

**AN ANALYSIS OF THE OPEN NETWORK ARCHITECTURE (ONA)  
COSTING AND TARIFF PLANS FILED BY  
THE REGIONAL BELL HOLDING COMPANIES**

**PREPARED FOR  
THE NATIONAL REGULATORY  
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## EXECUTIVE SUMMARY

This report provides an analysis of the issues and the positions of the major parties in the Federal Communications Committee's (FCC) currently ongoing Open Network Architecture (ONA) proceeding, CC Docket 88-2. The focus here is on those issues of primary concern to state regulatory commissions. Most specifically, this report provides an analysis of issues affecting "Who pays for ONA?" More generally, matters related to ONA demand, ONA costs, ONA pricing and ONA tariffs are discussed. In addition to addressing these issues, a candidate model ONA tariff is provided.

ONA is a major component of the regulatory structure adopted by the FCC permitting the Bell Operating Companies (BOCs or RBOCs) to provide enhanced services. ONA is a substitute for the structural separation of traditional and enhanced service operations of the BOCs and requires that enhanced service providers (ESPs) be granted "equal access" through the unbundling of basic services. Despite the fact that the ongoing ONA process is mandated by the FCC and is proceeding at its direction, state regulatory commissions have a definite interest in this process and the results it produces. This is because enhanced service applications exist in both the interstate and intrastate markets. Since ONA services are generally local in nature, there are obvious overlapping jurisdictional responsibilities for the state and federal authorities. Moreover, each of the BOCs has indicated that tariffs will be filed with state regulatory authorities and many have accepted the states' responsibility in the price regulation of ONA services.

The ONA plans filed by the BOCs focused on complying with the FCC's ONA requirements as specified in its Computer III orders. These plans are based on services that the BOCs could provide by

September 1989. Approximately 150 specific service requests were identified, with less than 50% listed as candidate ONA services by the BOCs. Most identified services already exist, minimizing the additional investment or network reconfiguration needed for the unbundling and initial offering of ONA services.

The various BOC plans differed in several significant ways. There were, however, common threads running through them. One commonality was the universal reliance on a Bellcore ONA model of ONA services. This model identifies four major service classifications: basic service arrangements (BSAs), basic service elements (BSEs), complementary network services (CNSs) and ancillary services (ANS). The BSAs are ESP network access service arrangements. The BOCs' plans provided for both switched and dedicated architectures and for various service arrangement alternatives with each architecture. The alternatives include line side connections, trunk side connections, voice grade service, data-over-voice, etc. The BSEs are optional network capabilities required in the provision of enhanced services. The ability to mix different BSEs together and with different BSAs is supposed to permit the design of different enhanced services. BSEs are quite often provided only in conjunction with BSAs and not any other access arrangement. In addition, some of the plans call for "pricing parity" where the BOCs cannot charge their own unregulated ESPs less than their competitors, even where it may cost less to serve their own ESP. CNSs are end-user network services that can be used in conjunction with enhanced services. ANs are non-network services (e.g., billing services) which may be used by the enhanced service provider, but are not necessary for the provision of enhanced services, per se.

A summary of many of the other features of the BOCs' ONA plans is shown on Table ES-1. As indicated earlier, there are

Table ES-1

A Comparison of BOC ONA Plans  
BSE and Switched BSA Costing and Pricing Proposals

|                                                                           | AMERITECH          | BELL<br>ATLANTIC | BELL<br>SOUTH      | NYNEX              | PACIFIC<br>TELEISIS | SOUTH-<br>WESTERN<br>BELL | US WEST |
|---------------------------------------------------------------------------|--------------------|------------------|--------------------|--------------------|---------------------|---------------------------|---------|
| JURISDICTION<br>TARIFFS TO BE<br>FILED IN                                 | STATE &<br>FEDERAL | STATE            | STATE &<br>FEDERAL | STATE &<br>FEDERAL | STATE &<br>FEDERAL  | STATE &<br>FEDERAL        | STATE   |
| SEPARATE TARIFF<br>FOR ONA SERVICES                                       | NO                 | NO               | YES                | NO                 | YES                 | YES                       | NO      |
| BSEs AVAILABLE ON<br>ACCESS ARRANGEMENTS<br>OTHER THAN BSAs<br>(E.G. B1s) | NO                 | YES              | NO                 | YES                | YES                 | NO                        | YES     |
| PRICING APPROACH:<br>COST-BASED (CB) OR<br>MARKET-BASED (MB)              | CB                 | MB               | MB                 | CB/MB              | MB                  | MB                        | CB/MB   |
| LEVY ACCESS<br>CHARGES ON ESPS                                            | YES                | YES              | TBD                | TBD                | TBD                 | YES                       | TBD     |
| RETAIN "SHORTWIRE"<br>(I.E. COLLOCATION)<br>ADVANTAGE                     | NO                 | NO               | YES                | NO                 | NO                  | NO                        | NO      |

TBD: To be determined.

several differences between the plans as proposed. Opinions about these differences and for that matter, about their similarities also engendered many of the comments filed by the parties in this FCC proceeding. The review of these plans and the comments filed by other parties identifies a number of issues related to the initial tariffing of ONA services. These include:

- The extent of unbundling;
- The criteria regarding the availability of ONA services;
- The pricing and costing of ONA services; and
- A model ONA tariff.

### The Extent of Unbundling

There are significant differences of opinion among the parties as to whether the services proposed by the BOCs are sufficiently unbundled. It appears that the disagreement centers on interpretations of the minimum amount of unbundling necessary to meet the FCC's ONA requirements as specified in its Computer III orders. The BOCs take the position that the purpose of ONA is to assure "equal access" to the ESPs and nothing more. This, they claim, has been accomplished in the service structures proposed, since the structures and the ONA tariffs apply equally to BOC affiliated ESPs, as well as nonaffiliated ESPs. Others take the position that the purpose of unbundling is to permit the ESP to select among BOC and alternative suppliers for service elements to minimize the cost of enhanced services. Without this, it is argued, one would not have an open network architecture. For instance, a BSA is configured to include a loop, central office functions and inter-office transmission services and thus is not open to alternative competitive suppliers. The BOC required linkage between BSEs and BSAs is pointed to by some as another example of an inadequate level of unbundling contained in the BOC ONA plans.

In addition the report identifies various ratepayer equity issues of concern to regulatory commissions. For instance, the ONA plans clearly suggest that unbundling is not costless. Greater unbundling will increase the cost of developing and deploying ONA services. There is, of course, no assurance that the demand for enhanced services will materialize as necessary to recover these costs. Greater unbundling will, therefore, increase the risk exposure to POTS ratepayers. However, it should be noted that neither the BOC plans, nor any of the comments, contains information necessary to accurately determine the cost of ONA deployment or the benefits from additional unbundling. Further information must be developed to permit such a cost-benefit analysis to be undertaken. Other issues related to unbundling include the implications on bypass, collocation, and local exchange competition.

#### Demand for ONA Services

Accurate demand data are necessary to the development of a well reasoned schedule of ONA service deployment. However, most participants (i.e., BOCs, ESPs, etc.) acknowledge the soft, non-quantifiable nature of estimated demands for new BSEs at this stage of the process. The softness of these data has important implications for the ONA service implementation process.

Consider that there is a diversity of interests and concerns among the stakeholders. The ESPs and end-users have an obvious interest in a rapid deployment schedule. The BOCs, because of MFJ restrictions on their involvement in the market for information-related enhanced services, are much less interested in an expedited deployment process. With residual pricing, rates for POTS customers will depend in part on the success of ONA deployment. Insufficient and unreliable demand information subjects the deployment schedule and the POTS ratepayers to greater risks.

The demand estimating procedures relied on by the BOCs and the specific concerns raised by the parties are discussed in some detail. In addition to matters related to the timing of BSE deployment, other issues related to geographic deployment, phase-in pricing and statewide pricing are discussed.

### Pricing of ONA Services

The BOCs accept the prospect of state regulatory authority over the pricing of ONA services. Each BOC has proposed to file ONA tariffs with the states, and some have proposed not filing any with the FCC. In addition, the BOCs propose to price ONA services in a manner comparable to that used for other similar existing services. Generally this means market-based pricing, i.e., recognizing factors other than costs in setting price. Ameritech stands out as the only exception, proposing strict adherence to cost-based pricing.

Most ESPs express a strong desire for national uniformity in the pricing of ONA services. Nationwide pricing uniformity requires FCC preemption or at least the universal application of cost-based pricing of ONA services.

The FCC preemption over all ONA tariffs or the universal application of cost-based rates may lead to uniformity in ONA rates, but will result in differences in rates for similar services within the state jurisdiction. Most of the proposed ONA services already exist. Intrastate rates for most of these services are not set at levels equal to costs. In fact, some of the services are offered subject to one or another form of price flexibility (e.g., banded rates or price caps). Price uniformity as such cannot be imposed. FCC preemption of ONA services, for instance, may result

in price uniformity across states, but not across markets (e.g., within a state).

There are other implications of the pricing policy selected. At least one BOC has indicated the possibility of phase-in or promotional pricing. This may be inconsistent with cost-based pricing. Cost-based and market-based pricing can coexist if costs are used to identify an "ONA category" revenue requirement and market-based policies are used to price the individual services.

### ONA Service Costs

There are several cost and cost allocation matters raised by the introduction of ONA services. One relates to the jurisdictional allocation of costs. Currently, most ONA services are local in nature. ESPs have proposed federal preemption over all aspects of ONA tariffs, meaning that revenues from these services will be classified as interstate. Several parties have pointed out, however, that revenue responsibility will not shift along with these revenues to the interstate jurisdiction leaving states with cost responsibility while the federal jurisdiction enjoys the related revenues. One possible solution is intrastate regulation of ONA prices, another is adjustments to the separations process.

Second, ONA is one of the non-structural safeguards designed by the FCC permitting the BOCs to freely enter the market for enhanced services. Without the structural separation requirement, equipment, facilities and manpower will be shared by the regulated and unregulated BOC operations. The FCC, in its CC Docket 86-111, established a Joint Cost Procedure that in its view will prevent any cross-subsidy. Such procedures do not now exist in all states. Costing procedures need to be established to protect ratepayers and non-affiliated ESPs from the potentiality of cross subsidies.

Third, there is the matter of ONA service costs. None of the BOC plans provided reliable information on the unit costs of newly proposed ONA services or on the expected total costs associated with the development and deployment of these services. There was widespread agreement that rates for ONA services should cover their costs. This statement is not terribly meaningful unless the concept of costs, as used therein, is explicitly defined and understood. For instance, what cost standard should apply -- incremental or embedded? Further, there may also be issues regarding cost allocation that are independent of whether an embedded or incremental standard applies. If current investment activities are undertaken and based on anticipated future ONA demands, should investment costs, for instance, be allocated to services based on current use or on anticipated use?

#### Model ONA Tariff

Determinations regarding the potential issues discussed in this report will be specified concretely in an ONA tariff offering. A candidate Model ONA Tariff is developed and presented in this report. Its purpose is to provide baseline information on the form, feasibility and desirability of such a tariff. There may be no long-run desire for a separate tariff for ONA services. Instead the tariff for ONA services may be merged with that for other general exchange services, just as the tariff for special access services is now being merged with that for private line services. However, even on a temporary, short-run basis a separate ONA tariff could be a useful tool in evaluating various tariff issues such as collocation, usage restrictions, and tariff cross referencing in addition to matters of uniformity.

The model ONA tariff presented identifies the information that could, and quite likely should, be included to properly describe

the terms and conditions of the service offering. This includes (1) a listing and description of the services along with a statement of any restrictions based on technical compatibility or other factors; (2) a listing and description of any nontechnical restrictions or limitations on service use, e.g., can only ESPs take the services? and (3) the rates and charges for the services.



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## FOREWORD

In July 1988 the Institute was asked by Commissioner Sharon Nelson of the Washington Utilities and Transportation Commission to provide technical assistance to the NARUC Communications Committee (which she chairs) in its efforts to examine the feasibility of a model Open Network Architecture (ONA) tariff. The Institute then began to prepare a brief report 1) identifying the positions of the major ONA parties regarding the costing and pricing of ONA services, and 2) outlining the features a candidate ONA model tariff might have. To do this, the Institute issued a competitively bid contract to Exeter Associates, Inc. to accomplish the project. This report is the result of that effort.

The report is intended to provide initial baseline information which the NARUC Communications Committee can use as it assesses the desirability and other issues surrounding a model ONA tariff. The report is being distributed to all state commissions and members of the regulatory community.

Douglas N. Jones  
Director, NRRI



## CHAPTER I. INTRODUCTION

Open network architecture (ONA) is a major component of the regulatory structure adopted by the Federal Communications Commission (FCC) permitting the Bell Operating Companies (BOCs or RBOCs) to provide enhanced services. Specifically, ONA requires that enhanced service providers (ESPs) be granted equal access through the unbundling of services, the establishment of basic service elements (BSEs), and the establishment of non-discriminatory pricing. The FCC established CC Docket No. 88-2 for the purpose of dealing with matters related to ONA. The BOCs were ordered to file ONA plans by February 1, 1988 indicating how these requirements would be met. The acceptance of these plans is a precondition for the entry of the BOCs into the enhanced services market without the requirement of structural separation.

The interests of state regulatory commissions into the ONA process are obvious. Enhanced service applications exist in the interstate and the intrastate markets. Therefore, there are jurisdictional responsibilities. To be sure, matters dealing with federal preemption are being debated and are before the courts. However, these go to the extent and nature of state regulatory responsibility, not its very existence. Moreover, each of the BOCs has indicated that tariffs will be filed before state regulatory authorities as well as the FCC and many have accepted the states' responsibility in the price regulation of ONA services.

To date there has been relatively little activity regarding ONA at the state level. The New York PSC and Florida PSC have each recently structured a proceeding to deal with several gener-

ic ONA issues.<sup>1</sup> The California Commission may soon have a proceeding dealing with rates and tariffs for BSEs as Pacific Telesis has filed for several ONA services in that jurisdiction. To date, most attention has been on activities before the FCC. Much of the information contained in the comments filed in CC Docket 88-2 should apply to the concerns that eventually will have to be addressed by the states.

ONA plans were filed by the seven RBOCs on behalf of their BOCs. In addition, a total of 65 other parties (in addition to the BOCs) filed comments or reply comments. A complete list of parties filing comments and reply comments is included as Attachment 2 to this report. These other parties included enhanced service providers, interchange carriers, end users, state commissions and government agencies.<sup>2</sup> These plans and comments constitute over 7,000 pages of text, tables and appendices.

