NRRI 89-13

IMPLEMENTATION OF OPEN NETWORK ARCHITECTURE: DEVELOPMENT, TENSIONS, AND STRATEGIES

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September 1989

This report was prepared by The National Regulatory Research Institute (NRRI) with funding provided by participating member commissions of the National Association of Regulatory Utility Commissioners (NARUC). The views and opinions of the author do not necessarily state or reflect the views, opinions, or policies of the NRRI, the NARUC, or NARUC member commissions.

EXECUTIVE SUMMARY

Introduction

Open network architecture (ONA) is a complex topic crossing regulatory, strategic, and marketing boundaries. Essentially, it represents a new way of doing business. Reversing the tradition, however, rests on the overall acceptance of the proposition that the value of the local exchange network is increased by making it possible for users of the telecommunications network to tailor their purchases of services to their specific needs.

ONA also represents a regulatory initiative began by the Federal Communications Commission's (FCC) at the close of its Third Computer Inquiry. Joined with Part 64 and Part 36 cost allocation decisions, its purpose is to provide a suitable mix of nonstructural competitive safeguards sufficient to allow the Regional Bell Holding Companies (RBHCs) to offer enhanced services on an unseparated basis. Previously, the FCC's Computer II decision allowed the RBHCs to market enhanced services if and only if they agreed to form fully separate subsidiaries with independent facilities and management.

Concerns with the adequacy of ONA quite naturally followed the FCC's Computer III decision. The ensuing debates tracked arguments made during the Computer I, Computer II, and deregulation dockets. Consequently, many ONA issues are derivatives of issues associated with the evolution of the telecommunications industry. While this report does not contain discussions of the more general issues, accessible summaries are the FCC's Computer I, II, and III orders, and Dr. Peter Huber's 1987 Report to the Department of Justice.

Familiarity with the evolution of the telecommunications industry is not the only prerequisite for understanding ONA issues. Access to an annotated list of the regulatory and business concepts surrounding the development and deployment of ONA services is also required. These definitions create a framework for organizing and interpreting the factors that influence ONA strategies. While the necessary definitions are presented and explained in this report, space and time constraints prevented the discussion of the others. These definitions are explained in the National Regulatory Research Institute's An Analysis of Open Network Architecture and Hatfield and Associates' report on the RBHCs' ONA Plans. Other sources include the RBHCs' initial and revised ONA plans, and comments on these plans by enhanced service providers (ESPs), interexchange carriers, end users, industry associations, and state public utility commissions.

ONA Implementation Complexities

The transition to ONA is apt to be a slow and laborious process. Every Bell Operating Company (BOC) currently operates its local exchange network as a closed network architecture. Useful features and functions exist, but they have not been made easily accessible to end users, interexchange carriers, and enhanced service providers (ESPs). To reverse this business

practice, the FCC requires the RBHCs to devise means and methods for cost-effectively breaking these network capabilities out of the architecture in which they are encased. These initial unbundling efforts will establish an accessibility policy that eventually will encompass all users of telecommunications services.

While in the long run ONA cuts across all consumer and producer markets within the telecommunications and computer industries, the current ONA implementation plans are targeted to meet the needs of the enhanced services industry. Pursuant to the FCC's ONA guidelines, ESPs are the only users of the local exchange network that are empowered to request the unbundling of a technology or basic service. End users, information service providers (ISPs), and interexchange carriers, as a result, benefit from ONA only through a "trickle down" effect. That is, these users may or may not find ONA services suitable for their existing and future needs.

Other important ONA implementation issues have not yet been addressed. Estimates of market demand and the proper span of geographic availability for ONA services have proven to be sticky issues. For example, the cost-effective geographic deployments proposed by the RBHCs tend to encompass land areas that are smaller than what the ESPs find to be sufficient to reach minimally efficient scale. Furthermore, the role of the ESPs in the future evolution of the RBHCs' networks is not clear.

The complexities surrounding the implementation of ONA indicate clearly that more is needed than a mandate from regulatory authorities. Cooperation and coordination among the various stakeholders has to be a hallmark of ONA implementation. The RBHCs have to work with the ESPs, interexchange carriers, manufacturers, and large end users. State and federal regulators have to exchange views with each other, and both have to seek and respond to input from the industry. Moreover, the ESPs, interexchange carriers, manufacturers, and end users have to begin meaningful discussions concerning their role in the evolution of the local exchange network.

Need for Cooperation and Coordination

With so many issues unresolved and cooperation and coordination an unaccustomed feature of the telecommunications industry, the ONA participants have agreed to convene two advisory bodies to assist in the development, deployment, and delivery of present and future ONA services. These discussion groups are the Information Industry Liaison Committee (IILC) and the Section 410(b) Joint Conference.

The IILC is loosely modeled after the Interexchange Carrier Forum (ICF). The purpose of the IILC is to accommodate the views of the RBHCs, ESPs, interexchange carriers, and manufacturers that relate to the development and delivery of ONA services. The ICF addresses special and switched access issues without the explicit input of the switch manufacturers.

The Joint Conference is an ad hoc committee of thirteen state regulators and two federal regulators. It is chaired by the Chairman of the FCC or his representative. Although the conferees are empowered to discuss ONA issues of relevance to both regulatory jurisdictions, their discussions do not end at present with a binding decision or a recommended resolution of a problem.

The implementation of ONA is the first time since the passage of the Communications Act of 1934 that the FCC has found it necessary to convene a Section 410(b) Joint Conference. As a result, its mechanics are unknown. Also unknown is the relationship between the Joint Conference and the IILC. However, there appears to be wide-spread agreement that some type of coordination is necessary.

Whatever the ultimate form of this coordination, there is little doubt that the IILC and Joint Conference are dealing with the same ONA issues. Consider the tentative agenda of these committees. The Joint Conference agenda addresses the efficient delivery of new services, the deployment of new network technologies, innovative tariff and interconnection policies, a model ONA tariff, and market and technical trials for ONA services. The IILC agenda deals with uniform nomenclature for ONA services, cross-referencing, technological solutions to the uniformity issues, technical uniformity for interstate ONA services, the efficient deployment and availability of ONA services, methods and procedures for estimating the market demand for ONA services, and nondiscriminatory access to the network and the RBHCs' operations and support systems. These two agendas may be merged to form a super-agenda.

Understanding the Common ONA Model

The RBHCs' common ONA model has four interlocking elements - basic serving arrangements (BSAs), basic service elements (BSEs), complementary network services (CNSs), and ancillary services (ANSs).

BSAs, BSEs, and CNSs are regulated basic services supplied by firms operating subject to the competitive pressures found in the fully regulated, basic local exchange services market segment of the telecommunications industry. These services are often protected from competition by their technical configurations because they are associated with the bottleneck facilities owned and operated by the local exchange companies.

ANSs are either deregulated or detariffed services such as billing and collection in most regulatory jurisdictions. They are supplied by firms subject to the competitive pressures of the unregulated and detariffed segment of the telecommunications industry. In the past, this segment has been kept separate from the fully-regulated segment by selected regulatory and judicial decisions concerning the competitiveness of the telecommunications industry.

Each element of the common ONA model is designed to promote the delivery of enhanced services. A BSA connects the premises of an ESP to end offices located within the BOC network. It is not an end-to-end connection from the premises of the ESP to the premises of its customers. Its purchase, therefore, completes the first leg of a journey. The purchase of a CNS completes the second leg. This ONA service connects the premises of the enhanced service customer to the end offices within the BOC's network. Hence the BSA plus the CNS constitute the end-to-end access service for ESPs and their customers.

A BSE is an efficiency-enhancing basic service. Technologically, it is a network capability available as an unbundled option. These services are

usually features and functions embedded within the BOC's switching technology and associated software programs. Consequently, their direct access requires some form of transport to bring them out of the switch architecture to the premises of the ESP. An ANS is a network capability that is necessary to provide an enhanced service. However, one or more alternatives are available for this basic service from nonRBHC suppliers. Usually, these services are performed outside of the network switch.

The operation of the common ONA model is most easily understood by reference to a concrete example. Assume that an ESP is providing a messaging service to its subscribers. The BSA could be single-line business service. The CNSs could be residential line and a message-waiting-indicator functionality such as a flashing red light or stutter dial tone. The BSEs could be a message-waiting-indicator activator that alerts the subscriber to a waiting message and a call-forwarding feature that sends the message to the ESP's storage facility. An ANS could be billing and collections services performed by the BOC as an agent for the ESP.

The common ONA model is not the only way to provide ONA services to ESPs. The RBHCs had the latitude to select an end-to-end service paradigm. ESPs would then be connected directly to their customers, and BSEs, ANSs and some CNSs would be treated as options to that service. Conversely, a service paradigm permitting the interconnection of alternative local exchange carriers to BOC end offices might be chosen thereby allowing these carriers to supply components of the end-to-end transport service. Or, another potential service paradigm might be a modular end office utilizing the applications programs of multiple software firms. That none of these alternatives were selected points to the regulatory and business aspects of ONA.

The Role of Regulatory and Business Strategies

The essence of ONA is the regulatory and business relations between the fully-regulated and fully-deregulated segments of the telecommunications industry. ONA is meant to neutralize the anticompetitive incentives that are caused by the RBHCs' ownership of bottleneck facilities used by the affiliated and nonaffiliated ESPs. Neutralization occurs with equal access and easy accessibility to the features, functions, and capabilities of the parent's present and future local exchange networks.

Economic efficiency assumes an unrestricted capability to use available resources. Consequently, ONA regulatory and business strategies can validate or invalidate this assumption. An important component of these strategies is the absence or presence of technical uniformity in the production and delivery of, say, billing and collection services, and the absence or presence of nontechnical uniformity concerning the purchase and use of call-forwarding and message-waiting indicators. The utilization of ONA service is improved by attaining either objective. Table ES-1 summarizes the policies that the six ONA stakeholders have adopted to increase the value of the local exchange network.

Confirming expectations, the ESPs, interexchange carriers, and large end users seek technological choices and the maximum level of technical and nontechnical uniformity. Selections of network technologies and interfaces,

Table ES-1

METHODS TO INCREASE THE VALUE OF THE NETWORK*

STAKEHOLDER	TECHNOLOGY OPTIONS		UNIFORMITY OPTIONS			
	Technology Choice	Interface Choice	Technical	Tariff	Operational	Administrative
Regional Bell Holding Company (RBHC)	X	X	X			
Enhanced Service Provider (ESP)	X	X	X	X	X	X
Interexchange Carriers	X	X	X	X	X	X
Large End Users	X	X	X	X	X	X
State Regulators	X	X				
Federal Regulators			X	X		

Source: RBHC ONA Plans & Reply Comments
ESP, State and Others ONA Comments and Replies

* An empty cell does not mean that stakeholders have no interest in that element - only that it is a secondary concern or subsumed under a primary interest.

for example, should be driven by the ease that these ONA participants can obtain access that is equal to that provided to the ESPs affiliated with the RBHCs. This strategy is also furthered by administrative, technical, tariff, and operational uniformity for intrastate and interstate ONA services.

Proper technology and interface choices are also issues for the RBHCs. However, their strategic options are constrained by network architectures that also must supply the full range of local and intraLATA services to end users and access services to interexchange carriers. These factors may conflict with providing easy, equal, technically-uniform access for ONA services to ESPs. Yet despite this possibility, the RBHCs appear willing to offer a level of technical uniformity within and between their service territories.

At present, state and federal regulators have complementary policies for increasing the value of the local exchange network. Proper choices for network interfaces and technologies are emphasized by state regulators. This focus is consistent with an objective of encouraging the further unbundling of network capabilities. Federal regulators have elected to focus their efforts on obtaining a substantial degree of technical and tariff uniformity for interstate ONA services. This objective complements the FCC's responsibility to promote the efficient use of network facilities employed to produce interstate basic and enhanced services.

Most of these stakeholders agree that a specific network architecture is not required to meet the objectives of further unbundling and the efficient use of network facilities. Because the composition of this majority includes the RBHCs, federal regulators and many state regulators, the ONA implementation plans do not identify the network technologies and interfaces that will be used to develop and deploy ONA services. Instead, these plans imply that each RBHC network is expected to evolve independently of the others even if this evolution takes individual RBHCs in different business and regulatory directions.

The various ONA participants have adopted different positions to further their regulatory and business objectives. Most of these position address legitimate ONA implementation issues. For example, ESPs want to obtain new and more useful network services. RBHCs want to benefit from any economies of scale and scope embedded within their present and future networks. Other positions are more questionable. Some ESPs simply want to realize cost reductions as a result of the implementation of ONA. Some RBHCs want to modify their pricing schemes for local exchange and interexchange carrier access services.

Comparisons of the different ONA regulatory and business objectives reveal sometimes conflicting positions with respect to what actually constitutes the efficient unbundling, pricing, and availability of ONA services. The implementation of ONA, therefore, implies a tension between ONA stakeholders. Table ES-2 supplies a sense of these tensions by summarizing the relationships between the different ONA objectives.

The RBHCs seek marketing flexibility coupled with a managed deployment of ONA services. Fulfilling the objectives of efficient unbundling,

Table ES-2

ONA OBJECTIVES AS PRIMARY CONCERNS*

STAKEHOLDER	MARKET OBJECTIVES				REGULATORY OBJECTIVES		
	New Services	Revenue Protection	Network Evolution	Technology Deployment	Maximum Unbundling	Lowest Prices	Maximum Availability
Regional Bell Holding Companies (RBHCs)	X	X	X	X			
Enhanced Service Providers (ESPs)	X				X	X	X
Interexchange Carriers (IXCs)	X					X	
Large End Users	X					X	
State Regulators		X			X		X
Federal Regulators		X			X		X

Source: Chapters 3 & 4, Infra

* An empty cell does not mean that stakeholders have no interest in that element - only that it is a secondary concern or subsumed under a primary interest.

pricing, and availability of ONA services appears less important than meeting the objective of revenue protection. The RBHCs suggest that they are constrained by prior regulatory decisions when they plan the unbundling, pricing, and availability of ONA services. They indicate that these efforts are affected by a regulatory requirement that the implementation of ONA should not harm those subscribers who do not use ONA services.

The ONA objectives of the ESPs, large end users and interexchange carriers tend to emphasize actions geared toward obtaining marketing flexibility and unbundling, pricing, and availability schedules consistent with such flexibility. Protection of their revenues appears to be a secondary concern. As largely profit-maximizing firms operating in the unregulated segments of the telecommunications industry, they have come to expect the shifting of regulated costs away from them as the unavoidable and necessary outcome of the existing and future market forces.

In contrast, state and federal regulators tend to emphasize economic efficiency concerns constrained by equity considerations. Both regulatory authorities have taken actions to maximize the number of available ONA services and to stimulate the enhanced services market. These actions also are consistent with the prevention of tariff-shopping opportunities. The FCC has prevented tariff shopping by prohibiting the "mixing and matching" of intrastate and interstate ONA services. It has restrained its pro-growth incentives by permitting the RBHCs to couple the purchase of a BSE with the purchase of a specific BSA. State regulators have noted that use and user restrictions on ONA services can perform the same function.

Interactions between the objectives and strategies of the ONA stakeholders have produced the following federal regulatory parameters guiding the implementation of ONA. The FCC has asserted its jurisdiction over interstate ONA services. It, however, has not preempted the regulation of any intrastate ONA service. Within this context of dual jurisdiction, the FCC is opposed to use and user restrictions. It would prefer that they not be imposed by the states. The FCC, however, is not opposed to continuation of the access charge exemption for ESPs, or the availability of existing service at existing prices for ESPs. Furthermore, it is not opposed to the use of the common ONA model to define the boundaries of marketable ONA services.

Guidelines for a Model ONA Tariff

Guidelines for a model ONA tariff have been designed in this report that prevent tariff-shopping opportunities while stimulating the growth of the enhanced services market and maximizing the number of new ONA services offered to the public. This design accepts as necessary dual jurisdiction over ONA services. Dual jurisdiction is needed even if the large value added networks elect to exercise the access charge exemption. AT&T, MCI, and US Sprint acting as ESPs are not likely to follow suit. Instead, they may find it more cost- effective to purchase BSEs as optional elements of existing switched and special access arrangements. Consequently, they may be entitled to federal tariffs for BSEs used in the production of interstate enhanced services.

The tariff design also accepts the FCC's prohibition against the "mixing and matching" of intrastate and interstate ONA services. The "mix and match" prohibition eliminates many of the tariff-shopping opportunities between the intrastate and interstate regulatory jurisdictions. The implementation of ONA is too costly for it to become merely a vehicle for ESP cost reductions unaccompanied by any change in their productivity or the access charge exemption.

The tariff design further accepts as necessary the continuation of the ESP access charge exemption, and the availability to ESPs of existing services at existing prices. The continuation of the access charge exemption helps to ensure that the prices for existing interstate enhanced services are not increased simply because the FCC's ONA rules treat the purchase of interstate access service as the prerequisite to the purchase of an interstate BSE. Supplementing the access charge exemption with the continued availability of existing service at existing prices prevents price increases for enhanced services produced with pre-ONA network technology. This tariff policy also creates some market stability for ESPs.

This tariff design assumes that the FCC will clarify what type of behavior constitutes the permissible resale of ONA services. Presumably, permissible behavior would not include the WATS-type resale of ONA services. Such resale would introduce pure arbitrage as a factor of the ONA implementation process. WATS-type resale of ONA services that are functionally equivalent to existing interexchange carrier access services is expected to result in a revenue deficiency for the RBHCs.

This tariff design also assumes that the FCC will clarify the extent to which its "contamination theory" applies to ONA services. The clarification is needed because the ONA version of the "contamination theory" addresses the use of multiple basic services employed to produce an enhanced service. The current "contamination theory" deals with jurisdictionally-mixed traffic carried over a private line service. The FCC has taken action to prevent the abuse of its existing "contamination theory" by adopting a "di minimus" rule indicating that the minimal use of such a line for interstate commerce does not automatically place all traffic on that line into the interstate jurisdiction for pricing purposes.

A similar rule could be installed for ONA services. It would have to address the regulatory treatment of jurisdictionally-mixed BSEs purchased as options to a business line that has been purchased pursuant to the access charge exemption. An ESP providing predominately interstate enhanced services could argue that such BSEs are jurisdictionally interstate even though the business line is jurisdictionally intrastate. This debate can be avoided if the the FCC clarifies that its "contamination theory" does not apply whenever an ESP elects not to pay interstate access charges. Or, alternatively, its "mix and match" prohibition supercedes its "contamination theory" when dealing with charges for jurisdictionally-mixed ONA services.

This tariff design does not consider as necessary the imposition of use and user restrictions, or coupling the purchase of specific BSEs to the purchase of specific BSAs. The elimination of use and user restrictions improves economic efficiency by reducing policing and other transactions costs that waste resources. Decoupling the purchase of BSAs and BSEs

improves economic efficiency by eliminating incentives for anticompetitive behavior by the RBHCs.

The tariff design represents the foundations of a model ONA tariff that meets the public policy objectives of stimulating the demand for enhanced services, maximizing the number of ONA services, and preventing tariff-shopping opportunities. The tariff design is completed by granting the RBHCs the limited flexibility to use cost-based and market-based pricing methods to determine the charges for ONA services. More specifically, market-based prices are permissible for ONA services that are functionally equivalent to existing basic services. However, such prices are not sanctioned for ONA services for which there are not any functionally equivalent existing basic services. Instead, the prices for these ONA services are set according to full incremental cost measured on the basis of an RBHC's five year planning horizon.

Market-based prices for ONA services that are functionally equivalent to existing basic services maximizes the number of available ONA services. If this pricing solution to tariff shopping is not allowed, it may be unreasonable to expect that ONA services with functional equivalents would be offered for consumption. Although this pricing approach may restrain the demand for enhanced services through its effect on an ESP's cost of production, it does provide the ESPs with network capabilities currently available to any other network end users. This is an improvement over the existing situation. Incremental-cost-based prices for ONA services without existing functional equivalents stimulates the growth of the enhanced services market absent the introduction of any tariff-shopping opportunities for ESPs or end users.

Conclusion

ONA requires the reconfiguration of local exchange networks into more unbundled, but marketable, basic services. Additionally, it requires future network modifications and enhancements designed with an eye toward accessibility. The model ONA tariff outlined above furthers these objectives. It establishes a reasonable framework for reaching an equality between constrained-profit-maximizing prices and the constrained-utility-maximizing prices. That is, it fosters an environment where producers will be willing to supply these services at levels approximately equal to those at which consumers will be willing to use them.

At times however, short-term market forces will not permit the telecommunications industry to reach this equilibrium position for ONA services. Instead, disequilibrium will exist as telecommunications firms adjust their technologies, price levels, and product mixes to eliminate excess demand and supply for ONA and other services. One cause of this disequilibrium is the ebb and flow of the producers' profits.

Profit deterioration causes exit from the industry when it is practical to do so. Profit opportunities cause existing firms to offer new telecommunications services some of which will be ONA services, and induces new firms to enter the telecommunications market. Both activities move the telecommunications industry toward a more efficient allocation of resources. But, the latter causes the addition of new switching and transmission

network technologies. These technological changes alter the telecommunications industry's production possibilities, thereby suggesting a new mix of basic and enhanced telecommunications services, new prices for these services, and new profit opportunities. Thus, another disequilibrium cycle is initiated thereby sustaining the evolution of the network and the supply of ONA services.

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GLOSSARY OF ACRONYMS

ANS	Ancillary Services
BOC	Bell Operating Company
BSA	Basic Serving Arrangement
BSE	Basic Service Element
CCLC	Carrier Common Line Charge
CEI	Comparably Efficient Interconnection
CLASS	Custom Local Area Signaling Services
CNS	Complementary Network Service
CONAP	Coalition of Open Network Architecture Parties
CPNI	Customer Proprietary Network Information
ESCA	Exchange Carrier Standards Association
ESP	Enhanced Service Provider
FCC	Federal Communications Commission
FDC	Fully Distributed Costs
ICF	Interexchange Compatibility Forum
IILC	Information Industry Liaison Committee
ISP	Information Service Provider
LATA	Local Access Transport Area
LEC	Local Exchange Company
NTIA	National Telecommunications Information Administration
ONA	Open Network Architecture
PIU	Percent Interstate Usage
RBHC	Regional Bell Holding Company
SLC	Subscriber Line Charge
SS7	Signaling System 7
VAN	Value Added Network
WAL	WATS Access Line

FOREWORD

Clearly, discussions about open network architecture will comprise a major part of the regulatory agenda in telecommunications for the foreseeable future. This lengthy report considers the many complexities that attend implementation of ONA, explains and appraises the positions of the several stakeholders on the matter, analyses the regulatory and business strategies that surround the issue, and develops guidelines for a workable ONA tariff from the public interest point of view. The report is, we believe, necessarily written for the advanced reader in the current telecommunications environment. We offer it as a timely addition to the ongoing discussion and debate.

Douglas N. Jones
Director

ACKNOWLEDGEMENTS

The author would like to thank Douglas Jones, Raymond Lawton, and Kenneth Rose of the NRRI for helpful comments and criticisms that helped to improve this report in several ways. Discussions with Janice Beecher and John Burrows, also with the NRRI, were very helpful during that period of the analysis when the issues are framed. Last, but not least, I am deeply indebted to Debra Daugherty, Evelyn Shacklett, and Wendy Windle for producing the final report.

CHAPTER 1

INTRODUCTORY REMARKS: THE IMPLEMENTATION OF ONA

Introduction

Open network architecture (ONA) represents a regulatory initiative began by the Federal Communications Commission (FCC) at the close of its Third Computer Inquiry.[1] ONA, however, is more than a regulatory issue. It is a complex topic crossing regulatory, strategic, and marketing boundaries. Most importantly in this context, ONA is hoped to be a suitable mix of nonstructural competitive safeguards sufficient to allow the Regional Bell Holding Companies (RBHCs) to offer enhanced services on an unseparated basis. Previously, the FCC's Computer II decisions allowed the RBHCs to market enhanced services if and only if they agreed to form fully separate subsidiaries with independent facilities and managements.[2]

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[1] Federal Communications Commission, Amendment of Sections 64.702 of the Commissions' s Rules and Regulations: Report and Order (Washington D.C.: Federal Communications Commission adopted May 15, 1986 released June 16, 1986) (hereafter, Phase I ONA Order), modified on reconsideration, 2 FCC Rcd 3035 (1987) (hereafter Phase I ONA Reconsideration Order); further reconsideration, 3 FCC Rcd 1135 (1988) (hereafter Phase I ONA Further Reconsideration Order), second further reconsideration pending, appeals pending. As a regulatory acronym, ONA mandates the terms, conditions, and tariffing practices that must be met before the RBHCs are allowed to provide enhanced services without the safeguard of structurally separate subsidiaries. See: Idem, Phase I ONA Plan Order.

[2] The definitions of a basic and enhanced service have never been confining. At the close of the Second Computer Inquiry, the FCC reached two obvious conclusions concerning an enhanced service. First, it is something more than a basic transmission service. Second, it utilizes the telecommunications network as a factor of production. See: Federal Communications Commission, Second Computer Inquiry: Final Decision 77 FCC 2d (Washington D.C.: Federal Communications Commission 1979) 420, para. 97. Subsequently in its rules and regulations, the FCC expanded its definition of an enhanced service to: "... services offered over common carrier transmission facilities, which employ computer processing applications that

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The current ONA implementation plans are targeted to meet the needs of the enhanced services industry. End users, information service providers, and interexchange carriers benefit only through a trickle down effect. To expand the benefits to all telecommunications users, cooperation and coordination have to be a hallmark of implementing ONA.

