice conversations, each digitally encoded at 64 kilobits per second, for a total capacity of 1.544 megabits per second. A DS3 line has 28 times the capacity of a DS1.

[219] *First Transport Order*, 7 FCC Rcd at 7029. Special access customers use a dedicated trunk running between the customer's premises and the IXC's POP, thereby bypassing the LEC's switched network facilities altogether. This service is primarily used by large volume users in densely populated areas.

[220] *Id.* at 7036-37.

[221] *See Competitive Telecommunications Ass'n v. FCC*, 87 F.3d 522, 526-27 (D.C. Cir. 1996) ("*CompTel*").

[222] *First Transport Order*, 7 FCC Rcd at 7008.

[223] *Id.* at 7016.

[224] *Id.* at 7038.

rate structure revenue neutral.[225] Among other possible costs, the TIC recovers the remaining 80 percent of the tandem-switching revenue requirement.

163. Portions of the interim transport rate structure were recently remanded to the Commission by the United States Court of Appeals for the District of Columbia Circuit.[226] With respect to tandem-switching rates and the TIC, the Court ordered us either to implement a cost-based rate structure or offer a "rational and non-conclusory analysis in support of [our] determination that an alternative structure is preferable."[227] With respect to overhead loadings, the Court ordered us either to substantiate that our current method of allocating overhead is cost-based, choose a method that is, or provide a reasoned explanation of our decision to pursue a non-cost-based system.[228]

164. In the NPRM, we sought comment on several alternative rate structures for tandem-switched transport service facilities, including: (a) maintaining the interim rate structure, which permits the IXCs to choose between the two pricing alternatives above; (b) eliminating the unitary rate option and requiring the IXCs to purchase tandem-switched transport under the three-part rate structure; or (c) developing another, different rate structure.[229] We also sought comment on whether, in conjunction with any of these pricing options, we should apply to tandem switching any of the options for local switching discussed above, including whether we should establish separate flat-rated charges for the dedicated ports on the serving wire center side of the tandem or other NTS components of the tandem switch, and whether usage-based or flat rates more accurately reflect shared tandem-switching costs.[230] We also sought comment on whether, in conjunction with any of these options, we should permit or require peak load pricing for usage-based charges for tandem-switched transport service, and on whether any portion of tandem-switched transport costs should be recovered from direct-trunked transport customers.

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[225] *Id.*

[226] *CompTel*, 87 F.3d 522.

[227] *Id.* at 536.

[228] *Id.*

[229] NPRM at ¶¶ 87-88, 91.

[230] NPRM at ¶ 89.

### b. Overview of Rate Structure and Rate Level Changes

165. In this section, we summarize the changes we make to the tandem-switched transport rate structure and rate levels below. We conclude that we should require incumbent LECs to implement a cost-based rate structure for tandem-switched transport in four stages over a two year transition period. Unlike our previous transition plans, however, we set forth today, for the first time, the details of a final, cost-based transport rate structure. We have long recognized that non-cost based rate structures can, among other dangers, (1) threaten the long-term viability of the nations's telephone systems; (2) distort the decision whether to use alternative telecommunications technologies; and (3) encourage "uneconomic bypass" of the public switched telecommunications network, raising rates for all.[231]

166. Until today, however, we have limited ourselves to interim transport rate structure plans, such as the equal charge rule and the interim rate structure described above. While the interim rate structure increased the cost-based nature of our transport rate structure, it also included significant non-cost-based elements. We have not, until today, laid out a clear transition plan that describes all the steps necessary to achieve cost-based transport rates. As a result, although all carriers have no doubt been aware of our intention to move to a cost-based rate structure, they have been able only to react to our transitional steps, announced piecemeal. Because we have not announced a definite and detailed end state -- a final, cost-based rate structure -- we have afforded carriers little opportunity to plan, adjust, and develop their networks in preparation for such a rate structure, despite our lengthy period of "transition." Accordingly, because of the potential magnitude of the rate impact of these changes, we conclude that a four-step implementation over a two-year period will minimize the risk of rate shock and allow transport customers to adjust while we move as expeditiously as possible to cost-based transport rates as required by the *CompTel* decision.

167. The first step will occur in incumbent LEC access tariffs to become effective on January 1, 1998. In those tariffs, incumbent price cap LECs must establish new rate elements for recovery of the costs of DS3/DS1 and DS1/voice-grade multiplexers used in conjunction with the tandem switch. The rate element for the dedicated multiplexers on the serving wire center side of the tandem will recover these costs on a flat-rated basis, while the rate element for the multiplexers on the end office side of the tandem will be assessed per minute of use. In addition, incumbent price cap LECs must establish in those tariffs a flat-rated charge to recover the costs of dedicated trunk ports on the serving wire center side of the tandem. None of our existing rate elements currently recovers the costs of either these multiplexers or these dedicated trunk ports. Accordingly, we conclude that those costs are currently recovered through the TIC, and that incumbent price cap LECs must reduce the TIC to reflect the recovery of these costs through the new rate elements. Also on January 1, 1998, all incumbent LECs must take the first of three annual steps to reallocate to the tandem-switching

[231] *MTS and WATS Market Structure*, Third Report and Order, 93 F.C.C.2d at 251-252.