This study is an analysis of the positions taken by the parties in this FCC proceeding on major ONA issues that are of concern to state regulatory commissions. Most specifically, this study provides an analysis of the issues bearing on the question

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<sup>1</sup>NYPSC Case No. 88-C-004, Proceeding on the Motion of the Commission to Review Telecommunications Industry Interconnection Arrangements, Open Network Architecture, and Comparably Efficient Interconnection. FPSC Docket No. 88-043-TP, An Investigation into the Statewide Offering of Access to the Local Network for the Purpose of Providing Information Services.

<sup>2</sup>No independent telephone company filed comments in this proceeding. The FCC's Computer III decision and, therefore, the ONA/enhanced service structural separation issue relates only to BOC operations. Nevertheless, the independent companies will eventually have to become involved in the ONA process, as the demand for ONA services extends beyond the boundaries of the BOC service territories to those served by the independents. Several independents did file comments before the NYPSC in its recent ONA proceeding, Case No. 88-C-004.

"who pays for ONA?" In doing so, we address matters related to ONA demand, ONA costs, ONA pricing policies, and ONA tariffs.

### Organization of This Report

This report consists of six chapters. The remainder of this chapter provides an overview of the BOCs' ONA plans. This will be helpful to those interested in gaining some familiarity with the scope of the plans. It can also serve as a reference to the plans of any one BOC or to a comparison of the various plans. Chapters II through V provide an analysis of the positions regarding issues dealing with ONA costs and ONA cost recovery.

Chapter II focuses on the Bellcore Common ONA model which is the very basis of the proposed plans. The primary issue here is the level or extent of service unbundling. Chapter III deals with issues related to the demand for ONA services and focuses on matters such as demand uncertainty and the implications of various deployment strategies.

Chapter IV addresses the position taken regarding the pricing of ONA services. Issues such as cost-based vs. market-based pricing as well as different pricing strategies are discussed. Chapter V identifies and discusses the implications of different issues raised regarding costing procedures required by or affected by ONA.

Chapter VI presents and discusses various aspects of a model ONA tariff. Its purpose is to serve as a starting point for ongoing discussions regarding the development of an ONA service tariff.

## The BOCs' ONA Plans

Each of the BOCs had an ONA plan filed on its behalf by its RBOC. These plans share a number of common characteristics, but also contain several significant differences in approach. The common elements include the reliance on the Bellcore Common ONA Model as the underlying structure of each of the plans and a common strategy for the deployment of individual ONA services. However, pricing policies, cost development and tariff proposals differed across companies and in some instances, significantly so.

The Bellcore model identifies four major service classifications:

- (a) Basic serving arrangements or BSAs are the ESP network access arrangements;
- (b) Basic service elements or BSEs are "optional" unbundled network services available to ESPs and in some instances, only to ESPs;
- (c) End-user complementary network services or CNSs are end-user network services used in conjunction with enhanced services (e.g., local residential exchange); and
- (d) Ancillary services or ANs are non-network services (e.g., billing services) which may be of value to the ESPs.

The determination of which ONA services would be offered was based on considerations such as market demand, technical feasibility and cost. Market demand information was drawn from national and regional ONA forums, follow-up contacts with ESPs, market studies commissioned by the BOCs, and internal marketing intelligence. There were over 150 service requests made by the ESPs

plus others identified by the BOCs. Less than 50 percent of the industry requests were ultimately identified as candidate services by the BOCs.

Despite the fact that each of the plans was drawn from the common ONA model and each used reasonably similar decision criteria to determine which services to deploy, there are differences across companies and across markets within companies in the actual services and service arrangements proposed. The number of BSAs described in the plans range from 4 to 14 and the number of BSEs suggested range from about 20 to 91.<sup>3</sup>

To be sure, some differences would be expected even if the same criteria and methodology were used throughout. States differ in income and demographic characteristics which could cause different levels of demand for the various ONA services. The technical characteristics of the network also differ across the states. This could affect technical feasibility and costs. Hence, differences in the number and identity of BSAs and BSEs proposed should not be surprising. It should be noted, however, that the differences in the plans go beyond the number of services offered.

A comparison of the BOC plans is presented in Table 1 and a more detailed statement of each plan is shown as Tables 2 through 8. The focus here is on differences in these plans. For instance, Table 1 does not reflect the fact that each of the plans uses the Bellcore model or that each RBOC attempted to identify the demand and technical requirements of the BSEs in fairly similar ways. Further, we focus here on those matters affecting the issue of who pays for ONA.

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<sup>3</sup>There is some disagreement among the BOCs as to exactly how to count BSEs. The numbers identified here are those stated by the BOCs in the plans.

Table 1

A Comparison of BOC ONA Plans  
BSE and Switched BSA Costing and Pricing Proposals

|                                                                           | AMERITECH          | BELL ATLANTIC | BELL SOUTH         | NYNEX              | PACIFIC TELESIS    | SOUTH-WESTERN BELL | US WEST |
|---------------------------------------------------------------------------|--------------------|---------------|--------------------|--------------------|--------------------|--------------------|---------|
| JURISDICTION<br>TARIFFS TO BE<br>FILED IN                                 | STATE &<br>FEDERAL | STATE         | STATE &<br>FEDERAL | STATE &<br>FEDERAL | STATE &<br>FEDERAL | STATE &<br>FEDERAL | STATE   |
| SEPARATE TARIFF<br>FOR ONA SERVICES                                       | NO                 | NO            | YES                | NO                 | YES                | YES                | NO      |
| BSEs AVAILABLE ON<br>ACCESS ARRANGEMENTS<br>OTHER THAN BSAs<br>(E.G. B1s) | NO                 | YES           | NO                 | YES                | YES                | NO                 | YES     |
| PRICING APPROACH:<br>COST-BASED (CB) OR<br>MARKET-BASED (MB)              | CB                 | MB            | MB                 | CB/MB              | MB                 | MB                 | CB/MB   |
| LEVY ACCESS<br>CHARGES ON ESPS                                            | YES                | YES           | TBD                | TBD                | TBD                | YES                | TBD     |
| RETAIN "SHORTWIRE"<br>(I.E. COLLOCATION)<br>ADVANTAGE                     | NO                 | NO            | YES                | NO                 | NO                 | NO                 | NO      |

TBD: To be determined.

Source: Tables 2-8

Table 2

Pricing and Costing of ONA Services  
Ameritech ONA Plan

- All ONA services tariffed in interstate access tariff and mirrored in the intrastate access tariff.  
(Plan at 94-96)
- BSEs are available only on BSAs. (Plan at 28)
- Cost-based rates using FCC part 69 Rules.  
(Plan at 127)
- ONA service elements include CCLC, consistent with Part 69 Rules. (Plan at 96)
- Switched BSA access link not distance sensitive.  
(Plan at 3, 78, 90)

Source: Ameritech Operating Companies, Open Network Architecture Plan

Table 3

Pricing and Costing of ONA Services  
Bell Atlantic ONA Plan

- All ONA services are to be offered as part of the existing intrastate local exchange tariff. No separate tariff for ONA services. (Plan introduction at 4, Reply Comments at 24)
- BSEs will be available on existing business access arrangements, e.g., By-lines. (Plan, Section G)
- Existing services will be offered to ESPs and non-ESPs alike at existing rates. New services will be market-prices. (Plan, Section E)
- Tariffs will be filed only with the states because the FCC has held that ESPs are not subject to access changes. (Plan, Introduction at 4)
- There will be no "collocation" or "short loop" discount to affiliated ESPs. (Plan, Introduction at 2, Plan at 66)

Source: Bell Atlantic Telephone Companies, Petition for Approval of Open Network Architecture Plan and Reply Comments.

Table 4

Pricing and Costing of ONA Services  
BellSouth ONA Plan

- A separate ONA section of the general exchange tariff will be developed for BSEs. These tariffs will be filed with the state commissions. (Plan 72)
- BSEs will be available only to ESPs. BSAs can only be used in the provision of enhanced services. (Plan at 65-66)
- ONA services will be priced to reflect value as well as costs. (Plan at 4)
- Distance sensitive access link pricing, using distance bands, permit returning portions of the short wire advantage. (Reply Comments at 30)

Source: BellSouth Corporation, Open Network Architecture Plan and Reply Comments.

Table 5

Pricing and Costing of ONA Services  
NYNEX ONA Plan

- Existing tariffs will be used for ONA services, where practicable, new services will be added to state and/or interstate tariffs as deemed necessary. (Plan at 95-96)
- Existing rates will apply to existing services. Rates for new services will be market or cost-based, as per the requirements in each jurisdiction. (Plan at 92)
- BSEs are available using existing network access arrangements, e.g., BIs. (Plan at 18)
- Collocated NYNEX ESPs and non-collocated competitors will pay identical rates for access link service. (Plan at 91)

Source: NYNEX Telephone Companies, Open Network Architecture Plan.

Table 6

Pricing and Costing of ONA Services  
Pacific Telesis ONA Plan

- ONA services are to be filed in the state and interstate jurisdiction as deemed necessary. (Plan at 21)
- All BSEs will be filed in separate ONA tariffs. (Plan at 45)
- Most BSEs will be available only on BSAs. Some will be available on other access arrangements. (Reply Comments at 8)
- ONA service prices will be market-based. (Plan at 15)
- Pacific's current position is that there be no short wire advantage. This position will be reviewed in time for future tariff filings. (Plan at 31,39)

Source: Pacific Companies, Plan to Provide Open Network Architecture and Reply Comments.

Table 7

Pricing and Costing of ONA Services  
Southwestern Bell ONA Plan

- Circuit switched and dedicated BSAs and associated BSEs are to be included as part of the access tariff or a newly constructed Enhanced Service Interconnection (ESI) tariff. (Plan at 81-82)
- Rules for ONA services included in the ESI tariff will be filed with state commissions and cross referenced in interstate tariffs. (Plan at 82)
- BSEs are available only with BSAs. (Plan at 113)
- ONA services that are similar to other existing services will have a markup or contribution comparable to that of the existing service. Rates for new ONA services will be market-based. (Plan 94-95)
- The average access link cost as applied to other ESPs "will probably" be what is charged to the SWB affiliated ESP. (Plan at 21)

Source: Southwestern Bell Telephone Company, Open Network Architecture Plan

Table 8

Pricing and Costing of ONA Services  
U.S. West ONA Plan

- Most BSEs will be offered pursuant to intrastate general exchange tariffs and referenced in the interstate tariffs. (Plan at 363)
- BSEs are available on existing access arrangements, including BIs. (Plan at 363-369)
- State costing and pricing rules will be complied with. Cost support will provide incremental costs or FDCs, as appropriate in each jurisdiction. (Plan at 366)
- U.S. West will charge its collocated affiliated ESP as if it were located off premises. (Plan at 336-337)

Source: U.S. West Inc., Open Network Architecture Plan

The RBOCs are in general agreement regarding the responsibility of the states in regulating the price of ONA services. Bell Atlantic proposes state tariffing of all ONA services and makes no commitment to the interstate tariffing of any of these. U.S. West and Southwestern Bell also propose state tariffing for all BSEs and if interstate demand materializes, will incorporate these tariffs by reference in their interstate tariff. Ameritech, on the other hand, proposes to tariff all ONA services in the interstate jurisdiction setting rates based on FCC Parts 61/69, and "mirror" these rates in its intrastate tariffs.

Bell South and Southwestern Bell propose that ONA services be placed in a separate ONA tariff. Ameritech proposes that all ONA services be included in the access tariff and Bell Atlantic proposes that they be included in the local exchange tariff.

The BOCS differ in the extent to which restrictions are placed on access to BSEs. Ameritech, Bell South, Pacific and Southwestern propose that access to BSEs not be available through standard local business access tariffs (e.g, B1s). This makes subscription to a BSA a precondition for access to BSEs. In essence, this restricts ONA services to ESPs. Bell South proposes that ESPs not be permitted to take service from basic local tariffs, but be restricted to taking service from the ONA tariff.

Each of the ONA plans addresses pricing policy issues but none include specific prices for the proposed BSEs or BSAs. Ameritech proposes adopting Parts 61/69, i.e., the federal standard for pricing access services, for its interstate and state ONA services. All other companies propose that factors in addition to cost be considered and that rates be market-oriented.<sup>4</sup> While some propose setting rates sufficiently above cost to assure a reasonable contribution, others insist on rates being above costs but low enough

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<sup>4</sup>No company explicitly proposed setting rates equal to incremental cost.

to promote ONA market development and yet others simply propose a market clearing price.

The BOCs agree that prices should be equal to or greater than cost, but suggest different measures of cost. As indicated, Ameritech proposes the use of FCC Parts 61/69, (i.e., FDC). NYNEX and Southwestern propose to rely on the cost methodology requirements of the relevant jurisdiction. The remaining companies have either identified incremental costs as the relevant measure or have simply asserted their intention to set price above cost and failed to identify their definition of cost.

Each of the companies points to its filing in the Joint Cost Proceeding (CC Docket No. 86-111) as an assurance that costs will properly be allocated between the (interstate) regulated ONA and unregulated ESP operations. None of the plans give any indication of any concerns with regard to the impact of the provision of these ONA services on jurisdictional separations procedures.

Three of the companies clearly indicated that they were positively disposed toward charging ESPs a carrier common line charge (CCLC). However, the question of whether prices will be marked up to include the CCLC is of interest only where prices are explicitly linked to costs rather than being market-based. Only Ameritech proposed such an explicit linkage, and it does propose to include the CCLC in the determination of rates.

None of the BOCs proposed that non-affiliated ESPs be permitted collocation. The BOCs affiliated ESPs would be permitted collocation.<sup>5</sup> Consequently, the outside plant required to serve an affiliated ESP may well be less than that required to serve a non-affiliated ESP.<sup>6</sup> Most BOCs have proposed a policy of "virtual

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<sup>5</sup>The FCC considered the issue of collocation and decided not to require that the BOCs offer collocation to non-affiliated ESPs.

<sup>6</sup>This is often referred to as the "short wire" advantage.

collocation" or pricing parity which effectively results in their giving up the short wire advantage. In general, rates for ESP access (i.e., BSA) do not reflect differences in distances from the ESP to the serving central office. Bell South and possibly Pacific are the exceptions. Bell South proposes a distance band tariff applicable to all ESPs with a zero distance band applicable only to its collocated affiliated ESP. Pacific also proposes a distance band, but the details of its proposals were not provided.