The analysis of ONA could follow several paths. First, the analysis could predict what is going to happen during and after the implementation of ONA. Second, the analysis could explain what ought to happen as a result of implementing ONA. Third, the analysis could combine descriptions and predictions to dissect the evolution of the enhanced services and ONA services markets. This third option is the path followed in this report. Predictions concerning the effects of various regulatory and business strategies for implementing ONA are interspersed with conclusionary statements suggesting how ONA might be best implemented.

For many, ONA always will be a regulatory framework imposed on the telecommunications industry by the FCC. But ONA also addresses the business and technological environments governing the development, deployment, and marketing of basic and enhanced services. Its message is that the value of the local exchange network to economic growth is measured by its

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act on the format, content, code, protocol, or similar aspects of the subscriber's transmitted information, provide the subscriber additional, different or restructured information, or involve subscriber interaction with stored information." See: Section 64.702(a) of the Commission's Rules, 47 CFR Section 64.702(a). This definition suggests some form of interaction between the telecommunications network and a computer. The extent of interaction remains, however, unclear. Some direction on this vital issue can be found in the FCC's decision regarding the the RBHCs and AT&T's comparably efficient interconnections (CEIs) approved as interim nonstructural safeguards. See: Idem, American Telephone and Telegraph Plan for the Provision of Transaction Services: Memorandum Opinion and Order 3 FCC Rcd 1988 2702; Idem, AT&T Plan for the Provision of Codec Conversion Services: Memorandum Opinion and Order 3 FCC Rcd 1988 4683; Idem, Bell Atlantic Telephone Companies Offer of Comparably Efficient Interconnection to Providers of Gateway Services: Memorandum Opinion and Order 3 FCC Rcd 1988 6045. CEI is the access arrangement that must be made available to ESPs when AT&T or the RBHCs elect to provide an unseparated enhanced service before they have implemented ONA. See: Idem, Amendment of Section 64.702 of the Commission's Rules and Regulations: Report and Order (adopted May 15, 1986 released June 16, 1986) 7, 4 (hereafter Phase I ONA Order).

accessibility. Take, for example, the FCC's prediction that more unbundling, more features, and more functions are expected to emerge after the deployment of Signaling System 7, integrated services digital network, and intelligent network technologies.[3]

Still ONA has a more immediate purpose. It represents the framework that the Bell Operating Companies (BOCs) will use to introduce new and repackaged basic services as access arrangements for enhanced service providers (ESPs). It, therefore, addresses the standards, interfaces, protocols, and other attributes of technical uniformity that are necessary if the BOCs networks are to communicate, effectively and efficiently, with the networks of others. This aspect of ONA suggests that a meaningful implementation of ONA should be evolutionary and not flash-cut.

ONA has strategic characteristics as well. Its guidelines will determine the degree to which the RBHCs are required to share the fruits of their research and development expenditures. Examine, in this regard, the structure of the common ONA model developed by Bell Communications Research.[4] It has four interlocking elements - basic serving arrangements (BSAs), basic service elements (BSEs), complementary network services (CNSs), and ancillary services (ANSs).

The common ONA model is a prototype for unbundling basic services. It represents the functional means of the ESPs' interconnections with the BOC networks. It is based on the existing local exchange network architecture. Thus, the exploitation of research and development efforts depends on the characteristics of the local loop, an end office with a stored-program-controlled switch, and an interoffice transport network.

The operation of the common ONA model is most easily understood by reference to a concrete example. Assume that an ESP is providing a messaging service to its subscribers. The BSA could be a single-line

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[3] Federal Communications Commission, Filing and Review of Open Network Architecture Plans: Memorandum Opinion and Order (Washington D.C.: Federal Communications Commission adopted November 17, 1988 released December 22, 1988) 198, para. 378. (hereafter Phase I ONA Plan Order).

[4] Bell Communications Research Corporation, BOC Special Report No. 4: Common ONA Model (Livingston, Bell Communications Research 1987) 1-2. The Common ONA Model contains four separable categories -- basic serving arrangements, basic service elements, complementary network services, and ancillary services.

business service. The CNSs could be a residential line and a message-waiting-indicator functionality such as a flashing red light or stutter dial tone. The BSEs could be a message-waiting-indicator activator that alters the subscriber to a waiting message and a call-forwarding feature that sends the message to the ESP's storage facility. An ANS could be billing and collection services performed by the BOC as an agent for the ESP.

The Implementation of ONA

The implementation of ONA rests on the effective cooperation and coordination between six stakeholders. That is, it represents an arena where ESPs, RBHCs, interexchange carriers, large end users, state regulators, and federal regulators may find it beneficial to work together to plan basic communications networks promoting an open, competitive and efficient enhanced services market.[5] The objective is to attain economic efficiency and optimal prices despite the habitualized behavior of different economic stakeholders as they react to a new of way of conducting business in the telecommunications industry. Consider the FCC's dictum that the prices for ONA services should not produce anticompetitive or discriminatory effects on the ESPs.[6] Or its belief that ONA is an extension of the bottleneck theory underlying the American Telephone and Telegraph Company's (AT&T's) divestiture because the BOCs control the availability of ONA services, and also will use these services to compete with ESPs.[7]

The implementation of ONA also requires the construction of guidelines that determine the technological interfaces between the basic and enhanced services markets.[8] A BSA may be viewed as bundled switching and transport

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[5] Federal Communications Commission, Phase I ONA Plan Order, 200, para. 384. The FCC, however, does not envision that an industry or regulatory consensus will rule over the evolution of the local exchange network. From the FCC's perspective, the RBHCs retain the ultimate responsibility for the design and implementation of changes to their networks. See: Ibid., 202, para. 388, n. 957. If it were otherwise, state and federal regulators could not exercise ex post oversight over the RBHCs.

[6] Ibid., 146, para. 283.

[7] Ibid., 43, para. 75.

[8] Federal Communications Commission, Phase I ONA Plan Order, 35, paras. 56-57.

service that is required if an ESP is to communicate with an end user over the BOC network. A BSE may be perceived as the optional feature or function used by an ESP to configure its enhanced services. A CNS may be classified as a feature or function used by an end user to access or receive an enhanced service from an ESP. Hence, BSEs and CNSs may be resident in the stored-program-controlled switch. An ANS may be interpreted as an unregulated, nonbottleneck service useful for producing an enhanced service.

The common ONA model affects the prices that will be set for the new and existing features and functions made available as a result of the implementation of ONA. Take the FCC'c conclusion that the structure of the common ONA model does not affect the regulatory treatment of an ONA service.[9] Thus, BSAs, BSEs, and CNSs are subject to the pricing rules applicable to a regulated service, while ANSs may be priced according to what the market will bear.

The implementation of ONA is clearly the fabric of present and future communications. It will have an immediate effect on the features and functions of the current generation of telecommunications switches. It will have have a minimal effect on the architecture of the future generation switches. In sum, it will help guide, but not determine, the evolution of a competitive telecommunications market by introducing a degree of cooperation and uniformity into a rivalrous marketplace.

Effects of a Closed Network Architecture

The predivestiture network architectures of the United State's domestic telecommunications network was closed, except for those interfaces and interconnections necessary to make a nationwide network a reality. This architecture required that technical equal access for multiple common carriers be provided over dedicated transmission facilities. Since such facilities are restricted to the carriage of a single customer's traffic, equal access merely required a signaling arrangement equating the number of dialed digits.

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[9] Federal Communications Commission, Phase I ONA Plan Order, 43-44, paras. 76-77.

The need for dialing parity carried over into equal access for interexchange carriers to switched transmission facilities. In this instance however, the local exchange company had to open its network to allow the efficient transfer of billing number information. The existing closed network architecture could not accommodate this demand. It was incapable of distinguishing between different interexchange carriers at the end office level of the switching hierarchy. To compensate for this shortcoming, the local exchange companies agreed to provide an inferior form of access at lower prices.[10]

This system of dual access remained in place until after the AT&T divestiture.[11] At that time, the local exchange companies introduced dialing parity for voice-grade services.[12] Dialing parity is not, however, the alpha and omega of equal access. Equal access also involves deciding what network interface will be used to obtain this basic service. Furthermore, different types of access are required for different voice-grade services. For example, equal access for 700, 800, and 900 services uses a different technology than equal access for message toll service.[13]

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[10] The price discount had to compensate for longer call set-up times and dialing inconveniences.

[11] United States v. AT&T, 552 F.Supp. 131 (D.D.C. 1982), aff'd sub nom. Maryland v. United States, 460 U.S. 1001 (1983). The Modified Final Judgement authorizing the divestiture of AT&T contained an equal access provision.

[12] The modification of the local exchange network to provide dialing parity for AT&T and all other OCCs was not a trivial task. AT&T felt compelled to develop overlap outplusing to ensure that its customers would not experience an increase in call set-up time after the introduction of dialing parity. Technically, overlap outplusing compensates for the increase in call set-up time caused by the identification of the interexchange carrier by the local exchange carrier. Thus, it appears that some incumbent firms are willing to incur additional regulatory-related costs when it suits their business interests.

[13] The AT&T Divestiture Court has been addressing equal access issues for operator services. This Court and the FCC have overseen the introduction of an equal access service for interstate 800 services, although not every interexchange carriers approves of this service. The concept of equal access for 700 and 900 services has been introduced into the ONA implementation process. The pattern of development has been the same in each case. Interim technical solution are placed into operation until the business, strategic and pricing issues can be resolved.

Since their divestiture from AT&T, the seven RBHCs have been involved in disputes concerning the usefulness of the equal access they provide to the interexchange carrier. These disputes imply that the RBHCs are not treating full equal access as their number 1 technical priority. These firms have tended to expend considerable resources on network technologies that place them in the position to compete with the interexchange carrier. Because the RBHCs can already compete in the enhanced services market, there is ample reason to conclude that the RBHCs are less likely to provide equal access for ESPs.

Effects of Technological Neutrality

Each RBHC has followed different business strategies. As a result, each has emphasized different products and services in its technology-development efforts. These factors create strong incentives for a technology-biased research and development agenda. Each RBHC has the incentive to deploy access and end user services that most fit its business strategies and corporate objectives. It would be poor public policy if these incentives were allowed to drive the ONA implementation process.

Perhaps the FCC held similar views on marketplace dynamics when it asserted that the development and deployment of ONA services should be technology neutral.[14] Using commonsense definitions, a technology-neutral ONA implementation could not be technologically biased. Unfortunately, this conclusion, if reached by the FCC, is incorrect. Technological-neutrality does not reduce any existing technology biases. In fact, it actually increases them.

Assume the postdivestiture telecommunications environment. There are multiple basic services carriers. One carrier may adopt ONA implementation guidelines that differ from the others. Or, each carrier may select a different network technology as dictated by the focus, content, and objectives of its business strategies. Absent its self-imposed technology-neutral constraint on its decision making, either case could cause the FCC

[14] Federal Communications Commission, Phase I ONA Plan Order, 11, para. 4, n. 12.

to reject one or more RBHC business strategies and redefine the network evolution plan. Such decisions, or even the potential for such decisions, could reduce incentives to pursue technological biases. However, the FCC has opted not to make them. That is, it has decided not to modify or coordinate seven different network evolution plans. Consequently, the implication of technological neutrality is that the implementation of ONA will have less of a chance of causing a change in any RBHCs' technology objectives and biases.

Although it would be overly optimistic to demand that every RBHC must adopt one network technology because it appears well-suited for ONA purposes, it also would be overly pessimistic to condone a completely independent and disjointed evolution of competing local-exchange-network technologies. As a result, it would appear that ad hoc incentives are acceptable for the purpose of introducing uniformity into network evolution. These incentives could take the form of rewards for the coordinated introduction of future ONA services using future network technologies such as Signaling System 7, Integrated Services Digital Network, and Intelligent Network 2.

The development and deployment of ONA services require more than simple technical uniformity. Lying somewhere beyond this already challenging objective, there is the need to create those cost efficiencies associated with establishing some level of uniformity in the ordering, installation, and maintenance procedures for ONA services. Not only does it appear necessary to agree on certain terms and conditions for inclusion in the ONA tariffs, it also appears necessary to develop RBHC/ESP interfaces to accommodate mechanized or nonmechanized ordering and monitoring systems.

Uniformity does not end with technical and operational considerations. It extends to the ONA availability schedules, and the ONA tariff structure, terms, conditions, and nomenclature. This segment of ONA uniformity turns on the appropriateness of the implementation of interexchange carrier access services as the model for the implementation of ONA services. In general, the case against this analogy is premised on the assertion that ONA services are local exchange services in the image of residential and single-line business services, whereas interexchange access services are regulated separately by intrastate and interstate authorities. Under this assertion, any form of uniformity would be difficult to achieve because of the varying

objectives of the individual RBHCs as to what ought to be accomplished by the implementation of ONA.

Conclusion

The implementation of ONA will be discussed from the perspective of how to meld ONA into the existing and future networks of the RBHCs. The objective is to develop guidelines for a model ONA that are consistent with dual regulation of ONA services and the elimination of tariff-shopping opportunities. If these problems can be solved, it is conceivable that an appropriate jurisdictional balance can be obtained concerning the technical and operational problems affecting the implementation of ONA.

Chapter 2 describes and analyzes the reasons for implementing ONA. This discussion is driven by the expectation that ONA, if performing properly, will improve the selection of enhanced services, increase the efficiency of the enhanced service market, and lower the prices for some enhanced services.

Chapter 3 explains the RBHCs' business strategies associated with the implementation of ONA. This discussion revolves around the tensions that the RBHCs create by seeking to promote their own business interests, while simultaneously attempting to provide basic telecommunications services to ESPs.

Chapter 4 begins the regulatory segment of this report. It addresses the various regulatory strategies that are seeking to dominate the implementation of ONA. Critical to this analysis is the resolution of the issue of dual jurisdiction over ONA services.

Chapter 5 discusses the RBHCs price and tariff policies for implementing ONA. These policies are much affected by the decision to submit state-only, federal-only, or state and federal ONA tariffs.

Chapter 6 presents and justifies the guidelines for a model ONA tariff designed to prevent tariff-shopping opportunities. This model tariff rests on the prohibition of the "mixing and matching" of intrastate and interstate services.

Chapter 7 concludes the report with suggestions for reconciling the concerns of that regulatory authorities, ESPs and RBHCs have with the implementation of ONA.

CHAPTER 2

OBJECTIVES, MILESTONES, AND EXPECTATIONS FOR OPEN NETWORK ARCHITECTURE

Introduction

When viewed as a regulatory framework, ONA is a tool that can be used to construct an efficient enhanced services industry and a powerful public switched network. One important component of this framework is the capture of the economies of scale and scope that are possible from the common use of network facilities.[15] Another aspect of this framework is a regulatory structure that will not long allow the anticompetitive use of these economies.

ONA, if properly implemented , is expected to improve the selection of enhanced services that are available to the public, increase economic efficiency, and lower the costs and prices of enhanced services that are produced by the RBHC-affiliated ESPs.[16] These expectations can be fulfilled if the implementation costs of ONA are not prohibitive and if network capabilities are unbundled into the BSEs and BSAs that are useful to RBHC-affiliated and nonaffiliated ESPs. Unbundled network capabilities help an ESP to design its products in a flexible and economic manner.[17] Low-cost implementation assists an ESP in its efforts to to be innovative.[18] The reasons for implementing ONA are discussed in this chapter.

The Four Milestones of ONA

The structural separation of AT&T's enhanced services from its basic services was a fundamental market structure determinant that emerged from the FCC's Computer II deliberations. The FCC stated that the lack of

[15] Federal Communications Commission, Phase I ONA Plan Order, 10, para. 2.
[16] Ibid., 11, para. 4. See also: Idem, Phase I ONA Order, 104, para. 210.
[17] Federal Communications Commission, Phase I ONA Order, 104, para. 212.
[18] Ibid., 88, para. 171.

structural separation acted as a deterrent to the growth of the enhanced services market and that structural separation was required to assure that discrimination did not occur when AT&T furnished basic services to nonaffiliated ESPs.[19] ONA represents a significant departure for the policy of structural separations. The FCC hopes to implement this new policy initiative by passing four policy milestones.

The first milestone associated with implementing ONA is to establish a regulatory and operational infrastructure eliminating the requirement that the BOCs provide enhanced services through a structurally separate subsidiary.[20] Although the Computer II separate subsidiary requirement is not as confining as it once was because of the adoption of comparably efficient interconnection (CEI) "equal access" and the associated limited pricing guidelines,[21] its existence still places efficiency-reducing restrictions on the ways the BOCs may develop and offer enhanced services to the public.[22] The RBHCs, for example, continue to incur added expenses for those enhanced services with technical and marketing characteristics that are not improved through integration with basic services.

Yet, the substitutions of interim service-specific CEI plans and permanent ONA plans do not imply that structural separation is always inappropriate as a regulatory policy. Such a result requires empirical support for the hypothesis that the benefits of structural separation are never greater than its costs. Because such support is impossible to attain, the decision to enforce structural separations requirements remains an issue often decided on a case-by-case basis.

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[19] Federal Communications Commission, Computer II Final Decision, 77 FCC 2d, 475-86, paras. 233-60; Idem, Computer II Reconsideration Order, 84 FCC 2d, 75-86, paras. 72-105.

[20] Federal Communications Commission, Phase I ONA Plan Order, 198, para. 379. The Computer II proceedings divided telecommunications services into two fundamental, but not mutually exclusive, categories. Basic services remained subject to Title II regulation. Enhanced services were exempted from such regulation. However, to avoid potential competitive abuses by AT&T and its then-subsidiary BOCs, the FCC required that enhanced services be provided only through a structurally separate subsidiary.

[21] For a summary of the CEI equal access parameters and limited pricing guidelines, see: Federal Communications Commission, Phase I Order, 80-85, paras. 154-67.

[22] Federal Communications Commission, Phase I ONA Plan Order 10, para. 2.

Consider the history of the FCC's own analysis of this issue after it had adopted the enhanced services-basic services dichotomy as a regulatory tool. In Computer II, the FCC found that market conditions were such that the costs of structural separation were less than its benefits. The empirical evidence relied upon was observation and experience. Several years later, however, the FCC reached an opposite conclusion. Market conditions had evolved to the point where the costs of structural separation (in terms of allocative efficiency and consumer welfare) outweighed the benefits (measured in terms of preventing technological discrimination and other anticompetitive activities). Once again, the empirical evidence was observation and experience.

Additionally, a critical factor in both of these analyses has been the FCC's perception of the role that nonstructural safeguards are capable of playing in preventing anticompetitive practices by the BOCs. At the end of the Computer II investigation, the FCC believed that nonstructural deterrents would not control such tendencies. Conversely, the perceived effectiveness of nonstructural safeguards rose as the Computer III proceedings moved forward.[23]

The second milestone is the implementation of the regulatory infrastructure that will replace structural separations as the means for controlling any incentives for the BOCs' anticompetitive behavior. This infrastructure must ensure that the public has the opportunity to realize the benefits of ONA without undue concern about discrimination and predatory behavior by the RBHCs. The corrolative subobjective, lying below efficient unbundling and low-cost implementation fulfilled at this milestone, is the opportunity for the RBHCs "to participate efficiently in the enhanced services market ... [with an appreciably lessened concern about] ... anticompetitive conduct based on BOC control of underlying, local communications networks."[24]

In reaching this subobjective the implementation of ONA opens doors previously closed to RBHC-affiliated and nonaffiliated ESPs. But it also

[23] Federal Communications Commission, Phase I ONA Order, 54-55, paras. 98-99.

[24] Federal Communications Commission, Phase I ONA Plan Order, 10, para. 2; 188, para. 379; 252, para. 496.

carries a price tag. The BOCs are expected to develop and deploy ONA services that are suited to the specific needs of the entire enhanced services market.[25] Consequently, industry organizations, such as the T-1 Committee and other telecommunications technical standards groups, will have to resolve many of the technical issues that arise as a result of this expectation.[26]

The third milestone is the development of a uniform method of planning for future ONA services. The associated subobjective is to increase the use of the BOCs' basic communications networks in ways that expand the markets for existing enhanced services and to prime the markets for new services.[27] After this milestone is reached, ONA is expected to evolve into the accelerated unbundling of the local exchange network; that is, more network capabilities will be offered to all ESPs. As the FCC notes, an equitably designed ONA network is apt to "be hospitable to (all) competitive offering of enhanced services," as well as to forestall opportunities for discrimination.[28]

The fourth milestone is the removal of service-by-service CEI regulation of BOC participation in enhanced services markets.[29] The purpose of CEI regulation is to accelerate the deployment of those enhanced services that could not be produced and marketed cost-effectively by the BOCs under the separate subsidiary requirements of Computer II. Its impact as a non-structural safeguard is that it is the "equal access" criteria that the FCC has adopted to police BOC discrimination on a case-by-case basis. With ONA, however, the FCC believes that the underlying network facilities and

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[25] Federal Communications Commission, Phase I ONA Order, 107, para. 219.
[26] Federal Communications Commission, Phase I ONA Plan Order, 94-95, para. 185.
[27] Ibid., 104, paras. 210-12.
[28] Ibid. See also: Idem, Phase I ONA Plan Order, 11, para 4.
[29] Ibid. The service-by-service criterion is important because it restricts the BOCs' CEI obligations to those enhanced services that are being provided on an unseparated basis prior to the final approval of the RBHCs' ONA plans. There is a high probability that the currently approved CEI plans will be grandfathered into the ONA plans at the time of the latter's final approval.

capabilities that the BOCs use to provide basis services to their affiliated ESPs will necessarily be available equally to all non-affiliated ESPs.[30]

The Many Expectations for ONA

Many of the FCC's expectations concerning the impact of ONA on the telecommunications network and the enhanced services marketplace are found in the issues that it has suggested be resolved by the Information Industry Liaison Committee (IILC) and by the ONA plan amendments that it has required the RBHCs to supply by mid-May 1989. Through these initiatives, the FCC has encouraged cooperation and coordination between basic service providers, ESPs, end users, and state and federal regulatory bodies. Industry coordination is expected to occur at the IILC meetings, addressing primarily technical and operational issues.[31] Regulatory coordination is expected to occur through a Joint State-Federal Conference.[32]

The Expectation of State-Federal Cooperation

Section 410(b) of the Communications Act permits a state or federal regulatory authority to convene a joint state-federal conference to discuss the relationship between rate structures, accounts, charges, procedures, and classifications of competing intrastate and interstate rules and regulations.[33] The conference director will be the FCC Chairman or his

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[30] The "equal access" criteria are: (1) interface functionality; (2) unbundling; (3) resale; (4) technical characteristics; (5) installation, maintenance, repair; (6) end-user access; (7) availability; (8) minimization of transmission costs; and (9) recipients. See: Federal Communications Commission, Phase I ONA Order, 80-85, paras. 154-67.

[31] Federal Communications Commission, Phase I ONA Plan Order, 110, para. 216.

[32] A Joint Conference, as opposed to a Joint Board, had been proposed by the National Association of Regulatory Utility Commissioners (NARUC) as the mechanism for state and federal cooperation and coordination on ONA matters of regulatory and public policy interest. See: NARUC, Resolution Regarding Open Network Architecture, Resolution No. 2, San Francisco, CA (adopted October 31, 1988).

[33] 47 United States Code, Section 410(b).

representative.[34] The other conferees will include one other FCC commissioner and seven or more state commissioners, who will be selected to represent regional and national ONA interests.[35] The expectation is that this semiformal process will enhance the quality of the ONA policy debate.

Although the FCC's rule operationalizing a Section 410(b) conference is unclear as to whether BOCs, ESPs, end users, and others can be participants in the decision-making process,[36] the FCC expects that these interested parties will gain access to this policy debate by making presentations on issues of interest to the conferees.[37] While the invitation alternative imbues the joint conference with the characteristics of an open forum, the potential exists through the selection of the invitees for the introduction of narrowly focused perspectives. Therefore, agreement on invitee selection criteria may be necessary before the work of the conference actually begins.

By heeding the requests of numerous parties for some form of formalized state and federal interaction on ONA issues,[38] the FCC has confirmed the early expectations of the ESPs that the unilateral implementation of a comprehensive ONA process by either the FCC or individual state regulatory agencies would be extremely difficult. This expectation existed from the inception of ONA because the state and federal concerns regarding ONA matters have different emphases.[39]

The FCC opposes a joint board on two grounds.[40] It has noted that a joint board tends to be driven by federal policy positions. This, according to the FCC, could place the state commissioners on an uneven footing that would work to the detriment of cooperation and coordination on vital ONA matters. Furthermore, the FCC notes that a joint board is required to produce a recommended decision for its consideration. This requirement, the

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[34] Federal Communications Commission, Phase I ONA Plan Order, 111, para. 219.
[35] Ibid.
[36] 47 C.F.R. Section I, Appendix A.
[37] Federal Communications Commission, Phase I ONA Plan Order, 111, para. 219, n. 438.
[38] For a partial list of these parties, see: Ibid., 109, para. 214. A sampling of these parties are the public utility commissions of California, Missouri, New York, New Jersey, Arizona, Minnesota, and the Ameritech states.
[39] Ibid., 110, para. 216.
[40] Ibid., 112-13, para. 221.

FCC cautions, has sometimes caused procedural and analytical delays that the FCC wants to avoid in this instance.[41]

In support of its selection of a joint conference as the appropriate and most flexible method for treating jurisdictional ONA issues, the FCC emphasized the absence of any specific limitations on the nature of the conference output.[42] That is, conferees would not have to produce a recommended order for consideration and vote by the FCC. By avoiding this, a joint conference eliminates the possibility of attributing any delays in the implementation of ONA to action--or inaction--on the part of the joint board and/or the FCC.[43]

Conferees will discuss an impressive list of ONA issues. On the FCC's list are ONA issues associated with: (1) the deployment of new network technologies; (2) the delivery of new basic and enhanced services to the public; (3) efficiency and nondiscrimination in the use and tariffing of ONA services; (4) the relationship of ONA to state and national economic development and economic competitiveness; (5) the development of model ONA tariffs that address the areas of increased uniformity in nomenclature, structure, and terms and conditions; (6) the coordination of marketing and technical trials for the BOCs' enhanced services; and (7) the interrelationships between state and federal ONA rules and regulations.[44]

A comparable state list might include the continuation of the debates on (1) the unbundling of BSA; (2) the tariffing of ONA services versus the imputation of market price for that service; (3) the need for use and user restrictions; (4) the determinants of the market demand for new ONA services; (5) the acceptable level of geographic availability for approval of the deployment of an ONA service; (6) the untying of the purchase of a BSE from the purchase of a BSA; (7) the rules and regulations for providing an ONA service under contract or pursuant to a special assembly relationship; (8) the causes of and solutions for tariff shopping between interstate and intrastate jurisdictions; (9) the effect of ONA on the separations of costs between the intrastate and interstate jurisdictions and

[41] Ibid., 113, para. 221, n. 442.
[42] Ibid.
[43] Ibid., n. 442.
[44] Ibid., 112, para. 220.

between regulated and unregulated services; (10) the effect of ONA on the independent telephone companies' settlement arrangements; and (11) the relationship between ONA and alternative forms of incentive regulation.

As these two lists suggest, the domain of the joint conference is intrastate and interstate jurisdictional issues related to the development of policy that will control the tariffing, costing, pricing, and availability of current and future ONA services.[45] The IILC is, therefore, expected to focus its energies and expertise primarily on technical and cross-referencing issues associated with the development and deployment of ONA.

Expectations for the Information Industry Liaison Committee [46]

The IILC is expected to consider fairly, resolve equitably, and design efficiently, technical solutions for the ONA issues it elects to address. Each issue sent to the IILC for possible resolution is cochaired by an individual affiliated with a RBHC who represents the suppliers of ONA services and an individual affiliated with an ESP, end user, or interexchange who represents the users' perspective.[47] The organizational structure of the IILC also contains an advisory group charged with monitoring the final output of specific committees and subcommittees. On occasion, this advisory group may request that the proposed resolution of an ONA issue be revisited.[48]

Unlike existing-standards forums, an IILC committee can attain consensus only by the universal acceptance of the proposed solution to a technical ONA issue. As a result, majority and minority positions may accompany the committee reports submitted for a vote by the membership.[49]

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[45] Ibid., 113, para. 222.

[46] The IILC was formed at the request of the RBHCs to address technical and related issues that would affect the nationwide development and implementation of ONA. Its sponsor was the Exchange Carriers Standards Association (ECSA). The IILC's bylaws, administrative procedures, and review processes are new to the telecommunications industry.

[47] Bylaws of the Information Industry Liaison Committee, Article VI, Section 3.

[48] Ibid., Articles IV, VII, IX.

[49] Ibid., Article VIII, Sections 3 and 4.

Additionally, structured mechanisms permit IILC members to review and amend the minutes of the various meetings.[50] Unlike the Interexchange Carrier Compatibility Forum, the Exchange Carriers Standards Association (ECSA) cannot report to the FCC or other interested agencies that a technical issue has been unanimously resolved merely because all exchange carriers agree among themselves.[51] Instead, the IILC has been organized so that minority opinions are included in any final report forwarded to state or federal regulatory bodies.[52]

Because of its design and structure, the IILC is well suited to address many of the technical uniformity issues associated with introducing and providing ONA services.[53] Recognizing the potential of the IILC in this area, the FCC has given the IILC a list of issues that it expects to be expeditiously resolved during the ensuing months. Following are brief discussions of some of the issues on that list.[54]

Technical Uniformity for Key BSEs

Building on its prior efforts to establish technical uniformity for calling-number identification (CNI), the IILC has been asked to resolve other ONA-service-specific applications. In making this request, the FCC expects that key interstate BSEs will be made technically uniform in the near term.

The IILC has been asked to begin this effort by developing a list of specific ONA services that are candidates for technical uniformity across the RBHC territories and then to determine the characteristics of the proper delivery mechanisms for these services. The IILC also is expected to investigate ways that different technical implementations of ONA services may be made compatible in the short- and long-term. If successful, these efforts will increase the availability and improve the interLATA transportability of ONA services.

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[50] Ibid.
[51] Ibid., Section 1.
[52] Ibid.
[53] Federal Communications Commission, Phase I ONA Plan Order, Section III C.
[54] Ibid., 105, para. 207, n. 413.

Other uniformity issues can be resolved with less technical development. Some of the perceived nonuniformity of ONA services is caused by imprecise descriptions of the services that will be offered by each BOC. As a step toward eliminating this semantics problem, the IILC has been asked to complete a cross-referencing of ONA services. When compiled, this cross-reference will indicate those ONA services that could be provided in a more technically uniform manner. Additionally, it will highlight those services than the RBHCs have classified differently because of their interpretations of the common ONA model.[55] As a result, many misunderstandings between the RBHCs and the nonaffiliated ESPs will be eliminated.

Because technical and operational uniformity issues are the IILC's top priority, the IILC is expected to examine how a nonaffiliated ESP can obtain nondiscriminatory access into the switch. However, the IILC has been instructed not to begin this task until after it has made "substantial progress" on the other issues that the FCC has asked it to consider.[56] Therefore, the untying of BSEs from BSAs, an issue closely related to local exchange competition, has been deferred.

Availability and Deployment of BSEs and BSAs

In conjunction with its activities to resolve technical uniformity issues, the IILC has been asked to improve on several aspects of availability and deployment. Initially, these efforts will concentrate on ONA services scheduled for partial deployment by all of the RBHCs or offered by a subset of the RBHCs. A list of technically uniform ONA services that

[55] Ibid., 100, para. 197, n. 391.
[56] Idem, 42, para. 72. The FCC also expects that the IILC will do more than examine the generic aspects of untying BSAs and BSEs. Its expectation is that the IILC will also recommend possible solutions for any problems that are uncovered.

will be nationally available will result.[57] This list will also serve as a preliminary agenda for the IILC's technical committee and subcommittees.[58]

The availability and deployment of ONA services involves more than the resolution of technical and operational issues. Also involved are issues related to the identification of useful new network capabilities. To shed some light on this elusive area, the IILC has been asked to undertake analysis that will result in a preferred structure for the projections of ONA service demand that ESPs will be required to supply to BOCs before new ONA services are offered for future consumption.[59]

This investigation is warranted because nonaffiliated ESPs respect the potential marketing power of an RBHC-affiliated ESP. Until it is firmly established that the RBHC-affiliated ESPs will not have access to this highly valuable market demand information, the nonaffiliated ESPs are unwilling to divulge it to BOC employees who develop and market ONA services.[60] To prevent this type of behavior, the FCC expects that it will be necessary for all parties--BOCs, ESPs, and regulators--to reach a compromise on the procedures and formats that should be used to transfer proprietary market information to the BOCs, while maintaining confidentiality for competitive purposes.[61]

ESP Access to Operations and Support Systems

One of the most promising new ONA capabilities will be access to the operations and support systems controlled and owned by the BOCs. Currently,

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[57] Ibid., 105, para. 207, n. 413.

[58] Taking a more global perspective on the availability and deployment of ONA services, the FCC has noted that it would be timely for the IILC to address the technical uniformity issues that are expected to arise when the independent telephone companies begin to offer ONA-like services. See: Ibid., 107, para. 209, n. 417.

[59] In its first Computer III order, the FCC approved three criteria that the BOCs should use to decide whether an ONA service should be developed, deployed, and offered to ESPs. Along with the expected market demand for these services, the BOCs are expected to determine: (1) the utility of these services as perceived by the ESP competitors of the BOCs and (2) the technical and costing feasibility of these services. See: Federal Communications Commission, Phase I ONA Order, 106, para. 217.

[60] Federal Communications Commission, Phase I ONA Plan Order, 70, para. 135.

[61] Ibid.

Bell Communications Research is at work on a front-end processor that will permit the transfer of data and information to an ESP network controller without intruding on the privacy of the BOC information base, or on the security of the BOC network. The tentative trade name for this product is Custom-Mate.[62]

Also, the IILC has been asked to undertake an analysis that will determine whether feasible methods acceptable to the ESPs exist for gaining access to the BOCs' operations and support systems. Similar to Custom-Mate, these methods should address the needs of the ESPs while assuring the privacy of customer information and network security required by the BOCs.[63]

Concerning a more particularized issue related to access to operations and support systems, the IILC will consider alternative ways of supplying nonaffiliated ESPs with the underlying information required for bill preparation.[64] Many nonaffiliated ESPs assert that the BOCs cost efficiencies in the actual task of bill preparation could give their integrated RBHC-affiliated ESPs a significant competitive advantage.[65] The FCC, however, holds a contrary expectation because alternative billing and collection services are available and competitively priced. It believes that competitive equality will be established if the nonaffiliated ESPs are provided with nondiscriminatory access to the underlying information required to prepare and produce bills.[66]

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[62] Although authorized by the Bell Communications Research steering committee, the incentive for this research and development was a network capability request made at the first ONA agenda setting conference by a network-oriented ESP. This concept took hold subsequently and was adopted by Telenet Communications Corporation and other value-added networks.

[63] Ibid., 58, para. 110.

[64] Ibid., 58, para. 109.

[65] Ibid., 50-53, paras. 89-93. A list of firms claiming that the RBHCs have a comparative advantage in billing and collection include the Enhanced Services Council, Association of Telemessaging International, Inc., Tymnet, and Telenet (suggesting discrimination opportunities).

[66] Ibid., 57, paras. 107-8. The FCC's analysis of this issue may be questioned for the following reasons. Most existing billing and collection alternatives are designed to meet the diverse needs of end users that use multiple basic services. It is, therefore, not appropriate to assume that the firms providing these alternatives possess the background and expertise

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An industry consensus is preferred for this issue because disagreement exists over whether access to operations and support systems should be classified as an ONA service. The disagreement may be reduced to the competitive relationship between the nonaffiliated ESPs and the RBHC-affiliated ESPs. Nonaffiliated ESPs assert that access to operations and support systems is necessary to let them control the quality of their enhanced services. The RBHCs assert that the nonaffiliated ESPs are trying to extract the BOCs' cost efficiencies without bearing any of the research and development costs. Midway between these opposing positions is the FCC's belief that competitive issues can be resolved if agreement can be reached on the deployment mechanisms and availability criteria for access to BOC-controlled operations and support systems.[67]

FCC-Ordered ONA Plan Amendments

Because the IILC is an industry consensus forum, it is beyond the FCC's regulatory reach. Strictly speaking, the FCC can only suggest or encourage the IILC to become involved in specific ONA issues.[68] Therefore, the FCC has decided to reinforce its requests by ordering the RBHCs to amend their ONA plans with respect to the issues of uniformity, market demand, cross-referencing, and access to operations and support systems. Additionally, the FCC has requested that amendments be made to the RBHCs' ONA plans that reverse management decisions if the affected RBHC could not, given a second chance, fully justify its current position. In other instances, it has

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that is required to provide efficient billing solutions for the enhanced services industry. On the contrary, it is more reasonable to expect that these firms will have to climb a learning curve that has already been traversed by the BOCs.

[67] Ibid.

[68] The exception to this procedure is when the FCC believes that it is necessary to achieve industry consensus regarding the implementation of an FCC-approved criteria or rule. One instance meeting this test is the FCC's strong urging that the IILC attempt to obtain agreement on the role that market demand information will play in the development, deployment, and availability of future ONA services.

reversed some management decisions without a request for further information or justification.

Uniformity, Access to Operations and Support Systems, Market Demand, and Cross-referencing: Reenforcing the IILC

Stressing its preference for a quick resolution, the FCC has ordered each RBHC to describe the current efforts that the IILC has undertaken regarding the treatment of uniformity issues. This should help clarify each RBHC's understanding of the mission of the IILC. Moreover, it should demonstrate the procedures that the BOCs will use to unravel systematically the uniformity issues that accompany the furnishing of specific ONA services that are of immediate interest to nonaffiliated ESPs.[69] By asking the IILC to focus its efforts on existing ONA services, the FCC expects to accelerate development of practices and procedures that can be used to find technical uniformity "fixes."

Toward helping to resolve the disagreement over the need for access to the BOC-controlled-and-owned operations and support systems, the FCC has required that each RBHC amend its ONA plan to specify the operations-and-support-system access that it can offer in the short term. Concomitant with developing this list of potential ONA services, each RBHC must discuss its ability to provide these services within a reasonable time frame.[70] In addition, RBHCs must determine if these potential ONA services should be regulated basic services or unregulated ancillary services.[71]

The authority of state regulators over access to operations and support systems may be compromised by the ONA plan amendments required of the RBHCs. In setting the initial parameters of the operations and support system debate, the FCC could lay the foundation for declaring that these services should be deregulated or detariffed. Consequently, state regulators may want to devote considerable attention to this set of amendments. If declared to be an ancillary service similar in structure and content to

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[69] Federal Communications Commission, Phase I ONA Plan Order 105, para. 207.
[70] Ibid., 58, para. 100.
[71] Ibid., n. 208.

billing and collection services, this new service may move beyond the reach of state regulation.

Because the RBHCs and the nonaffiliated ESPs have voluntarily divulged little information about the market demand for the initial set of ONA services, the FCC has directed each RBHC to include a comprehensive explanation of how market demand and costing feasibility may have caused the BOCs to decide not to provide network capabilities requested by the nonaffiliated ESPs.[72] However, the FCC is not requiring the RBHCs to release their quantitative data that underlie these decisions.[73] Thus, the FCC is not prejudging that the IILC will be able to resolve the confidentiality and competitive issues entwined with the release of demand data.

Apparently the FCC is more optimistic about the potential successes of the IILC in the area of cross-referencing. Each RBHC (other than Ameritech) is ordered to provide a list of the reference documents that a nonaffiliated ESP can use to obtain information about the technical characteristics and interfaces for the initial ONA services.[74]

Price Parity, Use Restrictions, One-Stop Shopping, Prior Authorization and Collocation: Potential Management Reversals

There are five major instances where the FCC has asked one or more RBHC to justify more fully its current ONA plans or face an FCC-imposed reversal of a management decision. In general, these instances fall into the policy category of taking measures to avoid undue discrimination in the implementation of ONA. As such, they help fulfill the FCC's expectation that the conditions surrounding the removal of its structural separations requirements are fair and equitable. In particular, the FCC seeks to approach equality of opportunity in the areas of price parity, use restrictions, one-stop shopping, complementary network services authorizations, and minimization of transport costs.

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[72] Ibid., 69, para. 139.
[73] Ibid., 69-70, para. 134. These data include information that the RBHCs have obtained from market studies and used in their analyses of costs, revenues, and profits.
[74] Ibid., 74, para. 143; 76, para. 146.

The FCC is unsure whether the Pactel tariffing approach will ensure price parity between affiliated and nonaffiliated ESPs.[75] Therefore, it has ordered Pactel to remove this ambiguity in its tariffing approach for ONA services. Although Pactel asserts that it will follow a policy of price parity between its affiliated ESPs and nonaffiliated ESPs, it does not indicate whether its vision of price parity includes distance-sensitive pricing for the transmission element of a BSA. Because US West and BellSouth have not successfully accomplished the integration of banded pricing and price parity without proposing conditions that represent undue discrimination, Pactel has been ordered either to forego banded pricing or fully justify how its price parity approach would operate under banded pricing.[76]

BellSouth and Southwestern Bell Telephone either may delete any use restrictions proposed in their tariffs or fully justify why they are necessary.[77] The Phase I ONA Order implied that a use restriction is equivalent to undue discrimination.[78] By definition, a use restriction precludes the use of a tariffed basic service by at least one class of customers. Unjustified use restrictions are, therefore, incompatible with the public-interest standard of equal access, whenever possible, to basic telecommunications services.

Every RBHC has been asked to justify the one-stop shopping capability that has been proposed for its affiliated ESP, if such capability is denied to a nonaffiliated ESP.[79] Essentially, the FCC has decided to apply a nondiscrimination criteria to the supply side of the enhanced services

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[75] Price parity occurs when the affiliated and nonaffiliated ESPs purchase basic services according to the same price schedules and tariff terms and conditions. However, these prices, terms and conditions can not unfairly advantage either the type of ESP.

[76] Ibid., 86, para. 169.

[77] Ibid., 146, para. 284; 161, para. 312; 168, para. 215.

[78] Federal Communications Commission, Phase I ONA Order, 105, para. 215.

[79] Federal Communications Commission, Phase I ONA Plan Order, 50, para. 88, n. 165. When the FCC requested this justification, it noted that the RBHC has a heavy burden to overcome when it attempts to demonstrate why its affiliated ESP should have the one-stop shopping capability and others should not. One-stop shopping capability, in this instance, means that an ESP can order BSAs, BSEs, and ANSs on its own behalf, and it can order CNSs on behalf of its customers.

market. Specifically, it expects that ONA will be implemented without administrative terms and conditions that give a competitive advantage to the RBHC-affiliated ESP.

Following its theme of no supply-side discrimination, the FCC has ordered the RBHCs to provide a detailed explanation that justified why a nonaffiliated ESP must obtain prior authorization from its customers before it can purchase a complementary network service that will be included as part of the ESP's service to its customers.[80] Technologically speaking, no barriers exist that prevent such a service from becoming a factor of production for an ESP, although complementary network services are marketed generally as retail services. It follows naturally then that the decision to purchase an enhanced service from a nonaffiliated ESP is equivalent to authorizing the purchase of whatever is necessary to produce that service.

The issue of collocation has surfaced several times in the debate over ONA's implementation. The ESPs assert that collocation is a necessary, if not sufficient, condition to establish cost parity between the affiliated and nonaffiliated ESPs. The RBHCs assert contrarily that cost parity is not dependent solely on collocation. Other factors, such as proximity to customers, must also be considered. The FCC addressed these issues in its Phase I ONA Order and Phase I ONA Reconsideration Order. The decision, reaffirmed upon reconsideration, is not to mandate collocation; instead, the RBHCs are required to provide technical or other arrangements that minimize the transport costs of the nonaffiliated ESPs.[81]

Most RBHCs have elected to bypass the options of technical solutions for nonaffiliated ESPs and collocation for affiliated ESPs. As the Bell Atlantic CEI petition for voice messaging implies, the cost efficiencies of additional multiplexing alternatives are not generally sufficient to overcome the cost advantage of collocation.[82] BellSouth is the only RBHC

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[80] Ibid., 49, para. 88.

[81] Federal Communications Commission, Phase I ONA Order, 79-80, paras. 151-3; Idem, Phase I ONA Reconsideration Order, 18, para. 121.

[82] Bell Atlantic filed the first CEI petition with the FCC. This petition contained the proposal that Bell Atlantic's ESP would collocate its equipment with basic service facilities. As to its proposal for minimizing

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that elected to exercise these two options. It believes that the ESPs' transport costs could be minimized sufficiently by multiplexing and some difference should exist between the cost structures of competitors. Therefore, BellSouth declined to adopt price parity plans. The FCC, however, accepted neither this logic nor its conclusion. Instead, it ordered BellSouth to fully explain why its current proposals met the requirement of minimizing the transport costs of nonaffiliated ESPs. Alternatively, BellSouth was ordered to alter its proposals in this area.[83]

Classification of Regulated Services, Supply of BSAs, and Unbundling Ancillary Services: Direction to Management

The FCC has directed the management of the RBHCs to remove any ambiguities from their ONA plans that suggest that an RBHC-affiliated ESP would be treated differently than a nonaffiliated ESP. Two of the three ambiguities identified arise because of administrative and tariffing procedures. The remainder result from business decisions that affect the classification of ONA services.

In order to soften the impact of strategic business decisions concerning the furnishing of ONA services, the FCC has ordered each RBHC to take measures that will ensure that every regulated service is classified as either a BSE, BSA, or complementary network service.[84] As a result of this decision, the FCC has established its position on the treatment of unregulated ONA services. Specifically, the FCC intends to let the marketplace set the price, quality, and availability of ancillary services.

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the transport costs of nonaffiliated ESPs, Bell Atlantic argued that it had already designed its network to this criterion. Therefore, it concluded that nothing else was required of it. Before the FCC ruled on this CEI proposal, Bell Atlantic modified its stance. While retaining its decision to collocate its voice messaging equipment, it elected to charge itself the existing tariffed rates. That is, Bell Atlantic chose price parity over multiplexing. See: The Interconnection to Enhanced Service Providers, filed with the Federal Communications Commission March 6, 1987.

[83] Federal Communications Commission, Phase I ONA Plan Order, 86-87, paras. 170-71.

[84] Ibid., 56-57, para. 106.

Moreover, it has carved out a convenient ONA classification for new services that it does not wish to regulate.

To clarify a tariffing ambiguity of the ONA plans, the FCC has ordered each RBHC to apply the same rules to the furnishing of BSAs and BSEs.[85] This directive resurrects the FCC's original notion of a BSE as a stand-alone service. During the comment period preceding the issuance of the Phase I ONA Order, neither the FCC, the ESPs, nor the RBHCs debated the relative merits of a suitable transmission arrangement for the transport of BSEs. Therefore, it would be extremely unusual if the FCC had predicated removal of the Computer II structural separations requirements on the conceptual premise that a BSE would be useless to an ESP without the purchase of a distinct and separate transmission arrangement.

To correct an administrative shortcoming of the ONA plans, each RBHC has been ordered to describe the technical relationships between tariffed and nontariffed services. Although nontariffed telecommunications services will reside in the ancillary services category, it was unclear to the FCC whether such services would be unbundled and the elements offered subject to a standard of equal treatment for all ESPs. It also was unclear whether existing regulated services would be used in the delivery of an unbundled ANS. The FCC has sought clarification of these issues by ordering each RBHC to describe the services that it will utilize to provide unbundled ancillary services. Particularly, the RBHCs must describe how they will provide the data and information that a nonaffiliated ESP uses for bill preparation.[86]

Release of Customer Proprietary Network Information and the Deployment of ONA Services: Refocusing Management

Concerning the release of customer-proprietary-network information (CPNI), each RBHC (other than Pactel) must agree that usage data and

[85] Idem, 44, para. 78. The FCC may be moving in the direction that the structure of the common ONA model may provide opportunities to circumvent the CEI and limiting pricing requirements contained in the Phase I ONA Order. See: Phase I ONA Order, 80-84, paras. 154-66; 88-94, paras. 171-86.
[86] Ibid., 58, para. 109, n. 207. Pactel, in particular, has been ordered to supply a detailed description of its plans with respect to providing billing information, but not billing services, to nonaffiliated ESPs.

customer calling patterns are part of CPNI.[87] These six RBHCs had implied that such data were not CPNI and, therefore, they were not obliged to release them to nonaffiliated ESPs. The FCC, however, reached a different conclusion, holding that such data are valuable for marketing enhanced services and are components of CPNI.

While the release of CPNI to nonaffiliated ESPs has been a sensitive issue, the release of CPNI to affiliated ESPs has been a contentious one. The nonaffiliated ESPs repeatedly have argued that they are not being granted access to CPNI on the same terms and conditions as those offered to the RBHC-affiliated ESPs. Specifically, they oppose the FCC's decision that the RBHC-affiliated ESPs have the right to unrestricted access of CPNI unless subscribers deny it. Their assertion is that such a decision confers a competitive advantage on the affiliated ESPs.[88] The FCC, however, disagrees. It feels that placing a CPNI approval requirement on the RBHC-affiliated ESPs would impede their ability to market enhanced services. Moreover, it feels that competitive harm will not be inflicted upon the nonaffiliated ESPs as long as they can protect their CPNI and that of their customers.[89]

In response to the FCC positions, nonaffiliated ESPs note that it would be difficult to prevent the RBHCs' enhanced-service personnel from making unauthorized use of restricted CPNI in the absence of a password or identification system that would control access to records.[90] The FCC has

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[87] Ibid., 213-14, para. 411.