In the chapters that follow, the BOCs' rationale and the positions of other parties on several of the major aspects of these plans are subjected to review and analysis.

## CHAPTER II. THE ONA MODEL

The BOC ONA plans were developed based on the Bellcore Common ONA Model. According to the model, ONA services are either access-related or feature-related. The BSAs are the access-related services, and the BSEs are the feature-related services. Typically, BSEs can only be used in conjunction with BSAs.

The issue of the ONA Model and in particular the bundling called for by the application of this model received a great deal of attention in the filed comments. Two general concerns were raised: (1) that the BSAs represent an improperly bundled group of network services and (2) the proposed BSA/BSE linkage results in access being improperly bundled with other network elements. This section of the report focuses on those issues.

### The RBOC ONA Plans

The Bellcore ONA Model distinguishes between switching features and the serving arrangement by which the features can be accessed. Each serving arrangement or BSA is comprised of an access link, of central office features or functions and of transport to the end user or to other offices. According to the BOCs, the BSA constitutes the minimum necessary arrangement for the delivery of unbundled features and functions.

Each BSA component has a number of alternatives or options associated with it. Generally, the customer must choose from among the options. Examples of options for each BSA component are provided immediately below.<sup>7</sup>

- ESP Access Link - The various facilities used to connect the ESP to its serving office. An example of an Access Link alternative is voice grade channel capacity. The

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<sup>7</sup>These are from the Bell Atlantic Plan at 8.

customer must choose a channel capacity and may select varying numbers of channels within that Access Link's physical capacity.

- Features/Functions - Capabilities located at the ESP's serving central office and/or a distant office, including the array of available features/functions associated with the particular BSA. An example of a feature/function alternative is directionality. It may be one-way or two-way, but must be selected by the customer.
- Transport/Usage - The ESP's connection from the serving central office to its customers' serving central offices or to other central offices. Transport may be switched or dedicated, and there may be several alternative forms of transport available. An example of a transport/usage alternative is the calling area, which may be local exchange, metropolitan or other choices.

BSEs are "optional" network software capabilities. Ameritech, for instance, "clarifies" its definition of a BSE as:<sup>8</sup>

A BSE is an optional -- and therefore, capable of being unbundled -- intelligent switching feature.

The BOCs generally restrict the availability of BSEs to purchasers of BSAs. Ameritech refers to a BSE as a feature "associated with BSAs."<sup>9</sup>

In summary, the BOC plans "bundle" all components of the serving arrangement into a single rate element. Bypass or self-supply of individual components is not permissible. The BOC plans

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<sup>8</sup>Ameritech Plan at 28.

<sup>9</sup>Id.

also "bundle" BSEs with BSAs. This effectively restricts the availability of unbundled BSEs to BSA subscribers (i.e., ESPs).

The BOCs cite a series of practical considerations in support of their decision to deploy the BSA rate element. These include problems associated with technical compatibility, collocation, security, pricing and administration. U.S. West cites two other "pragmatic reasons" for its decision. First, it reports a lack of demand expressed by the ESPs for unbundled BSA services.<sup>10</sup> Second, it says that local access rate structures reflect public policy objectives and as such could not coexist with unbundled BSA components.<sup>11</sup>

Similar rate structure concerns were expressed regarding the required linkage between BSEs and BSAs. Southwestern Bell, for instance, comments that its policy of BSA/BSE linkage protects against harm to current subscribers of other services (especially business flat rate) which "were not designed or priced with ESP usage in mind."<sup>12</sup> Ameritech notes that its plan calls for rates for all ONA services to be cost-based. Rates for BSEs and BSAs are cost-based, but rates for other services (e.g., other forms of local access) need not be. Hence, to ensure that all ONA rates are cost-based, BSEs must be taken on BSAs.<sup>13</sup>

The comments filed by the ESPs raise a number of interrelated questions regarding the concept of ONA and the BOC proposals. Many of the comments actually challenge the BOCs' apparent interpretation of what ONA is. NTIA, for instance, notes:<sup>14</sup>

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<sup>10</sup>U.S. West Plan at 342-3.

<sup>11</sup>Id. at 344-5.

<sup>12</sup>Southwestern Bell Plan at 14.

<sup>13</sup>Ameritech Reply at 16-18.

<sup>14</sup>NTIA Comments at 4-5.

There seems to be widely different views regarding the precise meaning of ONA and thus what is required -- and in what time frame -- pursuant to the Commissions's Computer III decisions.

On one hand, ONA can be viewed as a set of requirements to be met before the BOCs can enter the enhanced service market without meeting the structural separation requirement. This is generally the view presented by the BOCs. Ameritech noted that:<sup>15</sup>

ONA is about enhanced services and is to be designed for enhanced service providers. ONA is not about unbundling network functionalities for any other purposes or for any other parties.

Several other parties have offered an interpretation of ONA and its associated requirements that is a bit different than that offered by the BOCs. For instance, in its study, Hatfield Associates, Inc. claims that: "The CPE and IC markets are already unbundled; ONA intends to do the same for the LEC network."<sup>16,17</sup>

The matter of BSA bundling and the proposed BSA/BSE linkage are not unrelated to the question of the purpose of ONA. Several commentators argue that the proposed BSA arrangement does not truly represent open access.<sup>18</sup> Truly open access would instead permit the ESPs to connect or interconnect at various locations within the

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<sup>15</sup>Ameritech Reply at 9, emphasis supplied.

<sup>16</sup>Hatfield Associates, Inc. Open Network Architecture: A Promise Not Realized, April 4, 1988. (Hatfield Study)

<sup>17</sup>This study was sponsored by ADAPSO, Compuserve, Computer and Business Equipment Manufacturers Association, Dun & Bradstreet, Independent Data Communications Manufacturers Association, and Telenet.

<sup>18</sup>See the Hatfield Study at 69-78, and the comments of parties sponsoring this study.

network.<sup>19</sup> Others assert that the BOCs must open their networks so alternative service providers may compete in providing service in individual segments of the local network.<sup>20</sup> Note that there seems to be no question but that a BSA contains three separate and distinct components. In fact, the BOCs typically price each component differently even when combined into a single BSA.<sup>21</sup> The access link is priced on either a flat rate or distance basis, the CO feature/functions are typically priced at a flat rate, and transport is typically priced on a usage basis.

The BOCs argued that further unbundling would indeed be costly.<sup>22</sup> If such costs are incurred, they are properly the responsibility of the ONA services. Several BOCs question whether the market for these services could withstand the prices necessary to fully recover such costs.<sup>23</sup>

Further, as Ameritech notes, the issue with regard to the unbundling of BSAs does not go to the matter of whether unnecessary services are being forced upon the ESPs. Indeed, there appears to be general agreement on the part of the ESPs that the BSAs comprise technically required components. According to the ONA Users Group<sup>24</sup>

A line into the network, transport, switching, and access to end users are all required for an ESP to provide service.

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<sup>19</sup>Id. at 97-99 and Teleport Communications Group Companies (Teleport) Comments at 8-10.

<sup>20</sup>See generally Institutional Telecommunications Company and Teleport.

<sup>21</sup>See e.g., Teleport at 9.

<sup>22</sup>See e.g., Southwest Bell Reply at 21, Bell Atlantic Reply at 5.

<sup>23</sup>E.g., Southwestern Bell op.cit.

<sup>24</sup>ONA Users Group Comments at 20.

Teleport also agrees that all three functions captured in a BSA are necessary, but questions whether

the ONA plans may compel an ESP to obtain every component of its transmission network from its single source.<sup>25</sup>

The issue then is not whether all components of the bundled service are necessary, but rather who should provide them. Therefore, the question is one of collocation.

Finally, the BOCs note that permitting collocation and the unbundling of BSAs will necessarily result in bypass. In fact, one BOC describes proposals of this type as a "blueprint" for bypass.<sup>26</sup>

A number of commenting parties argue that BSEs should be available without the requirement of purchasing BSAs.<sup>27</sup> In general, these commentators assert that the BOC proposals result in an unnecessary form of bundling and that the BOCs should simply tariff the BSEs as "stand-alone capabilities" allowing users to access them in any manner desired. The BOCs that do impose such restrictions seem to view the lack of this tie-in as resulting in either an inconsistent set of rates charged to ESPs or a set of rates that is less than equitable.

Ameritech has proposed that all rates, BSEs as well as BSAs, be cost-based. Though some other forms of access arrangements may also be cost-based, many are not. Therefore, if the provision of

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<sup>25</sup>Teleport Comments at 18. See also ADCU Comments at 19.

<sup>26</sup>Bell Atlantic Reply at 4.

<sup>27</sup>See e.g., NTIA Reply Comments at 10, ANPA Comments at 23, MCI Comments at 27, ADAPSO Comments at 21, CONAP Comments at 24, and API Comments at 6.

BSEs was not conditioned on the purchase of a BSA, the resulting rates and charges would no longer be cost-based.<sup>28</sup>

Where rates for BSAs are market-based, the criteria seems to be more one of ratepayer equity. Southwestern Bell and several other BSEs take the position that if an existing access arrangement is priced in a manner similar to that proposed for the BSA, BSEs can be taken on those access arrangements. Private line, special access and packet switched access arrangements are situations noted by Southwestern Bell that meet this criterion.<sup>29</sup> In other situations, it is argued that existing rates are based on criteria that would not be consistent with their use in the provision of BSEs. For instance, Southwestern Bell asserts that usage volumes on BSAs would necessarily be greater than that experienced volumes on other access lines, e.g., flat rate business lines. In this situation, one would experience "Usage at a level never anticipated when that existing service was originally costed and priced. The result would be greatly increased costs..."<sup>30</sup> These costs would not be recovered from the ESPs and would therefore be the responsibility of the remaining body of ratepayers.

## Unbundling Issues

### POTS Ratepayer Risk Exposure

There is always the question of how much unbundling is necessary and how much is enough. At one level this goes to matters related to the pro-competitive and anti-competitive aspect of the ONA plans. At another level, the extent of unbundling may affect the extent to which Plain Ordinary Telephone Service (POTS) subscribers are asked to assume the risks of ONA deployment.

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<sup>28</sup>Ameritech Reply Comments at 16-18.

<sup>29</sup>Southwestern Bell Comments at 24-25.

<sup>30</sup>Id.

It appears that unbundling is not costless. What this means is that the unbundling of a given set of services, or the unbundling of a greater number of services, or unbundling undertaken within a shorter time period will lead to higher system costs. Residual pricing exposes the POTS ratepayer to any deficiencies in ONA revenues. The higher ONA costs are, the greater the risk exposure of the POTS ratepayer. The inequities in this risk exposure are increased if POTS customers do not directly benefit from ONA services.

If state commissions were provided estimates of the cost of ONA services in which they had reasonable confidence, an assessment of the risks involved could be made and decisions regarding the extent and nature of ONA services could be based on these risk assessments. However, none of the BOC plans (or of the comments filed) provided estimates of the cost of ONA under any scenario, including those proposed.

The extent of ONA unbundling is then an issue that commissions must consider. To do so requires information not only on the unit costs of the services proposed, but also the total system cost of ONA deployment. The cost of alternative deployment strategies could also be helpful. The lack of information may provide commissions with the incentive to embrace a "go slow" strategy. This, however, may not be in the public interest. Commissions may well want to order the development of the necessary cost information.

### Bypass

If bypass results from greater unbundling, the result could be the shifting of revenue responsibility onto residually priced services. However, bypass may be a short-run phenomenon. First, bypass means less demand for BOC services, which in turn, should mean that over time fewer facilities will be needed and fewer costs

incurred. Second, bypass could provide greater incentives to BOCs to lower costs and if so, could provide benefits in the form of lower POTS costs. In either case, the negative effect is immediate, even if there are long-run positive effects.

### Collocation

For the time being, it appears that the FCC is not requiring collocation. Nevertheless, some states will likely assess the implications of collocation independent of any further FCC action on this matter.<sup>31</sup> The matter of collocation raises a host of new issues. These issues include security, pricing, logistics, and the rationing of collocated space. States may wish to consider whether the matter of collocation should be resolved by individual states or by some collective action such as a federal-state joint board.

### Local Exchange Competition

Local exchange rates reflect not only costs and market demand, but also public policy considerations. Unregulated competitors base rates on cost and demand. Hence, even if the local exchange is a natural monopoly, alternative service providers, if permitted to enter, will be able to establish a niche in certain segments of this market. With the local exchange being a natural monopoly, entry will necessarily lead to higher costs and eventually to higher prices. The merits of sanctioning and of promoting entry into the market for local exchange services must be assessed as part of ONA policy considerations.

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<sup>31</sup>See e.g., NYPSC, Case No. 88-C-004.

## CHAPTER III. ONA DEMAND

### Introduction

It is important for regulators, BSE providers, end users of services requiring BSEs, POTS ratepayers, and the BOCs, that accurate demand determinations exist for unbundled BSEs that are candidates for inclusion in the BOC's tariff structures. Two basic errors are possible if demand for a BSE is misspecified. The first error occurs if demand is over-estimated. The likely outcome in this case includes the possibility that revenues from sales won't cover the associated costs of unbundling and offering the candidate BSE. The second error occurs if demand is under-estimated, and in this case, the services that depend on the candidate BSE (which could very well provide sufficient revenues to cover the associated costs) will not be offered. Either error produces both a deviation from the optimal result and a consequential reduction in welfare to be borne by one or more stakeholders in the ONA deployment process.

### Decision to Deploy

The decision to offer a particular BSE is a decision to invest in the "up-front" costs associated with unbundling the BSE, and to commit to undertaking the ongoing costs associated with the offering. The critical question is, should the costs associated with the candidate BSE be undertaken. The answer to this question for each candidate BSE depends on the result of a rational investment decision-making process. Fortunately, rational investment analysis techniques and procedures are well developed and understood by practitioners of the process.

The basic principle of rational investment decision analysis is that the costs associated with the offering of a good or service should be undertaken if the value society places on the resulting good or service is equal to, or greater, than the value society

places on the resources necessary to produce the good or service. From an individual provider's point of view, the rational decision-making process requires a comparison of the additional revenues associated with the offering of the new product with the additional costs associated with the offering.<sup>32</sup> In more parochial terms, it is generally desirable to offer a BSE if the revenues associated with its offering at least cover all the costs associated with its offering, including the utility's required rate of return. The more accurate this comparison of additional revenues to additional costs, the more confident stakeholders can be about the likely results attending each BSE deployment decision.