[88] ADT Security Systems, Inc., ONA Comments (Washington D.C.; ADT Security Systems, Inc., 1988) 20-21; Association of Telemessaging Services International, Inc., ONA Comments (Washington D.C.: Association of Telemessaging Services International, Inc., 1988) 8; Committee of Corporate Telecommunications Users, ONA Comments (Washington D.C.: Committee of Corporate Telecommunications Users, 1988) 11-12; Alarm Industry Communications Committee, ONA Comments (Washington D.C.: Alarm Industry Communications Committee, 1988) 26-27.

[89] See, for example, Telenet Communications Corporation, ONA Comments (Reston, VA: Telenet Communications Corp., 1988) 52, n. 44. Telenet argues that BellSouth's procedures for clarifying the treatment of CPNI is an ill-disguised attempt to market enhanced services to the existing customers of other ESPs. Association of Data Communications Users makes essentially the same point, but its remarks are directed toward the CPNI procedures that Bell Atlantic wants to adopt.

[90] Federal Communications Commission, Phase I ONA Plan Order, 219, para. 422.

agreed with this analysis and has ordered each RBHC to follow NYNEX by integrating a password/ID system into the structure of its CPNI safeguards.[91] Through this required amendment, the FCC has clarified the proper procedures for safeguarding CPNI of nonaffiliated ESPs and their customers.

To fulfill some of the requirements of the FCC's Phase I ONA Order, the RBHCs have found it necessary to restrict their initial set of ONA services to network capabilities that can be fully or partially deployed within one year after the approval of their ONA plans. While the FCC accepts this practice as a by-product of its prior decisions, it also has decided that the RBHCs must extend their published deployment schedules beyond one year for each of their partially deployed ONA services. It is the FCC's belief that a one-year deployment schedule for a partially deployed service is insufficient for longer-term planning by nonaffiliated ESPs. Consequently, the FCC has ordered each RBHC to amend their ONA plans to include annual deployment schedules for their partially deployed ONA services up to July 1, 1992.[92] By placing this requirement on the RBHCs, the FCC has clarified its intent that the evolution of ONA is to be user-friendly from the perspective of the nonaffiliated ESPs.

Continuing with its theme of user friendliness, the FCC has ordered Ameritech, BellSouth, NYNEX, Southwestern Bell, US West, and Pactel to review comprehensively each others' ONA plans to identify those additional ONA services that they can include in their initial set of offerings.[93] This exercise is expected to yield two beneficial results. First, it should expand the set of ONA services available across the country. Second, it should increase the level of uniformity between the individual ONA plans. Both results will enhance the ease of providing nationwide enhanced services and reduce the administrative and technical burdens that disparate ONA plans placed on national ESPs.

The FCC did not, however, stop with its order to expand the set of common ONA services. It also ordered each RBHC to amend their plans to

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[91] Ibid., 222, para. 430.
[92] Ibid., 188, para. 363.
[93] Ibid., 104, para. 205. Bell Atlantic had already performed this type of review and its actions served as a model for the other RBHCs to imitate.

include a three-year deployment projection for all ONA services that can be provided before July 1, 1992, even though they may not have been included in the initial and expanded sets of ONA services.[94] This requirement clarifies the "where and when" of future ONA services. Moreover, it gives the enhanced-services industry a sense of how ONA will evolve.

The FCC also clarified its intentions concerning the future of ONA. As a way of focusing management's attention on the introduction of future ONA services, the FCC ordered each RBHC to respond to each complete future ONA request within 120 days.[95] Their response must include a decision about whether the RBHC will or will not meet the request of the ESP. If the RBHC agrees to provide the ONA service, it must further state the terms and conditions under which the enhanced-services industry will be supplied. If, however, the RBHC does not agree to provide the service, it must explain why it cannot do so.

Finally, the FCC ordered each RBHC to amend its ONA plan with a full and detailed description of how it would determine that a request for an ONA service is complete. This information should reduce the number of times that a RBHC can argue that an ONA request is incomplete and hence add to the delay associated with introducing ONA services. As a result, new ONA services should be introduced more smoothly. Additionally, the nonaffiliated ESPs will be provided with explicit guidelines for requesting new services.

ONA Tariff Structure: Reversing Management

Besides refocusing management's attention on providing regulated ONA services, the FCC has altered parts of the tariff structures proposed by US West and BellSouth. US West proposed that its collocated and affiliated ESPs should pay a distance-sensitive transmission rate that falls within the zero-to-one mileage band. The FCC rejected this proposal on the grounds that few nonaffiliated ESPs could find locations that would allow them to pay equal distance-sensitive transmission rates. Therefore, it ordered US

[94] Ibid., 202, para. 389.
[95] Ibid., 205, para. 397.

West to charge its collocated and affiliated ESPs as if they were two miles from the serving-wire center.[96] Because this decision improves the price parity policy that US West has adopted in lieu of providing collocation, the FCC expects that it has increased the competitiveness of the enhanced-service market.

As for BellSouth's ONA tariff structure, the FCC decided that BellSouth cannot propose tariffs that prevent an ESP from retaining its current grade of services.[97] That is, the FCC will not approve an ONA plan that requires an ESP to change its existing grade of service because of the introduction of ONA services. The FCC is concerned that such a requirement might cause a significant disruption in the furnishing of an existing enhanced service. Furthermore, this requirement may cause an adverse effect on the financial status of the nonaffiliated ESP.[98] The FCC would prefer to avoid either result.

Conclusion

Although the FCC accepts the proposition that every BOC network is somewhat different, it is, nonetheless, unwilling to reject the proposition that a significant degree of similarity still exists between local networks. As evidence, the FCC points to the number of essentially identical switch types found in each BOC network.

Given the FCC's perception of technical similarity across the BOCs, it naturally expects a greater level of uniformity than is evident in the current ONA plans. To correct this deficiency, the FCC has pointed the RBHCs toward reviewing each others' plans in the hope of increasing the number of identical ONA services provided by each BOC.

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[96] Ibid., 85-86, para. 168. Because BellSouth did not adopt a price-parity policy as an alternative to collocation, the FCC was not able to reject the BellSouth tariffing approach that would charge its affiliated ESPs a distance-sensitive rate that falls in the zero-mileage band. Instead, the FCC asked for a full justification of this procedure. However, owing to the FCC's decision modifying the US West banded-pricing approach, BellSouth may find it most difficult to supply the FCC with suitable justification.

[97] Ibid., 146, para. 284; 161-62, para. 312.

[98] Ibid., 167-68, paras. 321-22.

Additionally, the FCC has supported other mechanisms designed to increase the level of cooperation between interested parties and encourage uniformity in furnishing ONA services. For example, it accepts the IILC as the vehicle for resolving differences between its ONA principles and the BOCs' technology planning. Within the IILC procedural framework, the FCC directed the RBHCs to continue their efforts to achieve "greater uniformity" in the nomenclature, technical characteristics, availability, and deployment of ONA services.

The RBHCs have also been required to incorporate the input of ESPs into their technical planning processes. As a result, ESPs--through ONA requests--have at least the opportunity to affect the design of the new network technologies in the areas of multiservice-provider accessibility, compatibility, and switch programming. Clearly, this directive will require a departure from the RBHCs' existing service development procedures. Previously, these companies chafed at the suggestion that an ESP could cause a change in their operational processes and procedures.

Yet, the FCC has not limited its efforts to achieve cooperation to the technical and operational activities of the RBHCs and the ESPs. Cooperation and coordination are also necessary for the successful meshing of state and federal regulatory policies. Important issues in this area include the tariffing and costing of ONA services as they are introduced on a dual-jurisdictional basis, and the trade offs between ONA service uniformity and the uniqueness of each RBHC network. To achieve the requisite level of cooperation and coordination the FCC, at the urging of several state commissions and other interested parties, has convened a Section 410(b) joint conference to discuss nontechnical regulatory issues that will emerge as a result of developing and deploying ONA services.

CHAPTER 3

BUSINESS STRATEGIES FOR IMPLEMENTING ONA

Introduction

Because ONA represents a fundamental change in the market structure of the telecommunications industry, its implementation will determine the cost, price, and quality of enhanced services. The evolution of this market will, however, also depend on how the RBHCs and their regulators cope with a marketing twist not often encountered in the communications environment. Specifically, ONA services are suitable for either the wholesale or retail market segments even though they are designed to be used to produce enhanced services.[99] The financial impact of such flexibility will depend in large measure on the business strategy selected by each RBHC.

If the RBHCs choose to court the ESPs, the emphasis will be on developing, deploying and providing ONA services that meet the needs of the entire wholesale marketplace. If, however, the RBHCs decide to concentrate on their retail interests, they likely will introduce ONA services that benefit their own competitive positions. Yet, despite the possibility of such strategic maneuvers, ONA has created the potential for a host of services that were not previously available.[100]

Aspects of the RBHCs' ONA business strategies are discussed critically in the following sections. The discussions of technical equality, technical uniformity, distinguishing between BSEs and CNSs, the costs and benefits of unbundling ONA services, the minimization of transport costs incurred by ESPs, and access to BOC-controlled operations and support systems are

[99] Because ONA services are properly classified as network capabilities that are used by ESPs to produce enhanced services, derived demand curves represent the most accurate summary of the economic behavior that is embedded in the purchase of these services.

[100] These "new services" are defined loosely since the initial sets of ONA services to be offered by the RBHCs are dominated by repackaged existing basic services.

approached generically, but the level of abstraction is reduced where appropriate by referring to the ONA business strategies being followed by the various RBHCs.

ONA Business Strategies Available to RBHCs

The public interest seems to be that each RBHC should place an emphasis on the wholesale and retail aspects of ONA. It is, however, probable that a particular RBHC will elect to maximize its efforts in one of these market segments and minimize its efforts in the other. Take, for example, the business strategy adopted by NYNEX. It has chosen to emphasize the additional marketing opportunities for ONA services, and this decision has resulted in an avalanche of new basic services.[101]

Conversely, US West has elected to emphasize strategic opportunities for for deregulation. As a result, this RBHC focuses on serving the end users' demands for enhanced services. Although US West has offered thirty-two BSEs,[102] it is also the only RBHC that has not proposed the development and deployment of BSAs to supplement its existing local exchange services.[103] While these business decisions do not prove that US West will be preoccupied with the enhanced services market, they do indicate that US West may place less emphasis on making research, development, and marketing expenditures with respect to the wholesale aspect of ONA.

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[101]New York Telephone Company and New England Telephone and Telegraph Company, Open Network Architecture Plan of the Nynex Telephone Companies (White Plains: New York Telephone Company and New England Telephone Company, 1988) 62. Nynex is offering 19 new ONA services that are enhancements to its existing basic services. Additionally, it is offering 35 existing network features and functionalities as ONA services.

[102]As part of its ONA effort, US West evaluated 192 requests for network features and functionalities. Just over one-quarter, or 68 of these requests, were deemed to be consistent with its definition of a BSE as a central office feature or function that is not affiliated with inter-connection functions, transport functions, or operations and support-system functions. US West further reduced this list of acceptable network capabilities to 32 BSEs that are either currently available, or can be made available by September 1, 1989. See: US WEST, Inc., Open Network Architecture Plan of US West, Inc. (Washington D.C.: US West, Inc, 1988), iv.

[103]Ibid., v.

Other business approaches also suggest themselves. A predisposition for technology provides an RBHC with a strong incentive to use extensively recently deployed facilities. The associated business strategy is to reduce the pay-back periods of investments in leading-edge technologies. Bell Atlantic is one RBHC that has capitalized on the early deployment of its Signalling System No. 7 (SS7). It has elected to unbundle its Custom Local Area Signalling Services (CLASS), offering them separately as BSEs.[104] Because this business decision will increase the use of the SS7 overlay network, the revenue stream will be larger than it otherwise would have been. As long as the additional revenues exceed the additional costs of unbundling CLASS, Bell Atlantic's strategy will benefit it and its customers.

Alternatively, the expansionist tendencies of a technology bias can be mitigated by creating a service area that was not previously an element of a firm's marketing concept and then limiting geographically the availability of services produced by the new technology. Although a new service area will have boundaries that may enlarge the coverage of some local basic services, the costs of deploying a new technology are reduced by targeting their geographic availability.

Creating a new service area and targeting the geographic availability of the associated service are being used by Southwestern Bell to control internally its technology bias. A portion of the development and deployment costs to furnishing an Integrated Services Digital Network (ISDN) will be recovered this way.[105] This strategy is not the same as testing market demand in urban as opposed to rural areas.[106] The deployment of services, while being targeted, is also dispersed geographically. As a result, the capture of technological and advertising economies of scale that may be associated with market segmentation has been made more difficult.

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[104]Bell Atlantic Telephone Companies, Open Network Architecture Plan (Washington D.C.: Bell Atlantic Telephone Companies 1988) 28.

[105]Southwestern Bell Telephone Company, Southwestern Bell Telephone Company's Open Network Architecture Plan (St. Louis: Southwestern Bell Telephone Company 1988) 45-47, 56.

[106]The FCC has cautioned the RBHCs that they should not assume that large cities are the only places that will generate market demands that are sufficient to support ONA services. See: Federal Communications Commission, Phase I ONA Plan Order, 189, para. 364.

Thus far, only well-defined business strategies have been considered. More fluid conceptions of what ONA means for the firm's revenues and costs are possible. In these instances, an RBHC would adopt a business strategy for introducing new services that is based on the availability of at least the customary amount of quantitative data. An RBHC, for example, would seek information that would assist it in balancing the ubiquity of an ONA service against the cost of its deployment. Essentially, this RBHC would look closely at the relationship between the geographic dimension of investment decision and the market demand for an ONA service.

Ameritech has adopted the most quantitative approach to the costing and pricing of ONA services. Its approach seeks to apply the same costing and pricing procedures to ONA services as are used for the interstate access services available to interexchange carriers.[107] To implement this approach successfully, Ameritech will have to develop methods that reliably and accurately estimate the market demand for ONA services.[108] Since these methods do not exist as yet, such an ONA business strategy may be deemed experimental.

Traditionally, business strategies are designed to accommodate the relationships between new and existing services. This planning-type exercise involves relating the demand profiles and prices of existing services to the expected demand profiles and prices of new services. If differences exist between these variables, procedures are devised to determine the effects of the incentives that are embedded in the existing prices. Price shopping, arbitrage, and other abuses of a firm's price structure can be discouraged once these incentives are fully understood. Depending on the characteristics of the existing incentives, the restructuring of local exchange tariffs could easily be an important component of a firm's business strategy.

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[107] Ameritech Operating Companies, Open Network Architecture Plan of the Ameritech Operating Companies (Chicago: American Information Technologies Corp. 1988) 96.

[108] Ibid., 119.

BellSouth has argued that the incentives embedded in its tariffs for local exchange services are not appropriate for ESPs.[109] To rectify this perceived problem, BellSouth has proposed a usage-sensitive tariff as a substitute for the flat-rate tariffs currently assessed against ESPs.[110] BellSouth's business strategy is, therefore, to affect a price restructuring of the network capabilities used by the ESPs.

Because several business strategies have been shown to be consistent with ONA's implementation, state and federal regulatory authorities will find it difficult to avoid addressing ONA's marketing aspects. In addition to being a regulatory framework for the removal of structural separations constraints, ONA is a way of doing business spawned by a directive to improve the access to the capabilities of the public switched network.

The Definition of "Technical Equality"

The topic of "technical equality" has permeated the transition from a closed to an open network architecture.[111] A perennial issue has been the strength and clarity of the electronic signal that traverses the network facilities connecting nonaffiliated telecommunications firms with their customers. Currently, this signal weakens as the distance from its source lengthens. Consequently, it has never been possible to attain complete technical equality when multiple firms located different distances from an end office or tandem purchase access to the local exchange companies' public switched networks. Yet, it has been demonstrated many times that movement toward technical equality is possible as long as some disruption to the LECs' cost structure is deemed acceptable.

Unfortunately, simple and painless technological "fixes" have not been a characteristic of establishing "technical equality" of any type. Usually,

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[109] BellSouth Corporation, South Central Bell Telephone Company, and Southern Bell Telephone and Telegraph Company, BellSouth Open Network Architecture Plan (Atlanta: BellSouth Corporation, South Central Bell Telephone Company, and Southern Bell Telephone and Telegraph Company, 1988), 68.

[110] Ibid., 67.

[111] To date, "full technical equality" has not been implemented. The justification for this approach has been that it would be too expensive to reengineer the existing network to establish complete technical equality.

implementation is preceded by lengthy and acrimonious public debates. Every technical aspect is contested because they can not be separated from the firm's business and regulatory strategies. The level of contention rises whenever it is necessary to incur additional costs to change the transport or switching components of the network. The firm required to make the changes views these added costs as a siphoning away of funds that should be used to solve more pressing strategic problems. As a result of such beliefs, strong incentives are introduced for the continuation of existing trunking and signaling arrangements.

While RBHC incentives supporting the status quo are understandable, they are insidious because most existing local networks have been designed to accommodate one intrastate carrier of voice and data traffic. Except for the limited openness of intrastate, interLATA access, the first choice of the RBHCs' closed network architecture is to route traffic over the BOCs' facilities. To exit this traffic pattern, a nonaffiliated ESP must obtain an access code that directs traffic to its facilities. Normally, this access code precedes the number of the called party. Moreover, this network architecture is stingy when it comes to transporting billing information to nonaffiliated ESPs. A network capability as useful as the transport of the billing number of the calling party as well as the called number of the calling party is not readily available to nonaffiliated ESPs.

ONA may correct network shortcomings such as the nonavailability of automatic number identification. But even with the experience of trying to open the local network to multiple interexchange carriers, the FCC is not willing to require the BOCs to provide complete technical equality.[112] Alternatively, it has decided to allow four deviations from absolute equality.

First, some degradation in technical equality is permissible when distance is a factor that affects the transmission characteristics of a signal.[113] Second, technical characteristics may vary as long as the end users do not perceive any distortions when the enhanced services of RBHC-affiliated ESPs are compared with similar services that are provided by

[112] Federal Communications Commission, Phase I ONA Plan Order, 71, para. 136.
[113] Ibid., para. 87.

nonaffiliated ESPs.[114] Third, the RBHC may forego technical equality if it requires the "grossly inefficient" overengineering of the network.[115] Fourth, technical characteristics may differ when providing the enhanced service requires a mode of access for the RBHC-affiliated ESPs that is different from the delivery methods that are most efficient for the nonaffiliated ESPs.[116]

The first deviation from technical equality does not appear to be too threatening. As long as the signal attenuation within a radius of three miles from the end office or tandem is not noticeable to an end user, transmission quality will not affect the marketing of enhanced services either by the affiliated or nonaffiliated ESPs.[117] However, deviating from technical equality is not acceptable if the availability and usefulness of a predetermined set of network capabilities vary within three miles from the end office or tandem. Supposing for the moment that network capabilities increase as distance from the central office decreases, the affiliated ESPs will, in most instances, have service quality and marketing advantages over the nonaffiliated ESPs. This perverse result would occur because collocation opportunities will be available to the affiliated ESPs, and they will not be available to the nonaffiliated ESPs.

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[114] The end-user-perception approach has been adopted by Southwestern Bell. See: Southwestern Bell Telephone Companies, Southwestern Bell Telephone Company's Open Network Architecture Plan, 119-120. Since the FCC did not instruct Southwestern Bell to amend its ONA Plan in this area, it appears that it finds end-user perceptions to be a suitable method of evaluating technical equality. Federal Communications Commission, Phase I ONA Plan Order, 76, para. 149.

[115] Federal Communications Commission, Phase I Reconsideration Order, 2 FCC Rcd, 3048, para. 92.

[116] It is not clear at this time whether differences in the delivery method for the same type of service will be an acceptable reason for establishing technical inequality between the affiliated and nonaffiliated ESPs. The delivery method criterion has been proposed by Pactel. See: Pacific Bell and Nevada Bell, Pacific Bell and Nevada Bell Plan to Provide Open Network Architecture (San Francisco: Pacific Bell and Nevada Bell, 1988) 40-41. However, the FCC has ordered Pactel to amend its ONA plan by providing more detail in this and other areas of technical equality. Federal Communications Commission, Phase I ONA Plan Order, 76, para. 149.

[117] The FCC has proposed a two-mile rule when pricing parity is used as substitute for collocation. Federal Communications Commission, Phase I ONA Plan Order, 85-86, para. 168.

Fortunately, inappropriate behavior on the part of the BOCs is checked by the second criterion for permitting deviations from technical equality. Based on where they spend their money, end users will alert nonaffiliated ESPs to any anticompetitive differences in transmission quality and network capabilities. However, the end-user-perceptions test is not without problems: it allows different network configurations for the affiliated and nonaffiliated ESPs. Different configurations may supply the affiliated ESPs with more power and flexibility than what is made available to competitors of the affiliated ESPs. Consequently, the ESPs will have to ensure that an end-user test is not being abused. The FCC, in working to prevent discrimination, will have to develop monitoring procedures that flag anticompetitive behavior when the end-user test is cited as the cause for technical inequality.

The third criterion is unavoidably subjective and is, therefore, a candidate for misrepresentation and abuse. From the perspective of the ESPs, overengineering cannot be an issue when they need an ONA service with specific technical characteristics. Yet neither the ESPs nor the FCC can easily investigate a claim that providing a technically equal BSA or BSE requires such modification of the network. Essentially, the only alternative for the FCC and the ESPs is to accept the RBHCs' analyses. But this accommodation, out of necessity, can be harmful to the competitive process maturing in the enhanced services industry. Technical equality is part of the ONA and CEI requirements because the RBHCs have enhanced services aspirations. It is questionable, therefore, whether it is proper for the gross overengineering criterion to carry any weight as a justification for technical inequality.

The fourth criterion is the most easily manipulated because it is the most wide-ranging. Unfortunately, such abuse also will result in significant competitive damages. Variations in the methods for delivering similar services create an access market structure analogous to the "pre-equal access" environment. The line-side connections available to the other common carriers (OCCs) did not provide them with a "1+ dialing" or automatic number identification. These network capabilities were available to AT&T. The OCCs compensated for these and other shortcomings by offering lower

prices and by requiring subscribers to dial an access code.[118] Consequently, by permitting these differences to exist before equal access, regulators affected the type and quality of interexchange services offered by OCCs. An identical result will affect the operations of the nonaffiliated ESPs, if variations in the delivery methods for similar ONA services become commonplace.

These concerns about the implications of the FCC's four criteria for allowing technical inequality indicate that further research and analysis are required before they can be adopted as part of the ONA rules and regulations. Although the FCC has not sought absolute technical equality, it asserts that it is pursuing a course of fairness and efficiency. The FCC, therefore, has obligated itself to look into matters of systematic differences between basic services' access, and the utility of basic services' access to ESPs.[119] These are the issues raised by the preceding analysis.

The Process of Establishing Technical Uniformity

Discussions relating to uniformity surfaced early in the ONA consensus-building process. A call for technical uniformity was issued at the first national ONA forum (ONAF I).[120] A request for uniformity was a natural

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[118] Technical differences between line-side and trunk-side access established that Feature Group A access is inferior to Feature Group B, C and D interstate access. In particular, billing, network supervision, and fraud are more difficult to control when Feature Group A is purchased.

[119] Federal Communications Commission, Phase I ONA Order, 52, para. 92. However, the FCC has indicated, somewhat contrarily, that it will not evaluate the functionality of the interfaces that are part of the basic services' access. Federal Communications Commission, Phase I ONA Plan Order, 74, para. 143.

[120] Technical uniformity continues to be an important agenda item for those ESPs that provide nationwide enhanced services. Compuserve has asserted that the absence of technical uniformity creates difficult business, marketing and service availability problems. See: Compuserve Incorporated, ONA Comments (Washington D.C.: Compuserve Incorporated, 1988) 24-26. The International Communications Association (ICA), taking a broader perspective, focuses on the increased ease of planning, engineering,

(Footnote continues on next page)

extension of the forum topics because the RBHCs' spokespersons had presented ONA as a technological challenge.[121] However, the suggestion of technical uniformity was immediately rebuffed by the RBHCs.

Each RBHC asserted that its network was different because its business plan was not identical to those of the other RBHCs. They also noted that another consequence of different business plans was that the RBHCs could not be expected to evolve their networks in the same direction and at the same speed. Consequently, the RBHCs concluded that attaining technical uniformity would be difficult, if not impossible, even for BSEs in use across the nation.[122]

As the debate progressed, it became apparent that the RBHCs had always viewed ONA as more than a technological issue. Yet the RBHCs held fast to the network differences justification until the second national ONA forum (ONAF II) the following year. Acceding to the growing sense among the majority of ESPs that ONA is a new way of doing business, of increasing revenues, and of improving the RBHC profit statements, the RBHCs substituted strategic marketing and strategic planning personnel as their ONA

(Footnote continued from previous page)
installing, and managing a national network when there is uniformity in the areas of technical, price, tariff, ordering, installation, and availability information. See: International Communications Association, ONA Comments (Washington D.C.: International Communications Association 1988) 10.

[121] The departmental affiliations of the RBHCs' ONA panelists were consistent with the technological perspective. Each panelist had an engineering background, and each individual worked in, or was closely associated with, the network planning department.

[122] AT&T has provided information that suggests alternatively that national technical uniformity would not be difficult to attain. It has indicated that twenty-nine network capabilities have been offered as BSEs by all of the RBHCs. Of these current network capabilities, AT&T believes that it can transport twenty-three of them without any changes to its network. Of the remaining six network capabilities, five require administrative changes while one requires a technical change. American Telephone and Telegraph, Ex Parte Letter: AT&T to H. Walter Feaster III (Washington D.C.: American Telephone and Telegraph, September 19, 1988).

champions.[123] The significance of this leadership change is that the RBHCs had revealed their business strategy: ONA is a fundamental change in market structure and business practices.

Along with the change in leadership, the RBHCs modified the reasoning they used to oppose technical uniformity. Building upon the unique nature of each network, they suggested it would be too expensive and too risky to redesign each network so that absolute technical uniformity could be achieved.[124] Most RBHCs changed their tactics again in their ONA reply comments, asserting that absolute technical uniformity would stifle choice, deter innovation, and reduce flexibility.[125]

These new positions were consistent with New York Public Service Commissioner Eli Noam's analysis of ONA. He indicated that a tradeoff existed between the achievement of absolute technical uniformity and the flexibility that each BOC would have in designing its network.[126] However, mitigating this trend toward nonuniformity was a second analytical conclusion that implied a tendency in the ONA evolution process toward the

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[123] The RBHCs' external affairs personnel were never far from the action. Every RBHC realized that ONA, if successfully implemented, represented a regulatory framework that is consistent with the gradual, if not flash-cut, deregulation of the BOCs marketing activities. Moreover, regulatory affairs personnel are now the RBHCs' ONA champions because many important ONA issues will be resolved in that arena.

[124] These suggestions were made at the regional ONA forums and in face-to-face meetings with interested parties. It may be that these suggestions were an extension of the FCC's decision that it would not require the BOCs to grossly redesign and reengineer their networks to provide absolute technical equality between the affiliated and nonaffiliated ESPs.

[125] Ameritech Operating Companies, ONA Reply Comments (Chicago: Ameritech Information Services Corporation 1988) 27.; Bell Atlantic Telephone Companies, ONA Reply Comments (Washington D.C.: Bell Atlantic Telephone Companies, 1988) 14-15.; BellSouth Corporation, South Central Bell Telephone Company and Southern Bell Telephone and Telegraph Company, ONA Reply Comments (Atlanta: BellSouth Corporation, 1988) 10.; Southwestern Bell Telephone Company, ONA Reply Comments (St. Louis: Southwestern Bell Telephone Company, 1988) 48.; US West, Inc., ONA Reply Comments (Washington D.C.: US West, Inc. 1988) 81-83.

[126] The Honorable Eli Noam, ONA Comments of Commissioner Eli Noam (New York: Commissioner Eli Noam, 1988) 14.

natural convergence and coordination in the future development and deployment of BSAs and BSEs.[127]

Illinois and New Jersey regulatory authorities supported the RBHCs during this phase of the ONA comment cycle. Besides noting that differences in technological capabilities existed among the BOCs' network, they argued that absolute technical uniformity in the national context may not be achievable because of state and regional variations in the demand for BSAs and BSEs.[128] They do not, however, dispute that a degree of technical uniformity can be attained at the regional level. As BellSouth, US West, and Shoosan and Jackson have espoused, BSEs have an underlying technical uniformity that will enable ESPs to use them regionally without reconfiguring their enhanced services.[129]

Because of these factors, the FCC has decided not to encourage national and multiple-region uniformity, but to rely on moral suasion and cross-referencing efforts. While declining to mandate absolute technical uniformity because of technological and market-condition differences across BOCs, the FCC suggests that market forces and RBHC initiatives will increase

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[127] Any natural tendencies toward BSA and BSE convergence and coordination among the RBHCs have been reenforced by the FCC. In its Phase I ONA Plan Order the FCC ordered the RBHCs to develop mechanisms and procedures that would ensure the participation of ESPs in data gathering efforts that would support decisions that impacted the evolution of the BOCs' networks. In response to this directive, the IILC's Technical Working Committee (TWC), on January 25, 1989, began work on ESP Involvement in Future Technology Development. An accompanying statement indicates that the TWC hopes to reach consensus on an effective means for receiving input from ESPs regarding their future network needs and their use of advanced network technologies. But as clearly indicated in this issue statement, the TWC is not addressing mechanisms and procedures that will monitor how this information is used by the RBHCs and their affiliated BOCs. See also: Ameritech Operating Companies, ONA Reply Comments (Chicago: American Information Technologies Corp. 1988) 24, and Shoosan and Jackson, Inc., ONA Reply Comments (Washington D.C.: Shoosan and Jackson, Inc. 1988) 38.

[128] Illinois Commerce Commission, ONA Reply Comments (Springfield: Illinois Commerce Commission, 1988) 2. New Jersey Board of Public Utilities, ONA Reply Comments (Trenton: New Jersey Board of Public Utilities, 1988) 2.

[129] BellSouth Corporation, South Central Bell Telephone Company and Southern Bell Telephone and Telegraph Company, ONA Reply Comments, 8.; Shoosan and Jackson, Inc., ONA Reply Comments, 27-29.; US West, Inc., ONA Reply Comments, 55-56.

technical uniformity.[130] This approach assumes that decentralization may have little likelihood of of success.

Although Bell Atlantic voluntarily reviewed the ONA plans of the other RBHCs--and expanded its list of initial BSAs and BSEs as a result--the FCC had to order the other RBHCs to do the same thing.[131] The FCC suggests that this practice will achieve a balance between uniformity, choice, flexibility, and innovation without requiring it to mandate a specific set of BSAs and BSEs that must be offered at a certain time in specific places.[132] It also has concluded that even the ESPs cannot agree on BSAs and BSEs that should be offered nationally or multiregionally.[133] If the ESPs cannot agree on a set of national and multiregional ONA services, little incentive exists for a RBHC to expand its initial list of BSAs and BSEs.

Furthermore, the FCC has conceded that uniformity will impose costs on the BOCs.[134] As financially responsible parents, the RBHCs can be expected to weigh the choice between uniformity and flexibility together as opposed to uniformity alone. Their probable justification will be that pursuing technical uniformity is fiscally irresponsible because the costs of correcting technological incompatibilities cannot be reconciled with the ambiguities in the market demands for BSAs and BSEs. That is, the RBHCs' cost-benefit analyses may be that the best approach for implementing ONA is to let each RBHC follow its own network-evolution plan and business strategy for providing basic and enhanced services. It would then be argued that this cost-minimization approach is in the best interests of all ratepayers and all ESPs.

The FCC's demand for a further showing that the RBHCs are working together will not affect the results of the cost-benefit analyses of technical uniformity.[135] Coherent process or no, the BOCs have no other choice but to conclude that the needs of the nationwide or multiregional

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[130] Federal Communications Commission, Phase I ONA Plan Order, 104, para. 203.
[131] Ibid., 104, para. 205.
[132] Ibid., 106, paras, 208- 09.
[133] Ibid., n. 415.
[134] Ibid., 97, para. 190.
[135] Ibid., 104, para. 204.

ESPs are subservient to the needs of the local and regional ESPs. Unless nationwide and multiregional market demands for technically uniform BSAs and BSEs can be established, it is by definition true that any "opening" of a regional network architecture will not be cost-beneficial.

It follows, therefore, that the issue of technical uniformity is closely related to the issue of the robustness of the market-demand forecasts that will be used to determine whether or not BSAs and BSEs should be offered to the ESPs. Currently, the resolution of the second issue is in disarray. Each ESP and RBHC has deemed that its market demand information is proprietary, making it impossible to obtain the nationwide and multiregional demands for BSAs and BSEs.

Three FCC initiatives may help to resolve the issues associated with obtaining robust estimates of national and multiregional market demands.[136] First, the RBHCs have been ordered to develop a cross-reference that will help ESPs identify similar network capabilities across BOCs.[137] Besides improving an ESP's ability to provide a nationwide enhanced service, this effort will begin to identify those network capabilities requiring estimates of national and multiregional market demand.

Second, the FCC has asked that the enhanced services industry agree on a system of mechanisms and procedures that will enable the RBHCs to instruct ESPs on how to provide enhanced services across BOC boundaries without requiring a change in the BOCs' underlying technical capabilities.[138] While clearly a status quo approach for obtaining technical uniformity, a successful effort here will result in a list of existing network facilities that can be used as factors of production in the providing of national or multiregional enhanced service. Additionally, it may be found that the existing methods for estimating the local and regional demands for these

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[136] A robust estimate is defined as an accurate and reliable market forecast. A robust model is defined as a statistical specification that remains stable across a wide range of input values.

[137] Federal Communications Commission, Phase I ONA Plan Order, 100, para. 197, n. 391. The cross-reference document should be easy to use. Ibid., para. 195.

[138] Ibid., 104, para. 206. For the most part, the IILC has been given the responsibility for accomplishing this task. Ibid., 100, para. 196.

facilities are suitable for providing robust national and multiregional demand estimates for the same network facilities.

Third, the FCC is making an attempt to separate legitimate trade name concerns from a simple lack of effort on the part of the RBHCs to coordinate and agree on the nomenclature used to describe BSEs and BSAs.[139] This effort will increase the ESPs' level of understanding concerning the capabilities and limitations of the BSEs and BSAs offered to them. An improved capability to estimate national and multiregional market demands should accompany an improved ability to fit together the various pieces of different networks.

The Efficiency of Distinguishing Between BSEs and CNSs

The RBHCs' distinctions between BSEs and CNSs rest on business decisions concerning what basic services are appropriate for use by ESPs. Ameritech argues that the availability of ONA services should not disturb the pricing of existing basic services that it offers its subscribers. The CNS classification is required to maintain this balance.[140] Pactel describes CNSs as basic services that provide end users with access to the public switched network. Consequently, they are vehicles that further the efficient furnishing of basis and enhanced services.[141] Moreover, Pactel suggests that it is appropriate to segregate CNSs from BSEs because the former were not designed to meet the needs of ESPs.[142]

Conversely, the National Telecommunications Information Administration (NTIA) holds the position that the CNS classification amounts to a use restriction whenever these services are available only to end users.[143] Such a restriction is on the agenda of at least one RBHC. Southwestern Bell

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[139] Ibid., 99-100, para. 196.
[140] Ameritech Operating Companies, ONA Reply Comments, 19.
[141] Pacific Bell and Nevada Bell, ONA Reply Comments (San Francisco: Pacific Bell and Nevada Bell, 1988) 13.
[142] Ibid.
[143] National Telecommunications Information Administration, ONA Reply Comments (Washington D.C.: National Telecommunications Information Administration, 1988) 10-11.

has asserted that technical problems could arise if ESPs were permitted to order CNSs without the approval of end users.[144]

Ignoring for the moment any possibility of use and user restrictions on CNSs, Ameritech's desire to protect its revenue stream is justifiable on public interest grounds. The introduction of ONA would be unduly complicated and delayed if the pricing of the initial set of BSAs and BSEs disturbed the structure and relationships of the prices of existing basic services marketed directly to end users. Many of these Ameritech subscribers do not need enhanced services. Others will choose not to take advantage of the benefits that these services could provide. In either event, it seems inappropriate to let the introduction of ONA services immediately effect the prices that these subscribers are currently paying.

The FCC has recognized the implications of the CNS classification, and has taken actions to institutionalize these services within the Common ONA Model. First, it has accepted the Pactel position that existing CNSs provide end users with access to the public switched network.[145] As a result, CNSs must be supplied independently of the services of ESPs.[146]

Second, the FCC has concluded that the existence of CNSs will impart a higher level of flexibility to end users with respect to the choice of their service providers.[147] This conclusion is difficult to dispute. As noted previously, functionally equivalent BSEs will be available to nonaffiliated ESPs. Consequently, end users will, by definition, have more options to meet their needs.

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[144] Southwestern Bell Telephone Company, Southwestern Bell Telephone Company's Open Network Architecture Plan, 25.

[145] If asked to defend this conclusion, it would appear that the FCC would be forced to argue that the network facilities that provide the end users with dial tone comprise the CNS that provides these end users with access to other basic and enhanced services. Since many of the custom calling features will shortly be available from ESPs, it would appear that the access justification would apply to them only if they are used to access other basic services that also are carried over the dial tone facilities.

[146] Federal Communications Commission, Phase I ONA Plan Order, 46, para. 83.

[147] Ibid., 46, para. 84, n. 155. However, the FCC has noted that it will be necessary to ensure that adequate safeguards are in place to protect the subscribers of nonaffiliated ESPs from potential discrimination in the delivery of CNSs.

Third, the FCC has begun to hammer out the regulatory definition of a CNS and an identical BSE. A CNS is provided to an end user over an ordinary subscriber line, while an identical BSE is supplied to an enhanced service provider over a BSA.[148] This definitional approach suggests an implicit use restriction. Although a BSE can be purchased by an end user, ESP, or interexchange carrier and employed for any telecommunications purpose--two characteristics which establish the absence of an explicit use or user restriction--tying BSEs to the purchase of a BSA causes a limitation on its use. The regulatory question, therefore, is whether the implicit limitation on the use of a BSE represents a use or user restriction.

It can be argued that the purchase of features and functions used to provide interstate switched access to interexchange carriers is not the appropriate analogy to describe the linking BSEs and BSAs. Although these access tariffs bundle features and functions with a transport arrangement, they do not contain the additional requirement that interexchange carriers are the only users that can obtain this service and thereby access to end users. ESPs could also purchase such access, if they desired to do so. Consequently, tying BSEs and BSAs does not have a regulatory precedent that may be viewed as a use or user restriction. [149]

The Costs and Benefits of Unbundling ONA Services

Several important business issues are related to unbundling ONA services. The protection of the BOCs' revenue stream has been discussed within the context of unbundling CNSs from BSEs. In the preceding section, the appearance of a possible use restriction was discussed in the context of bundled BSAs and BSEs. This section contains discussions of the costs and benefits of untying BSEs from BSAs, and unbundling the BSA. The former will be called Type I unbundling. The latter will be labeled Type II unbundling.

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[148] Ibid., 47, para. 26, n. 157.

[149] See the FCC's discussion of its rejection of BellSouth's ONA tariffing approach, which required that ESPs be restricted to an ESP-only tariff that would contain prices, terms, and conditions that would be associated with the furnishing of BSAs and BSEs within the state jurisdiction. Ibid., p. 146, para. 284; pp. 167-68, paras. 321-22.

Type I Unbundling: BSEs Purchased Separately from BSAs

On the surface, unbundling the purchase of BSEs from BSAs seems to be a trivial issue. After all, BSEs are optional services designed to be added easily onto compatible transportation arrangements. Therefore, it is logically correct to conclude that a BSE could be made operational on any transmission facility with which it is technically compatible. Consequently, a BSE could be combined with a technically compatible transport arrangement that the RBHCs have not deemed to be a BSA.

Type I unbundling is an issue because it is associated with the same revenue protection problems that characterize the unbundling of BSEs and CNSs. This time, however, some RBHCs argue that revenue protection requires the bundling of BSEs and BSAs, whereas previously they asserted that protecting their revenues required the unbundling of BSEs and CNSs.

A highly stylized ONA-provisioning environment will be used to frame the RBHCs' analyses of the revenue protection issues entwined with the Type I unbundling of BSAs and BSEs.[150] Assume that the prices of functionally equivalent BSEs are below the prices of comparable CNSs. Also assume that the prices of functionally equivalent BSAs are above the prices of comparable existing basic services such as single-line and multiple-line business service. Further assume that each BSE and CNS is technically compatible with each BSA and existing basic service. Last, assume that the tariffs for each network capability do not contain any use or user restrictions.

Under these assumptions, the self-interested behavior of end users and ESPs would have the following characteristics: End users would tend to substitute the lower-priced BSEs for the higher-priced CNSs, while retaining their existing residential or business service. ESPs would have the same pattern of behavior because of their current exemption from access charges. As a result, the demand for BSAs would be negligible. Moreover, the

[150] Because the assumptions embedded in this environment act as strong constraints on the behavior of the BOCs and the ESPs, it would seem prudent to note that protection of the RBHC revenue stream may be possible even when Type I unbundling is permitted. This possibility will be discussed extensively in Chapter 6.

quantity demanded of CNSs would fall toward zero. Consequently, BSA research and development expenditures would tend to increase the BOCs' costs without any offsetting revenues. Conversely, CNS revenues would be depleted without assurances of their complete recapture through the quantity demanded of BSEs.

Although additional demand and elasticity assumptions could be made that would assure the recapture of CNS revenues and net additions to cost, their relationship is counterintuitive. It could be assumed, for example, that the demands for BSEs are elastic in the relevant price range.[151] Furthermore, it could be assumed that these demands are equal to or greater than the demands for CNSs. These conditions ensure that lower BSE prices would generate increased revenues. One aspect of their interrelationship, however, appears to be contradictory.

While ESPs may be more responsive to price than end users, it is questionable whether EPSs would be willing to pay more for a given level of BSEs when lower-priced CNSs are available. Although CNSs have been viewed for public policy purposes as end user services, they could become factors of production whenever they are technically compatible with underlying transport arrangements available to ESPs. In these instances, a lower-cost enhanced service can be constructed by combining a BSA or existing basic service with the CNSs. Consequently, from a cost-effectiveness perspective, it would be irrational behavior if an ESP were willing to pay more for equal quantities of BSEs or CNSs. Therefore, it is unreasonable to assume that the demands for BSEs are greater than or equal to the demands for CNSs.

There are, of course, other business environments where a group of individuals acting as either ESPs or end users would make different choices. If, for example, the BSEs and CNSs were not substitutable, the location of the BSE-derived demand curve would depend on the consumer demand curves for the relevant enhanced services. When consumers are willing to pay sufficiently high prices for enhanced services, the derived demand curves

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[151] An elastic demand for a good or service means, for example, that a 10 percent decrease in price will generate more than a 10 percent increase in the purchases of the good or service. The observed effects of a price decrease in this instance are therefore: (1) a rise in the consumption of the good or service, and (2) an increase in the total expenditure on the good or service. Consequently, the firm experiences an increase in revenue.

for BSEs may tend to lie above the consumer demand curves for CNSs. However, this business environment does not have any analytical significance as far as revenue shifts are concerned because the cross-elastic effects between the BSEs and the CNSs have been assumed away.[152] Consequently, the most probable relationship between the consumer demands for CNSs and the derived demands for BSEs is that the demands for BSEs will everywhere lie below the demands for CNSs.

Figure 3-1 describes the most direct analysis of infinite cross-elasticity between a BSE and a CNS. It is assumed that the costs of producing the BSE are identical to the costs of producing the CNS. **OAB** represents the accounting profits derived from the introduction of a BSE. **OCD measures** the accounting profits from the sale of a CNS before the introduction of a substitutable BSE. **IBDEFG** represents the costs of producing a lower-priced BSE that has replaced a higher-priced CNS. **ODH** measures the costs avoided by not producing the CNS. And, **IBFG** represents the revenue from the sale of a BSE as a substitute for a CNS. By inspection, **IBFG** is contained within **IBDEFG** with remainder **BDEF**. Consequently, the substitution of a BSE for a CNS results in a reduction of accounting profits for the RBHC. Additionally, **OAB** is less than **BDEF**. Their difference, **BDEF - OAB**, is **KJEF**. Thus, the accounting profit from the new purchases are voided by the costs of producing additional BSEs to replace CNSs. If, however, **ODH** is larger than **KJEF**, then a portion of the accounting profit is recovered. But when **ODH - KJEF** is positive but less than **OCD**, the RBHC has experienced a reduction in accounting profits because of the introduction of a lower-priced BSE that is perfectly substitutable with a higher-priced CNS.

Figure 3-2 shows that the revenue position of the RBHC is not sustainable when a lower-priced BSEs--functionally equivalent to and infinitely cross-elastic with a higher-priced CNS--can be combined with

[152] A cross-elasticity effect captures the change in the consumption of one good or service when the price of another good or service changes. The price change may cause an increase or decrease in the quantity demanded of the other good or service. Therefore, a cross-elastic effect represents the demand relationship between two related goods or services. If the two goods under investigation were unrelated, a change in the price of one of them would not have an impact on the consumption of the other.

REVENUE EFFECTS OF COMPLETE SUBSTITUTION OF BSE FOR CNS: DIFFERENT DEMAND SCHEDULES AND SAME SUPPLY SCHEDULES

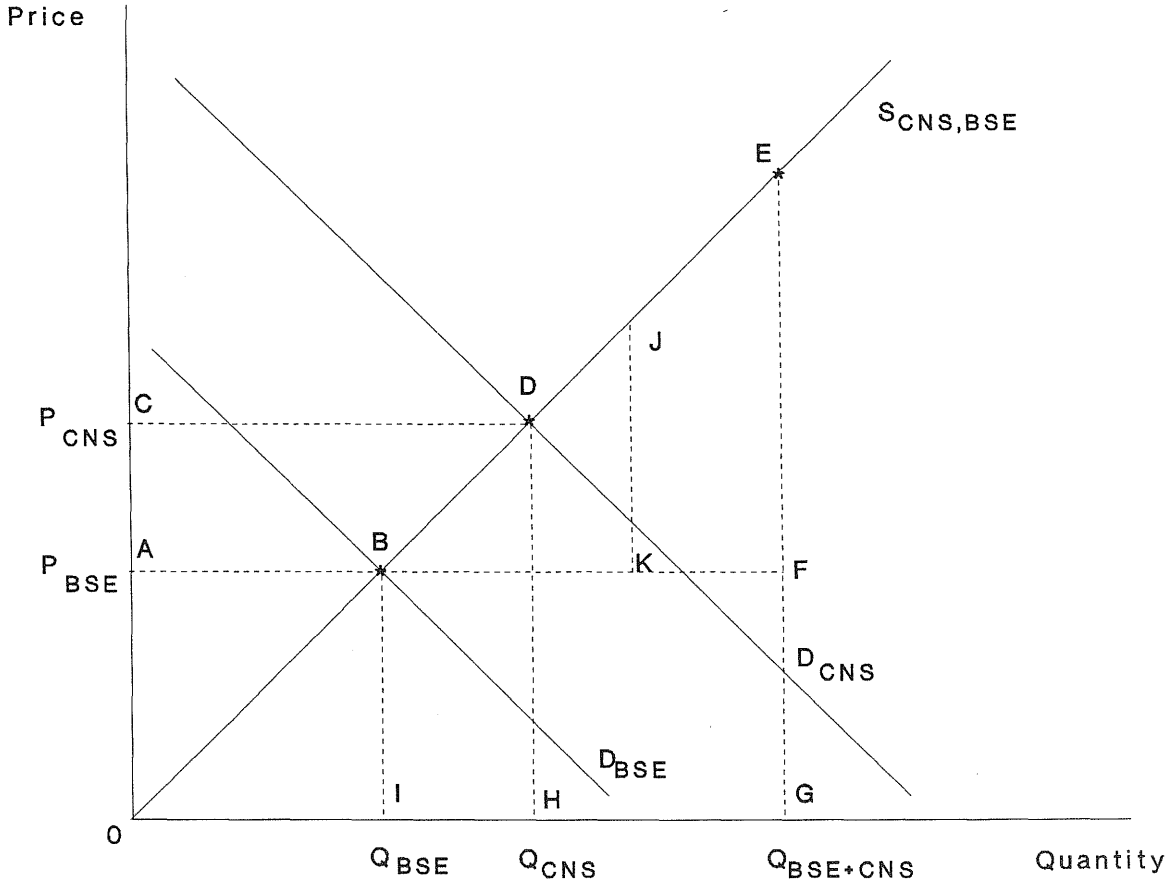

FIGURE 3-1

REVENUE EFFECTS OF COMPLETE SUBSTITUTION OF BSE FOR CNS: DIFFERENT DEMAND AND SUPPLY SCHEDULES - SUPPLY OF BSE LIES BELOW SUPPLY OF CNS

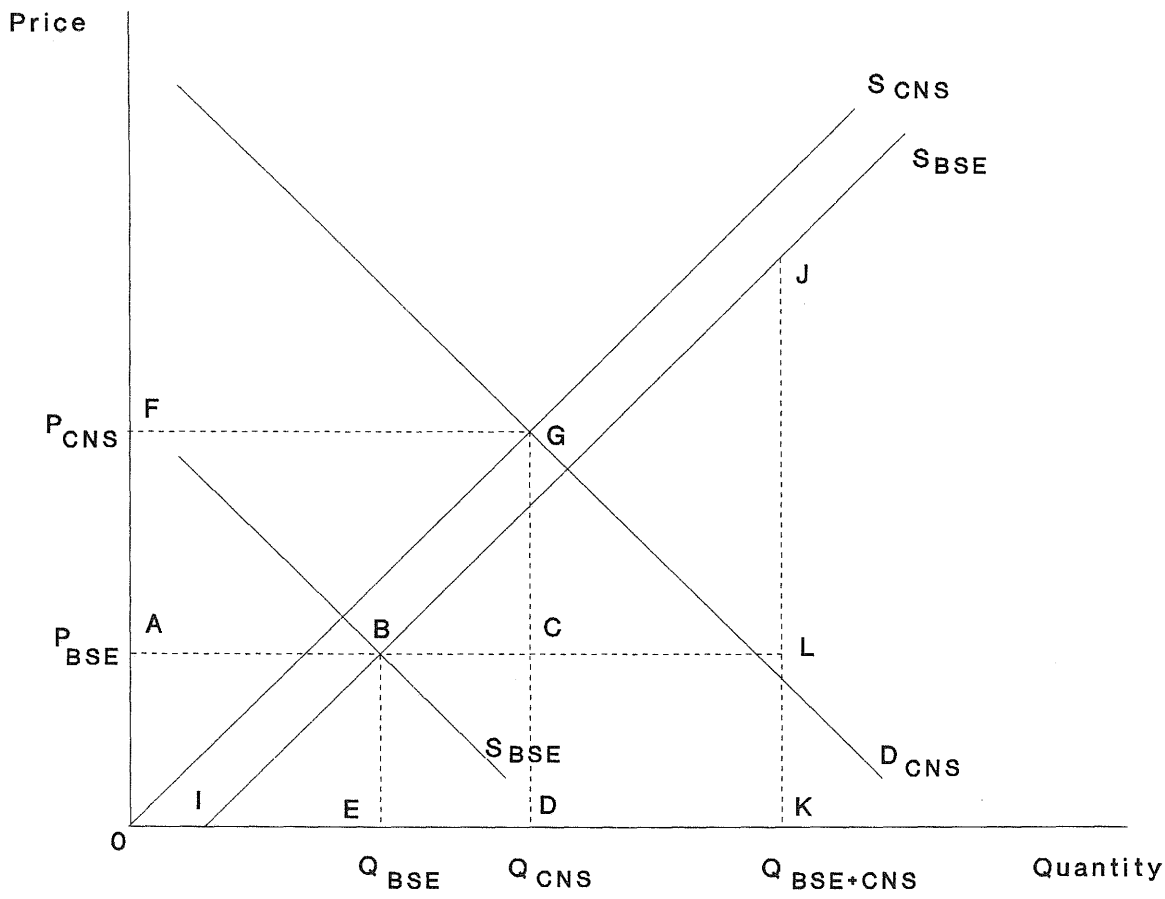

FIGURE 3-2

technically compatible a BSA or an existing basic service, even if the costs of producing the BSE are less than the costs of producing a CNS. In this instance, there are two components to the quantity demanded of a BSE. Q_1 represents new purchases determined by the intersection of market-demand curve and the market-supply curve for a BSE. Q_2 represents the maximum potential migration from a higher-priced CNS to a lower-priced BSE. By construction, the accounting profit from new purchases equals the area OABI which is a positive number. The accounting profit from migration is measured as EBLK - EBJLK + OGD. EBLK measures the revenue received from the migrated service. EBJLK represents the cost of providing a BSE that has been substituted for a CNS. OGD measures the reduction in costs because the CNS is no longer provided.[153] By inspection, it follows that EBLK is contained within EBJLK. Thus, the CNS migration to the substitutable BSE reduces the accounting profit derived from new purchases. Moreover, the actual accounting profits of the RBHC would decline, if holding everything else equal, BJL is greater than OABI + OGD.[154] BJL measures the reduction in accounting profits due to the migration between a BSE and a CNS. OABI + OGD measures the accounting profits from new purchases less the costs avoided by no longer producing the CNS.