Demand data are a necessary input into the rational decision-making process. Additional revenues will be a function of the various prices that could be charged, and the various sales amounts associated with each price. If the sales amounts at the various possible prices are accurately estimated, then an accurate comparison of revenues and costs can be made. Inaccurate demand data cannot be expected to yield revenue/cost comparisons in which much confidence can be placed. Given the link between demand and revenues, it is essential to know the market demand for candidate BSEs if rational investment decisions are to result.

#### Demand Empirics - Traditional vs. BSE

Commissions are largely used to dealing with essentially known and verifiable demand data. In many jurisdictions, for example, test year sales are grounded in actual, recent historical experience. True, this actual experience may be adjusted for changes, such as customer growth, abnormal weather, or even price elasticity, but these are all marginal adjustments to a usually much larger actual experience. Some jurisdictions allow future

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<sup>32</sup>Under certain conditions it can be shown that the sum total of all individual decisions based on such an investment analysis process will maximize the benefits society can achieve with its scarce resources, but that discussion is beyond the scope of this paper.

test year sales determinations where sales are estimated based on budgeted data or on the application of statistical techniques. But budget estimates are often themselves based on recent historical experience and are adjusted for changes at the margin of operations. Statistical relationships, too, are usually grounded in historical experience. Moreover, however, test year sales are developed for most traditionally regulated services, the resulting sales can be compared to recent sales experience. Thus, test year demand data that state regulatory agencies most often deal with are typically based on, and largely verifiable by, reference to recent historical experience.

There is virtually no experience with newly unbundled BSE offerings to serve as a basis of demand estimation. Newly unbundled, candidate BSEs must be analyzed without benefit of historical experience. Rather than starting with a known, historical experience and adjusting that experience for known or anticipated changes, the demand for newly unbundled, candidate BSE may have to be manufactured out of whole cloth. This necessity to estimate total demand, rather than estimate adjustments to already existing demand, is a fact that fundamentally differentiates the regulation of the ONA implementation process from currently traditional regulatory activities.

The immediate concern is the impact of demand estimates on BSE deployment schedules. Market demand consideration is one explicit requirement the RBOCs were to consider in their ONA Plan filings at the FCC. Neither too rapid a deployment, nor too slow a deployment of candidate BSEs is in society's interest, and the rate of optimal deployment depends critically on the accuracy of estimated demands.

Another concern regarding the accuracy of demand estimates relates to the number of candidate BSEs. Especially in the telephone industry, state commissions are familiar with miscellaneous rate filings designed to implement an occasional new

service offering between rate cases. If demand estimates prove unreliable, the impact on revenues and costs may be relatively small. The ONA process, however, envisions a larger number of the "miscellaneous" offerings initially, and continuing as networks are made more and more accessible on an unbundled basis. Accuracy of demand estimation is more important the larger the number of potentially new service offerings.

Finally, there may be a matter of equities. This will be the case whenever those who benefit from a new service are not the same as those who may ultimately be at risk for its costs. The greater the degree of unbundling, the more specialized will be the service offering, and the more select and tailored will be the relevant market. Should the BSEs offered as a result of the ONA process drive a greater wedge between POTS users and enhanced service users, the distribution of the cost consequences of misspecified demands will more greatly affect POTS customers.

In short, accurate demands are important to the deployment decision-making process. Rational deployment is critically tied to estimated BSE demands. There are fundamental differences between demand determinations in most traditionally regulated markets and the markets for BSEs. In general, these differences make it more difficult to accurately estimate BSE demands, while at the same time these differences increase the importance of accurate demand determinations. The remainder of this section describes the demand estimation process, and discusses the likely issues that state commissions will have to grapple with, as BSE offerings come to fruition.

#### Demand Estimating Process

Any decision to deploy a candidate BSE requires an estimation of the demand for each new BSE. Almost by definition newly unbundled BSEs have no history of demand. Therefore, demands have to be estimated on the basis of other than historical experience.

The RBOCs utilized several methods to acquire the data upon which conclusions regarding market demand may be based. These methods include:

- National Forums - ONA national forums were held near Washington, D.C. and Los Angeles in the fall of 1986 and spring of 1987, respectively. These national forums were sponsored by the seven RBOCs, and attendance included representatives of the enhanced services industry. One purpose of the national forums was to provide an opportunity for the industry to identify and describe its network capability needs.
- Regional Forums - Regional forums were held, such as the December 1987 Bell Atlantic forum in the Washington, D.C. area. These gatherings afforded ESP input into BSE deployment plans, as the ONA Plans were being developed.
- Research Studies - Special marketing research studies were undertaken as a part of the data gathering and demand estimation process. Data gathering activities included workshops, ESP surveys, end-user surveys, and in-person interviews. A basic objective was to solicit and assemble user sensitivity to various prices.
- Formal Meetings - Meetings with enhanced service providers covered such topics as clarifications of service descriptions and prioritizations of requested services.
- Participation in Industry Sponsored Forums - Participation in industry forums assists the RBOCs in assessing industry needs for network services.

- Written Reports - Status reports regarding ONA Plans were circulated. Responses to initial forecasts of demand levels of requested services by ESPs were solicited.
- Informal Contacts - Correspondence between ESPs and BOCs provided an avenue for ESPs to make available their needs for network services. One-on-one meetings provided yet another opportunity to the solicitation of ESP network needs.

Both qualitative and quantitative demand data were solicited by the RBOCs in their demand determination efforts. Requested data ranged from the mention of service needs to low, medium, and high valuations, to prioritizations or rankings, to quantities demanded at specific price points. The results of the demand data acquisition efforts revealed in the RBOC filings reflect more qualitative, rather than hard, quantitative demand information. Commentators concerns ranged from the softness of the resulting demand data to outright criticism of the demand determination efforts.

An example of the softness of the demand data and the limited ability to reach definitive conclusions is typified by the Bell Atlantic experience.<sup>33</sup>

...However, few network services were consistently mentioned, and no pattern of requests emerged which indicated clear industry-wide demands. Thus, the consultant reported to Bell Atlantic for evaluation, every service mentioned even once by the interviewees.

A mid-year 1987 Bell Atlantic status report released to the industry reveals that of "...24 key ESP industry requirements" the market demand was not quantified for 19 of the 24 BSEs.<sup>34</sup> This is

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<sup>33</sup>Bell Atlantic Plan, Appendix A, p. 8.

<sup>34</sup>Id. Appendix C, p. 42.

not to criticize Bell Atlantic, or to suggest they could have done better within the time constraints imposed by the FCC, but to point out the limited amount of hard empirical demand data exhibited in the filed ONA Plans.

An example of a regulatory commission's concerns, and even an RBOC's own recognition of the limited worth of acquired demand data, is found in the comments of the Wisconsin PSC:<sup>35</sup>

Ameritech concedes that its costing and demand analysis is faulty (pp. 34-37). The cost for BSEs and BSAs cannot be determined until demand is determined. However, demand cannot be determined until it is clear what cost the end user market will bear.

NECPUC is concerned national demand data may not be the relevant measure for services offered within a state.<sup>36</sup>

The pricing of BSAs and BSEs will require knowledge of local costs and may require knowledge of local elasticities of demand.

ESP commentators were generally suspicious of the deployment process for new BSE requests. ESPs generally fear a go-slow attitude by the BOCs. Users of ESPs prefer a timely disposition of industry requests. The Hatfield report comments:<sup>37</sup>

The industry requested timely responses to requests for new capabilities, fearing they might be 'slow-rolled' by protracted delays; the filings describe the process for receiving and analyzing requests, but make no commitment to such a timely disposition.

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<sup>35</sup>Wisconsin PSC Comments at 4.

<sup>36</sup>NECPUC Comments at 7.

<sup>37</sup>Hatfield Report at viii.

Some ESPs directly criticized the demand estimating procedures utilized by the RBOCs, and hence, their results. Commenting on Southwestern Bell's Primary Research activities obtained by performance of a special study, the Alarm Industry Communications Committee commented:<sup>38</sup>

...[i]t contained suggested prices having no apparent relation to cost. Absent such information, ESPs may have been understandably reluctant to answer the questionnaire.

To the extent that deployment depends on demand, and the possessors of that demand information are reluctant to provide it to a potential competitor, deployment schedules may be affected. The National Telecommunications Information Agency recommended a broad-based, neutral, inter-industry entity, as one arrangement for the exchange of information.<sup>39</sup> The New York PSC recommend both an inter-governmental and an inter-industry forum to facilitate the exchange of information.<sup>40</sup> Institutional mechanisms, such as these, may lead to more reliable demand information and should result in a BSE deployment process more commensurate with the interests of the broader stakeholders in this process.

In short, while accurate demand data are recognized as critical to the deployment process, virtually all participants in the ONA process acknowledge the soft, non-quantifiable nature of estimated demands at this stage of the process. The softness of demand data has important implications for the implementation process. Bellcore assembled a list of over 150 ESP network service requests. Initial offerings would generally range from about 20 to 91 BSEs as proposed in the ONA plans. ESPs and end-users have an interest in more rapid deployment -- POTS customers may be at risk if estimated demands fail to materialize. The implications

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<sup>38</sup>Alarm Industry Communications Committees Comments at 20.

<sup>39</sup>NTIA Comments at 21-23.

<sup>40</sup>NYPSC Reply Comments at 2-3.

of proceeding with the implementation process in the face of soft demand data are identified and discussed in the immediately following material.

### ONA Demand Issues

While accurate demand data are necessary to the development of a reasoned BSE deployment schedule, the lack of hard demand data will raise a number of issues that commissions will likely have to consider as the ONA process unfolds. Some of these issues may be relevant now in other regulated industries, but take on greater significance because of the lack of hard BSE demand data. Others will be new issues, often having the potential for a major impact within a state. State commissions will be better prepared to understand the issues, to adopt policy prescriptions and to participate at the federal level (where decisions affecting the states may be made) if some share of state commission resources is devoted to early participation in the ONA implementation process and consideration of these issues.

### POTS Cost Exposure

If the estimated demand for unbundled BSEs fails to materialize as expected, the costs associated with the provisions of the unbundled BSEs will not be recovered from the ESPs. Residual pricing exposes POTS customers to any shortfall between BSE-related revenues and BSE-related costs. Should the enhanced services provide benefits which are largely not utilized by most POTS customers, the POTS customers may be exposed to revenue requirements associated with BSE costs with little likelihood of any offsetting benefits. The cost exposure to POTS customers from misspecified BSE demands will be greater the larger the number of BSEs, the larger the cost of certain BSEs, and the lower the reliability of estimated demands for certain BSEs.

If state commissions were confident of BSE demands, BSEs could be priced such that the new services would be available to ESPs, and the BOCs would at least cover their costs, including a return. Depending on market conditions, BSEs may be priced to also covering a portion of fixed network costs, reducing the revenue requirement for POTS customers. However, a lack of reliable demand data may result in a situation where ESPs are provided service below costs, resulting in a cost increase for POTS customers. Implementation of BSE tariffs in a manner that affords some protections to POTS ratepayers is an issue associated with the implementation of ONA.

#### Phase-in Price Strategy

The market for a new product often takes time to materialize. Quite often sales start out at rather low levels and grow equally over the first several years. In these situations, sales may not produce revenues in the early years that are sufficient to cover unit costs. Estimates may indicate initial losses from the introduction of a new BSE, with profits being anticipated in the long-run. The degree of confidence in demand forecasts will certainly be critical to state commission consideration of BSE offerings characterized by forecasts having initial revenue deficiencies.

#### Geographic Deployment

There are innumerable deployment possibilities for introducing BSE offerings within a state. Deployment could begin in the larger metropolitan exchanges, where most access lines are located, and gradually extend to smaller exchanges. An offering could also be delayed until it could be made available in all portions of a BOCs service area. Or, an offering could be introduced only in those areas where the local demand economically justifies the offering.

By determining the intrastate deployment schedule and extent of deployment, a commission will be determining important components of a state's telecommunications policy. If certain BSEs are only economical in certain exchanges where the estimated demand supports the offering, some areas of a state may never have the services available elsewhere. This will obviously affect business location decisions and could relegate more rural areas of a state to a technological backwater. On the other hand, universal availability of an offering may not be economic without a subsidy. State policy on the geographic availability of enhanced services will be revealed by state deployment of candidate BSE offerings. Select implementation, statewide implementation at an average rate, or statewide implementation at de-averaged rates will be among the major geographic deployment possibilities presented for state commission consideration.

#### Rate of Deployment

The BOC plans generally contain an initial set of BSE offerings, to be followed by a more-or-less continued offering of additional BSEs as the market will support and technology will allow. The ONA Plans filed by the RBOCs were not initiated by the utilities themselves, but were filed in compliance with an FCC Order. This is unlike most miscellaneous tariff filings for new BOC services that commissions are used to dealing with, as these filings are typically initiated by the BOCs and reflect their own interest. ESPs appear skeptical of the adequacy of the deployment schedules. Proposing a more rigorous procedure, the Coalition of Open Network Architecture Parties states:<sup>41</sup>

As part of the ONA plans, the BOCs must propose a specific process for determining when and under what circumstances an expressed desire for a given network functionality will be translated into the offering of one or more BSEs to provide that functionality. Under CEI, this process is driven by a BOC-initiated

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<sup>41</sup>CONAP Reply Comments, 1st Appendix, at 4.

action to offer an enhanced service in which the given network functionality is an essential element. Absent a BOCs own demand for a particular network function on an unbundled basis, a BOC should still be required to offer the network service element in question either as a result of demonstrated demand or because there is a reasonable expectation, within the general parameters of risk that are common in BOC construction programs, that such demand will develop.

Other ESPs intimated a competitive concern over scheduled deployment. Should the BOCs anticipate that they will subsequently be eligible to directly enter the information services industry, a go-slow approach to BSE deployment would be in the BOCs interests. After discussing the go-slow approach to BSE deployment, the following statement appears in the Alarm Industry Communications Committee comments addressing a special study Southwestern Bell commissioned to ascertain BSE demand:<sup>42</sup>

For instance, in correspondence to SWB, LINK states as follows:

There are two potential LEC strategies toward the DOJ recommendations; a conservative strategy in which the LECs or RHCs maintain the current status under the assumption that future relief will come which will be more advantageous to them; or a conciliatory strategy in which the LECs actively participate in a plan to open their networks and provide "a safe place to do business" for the information providers on equal footing, with rational and consistent revenue sharing plans and tariffs.

Given the obvious interest of ESPs in a rapid deployment schedule and the concerns of POTS customers and other stakeholders in the deployment process, state commissions can expect to be

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<sup>42</sup>Alarm Industry Communications Committee (AICC) Comments at 21-22.

thrust into the role as arbiter of last resort in disputes over the scheduled deployment of new candidate BSEs.