Figure 3-3 completes the analysis of infinite cross-elasticity between a BSE and a CNS. It is assumed that the costs of producing a BSE are

[153] The actual cost reduction level approached OGD an the amount of fixed costs employed in the production of the CNS falls to zero. Since such a cost structure for the CNS is impractical, OGD overestimates the decline in costs caused by no longer producing the CNS.

[154] A cross-elasticity is defined as the percentage change in the quantity demand of service A that is caused by a percentage change in the price of service B. An infinite cross-elasticity means that a reduction in the price of substitute service B results in a complete migration away from the consumption of service A. Any cross-elasticity that is less than infinity requires that some consumers will continue to purchase service B even when the price of the substitute B is lowered. It seems somewhat extreme to assume an infinite cross-elasticities for BSEs and CNSs. Substitution imperfections may be caused by the end users' inertia, limited information processing ability, or limited information. Any of these factors would cause these consumers to continue to purchase a higher-priced CNS even though lower-priced BSEs are available. Therefore, a reasonable expectation is that only a fraction of the customer base will switch from higher-priced CNSs to lower-priced BSEs even when BSEs are technically compatible with existing basic local exchange services.

REVENUE EFFECTS OF COMPLETE SUBSTITUTION OF BSE FOR CNS: DIFFERENT DEMAND AND SUPPLY SCHEDULES - SUPPLY SCHEDULE FOR BSE LIES ABOVE SUPPLY SCHEDULE FOR CNS

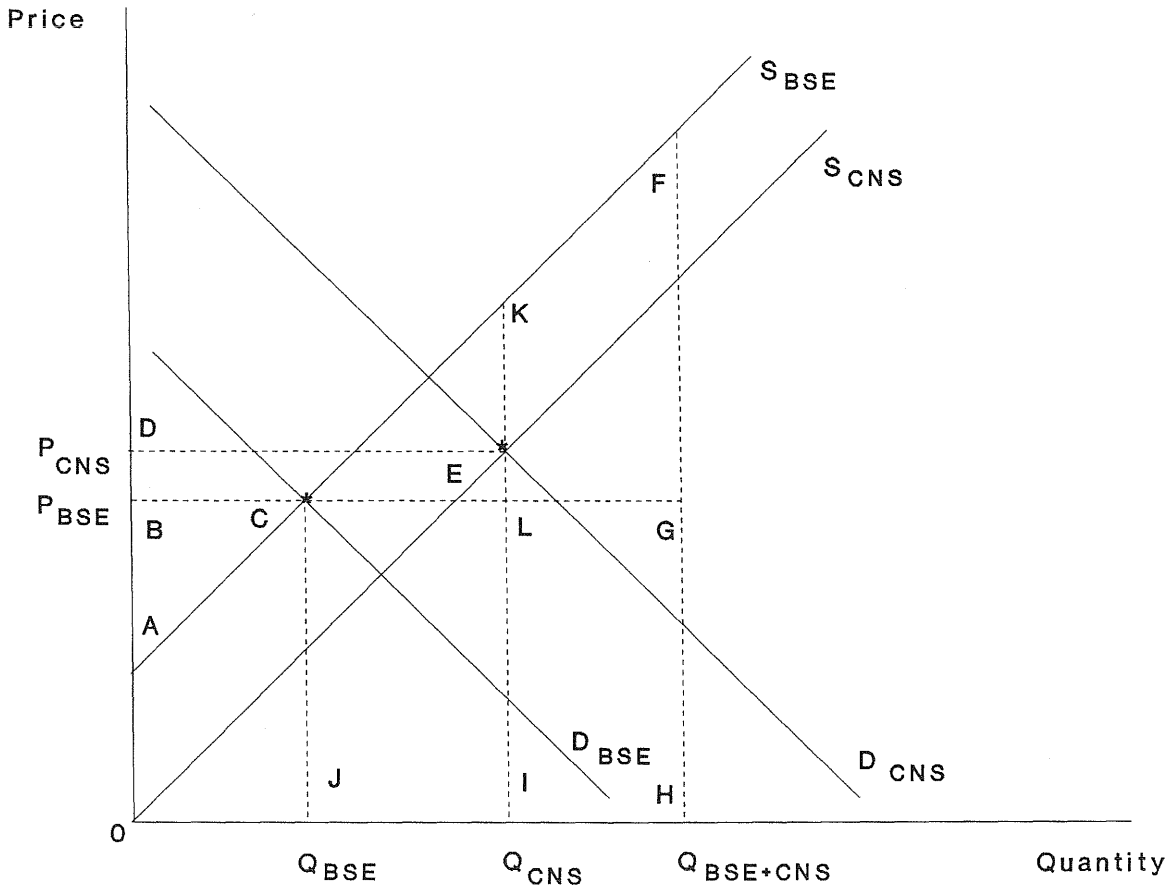

FIGURE 3-3

greater than the costs of producing a functionally equivalent CNS. ABC represents the accounting profit from new purchases of this BSE. ODE measures the accounting profits from the sale of the CNS before the introduction of a lower-priced BSE. OEI represents the costs of producing the CNS before any migration to this BSE. JCFGH measures the costs of producing those BSEs that have been substituted for a higher-priced CNS. JCGH represents the revenues from the sale of these additional BSEs. By inspection, ABC is equal to CKL. CKL and JCLGH are contained in JCKFGH with remainder LKFG. Thus before recognition of the cost avoidance from not producing the CNS, the RBHC has experienced a reduction of accounting profits equal to LKFG. If LKFG is greater than the cost avoidance OEI, then the RBHC recovers none of the accounting profits it had earned from selling CNSs, and suffers additional losses due to the introduction of a lower-priced BSE that is functionally equivalent to a higher-priced CNS. Conversely, if OEI is larger than LKFG, the RBHC recovers some of the accounting profits it had earned from the sale of CNSs.

The lesson learned is that the RBHC's probability of experiencing a reduction in accounting profits rises with increases in the costs of producing a BSE that is functionally equivalent to an existing CNS. Actually suffering a reduction in accounting profits becomes more probable when the costs of producing the BSE are everywhere larger than the costs of producing the substitutable CNS.

Figure 3-4 describes the equal costs of production case assuming a low cross-elasticity between a BSE and CNS. It is hypothesized, therefore, that a small fraction of the current consumers of CNSs will migrate to the consumption of a lower-priced BSE. It is further hypothesized that except for the quantity demanded that is associated with CNS-to-BSE migrators, the quantity demanded of this BSE represents new demand; that is, demand which did not exist before the introduction of ONA.[155]

In this case, the introduction of a BSE generates new accounting profits for the RBHC. They are equal to OFE. Since changes in the costs of production for the BSEs and CNSs cancel each other, the accounting profit

[155] This assumption is reasonable since many elements of the initial set of BSEs were previously unavailable to the ESPs. A case on point is the call forwarding BSEs that RBHCs have decided to offer to nonaffiliated ESPs.

REVENUE EFFECTS OF INCOMPLETE SUBSTITUTION OF BSE FOR CNS: DIFFERENT DEMAND SCHEDULES AND SAME SUPPLY SCHEDULES

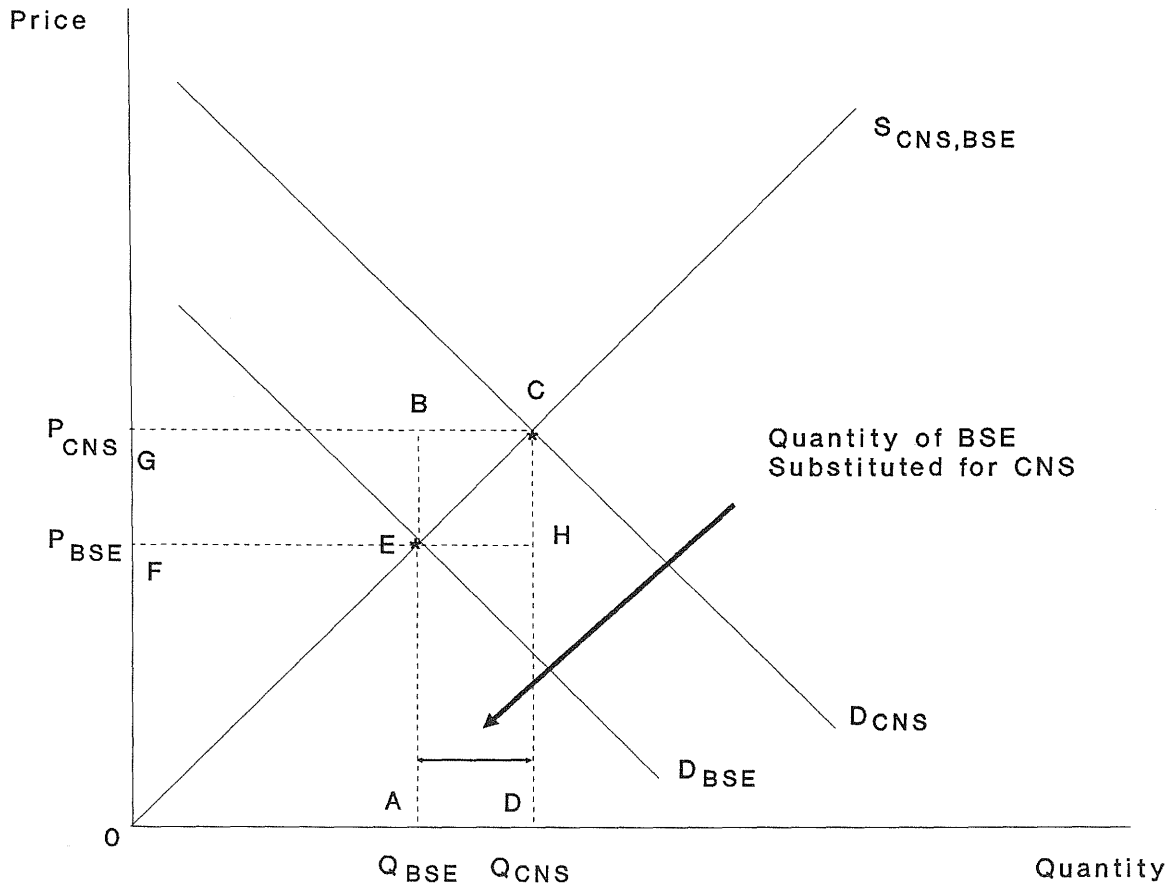

FIGURE 3-4

reduction due to the limited migration by CNS customers equals EBC. By inspection, EBC is less than OFE. Therefore, the RBHC enjoys and increase in its total accounting profits due to the introduction of this BSE.

Figure 3-5 also includes an assumption of a low BSE/CNS cross-elasticity. OJBA represents the accounting profit derived from the new demand for BSEs. Because the cross-elastic effect is small, CNS revenue loss shown in Figure 3-5 is restricted to IDEH. Conversely, BSE revenue gain from this migration equals IBGH. As a result, the RBHC experiences a reduction in revenues due to the introduction of this BSE. However, the cost avoidance associated with CNS revenue loss equals ICEH, while the cost increase caused by BSE revenue gain equals IBFH. Thus, the RBHC experiences a reduction in costs that balances its reduction in revenues. By inspection, the reduction in revenues, BDEG is larger than BCEF which is the reduction in costs. Consequently, the RBHC suffers a reduction in its CNS accounting profits equal to BDEG - BCEF. However, it gains an increment of accounting profits equal to OJBA generated by the introduction of a BSE that is not particularly substitutable against an existing CNS.

Figure 3-6 summarizes the analysis of the a low cross-elasticity BSE with high costs of production for this BSE. It is assumed further that the production costs of this BSE exceed those of the CNS for which it is an imperfect substitute. As occurred previously, new BSE demand generates profit equal to IJA. The cost avoidance associated with the migration of CNS customers to this BSE equals FGCE. Conversely, the cost increase associated with the production of additional BSEs equals FAHE. Inspection reveals that FGCE is contained within FAHE. Thus, the RBHC experiences an increase in costs as a result of introducing this BSE. The increase is equal to GAHC. Similarly, the revenue loss associated with the migration of CNS customers, FBCE, is larger than the revenue gain, FADE, associated with the increased BSE sales. Consequently, the RBHC experiences a revenue loss in addition to an increase in costs as a result of the deployment of the BSE. This relationship implies an accounting profit reduction equal to ABCD + GAHC. The issue is whether this loss is larger than the accounting profit originally earned on the sale of the CNS before the introduction of the BSE. This original level of accounting profits equals OKC. By inspection, GBC is contained in OKC. Moreover, HCM + LMC + CDN is less than OKBG. Hence, the RBHC's prior accounting profit from the sale of CNSs is

REVENUE EFFECTS OF INCOMPLETE SUBSTITUTION OF BSE AND CNS: DIFFERENT DEMAND AND SUPPLY SCHEDULES - SUPPLY OF BSE LIES BELOW SUPPLY OF CNS

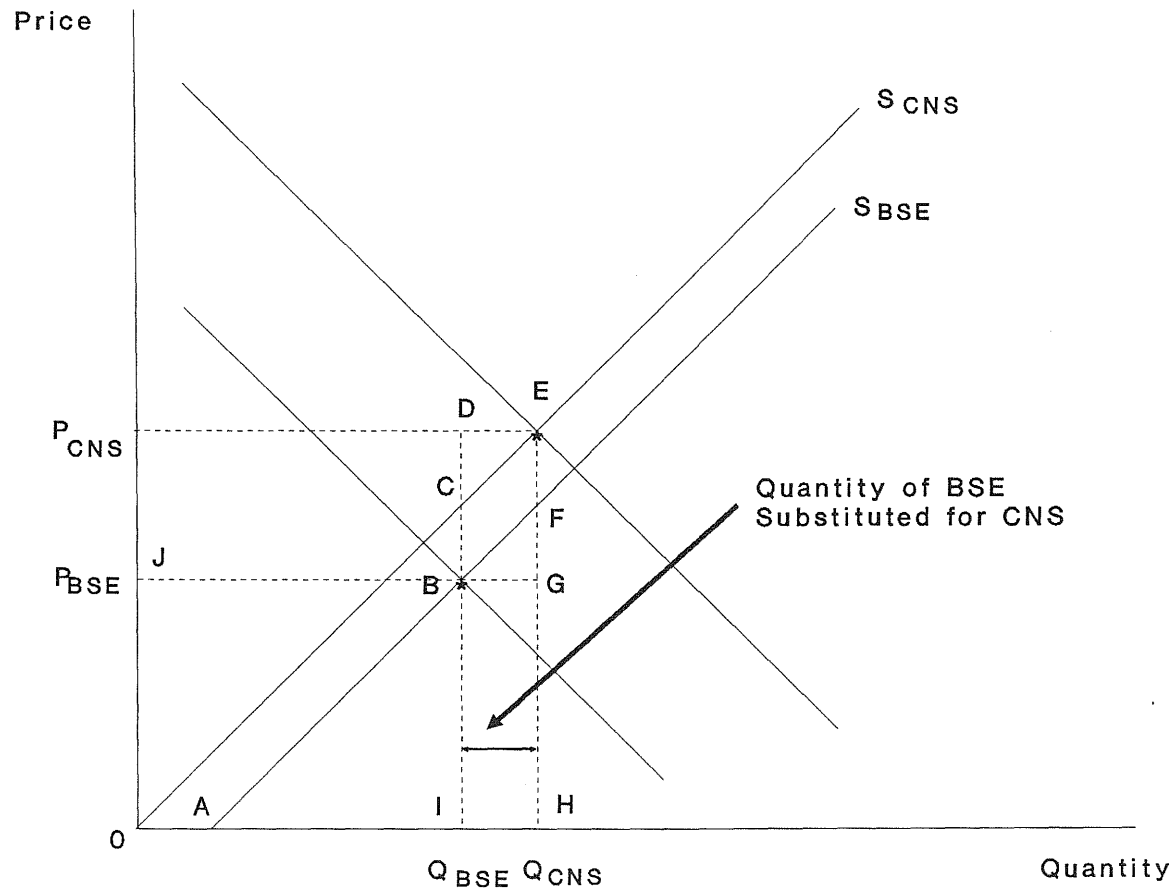

FIGURE 3-5

REVENUE EFFECTS OF INCOMPLETE SUBSTITUTION OF BSE FOR CNS: DIFFERENT DEMAND AND SUPPLY SCHEDULES - SUPPLY SCHEDULE FOR BSE LIES ABOVE SUPPLY SCHEDULES FOR CNS

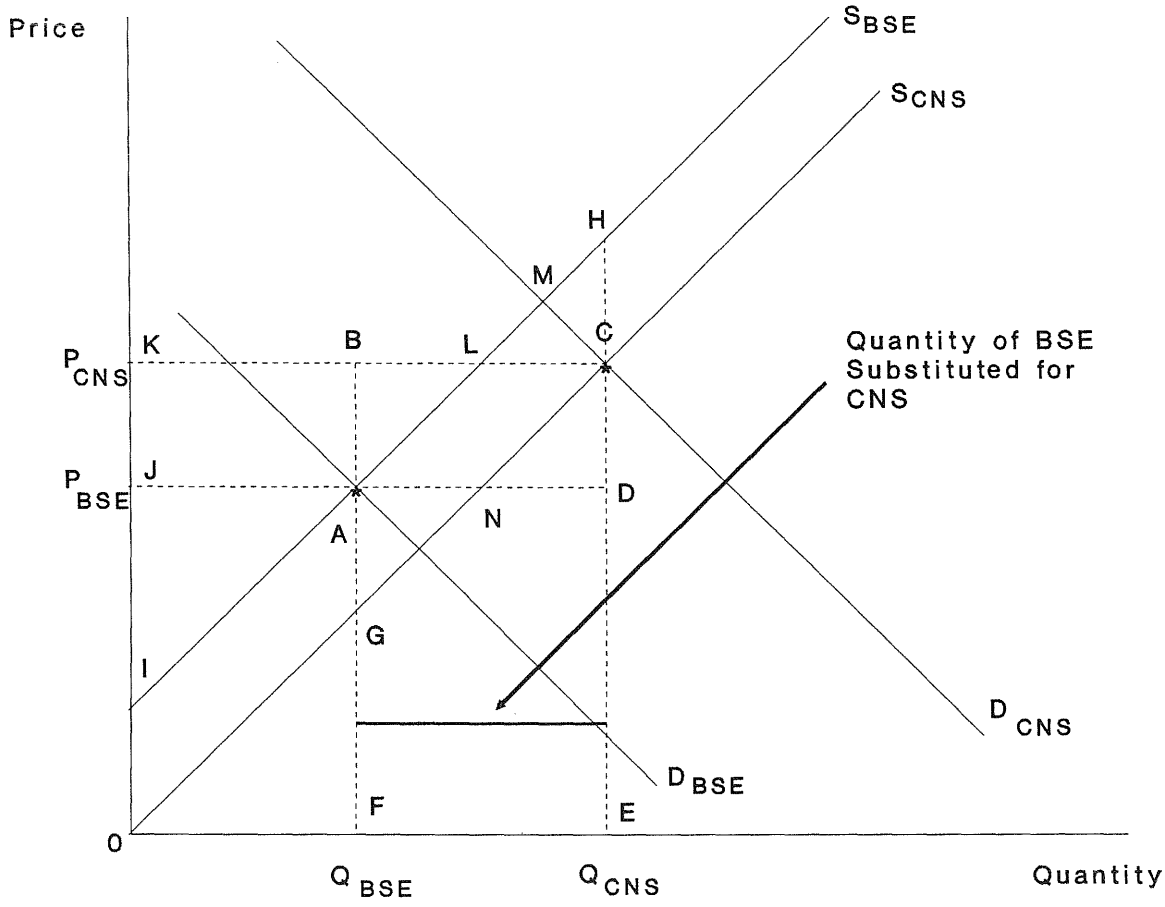

FIGURE 3-6

reduced, but not eliminated. However, it is possible that the accounting profit from new BSE sales may not be sufficient to totally replace the loss from the sale of CNSs before the introduction of this BSE. That is, IJA could be less than OKC - GAHC - CDN - ABL.

The lesson of the first analysis is reinforced by the results of this second analysis. The RBHC is exposed to a higher risk of loss when the costs of producing BSEs are greater than the costs of producing CNSs. Additionally, the second analysis teaches that risk of loss is greater for the firm that introduces a BSE that is highly substitutable with a CNS. This occurs because the risk of loss declines with decreases in the cross-elasticity between a BSE and a CNS.

The results developed in this section suggest that the revenues and accounting profits of an RBHC are affected by the cross-elasticities between BSEs and CNSs. They also imply that tariff-shopping opportunities improve with increases in the cross-elasticities between CNSs and BSEs. Moreover, these results have been obtained without assuming that the values of the cross-elasticities between CNSs and BSEs are a function of the selection of a pricing methodologies for these basic services. it follows, therefore, that some identifiable sources are the degree of substitutability between BSEs and CNSs, the technical compatibility of BSEs with existing basic services, and the price differentials between BSEs and CNSs. Cost-based or market-based prices for ONA services are, at best, secondary effects with respect to the creation of tariff-shopping opportunities.[156]

The degree of substitutability and technical compatibility are unaffected by decisions that determine the pricing methodology for BSEs. Technical compatibility is a pure engineering issue, and the degree of substitutability is a composite issue with functionality and nonprice-related tariffing dimensions. Logically, a BSE's functionality is not affected by the selection of a pricing methodology. And by definition, nonprice-related tariff terms and conditions also are unaffected.

The third source of tariff-shopping opportunities--price differentials between BSEs and CNSs--is unrelated to the selection of any particular

[156] US Sprint has argued that cost-based pricing will prevent tariff shopping. See: U S Sprint Communications Company, ONA Comments (Washington D.C.: U.S. Sprint Communications Company, 1988), 36.

pricing method. These differentials could occur, for example, when different cost-based methodologies are used to price BSEs and CNSs. Or, they could arise when CNSs are priced on a market basis and BSEs are priced on a cost basis. It follows, therefore, that price-differential-induced tariff shopping is caused by the interaction of pricing methodologies, and not by the selection of market-based over cost-based pricing.