In regard to a less formal dispute resolution process, a number of commentators called for the creation of various entities to assist the ONA process. Wide representation and neutrality are key elements of such proposed advisory groups. Representation would be afforded to LECs, ESPs, equipment manufacturers, and large and small telecommunications workers. New York suggests a two-tier system of separate governmental and industry bodies.<sup>43</sup> Regional forums are possible, as are combined governmental industry forums. The state commissions may find it in their interest to devote some measure of their staff resources to participation in such bodies, both to acquire knowledge necessary to effectively devise state policies, and to assist in smoothing the ONA implementation process.

#### Statewide Pricing

To the extent that state jurisdiction over implementation of the ONA process prevails, it is state demands that are important to the pricing of BSEs. Deployment scheduling of new offerings will require state-specific review. Demand conditions will vary among the states due to differences in demography, income, business practices and importance of different industry types. National or regional demand data may or may not accurately reveal more local demands for BSEs. Thus, the issue of the relevant market in which demand should be assessed will be an issue for any BSEs tariffed by the state commissions.

Since all of the ONA Plans filed with the FCC indicate the feasibility of offering at least a subset of BSEs necessary to provide for industry-requested services, state commissions can expect to soon become participators in ONA implementation. This

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<sup>43</sup>NYPSC Reply Comments at 2-5.

will place issues related to BSE demands on the front-burner of commission considerations along with all other regulatory issues related to the opening of access to the BOCs network activities.

## CHAPTER IV. PRICING OF ONA SERVICES

This chapter describes the principles advocated by the BOCs and other parties for pricing ONA services.

### Position of the Parties

Each of the ONA plans addressed issues of service pricing, but none included specific prices for proposed BSEs or BSAs. The plans are in total agreement that price should be at or above cost, but not as to how to best accomplish this.

Ameritech proposed offering its BSAs and BSEs as changes or additions to its interstate and intrastate access tariffs. It further proposed to set rates for these services equal to cost as defined by FCC Part 69 Rules.<sup>44</sup> All other BOCs proposed relying on market or marketing considerations in addition to cost in setting rates.

Southwestern Bell and NYNEX propose that whenever ONA services are identical to existing services, ONA services should be priced at the same rates as these existing services. For ONA services similar to existing tariffed services, the level of contribution built into the ONA service will be comparable to that in the existing service.<sup>45</sup>

Pacific identifies one of the goals of its market-based pricing policy as the stimulation of the ONA marketplace. Pacific explains that<sup>46</sup>

an objective of short-term profits from this segment of the industry may be counter productive to its long term growth.

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<sup>44</sup>Ameritech Plan at 94-96.

<sup>45</sup>See e.g., Southwestern Bell Plan at 92-95.

<sup>46</sup>Pacific Telesis Plan at 15.

In fact, it suggests the possibility of setting prices for several ONA services at below cost levels, at least initially.

The BOC pricing plans also generally include a policy of parity pricing where they cannot charge their own affiliated ESP less than that charged their competitors.

The ESPs objected to market-based pricing on a number of grounds including concern of monopoly abuse through discriminatory pricing and price squeezing.

ADAPSO argues that "strategic pricing is inherently anti-competitive when used by dominant carriers to set the rates which their enhanced service competitors must pay for essential ONA services."<sup>47</sup>

The Information Industry Association (IIA) comments that market-based pricing is the equivalent of "subsidy-generating, 'cost plus' pricing."<sup>48</sup> The IIA also notes that in its view market-based pricing will necessarily lead to over-inflated rates for ONA services, resulting in the "denial of services to ESPs and the public."<sup>49</sup> TYMNET argues that the failure to set prices at their fully distributed cost, introduces a "distortion" between costs and prices. TYMNET points to the ratios of hypothetical prices to preliminary estimates of cost presented by Southwestern Bell in its ONA plan as an indication of the magnitude of this distortion.<sup>50</sup> A number of parties argue that the FCC should require that all ONA services be tariffed interstate. This, they argue, would promote price uniformity. In addition, it would

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<sup>47</sup>Comments of ADAPSO at 34, emphasis supplied.

<sup>48</sup>IIA Comments at 22.

<sup>49</sup>Id.

<sup>50</sup>TYMNET Comments at 42.

impose regulatory pricing restrictions in those instances where ONA services have been detariffed or are otherwise subject to some form of flexible pricing at the state level.<sup>51</sup> The position of many other commentators can be simply summarized in the often used description of the BOCs' proposed policies as "strategic" pricing.<sup>52</sup>

Shooshan & Jackson, in reply comments prepared on behalf of Bell Atlantic, argue that ONA is a new service and there are no guarantees of financial success in the marketing of new BSAs and new BSEs. In such circumstances, they argue, market pricing can minimize the probability of a revenue support requirement from non-ONA services. If, for instance, the demand for a BSE did not materialize as expected at the price initially set, market pricing would permit the lowering of this price to short-run marginal cost to minimize losses.<sup>53,54</sup> Further, if ONA services as a category were to generate revenues above cost, the price of successful service offerings would have to be set above long-run incremental costs if only to offset the losses from unsuccessful offerings.<sup>55</sup>

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<sup>51</sup>See CONAP Comments at 60-63.

<sup>52</sup>See e.g., IBM Comments at 6 and Compuserve Comments at 18.

<sup>53</sup>Shooshan & Jackson Reply Comments at 53-55.

<sup>54</sup>It is interesting to note that Shooshan & Jackson seem to believe that short-run marginal costs are necessarily below long-run marginal costs. This may be the case on occasion, but it need not necessarily be true. The general argument is that capital is fixed in the short-run and, therefore, capital costs are not included in the determination of short-run marginal costs. For that assessment to be relevant, the capital in question must be dedicated to the service in question and not available for use in any other service. In other words, one must be dealing with sunk cost. If the capital in question represents common facilities used in a variety of services, then even in the short-run capital costs are relevant. See also Baumol, "Minimum and Maximum Pricing Principles for Residual Regulation", in Danielson and Kamershen, Current Issues in Public-Utility Economics, Lexington Books (Lexington, Massachusetts) 1983, page 193.

<sup>55</sup>Id.

Both NYNEX and Southwestern Bell respond that many proposed BSEs are existing services which are market priced. The companies intend to, wherever possible, simply use existing rates for ESPs' existing services.<sup>56</sup> Some BOCs fail to respond directly to the comments arguing that specific information on prices and costs are not necessary for the approval of ONA plans<sup>57</sup> or that ONA pricing is the responsibility of state and not federal jurisdiction.<sup>58</sup>

## ONA Pricing Issues

### Impact On POTS Customers

It is not clear which of these pricing strategies (i.e., market-based vs. cost-based) will necessarily benefit the residually priced services taken by POTS customers.

An implicit assumption, at least of the ESPs, is that market-based prices are, almost by definition, higher than cost-based prices. This is simply not correct. Marginal costs may be higher or lower than embedded costs and so may market-based prices. Transcripts of proceedings before state regulators contain innumerable situations where revenues from market-based priced services failed to recover the allocated embedded costs of that service. In fact, it has argued on more than one occasion that for some products fully distributed costs may be higher than the price that the market will bear.

Similarly, ESPs refer to market-based rates in the context of their having a negative effect on the growth of ONA and enhanced services over time. The BOCs, however, point out that market-based pricing allows promotional pricing, whereas cost-based pricing does not.

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<sup>56</sup>NYNEX Reply at 33-34.

<sup>57</sup>See e.g., NYNEX at 36.

<sup>58</sup>Bell Atlantic Reply at 21.

### Phase-In Pricing

The possibility of promotional or phase-in pricing raises an important issue. The assumption underlying this type of pricing strategy is that losses incurred in the early years of a service offering will be made up from higher prices, lower costs and/or larger volumes in the later years. To finance promotional pricing, BOCs may seek revenue support from other services in the early years with the intent of repaying this support from the higher levels of contribution expected later on. However, given the trend of current events, it is possible that services that have been subject to promotional pricing may be deregulated, preventing a complete repayment to ratepayers. The probability of a series of events such as this may be critical to state commissions considerations of any promotional pricing proposals and how these proposals will be incorporated into traditional rate of return regulation or flexible earnings regulation.

### Two-Tiered Pricing: Core vs. Non-Core Services

There are other approaches to concerns regarding the development of enhanced services. One is to distinguish between these services based on how essential they are to the development of the market for enhanced services. This leads to the identification of a core group of "basic" ONA services. These basic services would be priced at or near a commission determined price floor. Markups over cost to recover common costs and/or provide contribution will be restricted to the less discretionary services. This approach would encourage the development of the market for enhanced services.<sup>59</sup>

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<sup>59</sup>A further discussion of this two-tier approach is contained in the September 13, 1988 Staff memo to the NYPSC contained as an attachment to Order of Open Network Architecture in Case no. 88-C-004, issued September 15, 1988.

This procedure relies exclusively on neither cost-based, nor market-based rates. Setting rates exclusively on costs leaves no room for distinguishing in the rate setting process between core and non-core services. Setting rates on a market-based criteria will result in markups over cost being related to the inverse of the demand elasticity for each service. Services with more elastic demands will have lower markups and those with less elastic demands will have higher markups. Differences in demand elasticities reflect differences in options available to customers, including the number of firms supplying a particular service and the number of substitutes for this particular service. Fewer options means a lower demand elasticity. There are typically fewer options available for a basic or core service. All other things being equal, core services tend to have lower demand elasticities than non-core services. Relying exclusively on market-based pricing will not necessarily result in core services being priced closer to cost.

#### Unit Costs or Category Costs

Whether cost-based or market-based pricing is permitted, it is necessary to assure that ONA prices and revenues are above cost and that non-ONA ratepayers are not adversely affected by the provision of these services. This is a standard regulatory requirement and would appear to be easy to implement. However, what is the proper way to test for this? Should the price of each service be compared to its cost, or should the revenues of the entire category of ONA services be compared to the cost of that entire category? The category device may be helpful if a state is interested in promoting the demand for enhanced services, yet at the same time wants to assure that the total cost of ONA service is recovered or that some target level of contribution is recovered. This category cost procedure is consistent with and in fact, may assist in implementing promotional pricing or the two-tier concepts discussed above.

## Pricing Uniformity

There are two dimensions to the issue of price uniformity. One dimension deals with rates across states and the other across markets within a state. Federal preemption of all ONA tariffs and the requirement of a single costing standard will lead to rate uniformity across states, but not necessarily across markets (customer classes) within a state.

Many, if not most, of the BSEs proposed in the BOC plans are existing intrastate services. If rates for ONA services provided to ESPs are priced in accordance with federal rules, the resulting prices will, in most instances, differ from the rates for the same services that now exist for non-ESP subscribers. For this to persist, usage restrictions will be required.

The application of federal rules will result in some BSEs being priced higher than the comparable non-ONA services. In such situations, ESPs will have to be restricted to the ONA tariff, the tariff can remain open to all other ratepayers. In other situations, the application of federal rules will result in BSEs being priced below comparable services. In these situations, the ONA tariff will have to be closed to the general body of ratepayers and open only to ESPs. This will necessarily be the result of the imposition (or even widespread adoption) of the federal pricing rules - or any other pricing rule that differs from that used in the establishment of prices for existing services.<sup>60</sup> Ironically, while this will result from federal preemption, this is contrary to the ESPs voiced opposition to such restrictions.<sup>61</sup>

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<sup>60</sup>Southwestern Bell claims to have considered this when deciding that when ONA services are the same as existing tariffed services, the same price will apply to both. See Southwestern Bell Plan at 94.

<sup>61</sup>See e.g., Hatfield Report at 90-94.

The determination of whether cost-based or market-based pricing is to be relied upon for ONA services cannot be made in a vacuum. Recognition of the procedure used to determine price for other comparable services is necessary as is the fact that most BSAs and BSEs will be provided as intrastate services. One must then consider the implications of obtaining price uniformity between states and price differences within a state as opposed to price differences between and uniformity within the state.

#### State Authorized Flexible Pricing

Several states have granted pricing flexibility authority (e.g., in the form of banded rates) for services identified as BSE candidates. In many instances, pricing flexibility applies automatically to new services. It is difficult to apply the concept of cost-based rates in this type of regulatory environment.

The same situation exists in the federal jurisdiction if one assumes the adoption of price caps. There will be no long-term relationship between service price and the underlying service cost. The meaningfulness of cost-based pricing in this environment must be questioned.

#### Pricing Parity

The BOCs affiliated ESP will be able to collocate, whereas the BOCs have refused to consider permitting unaffiliated ESPs the same privilege. The unaffiliated ESP must have an access link running to the BOC central office, whereas an affiliated ESP need not.

In response to FCC guidelines, each BOC has proposed a parity pricing proposal where its affiliated unregulated ESP would be charged no less than would an unaffiliated ESP. Further, all BOCs, with the exception of BellSouth, propose to maintain this parity even when the affiliated ESP takes advantage of collocation. Under

this condition, affiliated ESPs would end up paying the BOCs more than cost of the access link would require. This policy has obvious competitive and efficiency implications, but it also has revenue implications.

## CHAPTER V. ONA SERVICE COSTING PROCEDURES

There are several cost and cost allocation matters raised by the introduction of ONA services. One of these deals with the jurisdictional allocation of costs. The concern is that the jurisdictional assignment of revenue requirements be totally consistent with jurisdictional revenue generation. This matter is of particular concern in light of requests by the industry for greater federal preemption over all aspects of ONA tariffs.

Second, ONA is one of the non-structural safeguards designed by the FCC permitting the BOCs to freely enter the market for enhanced services. Without the structural separation requirement, equipment, facilities and manpower will be shared by the regulated and unregulated operations. Costing procedures need be established to protect ratepayers and non-affiliated ESPs from potential cross subsidy.

Third, there is general agreement that rates for the regulated ONA services should be set to recover costs. Cost information is a necessary ingredient in the process of determining the reasonableness of the ONA rates.

### Jurisdictional Separations

All BOCs recognize the authority of the states over ONA pricing. Each has proposed to tariff its ONA services in the state jurisdictions. Bell Atlantic proposes to file tariffs only in the state jurisdictions.<sup>62</sup> U.S. West and Southwestern Bell propose to file all tariffs with the states and if federal tariffing is necessary (e.g., if demand materializes) to incorporate these state tariffs by reference into the federal tariff.<sup>63</sup> All other BOCs

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<sup>62</sup>Bell Atlantic Reply Comments at 21.

<sup>63</sup>U.S. West Plan at 363, Southwestern Bell Plan at 82.

appear to be prepared to tariff all ONA services in both jurisdictions.

The ESPs, however, generally calls for greater federal regulation over ONA services, including ONA pricing. The positions taken have both legal and policy bases. For instance, ANPA, IIA and others argue that federal tariffs are required at least for those ONA services that may be used in the provision of interstate enhanced services.<sup>64</sup> ADAPSO and other members of the industry take the position that consistency and uniformity in all aspects of ONA services are necessary and that this requires federal tariffs for all ONA services.<sup>65</sup> CONAP argues that federal tariffs are necessary to assure that FCC requirements are met especially since states may deregulate certain services.<sup>66</sup>

The matter of the proper regulatory jurisdiction for the pricing of ONA services is an issue that is well beyond the scope of this report. However, as noted by the Ameritech States and NECPUC, the resolution of this matter has significant implications on cost allocation and on cost recovery.<sup>67</sup>

The Ameritech States and NECPUC point out that much of the investment and associated costs of ONA services relate to central office equipment and more specifically to local dial switching equipment. Local dial is subject to jurisdictional allocations

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<sup>64</sup>See e.g., ANPA Comments at 25-26, IIA Comments at 16-19, and Dun & Bradstreet Comments at 37.

<sup>65</sup>See e.g., ADAPSO Comments at 50.

<sup>66</sup>CONAP Comments at 73-74 and MCI Comments at 35.

<sup>67</sup>Joint Comments of the State of Michigan and the Michigan Public Service Commission, Public Utility Commission of Ohio, Indiana Utility Regulatory Commission (Ameritech States Comments) at 4-5 and Comments of the New England Conference of Public Utilities Commissioners (NECPUC) Comments at 6).

based on dial equipment minutes (DEMs).<sup>68</sup> Hence, if a new service which does not add minutes of use is introduced, the jurisdiction in which the service is tariffed will gain the additional revenues, but will be allocated no additional costs. This problem is not unique to central office costs, but potentially exists wherever allocations are based on minutes of use.

This situation is not unusual. Rather it may typify what is to be expected given the nature of most ONA services. As pointed out by several commentators, the candidate BSEs have traditionally been local services, even when they have functioned as value added features or supplements to interstate services.<sup>69</sup> If these services are now tariffed completely interstate, revenues that have traditionally accrued to the intrastate jurisdiction will now be shifted to the interstate jurisdiction, but the revenue requirements will not. As the number of ONA services increase, this problem will simply be compounded.

One commentator reports that approximately 90 percent of all minutes of use are intrastate.<sup>70</sup> What this suggests is that if more than a fairly nominal portion of revenues from ONA services is deemed interstate, modifications to the separations procedure may be necessary in order to assure a reasonable jurisdictional assignment of ONA costs.

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<sup>68</sup>The allocation is based on the relative minutes of use of the local dial equipment for calls within each jurisdiction.

<sup>69</sup>See e.g., Bell South Reply at 60-63 and Bell Atlantic Reply at 21-23.

<sup>70</sup>Ameritech States Comments at 6.

## Joint Cost Allocation

The FCC determined that the unseparated provision of enhanced services must be subject, among other things, to the terms and provisions of its Joint Cost Order (CC Docket No. 86-111). This order and resulting cost allocation manuals prepared by the BOCs apply strictly to interstate services and interstate costs. Nevertheless, with ONA, the issue of cost assignment between regulated and non-regulated activities at the state level is most timely. There is little discussion of this matter as it relates to the interstate or intrastate jurisdiction in the plans filed by the BOCs or in the comments of other parties.

The BOCs' plans, for instance, simply note the existence of this requirement (in the interstate jurisdiction) and their intention to comply. Among the states, the California PUC notes that it has intrastate cost allocation issues under review, and that it will not automatically apply the federal standards in this area. The Ameritech States note that in the absence of structural separations, some form of accounting or cost allocation procedure is necessary to guard against improper cross subsidization.<sup>71</sup>

The cost allocation methodology adopted by the FCC in CC Docket No. 86-111 conforms to what it refers to as the "attributable cost" methodology. The thrust of the methodology is to maximize the portion of total system costs directly and indirectly attributable and in doing so, minimize the portion of costs that are viewed as residual and subject to general allocation. The methodology identifies plant, costs and expenses as being either direct, indirect or residual. Direct plant, costs and expenses are directly assigned to the regulated or unregulated operations, and indirect plant, costs and expenses are assigned based on the functional relationship to a direct account. All remaining costs

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<sup>71</sup>Ameritech States Comment at 14-15 and Ameritech States Reply at 14.

and expenses are deemed to be "residual" or allocated using a general allocator.

Central office investment and outside plant should typically be subject to direct assignment. Maintenance of central office facilities or outside plant, on the other hand, should be considered an indirect expense and assigned to regulated and unregulated activities on the basis of the assignment of the central office or outside plant being maintained. Land and building investments and associated costs are also subject to indirect assignment.

There are three aspects of this cost allocation method that are particularly noteworthy. First, the FCC recognized that allocating investment on relative current use does not "adequately reflect cost-causation principles and thus properly allocate investment risk."<sup>72</sup> Second, the FCC procedure requires that investments assigned to unregulated activities not be reassigned to regulated activities without explicit economic justification. The FCC described the purpose of this procedure as follows:<sup>73</sup>

If a cost were incurred largely to provide for future nonregulated services, and these services failed to grow as expected, we would not want the nonregulated share of the costs to fall on regulated operations and, therefore, be charged to ratepayers.

Third, the required cost allocation procedure is especially sensitive to marketing expenses. The FCC expressed its concern that the BOCs take pains to assure that very large portions of marketing expenses are directly assigned and required that residual marketing expenses be allocated based on allocated marketed

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<sup>72</sup>Joint Cost Order, CC Docket No. 86-111, Report and Order, issued February 6, 1987, paragraph 153.

<sup>73</sup>Id. paragraph 169.

expenses rather than on a general allocator. As a result, even residual marketing costs are assigned on a basis that more closely resembles the factors that lead to their incurrence.<sup>74</sup>

With the deployment of ONA services, concerns about cost allocation between the BOCs' intrastate regulated operations and their unregulated ESP operations arise. Structural separation may be one mechanism to achieve this. Though the relevant FCC decision is being appealed, structural separation is currently not an available option. It appears, therefore, that a cost allocation method to guard against cross subsidy may be a viable option to be examined and possibly implemented.

#### ONA Service Costs

The various comments to this proceeding propose that a cost-based pricing approach be adopted, while others propose market-based pricing. Where rates are explicitly tied to costs, the selection of a cost methodology leads to the unique identification of rates. Where a market-based pricing methodology is used, a cost methodology does not identify rates, but rather is necessary to assure that rates are fully compensatory. In either event, questions regarding the cost methodology to be relied upon need to be resolved.

The BOC plans provide only limited information regarding ONA service costs. No BOC plan included a reliable set of ONA service cost estimates.<sup>75</sup> However, most BOCs did identify the cost methodology it proposes to use in establishing rates or assessing the extent to which they are cost compensatory.

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<sup>74</sup>Id. paragraphs 196-203.

<sup>75</sup>Southwestern Bell provided a set of cost estimated which it describes as "very preliminary". It, along with the other BOCs, takes the position that cost information need not be developed until the BOC files tariffs before the FCC or relevant state commission. See Southwestern Bell Comments at 95 and Attachment 15B.

Ameritech proposed to rely on a modified version of FCC Parts 69 for costing and pricing purposes.<sup>76</sup> All other companies indicated reliance on incremental costs or alternatively on the methodology mandated in each regulatory jurisdiction served.

Very few comments address the issue of cost methodology, per se. Rather the primary focus tends to be on pricing policy, with costing procedures simply a means to an end. The ESPs, for instance, prefer cost-based pricing based on federal standards, i.e., fully allocated embedded costs. Some states exhibited a preference for strict cost-based rates.<sup>77</sup> Others indicated a preference for market-based prices and probably, therefore, do not oppose the use of incremental costs.<sup>78</sup>

Independent of whether embedded or incremental costing procedures are used, one factor that may have a major impact on the results of a cost study, is the method by which investment and associated costs are determined and allocated. As described in the preceding section, the FCC in its Joint Cost Order required that a method not relying on current relative use serve as the basis for investments allocations. The FCC noted that "the accurate allocation of costs... depends on the correct identification of the activity that is supported by the cost." And that "costs are incurred in anticipation of future demand..."<sup>79</sup> In addition, the FCC concluded that measures of relative use were also inefficient

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<sup>76</sup>Ameritech claims that under existing Part 69 rules, BSE costs will be averaged in with all switched access costs when establishing cost-based rates. It is seeking a waiver to permit what it describes as a more accurate assessment of BSE costs. See Ameritech Plan at 127.

<sup>77</sup>Ameritech States Comment at 13, Maryland Peoples Counsel Comments at 3.

<sup>78</sup>See, e.g., Florida Public Service Commission Comments at 4, Minnesota Public Utilities' Commission Comments at 5, U.S. West States Comments at 4.

<sup>79</sup>CC Docket No. 86-111, paragraph 167.

as a method of properly allocating investment risk.<sup>80</sup> These standards were required by the FCC in the allocation of costs between regulated and unregulated activities. Unless these standards are conceptually reflected in the allocation of costs between ONA services and other basic services, cost misallocations may result and other basic services may be improperly burdened.

A related issue is what will ONA cost, not so much on a per unit basis, but in the aggregate (or a per company basis)? What are the start-up costs? How long will it take? What are the options? There is virtually no information in the plans or in the comments on these issues.

This is not to say that any party seriously believes that ONA services will not result in costs being incurred or stated differently, that unbundling is costless. Some of the BOCs suggest that the existence and magnitude of such costs are a primary reason for their decision to "go slow" in terms of the extent of unbundling and in terms of the number of BSEs provided. For instance, Ameritech indicates that in order for it to be able to provide the number of ONA services in the areas identified in its plan, each of the central office switches in the proposed deployment areas will be equipped with a minimum generic level of software.<sup>81</sup> Ameritech's point must be that this would not happen if it were not for ONA and, therefore, it is reasonable to conclude that there are additional costs incurred. Southwestern Bell notes that among the reasons it chose not to disaggregate its BSAs was its view that

unbundling at a more granular level would require immediate, extensive modifications to the public switch network.<sup>82</sup>

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<sup>80</sup>Id. paragraph 153.

<sup>81</sup>Ameritech Reply at 6.

<sup>82</sup>Southwestern Bell Reply at 21.

It also notes that

attempting to disaggregate the three BSA components throughout the public switch network would be incredibly expensive as well.<sup>83</sup>

It should be noted, however, that it is not clear whether the costs referred to here are one-time, up-front costs for the initial deployment of ONA services, recurring costs related to the ongoing provision of ONA services, or both. Further, one must recognize that the BOCs may have an incentive to go slow and are easily convinced that costs associated with ONA are higher than what may actually occur. Nevertheless, it appears that the cost of deploying and providing ONA must be considered in assessing the reasonableness of any ONA strategy.

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<sup>83</sup>Id.

## CHAPTER VI. MODEL ONA TARIFF

### Introduction

In this section of the report, a model ONA tariff is presented. Its purpose is to pull together in a tariff format much of the information needed to evaluate an ONA plan. In what follows we identify and discuss the various assumptions made regarding the tariff, its structure and a number of tariff issues.

To be sure, a separate tariff for ONA services is not absolutely necessary. For instance, Bell Atlantic proposed simply filing changes where necessary to its local exchange tariff to incorporate ONA services. Ameritech proposed to incorporate ONA services in its interstate and intrastate access service tariffs rather than establish a separate ONA tariff. Nevertheless, there is some merit to the establishment of a separate ONA services tariff, at least during these initial phases of ONA development and deployment. A separate tariff allows ESPs to readily determine what access arrangements and other ONA services are available. In addition, commissions can more readily compare service arrangements and prices for ONA services with those for similar non-ONA services. Commissions can also more easily assess the merits of the ONA plan as proposed.

It may be that ONA is not a separate service, but rather a way of doing business. That is, the concept of ONA may simply require greater unbundling of several or possibly all BOC services. As such, one can expect pressures in the long-run to meld what are now called "ONA services" with the relevant sections of the BOCs local exchange and access tariffs. Establishing a separate ONA tariff at this time need not prevent that kind of arrangement from eventually coming about.

The case of special access may be somewhat analogous. Consider the pressure that now generally exists to meld special

access and private line tariffs. Initially, separate special access tariffs were established in part because of their newness and in part because of the amount of public attention afforded them. Having become more familiar with the concept of special access and, of course, recognizing its comparability to private line service, the melding of the two is generally taking place. The same is possible for ONA services, even if a separate tariff is initially established.

### The Model Tariff

A model ONA services tariff is presented in Attachment 1 to this report. This tariff identifies that information which could, and quite likely should, be included to properly describe the terms and conditions of this service offering. Sections 1 and 2 deal with preliminary matters, specifically the tariff application and definitions of terms. Section 3 deals with regulations: e.g., Who can subscribe to ONA services and for what purpose can they be used? There is also a Section 3A included. Sections 3 and 3A are alternatives, providing alternative sets of use regulations. These will be discussed in greater detail below.

Tariff Section 4 provides descriptions of the services offered. All ONA services are identified and a technical description of each presented. Further, to the extent there are restrictions based on technical compatibility or other factors, they should be identified in this section of the tariff. For instance, some BSEs may be of value if and only if used in conjunction with other BSEs or with certain BSAs. These requirements should be spelled out in this section of the tariff. Tariff Section 5 provides the rates and charges for the individual ONA services.

The descriptions provided in each instance are for illustration only. For instance, in Section 4.2, five BSAs are identified and described. We are making no recommendation regarding the

appropriateness of the number, identity or description of BSAs. Further, we have made no attempt to contribute to the technical description of these BSAs or to any other technical matter in these tariffs. As such we have borrowed heavily from the technical descriptions included by the RBOCs in their plans. Similarly, Sections 4.3, 4.4 and 4.5 are simply to illustrate the tariff structure and content regarding these service descriptions. Tariff Section 5 is again only illustrative, but with regard to rates and charges.

### Tariff Issues

#### Collocation or Bundled BSAs

This model tariff is developed based on the BSA concept as proposed by the BOCs. In essence, we have structured this tariff on the presumption that collocation will not be required, at least not for the present. There is widespread agreement that the three components comprising the BSA (i.e., access link, central office features/function and transport) are necessary to gain access to BSEs. Therefore, with no collocation, the 'bundled' BSA rate element is reasonable. If at some point in time collocation is permitted, tariff revisions would be necessary.