Type II Unbundling: The Separate Purchase of BSA Elements

The business strategies associated with Type I unbundling center on the protection of RBHC revenue. The business implications of Type II unbundling expand this theme. In addition to revenue loss and the subsequent threat of an increase in the price of residential and single-line business service, Type II unbundling reaches deeply into the network and the fundamentals of network design. It requires the dismantling of a dial-tone-type service that connects the BOC and the ESP alike. Moreover, its subsequent piece-part sale could be in combinations that do not support an end-to-end transmission between the ESP and the BOC's serving-wire center. Requests for Type II unbundling, therefore, imply that an ESP has already decided to obtain its transmission-related network capabilities from a supplier other than a BOC. Consequently, the existence of Type II unbundling introduces issues of local competition and the continuation of research and development expenditures into the ONA debate.

The discussion of these issues is facilitated by Figure 3-7 which is a schematic of Bell Communications Research's Common ONA Model. As the figure shows, a BSA is comprised of three distinct components--an access link connecting the ESP to its serving wire center, features and functions that are accessed within its serving wire center, and transport facilities to the end user's serving wire center. Pursuant to the Common ONA Model, Type II unbundling reduces to a question of an alternative supplier providing an ESP access link. Although the interoffice transport facilities and the BSA features and function, in theory, could be provided by an alternative

COMMON ONA MODEL: SIMPLIFIED SCHEMATIC

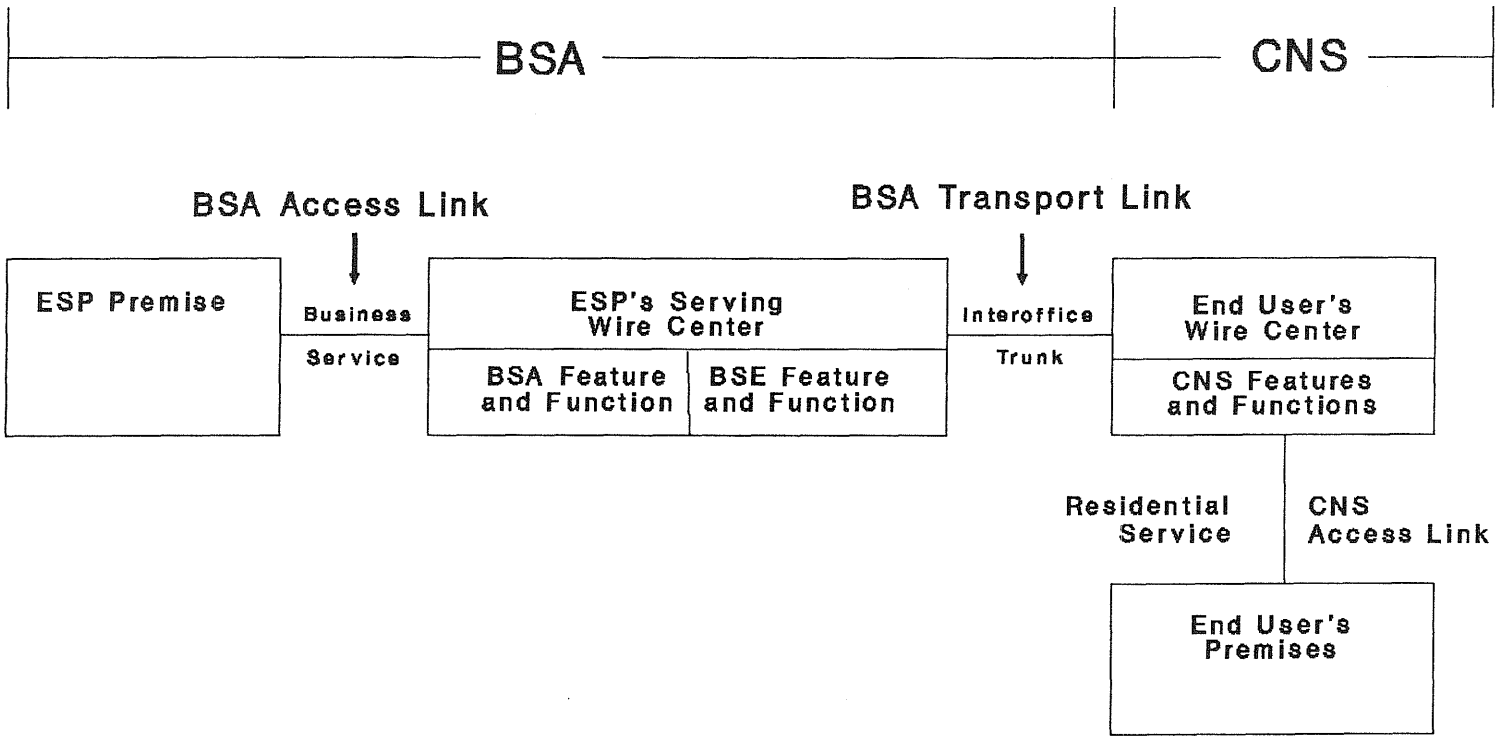

Figure 3-7

supplier, the BOCs' economies of scale and their existing networks would appear to give them a cost advantage in this area.[157]

Some consensus has emerged that Type II unbundling is technically feasible in the near future.[158] For example, MCI Telecommunications Corporation (MCI) argues that the access, switching, and transport capabilities of a BSA are physically and functionally separable.[159] Noam proposes that Type II unbundling implies important opportunities for the economically efficient unbundling of local services.[160] Hatfield Associates Inc. asserts that the outcome of ONA should be a physically interconnected network configuration that encourages the use of multiple vendors' equipment, software, devices and services.[161] Therefore, the primary issues of Type II unbundling are the business implications of direct connection to the BOCs switches.[162]

Perhaps the most publicized business implication has been the assertion that Type II unbundling requires that the BOCs offer collocation

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[157] The FCC views Type II unbundling somewhat differently. It states that "(M)any parties supporting the further unbundling of BSAs seek to interconnect their facilities directly with the end office switch and provide the transmission from the carrier to the end user rather than use a carrier-provided local loop." Federal Communications Commission, Phase I ONA Plan Order, 41, para. 71, n. 138.

[158] Southwestern Bell Telephone does not agree with the consensus that Type II unbundling is technically feasible in the near term. It asserts contrarily that it must redefine its switch generics (i.e. operating system software) to "modularize" the processing of the access, feature, and transport capabilities of a BSA. Currently, these functions are handled simultaneously as part of an end-to-end service. See, Southwestern Bell Telephone Company, ONA Reply Comments, 21. The Southwestern Bell position, however, does imply that Type II unbundling could be available some time in the future. Switch generics can be modified, and these modifications do not always involve a substantial time lag. As the initial set of BSEs demonstrates, software "fixes" have been used to extract existing switch features and functionalities. Type II unbundling could be such a software "fix".

[159] MCI Telecommunications Corporation, ONA Comments (Washington D.C.: MCI Telecommunications Corporation, 1988) 3-5.

[160] Noam, ONA Comments of Commissioner Eli Noam, 11.

[161] Hatfield Associates, Inc., ONA Comments, (Denver: Hatfield Associates, Inc, 1988) iv.

[162] Ibid., 9-59. These comments were sponsored by Telenet Communications Corporation, CompUserve Incorporated, Dun & Bradstreet, the Computer and Business Equipment Manufacturers Association, and the Independent Data Communications Manufacturers Association.

opportunities to the ESPs.[163] Hatfield emphasizes that its "natural building block" approach to ONA would be more effective if mandatory collocation provided the BOCs with the incentive to develop switch interfaces that permitted the interconnection of non-BOC access links.[164] Therefore, the function of collocation is to act as a catalyst to accelerate efficient network development.

Southwestern Bell and Shoosan and Jackson, on the other hand, argue that Type II unbundling requires actual collocation, not just collocation opportunities.[165] These ONA participants argue that the interconnection of "foreign" transmission facilities within the switch is equivalent to placing other vendors' equipment on BOC floor space. Although the "foreign transmission facilities" perspective stretches the interpretation of collocation, the FCC has accepted it as a suitable justification for not mandating Type II unbundling. It argues that its decision not to require the interconnection of others' transmission facilities on the BOCs' premises is consistent with its decision not to mandate a collocation option for ESPs.[166] As a result, it has not mandated the substitution of underlying facilities as part of the BOCs' ONA requirements.[167]

During the investigation of the interrelationship between collocation and Type II, other more relevant business issues were uncovered. It became apparent that it could take three to four years to develop and deploy new software generics for stored program switches. Consequently, the features and functions embedded in these generics involve research and development activities that are resource extensive and labor intensive. For example, thousands of hours can be consumed in the programming efforts required to bring an improved generic to market.

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[163] Collocation occurs when affiliated and/or nonaffiliated ESPs are permitted to place their equipment and facilities within the BOCs' end offices. Collocation is not used generally to describe the possibility of having ESP-owned software programs loaded onto the BOCs' telecommunications switches.

[164] Ibid., 23-26.

[165] Southwestern Bell Telephone Company, ONA Reply Comments, 18-19; Shoosan and Jackson, Inc., ONA Reply Comments, 44.

[166] Federal Communications Commission, Phase I ONA Plan Order, 41, para. 71.

[167] Ibid., 40, para. 69.

Such expenditures would not be undertaken unless the RBHCs, important financiers of this type of research and development, felt that they would be able to control the marketing and profit potentials of these efforts. Usually, control is exercised through patents and targeted license arrangements. Type II unbundling would remove this control. Therefore, it would adversely effect the ability of the RBHCs to retain the fruits of their switch-related research and development. Noncontributing alternative suppliers of network transmission facilities would be able to use intraswitch interfaces to pick off these plums. Moreover, the RBHCs would be powerless to stop this activity because the FCC's current ONA nondiscrimination rules require that interstate BSEs be made available to everyone on something that approaches technical equality.

Of course, the RBHCs would not be left totally uncompensated for their R&D efforts. They would retain the opportunity to sell BSEs on a stand-alone, piecemeal basis. But notably, their switch-related research and development then would lose much of its value-added potential. Specifically, the existence of alternative transmission service suppliers makes it more difficult to recover the costs of switch-specific research and development through the prices of new and existing transmission arrangements. Alternative suppliers of local exchange transmission capabilities tend to repress the price for these services.[168]

Another effect of intraswitch interfaces is that they establish BSEs as readily accessible basic services that are not available from alternative suppliers. Consequently, regulators would have to monitor their prices to ensure that anticompetitive actions did not occur. For example, an RBHC under price cap-type regulation could elect to earn a large contribution in support of joint and common costs from the sale of its BSEs, and accept lower rates of return on its enhanced services. Such contributions are attainable since the BOCs are permitted to charge market-based prices for BSEs. Large contributions from the sale of BSEs to affiliated and nonaffiliated ESPs protect the total revenue streams of the RBHCs, while increasing the cost of sales for the BOCs' enhanced-services competitors.

[168] The lot of the enhanced-services users would be improved because the rivalry in providing transmission services to ESPs tends to keep down the prices of enhanced services that utilize these transmission arrangements.

The lower rates of return, necessary components of this business strategy, are anticompetitive because they place the nonaffiliated ESPs in a cost-price squeeze.

Figures 3-8, 3-9, and 3-10 describe the market-equilibrium and production effects of this cost-price squeeze. The only assumption is that additional market-based contributions from the sale of BSEs are greater than the absolute value of the lost accounting profits that occur because the RBHCs have elected to earn lower rates of return on their enhanced services. This assumption is reasonable because its effect is to increase the overall accounting profitability of the RBHC.[169]

Figure 3-8 indicates that quantity of BSEs produced and consumed decreases and the price of the BSE increases as a result of the extraction of the market-based contributions necessary to begin the cost-price squeeze. The market-based contribution, BCDG, represents the ESPs' funds used to finance this RBHC business strategy.

Figure 3-9 shows a decrease in the production and consumption of enhanced services. The cause, in this instance however, is a decline in the supply of ONA services driven by an increase in its costs of production. That is, the price of a BSE sold to affiliated and nonaffiliated ESPs is P_2 instead of P_1 shown in Figure 3-8.

This figure also shows that the market-supply curve for enhanced services lies everywhere above a RBHC-supply curve that reflects the lower rate of return component of the cost-price squeeze. The interpretation of this apparent supply curve is that the RBHC is willing to supply any given level of enhanced services at a price lower than what is required by the aggregated behavior of all ESPs. As a result, the price of the enhanced service would be lower and the output higher if the RBHC was allowed to supply the level of enhanced services that equates market demand to market supply at its currently desired rates of return for enhanced services.

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[169] It would be unreasonable to make the alternative assumption that the RBHCs would follow this strategy if the additional contributions from the sale of BSEs to affiliated and nonaffiliated ESPs were less than the foregone profits from enhanced services. This strategy would lower the RBHCs' overall accounting profitabilities, while its implementation would appear to constitute clear evidence of predation.

ESP FINANCING OF THE PRICE/COST SQUEEZE

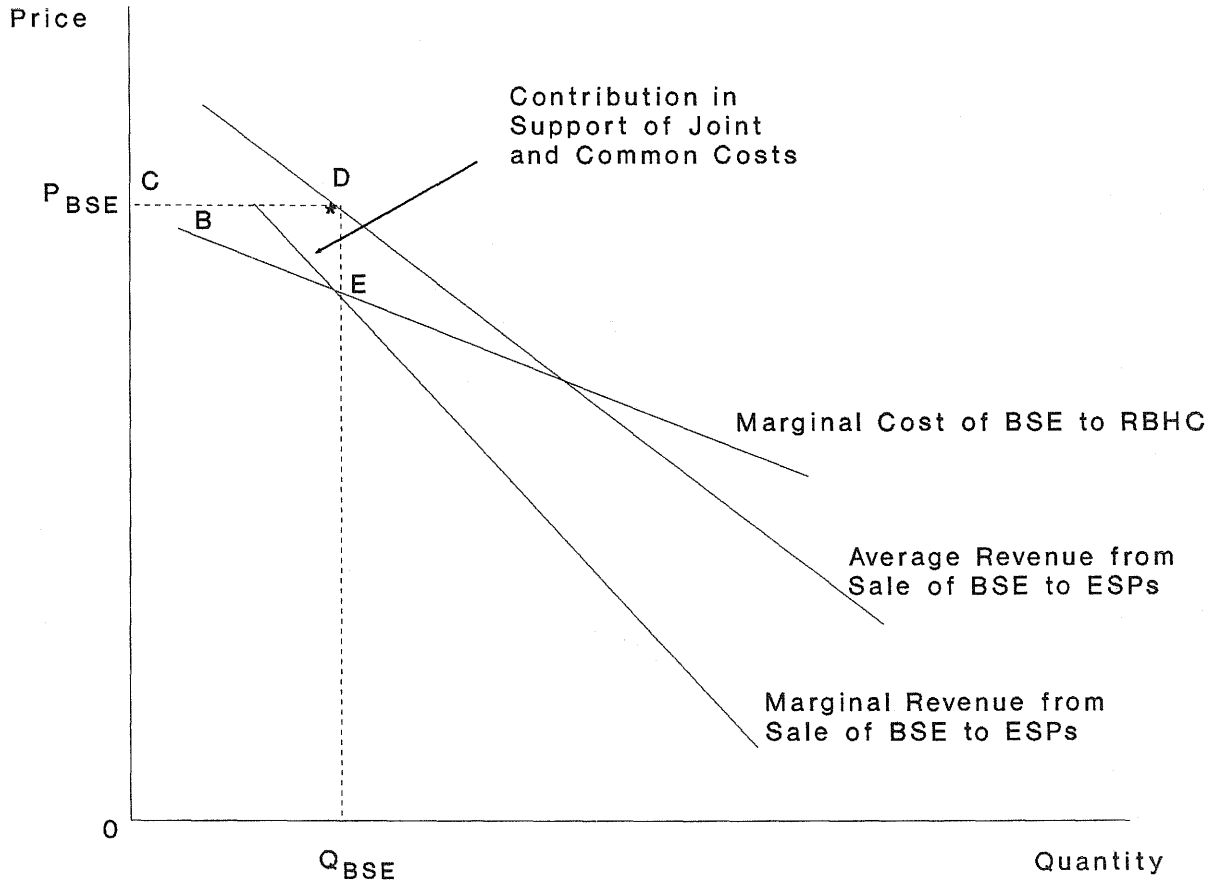

FIGURE 3-8

ENHANCED SERVICE MARKET EQUILIBRIUMS: BEFORE AND AFTER PRICE/COST SQUEEZE CAUSED BY AN INCREASE IN THE PRICE OF A BSE

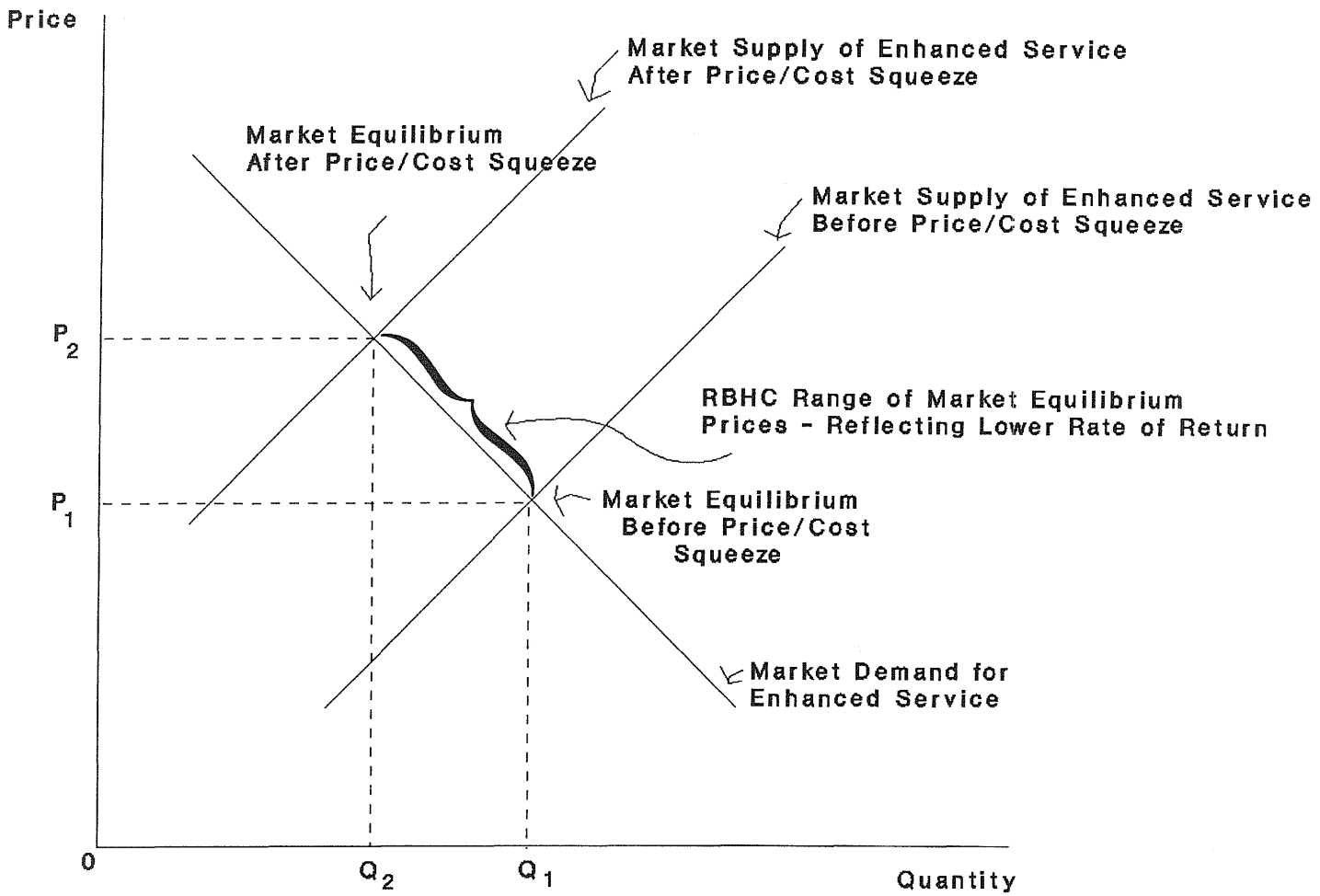

FIGURE 3-9

QUANTITY OF ENHANCED SERVICE SUPPLIED BY RBHC: AFTER PRICE/COST SQUEEZE CAUSED BY AN INCREASE IN THE PRICE OF A BSE

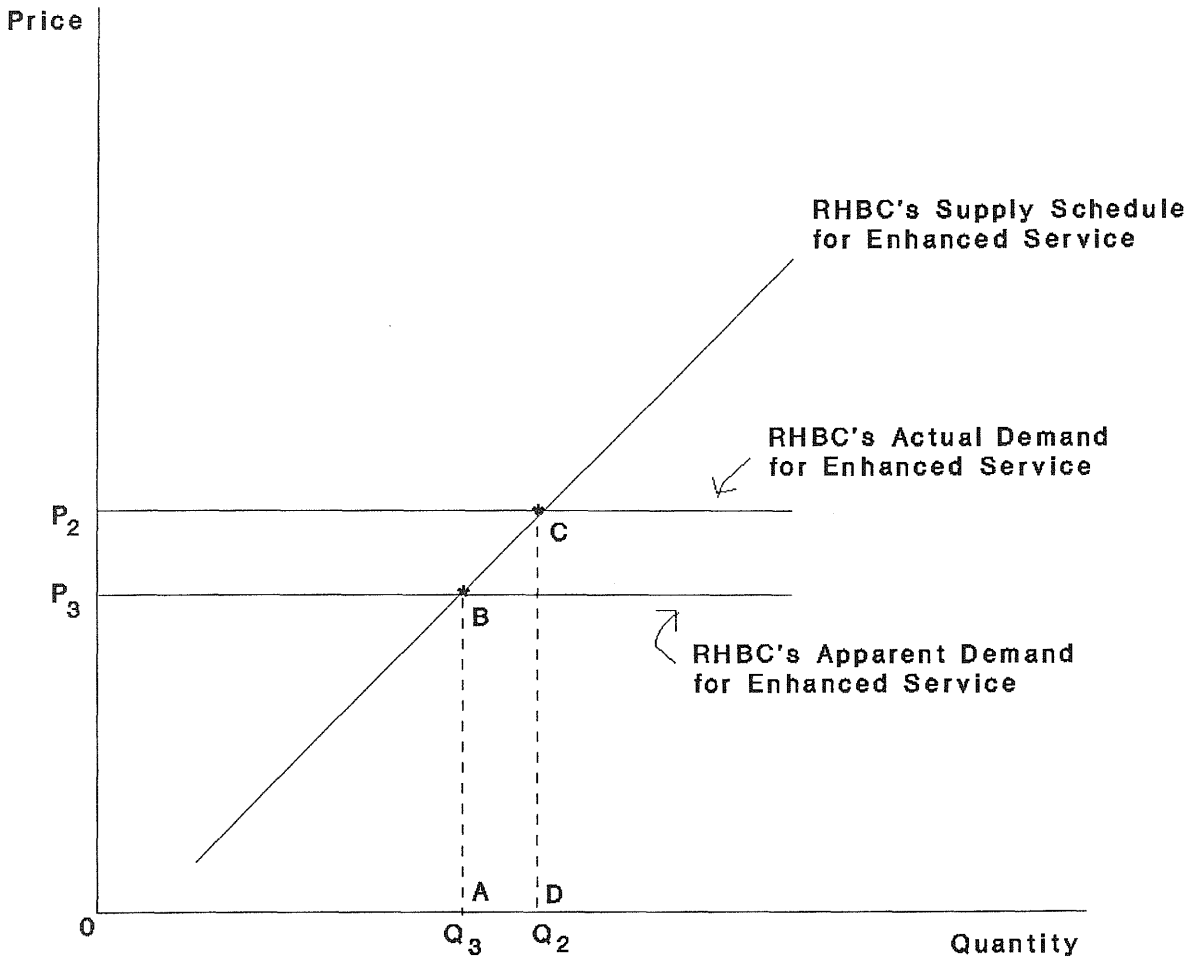

FIGURE 3-10

Recall the other element of the cost-price squeeze is voluntary reductions, by the RBHCs, of their earned rates of return for enhanced services.

Figure 3-10 suggests the direction of the change in accounting profits that the RBHCs experience when they adopt a cost-price squeeze strategy. The lower horizontal line represents the market-clearing price for enhanced services implied by the RBHC's apparent supply schedule. If the RBHC is required to produce a level of output compatible with this price, it would produce Q_3. However, this firm does not face its apparent market-clearing price. Instead, it is allowed to charge the price implied by the higher horizontal line which represents the market-clearing price after the effects of the cost-price squeeze. Consequently, the RBHC actually produces Q_4, thereby, earning additional accounting profits equal to **EBCF**.

The cost-price squeeze implies nothing but beneficial effects for the RBHC. Accounting profits from its ONA services are increased, and the reductions in the output of and accounting profits from its enhanced services are not as severe as it might otherwise have been. Recall. If the RBHC is required to act consistently with its apparent-enhanced-services market equilibrium (see Figure 3-10), it would produce fewer enhanced services and charge a lower price for them. Meanwhile, the accounting profits of its ESP rivals are placed under downward pressure. Their production costs have risen from P_1 to P_2 (see Figure 3-8), and the market-clearing output for ONA services has declined which implies a reduction in the production of enhanced services. To complete the cost-price squeeze, all the RBHC has to do is select a price P between the prices, P_3 and P_4, shown in Figure 3-9.