#### Technical Compatibilities

It is conceivable that there are or may be ONA services that are not technically compatible, i.e., cannot be used together. Further, there may be ONA services that cannot function on a stand alone basis but must be used in combination with other ONA services. These technical requirements must be incorporated in some fashion in the tariff. Our model tariff presupposes that a Technical Reference will be developed and made available to all

parties.<sup>84</sup> Rather than all technical requirements spelled out in detail in the tariff, most will be incorporated by reference.

### Usage Restrictions

Some commissions may wish to establish ESPs as a wholly separate class of customer whereas others may wish to have no distinctions between ESPs and the entire community of business subscribers. These are, of course, two polar cases and there is an entire spectrum of possibilities that lies between them. The larger the number and greater the extent of use restrictions, the further one moves toward establishing a wholly separate ESP class of customer.

Included in the model tariff is a Section 3 and a Section 3A as mentioned. These represent two alternative levels of usage restriction and, therefore, two different degrees to which a separate ESP class of service is established.

Tariff Section 3 is restrictive, setting up an entirely separate class of ESP customers. Specifically, this alternative restricts ONA services to ESPs, requires that ONA services be used in the provision of enhanced services and requires that only ONA services be so used.<sup>85</sup> With these restrictions, differentials in rates between ESPs and other business customers can exist without any concerns regarding tariff shopping. For instance, ONA services can be cost-based whereas services to other business customers can be market-based.

Tariff Section 3A includes fewer restrictions on usage. It explicitly permits non-ESPs to take service from the ONA Tariff. However, it does require that BSEs be taken on BSAs. Under these

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<sup>84</sup>A Technical Reference was proposed by BellSouth. See BellSouth plan Attachment Q.

<sup>85</sup>This is fashioned after the BellSouth plan.

circumstances, ONA services cannot be priced below the levels of comparable non-ONA services without inviting tariff shopping. However, this tariff structure does not prevent ONA service prices from being above those of other comparable existing services.

Other alternatives to Tariff Section 3 are possible. They should be fashioned depending upon the regulatory and/or policy goals of the Commission.

#### Tariff Cross Referencing

Virtually every BOC proposed some degree of tariff cross referencing. Southwestern Bell proposed to cross reference rates from its intrastate tariffs to its interstate tariffs. NYNEX proposed that whenever a BSE was the same as an existing service, the BSE would be priced by cross referencing the tariff for the existing service. Virtually all BOCs proposed that rates for private line and packet switched BSA access links not be established separately for ONA services, but rather the ONA Tariff include a cross reference to the packet switched, and private line or switched access tariff. An example of cross referencing is shown in Section 5.2 of the model tariff.

Cross referencing, of course, requires that rates for ONA services be set at the same level as the rates for these features and functions when provided to non-ESPs. If rates are cost-based, it presupposes that ONA and non-ONA costs are the same, and if rates are market based, it presupposes that market demand is unaffected by the expanded provision of enhanced services.

It is probable that the marginal cost providing a particular service to an ESP and to a non-ESP is the same, the fully distributed (embedded) cost of serving these customers need not be the same. The development and deployment of ONA services is not likely to be a costless exercise. The bulk of these additional costs are likely to be startup related, and therefore fixed or sunk in

nature. They will vary with the number of different ONA services, although not so much with the volumes of particular ONA services. These costs will then not be reflected in the marginal cost of ONA services, but will be captured as part of the FDC of these services. Therefore, the marginal cost of an ONA service and a similar non-ONA service will be the same, but the FDCs will not. In fact, the FDC of the ONA service will be higher.

The presumption that similar market conditions exist may not be unreasonable. ESPs use ONA services as inputs in the provision of enhanced services. Non-ESPs are often referred to as end-users. However, these are typically business customers who take telecommunications services of all kinds as inputs into their business operation. Since all customers view ONA and similar services as inputs, it is probable that the market characteristics for ONA services and existing similar services differ primarily by size.

#### Summary and Conclusions

Though it is not imperative that ONA services be tariffed separately from other services, doing so may be extremely useful especially during the initial time of ONA service development and deployment. A model ONA Tariff was developed that provided some insight to a number of tariff issues. There is no necessary single solution to each of these issues. The proper resolution may well depend on local conditions including demand, costs and customer acceptance of ONA services.

This model ONA tariff was also presented as a first step or baseline in assessing the possibilities and merits of a "model" uniform ONA tariff. The tariff presented is illustrative and includes ONA specific terms and conditions, technical and non-technical restrictions, and rate element structure for BSAs and BSEs.



ATTACHMENT 1

OPEN NETWORK ARCHITECTURE  
MODEL SERVICE TARIFF

Note: Many of the descriptions included herein borrow heavily from illustrative tariffs filed by the RBOCs in CC Docket No. 88-2.



## MODEL TARIFF

### OPEN NETWORK ARCHITECTURE (ONA) SERVICE

#### 1. APPLICATION

- 1.1 This tariff section contains regulations, rates and charges applicable to the provision of functional network capabilities enabling the supply of enhanced services through the use of the public switched and dedicated channel networks.
- 1.2 These regulations are in addition to the regulations and rates specified in other company tariffs where referenced.

#### 2. DEFINITIONS

##### 2.1 ACCESS LINK

The local loop facilities from the customer's premises to the first point of interconnection at the customer's serving central office.

##### 2.2 ALTERNATIVE

An alternative requires the customer to select from one of several available selections associated with a particular service.

##### 2.3 ANCILLARY SERVICES

Nontechnical services, not directly related to the interconnecting of an ESP and its client through the network, but which may provide utility to the ESPs. (e.g., billing services).

##### 2.4 BASIC SERVICE ARRANGEMENT (BSA)

A Basic Serving Arrangement (BSA) provides the connection of an ESP to and through the network to its customer.

##### 2.5 BASIC SERVICE ELEMENT (BSE)

A Basic Service Element (BSE) is a specific network capability which provides an optional function or a part of a function required for the provision of an enhanced service.

##### 2.6 COMPLEMENTARY NETWORK SERVICE (CNS)

This is the facility used to connect the ESP customers to the central office serving those customers. This service will be obtained from the appropriate local exchange tariff section.

## 2.7 ENHANCED SERVICES

The term "enhanced services" shall refer to services, offered by using common carrier transmission facilities, which employ computer processing applications that act on the format, content, code, protocol or similar aspects of the subscriber's transmitted information; provide the subscriber additional, differed or restructured information; or involve subscriber interaction with stored information.

## 2.8 ENHANCED SERVICE PROVIDER (ESP)

The term "Enhanced Service Provider" (ESP) denotes a Telephone Company customer that provides enhanced services.

## 2.9 TRANSPORT

The network facilities between the ESP's serving node and the ESP customer's local service office.

### 3. REGULATIONS

- 3.1 The provision of the services in this Tariff is limited to ESPs. These services will not be provided to non-ESPs for use as a replacement for basic services provided under tariff by the Telephone Company.
- 3.2 The use by the ESP of the services provided in this Tariff is limited to the ESPs provision of enhanced services to its client. ESPs are not permitted to use any of the services included in this Tariff for non-resale communications as a replacement for basic services provided under tariff by the Telephone Company. Such use will result in retroactive billing for the services at normal tariff rates, plus interest on the amounts owed.
- 3.3 ESPs may not use tariffed services other than those found in this Tariff in the provision of their enhanced services, except as noted in Section \_\_\_\_\_ below.
- 3.4 Other services provided under tariff by the Telephone Company may not be used in place of services offered under this Tariff within a Basic Service Arrangement, except as noted in Section \_\_\_\_\_. For example, an ESP may not utilize a non-ESP service (e.g., 1FB) in place of a BSA Access Link.
- 3.5 Combinations of services provided under this tariff may be technically limited, only certain combinations of services will work together. For instance, the availability a BSE may be restricted to a specific BSA. Allowable combinations are identified in the Technical References and where relevant, in the Service Description section of this Tariff.
- 3.6 Unless otherwise specified, BSEs will be provided only in conjunction with BSAs.
- 3.7 Airline distance between Telephone Company central offices shall be developed using the methodology and Vertical (V) and Horizontal (H) coordinates as stated in (relevant tariff).
- 3.8 The non-recurring charges specified herein shall apply in addition to any other applicable service charges (e.g. service order charges) specified elsewhere in this Tariff.
- 3.9 BSAs and BSEs are provided subject to the availability of facilities as described in Section 4.6 of this Tariff.

[ALTERNATIVE]

3.A REGULATIONS

- 3.A.1 The provision of the services in this Tariff is for the supply of enhanced services by, but not limited to, ESPs.
- 3.A.2 Combinations of services provided under this tariff may be technically limited, only certain combinations of services will work together. For instance, the availability of a BSE may be restricted to a specific BSA. Allowable combinations are identified in the Technical References and where relevant, in the Service Description section of this Tariff.
- 3.A.3 Unless otherwise specified, BSEs will be provided only in conjunction with BSAs.
- 3.A.4 Airline distance between Telephone Company central offices shall be developed using the methodology and Vertical (V) and Horizontal (H) coordinates as stated in (relevant tariff).
- 3.A.5 The non-recurring charges specified herein shall apply in addition to any other applicable service charges (e.g. service order charges) specified elsewhere in this Tariff.
- 3.A.6 BSAs and BSEs are provided subject to the availability of facilities as described in Section 4.6 of this Tariff.

#### 4. SERVICE DESCRIPTION

##### 4.1 GENERAL

- A. ONA services provide the functional network capabilities that enable the supply of enhanced services through the use of the public or switched network.
- B. ONA services are provided through the use of BSAs and BSEs. Each BSA is comprised of three elements, each having one or more alternatives. An alternative is an item that is generally required for the BSA to be technically feasible. A BSE is a technically defined capability that may or may not be selected in conjunction with a particular BSA.
- C. Not all BSEs are available with each BSA. The selection of a BSE may determine the choice among the available BSAs. The listing of BSEs available with each BSA is provided in Section 4.5 of this Tariff.
- D. Alternatives chosen for each component of the BSA must be technically compatible.
- E. Specific technical parameters for BSA alternatives and for BSEs are defined in the Telephone Company's Technical References.

##### 4.2 BASIC SERVICE ARRANGEMENT (BSA) DESCRIPTIONS

The BSAs offered are as follows:

###### A. Voice Grade, Circuit Switched-Line Side

A voice grade line circuit switched Basic Service Arrangement provides an ESP with a line side connection in the circuit switched network. This BSA is capable of supporting analog signals of approximately 300 to 3000 Hz over one or more channels. Analog data may also be transmitted at low speeds. The transmission interface can be 2-wire or 4-wire voice grade or may be derived from a variety of multiplexing alternatives.

The network connection may be a standard line connection or a Direct Inward Dialing (DID) connection. Either dial pulse or Dual Tone Multi-Frequency address signaling protocol may be selected, as well as various types of loop supervisory signaling. This BSA will support one-way or two-way directionality.

Calls are originated and completed on a call-by-call basis. The calling scope may include, for example, an entire LATA or be limited to a local calling area. Directory numbers are assigned from the North American Numbering Plan without any special routing or other use of the number.

B. Voice Grade, Circuit Switched-Trunk Side

A voice grade trunk circuit switched basic serving arrangement provides an ESP with a trunk-side connection to the circuit switched network. This BSA is capable of supporting analog signals of approximately 300 to 3000 Hz over one or more channels. Analog data may also be transmitted at low speeds. The transmission interface can be 2-wire or 4-wire voice grade or may be derived from a variety of multiplexing alternatives.

The network connection may be a direct trunk or tandem connection. Either dial pulse or Multi-Frequency address signaling protocols may be selected, as well as various types of trunk supervisory signaling. This BSA will support one-way or two-way directionality.

Calls are originated and completed on a call-by-call basis. The calling scope may include, for example, an entire LATA or be limited to a local calling area. Different access arrangements, based on the North American Numbering Plan, (e.g., use of certain access codes, 10XXX-based or 950-based) are available alternatives.

C. Digital, Circuit Switched-Line Side

A digital grade line circuit switched basic serving arrangement provides an ESP with a digital connection to a digital circuit switched network. The BSA is capable of supporting digital signals of up to 56 Kbps over one or more channels. The transmission interface can be 2-wire or derived from a variety of multiplexing alternatives.

Dual Tone Multi-Frequency address signaling protocol should be selected, as well as various types of loop supervisory signaling. This BSA will support one-way or two-way directionality.

Calls are originated and completed on a call-by-call basis. The calling scope may include, for example, an entire LATA or be limited to a local calling area. Directionary numbers are assigned from the North American Numbering Plan without any special routing or other use of the number.

D. Packet Switching

A packet switching basic serving arrangement provides an ESP with a connection to the public packet switched network. This BSA is capable of supporting analog or digital signs of various transmission rates. The transmission intercase can be 2-wire, 4-wire or derived from a variety of multiplexing alternatives.

This BSA is capable of using various protocols and the error detection and correction provided by those protocols.

The calling scope may include, for example, an entire LATA or be limited to a local calling area.

E. Dedicated - Private Line

A dedicated private line basic serving arrangement provides an ESP with a dedicated connection to or through the network. The BSA is capable of supporting analog or digital signals at various transmission rates. The transmission interface can be 2-wire, 4-wire or derived for a variety of multiplexing alternatives. It is also capable of providing supervisory signaling.

4.3 BASIC SERVICE ARRANGEMENT (BSA) RATE ELEMENT DESCRIPTIONS

4.3.1 BSA ACCESS LINK ALTERNATIVES

A. Channel Capacity Alternatives

(1) Single VG Equivalent

A communications channel capable of carrying voice and voice grade data signals, in the range of 300 to 3000 Hz....

(2) DS1  
(Description)

(3) DS3  
(Description)

(4) Alternative 4  
(Description)

B. Transmission Interface Alternatives

(1) Two wire Analog  
(Description)

(2) Four wire Analog  
(Description)

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(N)

C. Other Access Link Alternatives

4.3.2 FEATURES/FUNCTION ALTERNATIVES

A. Network Connection Alternatives

(1) Circuit Switched Interface

This alternative provides for the interconnection of a BSA Access Link to the line or trunk side of a voice grade circuit switch or the line side of a digital switch.

(2) Central Office Data Set (Packet Switched) Interface

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(N)

B. Signaling Alternatives

C. Protocol Alternatives

D. Directionality Alternatives

E. Other Feature/Function Alternatives

4.3.3 TRANSPORT ALTERNATIVES

A. Circuit Switched - Voice

B. Circuit Switched - Digital

C. Packet Switched

D. Dedicated

E. Other

4.4 BASIC SERVICE ELEMENT (BSE) RATE ELEMENT DESCRIPTIONS

A. Call Forwarding - Busy Line

This feature allows calls directed to a busy line to be automatically redirected to a specific predetermined number, the initially called number and the redirected number must be in the same central office.

B. Expanded Call Forwarding - Busy Line

This feature allows calls directed to a busy line to be automatically redirected to a specific predetermined number. The initially called number and the redirected number do not have to be in the same central office.

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N

4.5 TECHNICAL COMPATIBILITY OF BASIC SERVICE ELEMENTS (BSEs) AND BASIC SERVICE ARRANGEMENTS (BSAs)

A listing of the Basic Service Elements available with each of the basic service arrangements is provided in this Section of the Tariff.

A. Voice Grade, Circuit Switched-Line

Compatible BSEs include:

- Three-way call transfer
- Call Dist. Inc. Queue
- MLHG
- Selected Call Rejection (Screening)
- Selected Call Forward (CF w/screening)
- Calling DN Delivery
- Call Dist. w/o Queue

B. Voice Grade, Circuit Switched-Trunk

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N. BSEs Available On Access Arrangements Other than BSAs

Compatible BSEs include:

- Distinctive Ringing
- Direct Connection (access to data services)
- 
- 
-

#### 4.6 ONA SERVICE AVAILABILITY

This section of the Tariff describes and/or identifies those areas (e.g., switching centers) where ONA services are available.

5. RATES AND CHARGES

5.1 BSA RATES AND CHARGES

|                                                                           | <u>Monthly<br/>Rate</u> | <u>Non-<br/>Recurring<br/>Charge(1)</u> |
|---------------------------------------------------------------------------|-------------------------|-----------------------------------------|
| 5.1.1 BSA ACCESS LINK                                                     |                         |                                         |
| A. Voice Grade Circuit Switched<br>- Line side                            |                         |                                         |
| 1. 2-wire, per facility (USOC)                                            | \$                      | \$                                      |
| 2. 4-wire, per facility (USOC)                                            | \$                      | \$                                      |
| B. Voice Grade Circuit Switched<br>- Trunk side (USOC)                    |                         |                                         |
|                                                                           | \$                      | \$                                      |
| C. Digital Circuit Switched (USOC)                                        |                         |                                         |
|                                                                           | \$                      | \$                                      |
| 5.1.2 FEATURES AND FUNCTION                                               |                         |                                         |
| A. Network Interconnection<br>Directionality Alternatives<br>(select one) |                         |                                         |
| 1. Two-way originating and<br>terminating (USOC)                          | \$                      | \$                                      |
| 2. One-way originating (USOC)                                             | \$                      | \$                                      |
| 3. One-way terminating (USOC)                                             | \$                      | \$                                      |
| B. Address Signaling Alternatives                                         |                         |                                         |
| 1. Dial Pulse (USOC)                                                      | \$                      | \$                                      |
| 2. TouchTone (USOC)                                                       | \$                      | \$                                      |
| 5.1.3 TRANSPORT                                                           |                         |                                         |
| A. Originating                                                            |                         |                                         |
| 1. Call setup, per call (USOC)                                            | \$                      | \$                                      |
| 2. Minutes, per minute (USOC)                                             | \$                      | \$                                      |
| B. Terminating                                                            |                         |                                         |
| 1. Call setup, per call (USOC)                                            | \$                      | \$                                      |
| 2. Minutes, per minute (USOC)                                             | \$                      | \$                                      |

(1) Other applicable service order charges in this tariff will apply in addition to the nonrecurring charge list.

5. RATES AND CHARGES (continued)

5.2 BSE RATES AND CHARGES

|                                                                                                                                                                                                                                   | <u>Monthly<br/>Rate</u> | <u>Non-<br/>Recurring<br/>Charge(1)</u> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----------------------------------------|
| A. Calling Number Identification                                                                                                                                                                                                  |                         |                                         |
| A feature providing the called party with the telephone number (digital encoded form) of the incoming.                                                                                                                            |                         |                                         |
| Per Call (USOC) . . . . .                                                                                                                                                                                                         | \$                      | --                                      |
| B. Circle Hunt                                                                                                                                                                                                                    |                         |                                         |
| A hunting arrangement that permits complete hunting over all of the lines in a predetermined group of lines. The hunting will begin with the line called and continue until the hunt reaches the line that was originally called. |                         |                                         |
| Per Line (USOC) . . . . .                                                                                                                                                                                                         | \$ (2)                  | \$ (2)                                  |
| C. Customer Alerting                                                                                                                                                                                                              |                         |                                         |
| A feature that permits the customer to activate a stutter dial tone on the lines of his patrons for the purpose of alerting them that a call is waiting.                                                                          |                         |                                         |
| (1) Common Equipment (per central office)                                                                                                                                                                                         |                         |                                         |
| (2) Per Patron Line Arranged . . . .                                                                                                                                                                                              |                         |                                         |
| D. Direct Inward Number Identification                                                                                                                                                                                            |                         |                                         |
| Additional Telephone numbers associated with the customers Basic Serving Arrangement and delivered to the called party in the form of an analog signal.                                                                           |                         |                                         |
| Each 100 Numbers (USOC) . . . . .                                                                                                                                                                                                 | \$                      | \$                                      |

- (1) Other applicable service order charges in this tariff will apply in addition to the nonrecurring charge list.
- (2) Refer to General Exchange Tariff, Section A.X.X.X for the applicable rates and changes.

5. RATES AND CHARGES (continued)

5.2 BSE RATES AND CHARGES

|                                                                                                                                                                                                                                      | <u>Monthly<br/>Rate</u> | <u>Non-<br/>Recurring<br/>Charge(1)</u> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----------------------------------------|
| E. Improved Transmission conditioning                                                                                                                                                                                                |                         |                                         |
| <p>A feature that provides a designed local access link connecting the customer with the local serving office to provide improved transmission characteristics.</p>                                                                  |                         |                                         |
| (1) Voice grade transmission conditioning provides line loss not exceeding 4.0 db between the network interface and the local serving office when measured at 1004 Hz.                                                               |                         |                                         |
| Per Line (USOC). . . . .                                                                                                                                                                                                             | \$ (2)                  | \$ (2)                                  |
| (2) Data transmission conditioning typically supports 1200 baud data speeds between the network interface and the local serving office (end-to-end 1200 baud speed is not guaranteed).                                               |                         |                                         |
| Per Line (USOC). . . . .                                                                                                                                                                                                             | \$ (2)                  | \$ (2)                                  |
| F. Preferential Hunt                                                                                                                                                                                                                 |                         |                                         |
| <p>A hunting arrangement that allows some of the lines in a hunt group to be in a special hunt list, which permits a prehunt over a designated subset of the hunt list before hunting through the remaining portion of the list.</p> |                         |                                         |
| Per Line (USOC). . . . .                                                                                                                                                                                                             | \$                      | \$                                      |
| G. Rotary Hunt                                                                                                                                                                                                                       |                         |                                         |
| <p>A hunting arrangement that begins with the called number in a prearranged hunting group and completes to the first idle line encountered. Only a portion of the group is hunted, unless the first number is called.</p>           |                         |                                         |
| Per Line (USOC). . . . .                                                                                                                                                                                                             | \$ (3)                  | \$ (3)                                  |

- (1) Other applicable service order charges in this tariff will apply in addition to the nonrecurring charge list.
- (2) Refer to Intrastate Access Tariff, Section Y and to Interstate Access Tariff (FCC No. W), Section X for applicable rates and charges.
- (3) Refer to General Exchange Tariff, Section A.X.X.X for the applicable rates and charges.

5. RATES AND CHARGES (continued)

5.2 BSE RATES AND CHARGES

|  | <u>Monthly<br/>Rate</u> | <u>Non-<br/>Recurring<br/>Charge(1)</u> |
|--|-------------------------|-----------------------------------------|
|--|-------------------------|-----------------------------------------|

H. Uniform Call Distribution

An arrangement that provides for a distribution of calls among the lines in a hunt group starting with the first available line following the last line called (to which a call was completed) and continuing until all of the lines have been hunted. Per Line (USOC).

\$

\$

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(1) Other applicable service order charges in this tariff will apply in addition to the nonrecurring charge list.

## **ATTACHMENT 2**

- A. PARTIES FILING COMMENTS**
- B. PARTIES FILING REPLY COMMENTS**



A. Parties Filing Comments in CC Docket No. 88-2

1. ADAPSO ("ADAPSO")
2. ADT Security Systems, Inc. ("ADT")
3. Alabama Public Service Commission ("APSC")
4. Alarm Industry Communications Committee (Ameritech) ("AICC - Ameritech")
5. Alarm Industry Communications Committee (Bell Atlantic) ("AICC - BA")
6. Alarm Industry Communications Committee (BellSouth) ("AICC - BellSouth")
7. Alarm Industry Communications Committee (NYNEX) ("AICC - NYNEX")
8. Alarm Industry Communications Committee (Pactel) ("AICC - Pactel")
9. Alarm Industry Communications Committee (SWB) ("AICC - SWB")
10. Alarm Industry Communications Committee (US West) ("AICC - US West")
11. ALC Communications Corporation ("ALC")
12. American Library Association ("ALA")
13. American Newspaper Publishers Association ("ANPA")
14. American Petroleum Institute ("API")
15. American Telephone and Telegraph Company ("AT&T")
16. API Alarm Systems and Wells Fargo Alarm Services ("Wells Fargo")
17. Arizona Corporation Commission, et al. ("ACC")
18. Association of Data Communications Users  
California Bankers Clearing House  
Association  
Committee of Corporate  
Telecommunications Users  
Mastercard International Incorporated ("ADCU")

New York Clearing House Association  
Visa U.S.A. Inc.

19. Association of Telemessaging Services International, Inc. ("ATSI")
20. People of the State of California and the Public Utilities Commission of the State of California ("California PUC")
21. Coalition of Open Network Architecture Parties ("CONAP")
22. Committee of Corporate Telecommunications Users ("CCTU")
23. CompuServe Incorporated ("CompuServe")
24. Computer and Business Equipment Manufacturers Association ("CBEMA")
25. Digital Equipment Corporation ("DEC")
26. Public Service Commission of the District of Columbia ("DC PSC")
27. Dun & Bradstreet Corporation ("Dun & Bradstreet")
28. Dytel Corporation ("Dytel")
29. Enhanced Services Counsel ("ESC")
30. Florida Public Service Commission ("Florida PSC")
31. Hayes Microcomputer, Inc. ("Hayes")
32. Hello, Inc. ("Hello")
33. Independent Data Communications Manufacturers Association ("IDCMA")
34. Information Industry Association ("IIA")
35. Institutional Communications Company ("ICC")
36. International Business Machines Corporation ("IBM")
37. International Communications Association ("ICA")

- 38. MCI Telecommunications Corporation ("MCI")
- 39. Maryland People's Counsel ("MPC")
- 40. Michigan Public Service Commission, et al. ("Michigan PSC")
- 41. Minnesota Public Utilities Commission and Minnesota Department of Public Service ("Minnesota PUC")
- 42. National Association of Regulatory Utility Commissioners ("NARUC")
- 43. National Telecommunications and Information Administration ("NTIA")
- 44. NCR Corporation ("NCR")
- 45. New England Conference of Public Utilities Commissioners, Inc. ("NECPUC")
- 46. New Jersey Board of Public Utilities ("NJ BPU")
- 47. Eli M. Noam, Commissioner - New York State PSC ("Eli Noam")
- 48. Public Utility Commission of Ohio ("Ohio PUC")
- 49. Siemens Communications Systems, Inc. ("Siemens")
- 50. Tele-Communications Systems, Inc. ("TCA")
- 51. Telenet Communications Corporation ("Telenet")
- 52. Telocator Network of America ("Telocator")
- 53. Teleport Communications Group ("Teleport")
- 54. Tymnet-McDonnell Douglas Network Systems Company ("TYMNET")
- 55. United Church of Christ Office of Communication ("UCC")
- 56. US Sprint Communications Company ("US Sprint")
- 57. Virginia State Corporation Commission ("Virginia SCC")
- 58. Western Union Corporation ("Western")

59. Public Service Commission of Wisconsin

("Wisconsin  
PSC")

B. Parties Filing Reply Comments in CC Docket No. 88-2

1. Alarm Industry Communications Committee ("AICC")
2. American Newspaper Publishers Association ("ANPA")
3. American Telephone and Telegraph Company ("AT&T")
4. Ameritech Operating Companies ("Ameritech")
5. Association of Telemessaging Services International, Inc. ("ATSI")
6. Bell Atlantic Companies ("BAC")
7. Bell South Corporation,  
South Central Bell Telephone Company  
Southern Bell Telephone and Telegraph  
Company ("Bell South")
8. People of the State of California  
and the Public Utilities  
Commission of the State of California ("California  
PUC")
9. Coalition of Open Network  
Architecture Parties ("CONAP")
10. Electronic Data Systems Corporation ("EDS")
11. Enhanced Services Counsel ("ESC")
12. Hayes Microcomputer, Inc. ("Hayes")
13. Illinois Commerce Commission ("ICC")
14. International Communications Association ("ICA")
15. MCI Telecommunications Corporation ("MCI")
16. Maryland People's Counsel ("MPC")
17. Missouri Public Service Commission ("MOPSC")
18. National Association of Regulatory  
Utility Commissioners ("NARUC")
19. National Telecommunications and  
Information Administration ("NTIA")
20. National Telephone Cooperative Association ("NTCA")

21. New England Conference of Public Utilities Commissioners, Inc. ("NECPUC")
22. New Jersey Board of Public Utilities ("NJ BPU")
23. New York State Public Service Commission ("NY PSC")
24. New York Telephone Company and New England Telephone & Telegraph Company ("NYNEX")
25. The Pacific Companies ("Pacific Bell")  
("Nevada Bell")
26. Shooshan & Jackson, Inc.
27. Southwestern Bell Telephone Company ("Southwestern Bell")
28. Telenet Communications Corporation ("Telenet")
29. Telocator Network of America ("Telocator")
30. Teleport Communications Group ("Teleport")
31. US Sprint Communications Company ("US Sprint")
32. US West, Inc. ("US West")
33. Virginia State Corporation Commission ("Virginia SCC")