Type II unbundling involves behavior that goes beyond the competitive relationship between affiliated and nonaffiliated ESPs. The unbundling of the BSA also raises the issue of local competition and its impact on providing local basic services and maintaining universal service.[170] An alternative supplier of local-exchange-network transmission capabilities may find it advantageous to target the high volume, low per-unit cost routes to maximize the profitability of their limited networks. If successful, this

[170] Federal Communications Commission, Phase I ONA Plan Order, 41, para. 71.

marketing tactic would drain basic transport revenues away from the BOCs.[171] Additionally, it would serve as the predicate for concluding that the local exchange monopoly and its associated subsidy structure had become unsustainable.[172]

Yet, the local competition issue cannot be completely decided by the staying power of pricing structures. Alternative suppliers of local-exchange transmission services arguably hold down the costs of the transport component of enhanced and basic services. They also have the potential to spur technological advances in the transmission area even though this type of research already is proceeding at a healthy pace.

Furthermore, the discussion of what type of technology should be available to an ESP for its access link or "last mile" is brought to the forefront by the possibility of local competition. What if an otherwise feasible enhanced service requires a transmission technology that is not provided by the BOC? If nothing else, the existence of an alternative supplier provides the BOC with an added incentive to begin development and deployment efforts in this area. At the very least, local competition would exact a levy from the BOC for failing to have the requested technology assuming, it is available from an alternative supplier.

Although state and federal regulatory authority can make moot the issue of local competition by declining to mandate Type II unbundling until more analysis of the issue is available, this approach does not relieve them of considering a more immediate issue of ONA implementation. Although it may be too early to permit Type II unbundling, there remains the issue of whether or not customer-owned transport facilities are permissible under the approved ONA rules and regulations. Whereas customer-provided transport suggests that the underlying facilities are owned by either the ESP or an alternative supplier of local transmission services, the customer-owned option requires ESP ownership and maintenance of the access link.

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[171] Southwestern Bell Telephone Company, ONA Reply Comments, 19-21. US West, Inc., ONA Reply Comments, 101-02.

[172] J. C. Panzer and R. D. Willig, "Free Entry and the Sustainability of Natural Monopoly," The Bell Journal of Economics 8, no. 1 (Spring 1977): 1-22.

These differences are analogous to the differences in the marketing strategies between resellers and facilities-based carriers in the interexchange market. Resellers do not wish to own or maintain facilities, and want the flexibility to terminate service under the terms and conditions of the tariff. Facilities-based carriers, on the other hand, want to control their cost structure. As a result, they are willing to incur the long-term costs associated with the ownership of transmission and switching facilities. It follows that customer-owned access links should be considered as an alternative for ESPs.

Deploying customer-owned access links is consistent with the FCC's determination that unbundling in the ONA context is meant to describe different "ensembles of network services, (and) not facilities."[173] A customer-owned access arrangement, deployed because the BOC could not meet the service needs of an ESP, fulfills the logical requirements of the FCC's concept of ONA-related unbundling. Additionally, these access links help rationalize the evolution of the BOCs' networks. Specifically, they will act as ever-present messengers signalling the types of features and functions required of the new network. These messages will have long-term, pro-competitive effects on the enhanced services market because they are backed by the investment decisions of the ESPs.[174]

The Importance of Minimizing Transport Costs for ONA Service

The FCC's decision to permit the integration of basic and enhanced services within the BOCs' networks immediately raises the issue of the differences in transportation costs that the noncollocated, nonaffiliated ESPs would face if ONA services were tariffed on per-circuit and distance-sensitive bases. Multiplexing in theory is an acceptable means for minimizing the differences between the transmission costs of the affiliated and nonaffiliated ESPs.[175] However, it rapidly apparent rapidly that

[173] Federal Communications Commission, Phase I ONA Plan Order, 40, para. 69.
[174] The FCC has recognized that Type II unbundling can have long term, pro-competitive effects on the enhanced services market. See: Ibid., 42, para. 72.
[175] Federal Communications Commission, Phase I ONA Order, 83, para. 164.

multiplexing alone could not suffice as the sole means for minimizing these cost differences. The RBHCs argued repeatedly at the various ONA forums that their existing networks were designed as efficiently as possible. Consequently, their expectation was that new cost-saving multiplexing arrangements could not be easily introduced into the marketplace.

This expectation was confirmed by Bell Atlantic's justification of its voice messaging CEI. In its application to the FCC requesting permission to take advantage of the cost savings associated with collocation, Bell Atlantic indicated that it was not in the position to use multiplexing as a means for improving the access arrangements that are currently available to ESPs.[176] Shortly thereafter, the FCC clarified its Phase I Order by explicitly stating that price parity would satisfy its cost-minimization criterion.[177]

Subsequently, the FCC explained its price-parity decision. Using the NYNEX ONA plan as an exemplar, it constructed a three-branched standard for applying price-parity principles.[178] First, a BOC should charge its collocated, affiliated ESP the same prices that it would charge an ESP that took service from the same mileage band. Second, the collocated, affiliated ESP would be charged for the same number of access lines and other ONA services as a noncollocated, nonaffiliated ESP whenever both firms purchase the same quality of service. Third, the collocated, affiliated ESP would be free to choose the level of quality it wanted from the BOC. As a result, otherwise-identical ESPs may not have the same number of access lines and other ONA services.

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[176] See: Bell Atlantic Offer of Comparably Efficient Interconnection to Providers of Voice Messaging Services, Memorandum Opinion and Order, 3 FCC Rcd 1108 (1988).

[177] Amendment of Sections 64.702 of the Commission's Rules and Regulations (Third Computer Inquiry), Memorandum Opinion and Order on Further Reconsideration, 3 FCC Rcd 1135 (1988) 1141, para 46. See also: Amendment of Sections 64.702 of the Commission's Rules and Regulations (Third Computer Inquiry), Memorandum Opinion and Order on Reconsideration, 3 FCC Rcd 1150 (1988), 1157, para. 49.

[178] Federal Communications Commission, Phase I ONA Plan Order, 87, para. 172. The adoption of a regulatory standard describing price parity could not be avoided because of the various business strategies that are being implemented by some of the RBHCs.

Each RBHC dealt differently with the FCC's price-parity option. Initially, most RBHCs held to their multiplexing options. Eventually, they decided on some form of price parity. At the time that the RBHCs' ONA plans were submitted to the FCC, only BellSouth continued to assert that a multiplexing option was sufficient to minimize the transport costs of nonaffiliated ESPs.

NYNEX's Approach to Transport Minimization

NYNEX has decided that it will not offer collocation, and will make no special efforts in the area of multiplexing. Price parity is its preferred solution.

The NYNEX proposal is that the prices of BSAs will be the same for collocated and noncollocated ESPs operators.[179] It has chosen to implement this pricing principle without constructing new tariffs or mileage bands for BSAs. Neither has NYNEX forbidden the ESPs from continuing to purchase existing basic services. However, it will not permit an ESP to buy an BSE and transport it over an existing basic service. Consequently, NYNEX's version of price parity comes close to producing equal-transport charges for collocated and noncollocated ESPs. It accomplishes this feat without disrupting the local-network service configurations that are currently being employed by the nonaffiliated ESPs.

Yet, the NYNEX approach does have characteristics that indicate the general business positions that it has taken toward the development and deployment of ONA. Price parity has been limited geographically to the service area of the wire center. This decision limits the achievement of equal prices to those instances where the noncollocated ESPs can use BSAs that originate and terminate within this area.[180] Additionally, it imposes

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[179] New York Telephone and New England Telephone, ONA Comments (White Plains: NYNEX Service Corporation, 1988|) 78-82. Idem, ONA Reply Comments (White Plains: Nynex Service Corporation, 1988) 22.

[180] The Association of Data Processing Service Organizations, ADT Security Systems Inc., Alarm Industry Communications Committee, ALC Communications Corp., American Newspaper Publishers Association, American Petroleum

(Footnote continues on next page)

distance-sensitive usage charges on BSAs that originate and/or terminate outside of the area covered by the ESPs' serving-wire center. This characteristic of geographically limited pricing parity reintroduces the issue of collocation.

To simplify discussion of this issue, let us construct a scenario where the costs of NYNEX's enhanced services nodes would be less than the costs of its competitors. Assume that the costs of the collocated and noncollocated enhanced services equipment are identical, and that a specific charge for the floor space occupied by the collocated equipment is absent. NYNEX's price parity would then preserve the equality of the cost structures of the collocated and noncollocated ESPs because it averages the cost of end-office or serving-wire-center floor space in the price of the BSA and other basic services. However, the nonaffiliated ESP must, by definition, incur a real estate cost for its noncollocated equipment. This fact makes the two firm' cost structures unequal. If this additional cost is not offset by other cost advantages that are unavailable to the collocated ESP, NYNEX's price-parity approach would grant a marketplace advantage to its ESP.

The number and location of noncollocated enhanced-services nodes are other issues that arise because of NYNEX's price-parity approach. NYNEX may find it competitively advantageous to have numerous noncollocated enhanced-services nodes to minimize the distance-sensitive charges that are part of its price-parity approach. This marketing decision could be implemented because of NYNEX's real estate holdings throughout its service territory.

(Footnote continued from previous page)
Institute, Association of Data Communications Users, California Bankers Clearing House Association, Committee of Corporate Telecommunications Users, Mastercard International Inc., New York Clearing House Association, VISA U.S.A. Inc., Association of Telemessaging Services International Inc., Coalition of Open Network Architecture Parties, CompUserve Inc., Computer and Business Equipment Manufacturers Association, Dun & Bradstreet, Electronic Data Services, GE Communications & Services, Hayes Microcomputer Products Inc., Independent Data Communications Manufacturers Association, Information Industry Association, International Communications Association, McGraw-Hill Inc., Tele-Communications Association, Telenet Communications Corp., Tymnet-McDonnell Douglas Network Systems Company, and US Sprint Communications Corp. (Joint Parties) have argued that price parity does not guarantee just, reasonable and non-discriminatory rates. See : Joint Parties, ONA Supplemental Comments, 4.

The nonaffiliated ESPs would find it more difficult to follow such a strategy since they lack the requisite real estate holdings and perhaps even the "deep pockets" necessary to obtain them.

Southwestern Bell's Approach to Transport Minimization

Southwestern Bell has adopted a price-parity approach related to NYNEX's solution. The distinguishing characteristic is that its approach is more tentative. Specifically, Southwestern Bell has inserted two caveats along with its intention to provide price parity for nonaffiliated ESPs. First, it probably will charge its collocated enhanced services an averaged access link equal to the charge applied to noncollocated ESPs.[181] Second, Southwestern Bell raises the specter that there may be isolated instances where its affiliated ESPs will not be required to forego the "short wire" discount.[182]

Bell Atlantic's Approach to Transport Minimization

As the means for implementing its price parity approach, Bell Atlantic has decided to attribute full tariffed rates to the services that its affiliated ESP purchases from its BOCs.[183] Bell Atlantic, however, has not explained how this principle would work in practice. If the NYNEX approach is adopted, then collocation and other real estate issues remain as problems that should be solved before the initial set of BSEs and BSAs is deployed.

Several other tariff structure issues are raised because Bell Atlantic has not been more concrete about its interpretation of price parity. The Coalition of Open Network Architecture Parties (CONAP) has argued that the only requirement on Bell Atlantic at present is that it and the other RBHCs

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[181] Southwestern Bell Telephone Company, Southwestern Bell Telephone Company's Open Network Architecture Plan, 120-22.

[182] Southwestern Bell Telephone Company, ONA Reply Comments, 54-55. The "short wire" discount refers to the cost savings that occur because interoffice facilities and other outside plant are not required to interconnect collocated enhanced-services equipment with the features and functionalities of the switch.

[183] Bell Atlantic Telephone Companies, ONA Reply Comments, 29.

offer the same rate structure to affiliated and nonaffiliated ESPs. As a result, it is possible for the RBHC-affiliated ESPs to obtain their underlying basic services at the lowest possible rates while these rates are unavailable to other ESPs because of the structure of BSA tariff.[184] Consider, for example, the rate relationships that can be embedded in ESP access-link mileage bands. They can be discriminatory because a nonaffiliated ESP may never be suitably located to take advantage of the lowest rate.[185]

Also, Bell Atlantic leaves open the issue of whether it will offer usage-based volume discounts to ESPs that elect to purchase BSAs in lieu of their current services. Volume discounts on either a per-call or per-minute-of-use basis provide the incentive that would cause the larger-volume ESPs to obtain BSEs that are tied to the purchase of BSAs.

Additionally, it is unclear whether the price relationship between recurring and nonrecurring charges will encourage or discourage the purchase of BSAs. Relatively low nonrecurring charges would encourage the substitution of BSAs for existing services. However, the use of these BSAs will be repressed if an attempt is made to increase the recurring charges to make up for any shortfall in the recovery of the nonrecurring costs.

And finally, there is the issue of whether a multipart tariff will improve upon or detract from Bell Atlantic's efforts to meet its ONA obligations. It is well established that the structure of tariffs will influence a market's development and growth. It also is well established that participants in the affected market are aware of this fact.[186]

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[184] Coalition of Open Network Architecture Parties, ONA Comments (Washington D.C.: Coalition of Open Network Architecture Parties, 1988) 64-66.

[185] It should be noted that this type of discrimination could occur even if CONAP's definition of virtual collocation were accepted. CONAP proposes that virtual collocation means that all connections within the same mileage band would be subject to the same transport rates. See: Coalition of Open Network Architecture Parties, ONA Reply Comments (Washington D.C.: Coalition of Open Network Architecture Parties, 1988) 10-12, n. 15.

[186] The evolution of the interexchange market is a case in point. As long as AT&T's WATs tariff remained compatible with decisions to make minimum investments in switching and transmission facilities, resellers were AT&T's primary competitors. However, once it became apparent that state and federal regulators would not permit these tariff advantages to remain in effect forever, the facilities-based competitors rose up to be the firms that would carry the standard against AT&T.

Therefore, Bell Atlantic's decision not to address this issue would seem to have left a wide gap in its ONA plan.

BellSouth's Approach to Transport Minimization

BellSouth has opted to minimize transport costs of noncollocated ESPs by offering multiplexing options.[187] However, this RBHC has not provided any data that would indicate the size and magnitude of these cost savings. Moreover, it has not related the cost savings due to multiplexing to the cost savings that its affiliated ESPs would accrue if they were collocated. Collocation is an issue because BellSouth has elected not to offer this option to nonaffiliated ESPs, but intends to allow its affiliated ESPs to take advantage of its real estate advantages.[188]

Another BSA transport issue related to BellSouth's ONA Plan is that it has decided to price the ESP access link on a distance-sensitive basis.[189] This decision emphasizes the role that an RBHC's business strategy can have on the implementation of ONA and the furnishing of enhanced services. Depending upon how BellSouth chooses to design its mileage bands for the ESP access link, the potential exists for its affiliated, collocated ESPs to obtain a highly visible cost advantage as a result of the so-called "short wire" connection.

BellSouth elected to construct ESP-access-link mileage bands that did just that. In recognition of the cost savings of the "short wire" connection, BellSouth created a distance-sensitive tariff structure that included a zero-mileage band. This rate band is only available to collocated ESPs. Since BellSouth is not providing a collocation option to

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[187] BellSouth Corporation, South Central Bell Telephone Company, and Southern Bell Telephone and Telegraph Company, BellSouth Open Network Architecture Plan, 64-65; Idem, ONA Reply Comments, 26.

[188] Federal Communications Commission, Phase I ONA Plan Order, 86, para. 170.

[189] Ibid. Telenet and US Sprint are among the parties that oppose distance-sensitive pricing for ESP access links and other transmission services. See: Telenet Communications Corporation, ONA Comments (Reston: Telenet Communications Corporation, 1988) 47; U S Sprint Communications Company, ONA Comments, 23.

nonaffiliated ESPs, the cost savings of the zero-mileage band are available only to its affiliated ESPs.

BellSouth's rate structure for ESP access links exploits the FCC's decisions not to mandate collocation or discourage distance-sensitive pricing.[190] It also strengthens price parity as preferable to retrofits or special technological fixes whenever the latter will increase the costs to ESPs unnecessarily.[191] But its zero-mileage-band proposal does have a countervailing effect on the robustness of the price-parity solution for minimizing transport costs. Specifically, BellSouth has demonstrated that certain conditions exist where price parity is achievable only through a collocation option.[192]

The FCC has responded to these conditions by stating unequivocally that denying collocation opportunities coupled with a zero-mileage band places a heavy burden on the RBHC to show that it is providing an "effective, alternative means of minimizing transmission costs."[193] Essentially, BellSouth--as an RBHC in this position--has to demonstrate that the expected cost savings of its technical solution approximate the cost savings that would accrue to its affiliated ESPs because of the "short wire" connection.[194]

US West's Approach to Transport Minimization

Some degree of similarity exists between the cost-minimization approaches taken by BellSouth and US West. Although US West has indicated that its affiliated ESPs will access the network and pay charges as if they were not collocated, it has also proposed a distance-sensitive ESP access-

[190] See: Federal Communications Commission, Phase I ONA Plan Order, 86, para, 171, n. 330.
[191] Ibid., 85, para. 166, n. 327.
[192] Ibid., 85, para. 167.
[193] Ibid., 87, para. 171.
[194] Currently, BellSouth has not demonstrated to the FCC's satisfaction that its BSA rate structure will minimize the cost of competing ESPs. Specifically, the FCC is not satisfied with BellSouth's explanations of the utility of the multiplexing options to nonaffiliated ESPs, the availability of the multiplexing options, and the percent decrease in costs that the competing ESPs can expect as a result of these multiplexing options. Ibid., 86, para. 171.

link rate element that includes a zero-to-one-mile band.[195] Therefore, the noncollocated ESPs would have to own or lease real estate that is relatively close to their serving-wire centers if they are to receive the same treatment as a collocated ESP.

The FCC has reacted negatively to the zero-to-one-mile rate band, asserting that few competing ESPs would be able to take service.[196] Therefore, US West's BSA tariff structure may discriminate against the nonaffiliated ESPs. To avoid this, the FCC has ordered US West to charge its affiliated ESPs as if they were located at least two miles from the end office or serving-wire center. US West must amend its ONA plan to meet this requirement in either of two ways. It can construct a zero-to-two-mile band, or charge prices to its collocated ESPs that are associated with the mileage band that includes the two-mile mark.[197]

Pactel's Approach to Transport Minimization

Originally, Pactel had a price-parity approach that was similar, if not identical to what Bell Atlantic adopted for instituting price parity between affiliated and nonaffiliated ESPs. Pactel had stated simply that it would purchase BSEs and BSAs at the same tariffed rates available to all ESPs.[198] Subsequently, Pactel modified the approaches of BellSouth and US West. It proposes to employ distance-sensitive prices and intends to allow collocated ESPs to take service from the first mileage band.[199]

Because Pactel did not propose a zero-mileage band or a zero-to-one-mile band, its modified approach is compatible with the plan amendment that US West has been ordered to make by the FCC. Still, Pactel's ONA plan

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[195] US West, Inc., Open Network Architecture Plan of US West Inc., 353-59.
[196] Federal Communications Commission, Phase I ONA Plan Order, 85-86, para. 168.
[197] Ibid. Given US West's stated preference for a zero-to-one-mile band, it is likely that it will select the zero-to-two-mile band as the preferable alternative. If US West does actually make this selection, it would appear to provide further evidence that US West is more interested in providing enhanced services than in reaping revenue from competing enhanced service providers.
[198] Pacific Bell and Nevada Bell, Pacific Bell and Nevada Plan to Provide Open Network Architecture, 40.
[199] Pacific Bell and Nevada Bell, ONA Reply Comments, 29.

suffers from the same vagueness and problems that afflict Bell Atlantic's approach for minimizing the transport costs of nonaffiliated ESPs.

The Need for ESP Access to Operations Support Systems

The need for ESP access to the BOCs' operations and support systems is an issue that took hold slowly.[200] When the issue was first raised, the RBHCs responded that such network capabilities were beyond the scope of ONA. The ESPs' reaction was that the RBHCs had been unresponsive on this issue, and continued to press for access to BOC-controlled operations and support systems on the grounds that these systems were a source of features and functions essential to providing enhanced services inefficiently. Eventually, the RBHCs yielded some ground on this issue. During the development of the Common ONA Model, they created the ancillary services category which they defined as useful, but not essential, for providing an enhanced service. Therefore, access to operations and support systems became an ancillary service.

The Independent Data Communications Manufacturers Association (IDCMA) and Telenet Communications Corporation (Telenet) are not satisfied with this classification. The IDCMA asserts that it must have the capability to identify and isolate network problems in a multiple-carrier and multiple-vendor environment.[201] The traditional methods for accomplishing this are the exercise of trouble-shooting, diagnostic, and maintenance functions. Because the networks of the common carriers have been closed, primitive applications of these functions have been built into the customer premises equipment. But with a more open network, these functions can be more efficiently supplied by the common carrier.

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[200] The FCC has defined operation and support systems as BOC databases, either automated or manual, that store or control installation, diagnostic, and maintenance information that is required to manage the delivery of telecommunications services. Federal Communications Commission, Phase I ONA Plan Order, 50, para. 89, n. 167.

[201] Independent Data Communications Manufacturers Association, ONA Comments (Washington D.C.: Independent Data Communications Manufacturers Association, 1988) 19-20.

Telenet proposes that access to the BOCs' operations and support systems will improve its efficiency. Along with the three functions sought by IDCMA, operations and support system access will provide the opportunity for independent monitoring of the BOCs' portion of the Telenet network. Telenet asserts that this capability, previously unavailable, would improve the quality of its enhanced services.[202]

Pactel disagrees with the positions taken by IDCMA and Telenet. It asserts that operations and support systems are not essential or bottleneck facilities, meaning Pactel is not obligated to provide access to them. If, however, it elects to offer this service, Pactel argues that it is not required to provide it on an equal basis to all ESPs.[203] Specifically, differences in the prices, terms, and conditions offered to the affiliated and nonaffiliated ESPs may appear. Pactel feels comfortable with its approach because it believes that ESPs are seeking access to operations and support systems simply to improve their cost characteristics by leveraging their operations off of the BOCs' economies of scale and scope.[204]

Essentially, Pactel is responding to regulatory tests that Telenet and US Sprint have proposed for determining whether a service is ancillary, a BSE, or a BSA. US Sprint has proposed that the BSE classification be applied to any service that has not been detariffed or deregulated.[205] Although the FCC accepted this position[206], the question remains as to whether access to operations and support systems is a BSE or an ancillary service. The problem is that such access has not been provided heretofore. Therefore, a decision has not been reached that addresses its regulatory status.

Telenet, a US Sprint subsidiary, proposed a two-pronged test to determine the regulatory status of an isolated network capability. After examining the characteristics of the network feature or functionality, the FCC would rule on whether the capability was an essential component of an

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[202] Telenet Communications Corporation, ONA Comments, 17; Appendix A 20-24.
[203] Pacific Bell and Nevada Bell, ONA Reply Comments, 17.
[204] Ibid., 20.
[205] US Sprint Communications Company, ONA Comments, 26.
[206] Federal Communications Commission, Phase I ONA Plan Order, 56, para. 106.

existing BSE, or essential for the highest quality operation of any BSE.[207] If neither test was met, the network capability may be classified as an ancillary service. If one or both tests were met, the capability is either a BSE or BSA.

While the Telenet test provides a means for deciding the regulatory status of operations and support systems, it lacks an infrastructure. Telenet neither defined "essential" nor suggested rules for applying a definition. The absence of such implementation procedures represents a significant shortcoming of the essentiality test.

Perhaps neither of these implementation tasks was undertaken because they were too difficult. The diversity of the enhanced services industry would make it difficult for the parties to reach a consensus. Furthermore, if a consensus were reached, the definition of essential would have to be broad enough to include the business strategies of the various firms. Consequently, it may be impossible to devise workable implementation rules acceptable to the ESPs.

While the implementation and regulatory issues associated with access to operations and support systems are complicated, the business issues are straightforward for each side. Let us assume (as Pactel does) that the RBHCs employ production processes that contain economies of scale and scope with respect to the development and use of such systems. Let us assume further that increases in the efficiency of developing and operating these systems are positively related to increases in system-specific experience and expertise. Neither assumption is unreasonable, and events in the interLATA market appear to support them. For example, AT&T's long history and experience with its operations and support systems have helped keep it ahead of its competitors in the areas of customer service and customer loyalty. Both of these factors are characteristics of the product differentiation that AT&T has maintained in spite of the fact that telecommunications services tend to be relatively homogenous commodities.

Given these assumptions, it is not surprising that the RBHCs would like to keep these cost advantages to themselves. They represent a replicable resource that will give the affiliated ESPs a competitive advantage until

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[207] Telenet Communications Corporation, ONA Comments, 18.

third-party vendors can develop, deploy, and market alternative systems of equal or better quality, features, and functionality. This strategy can be furthered simply by retaining the closed nature of this component of the network.

The RBHCs have used two tactics to implement this strategy. First, they have deemed their operations and support systems proprietary and confidential, and as such, they should not be required to offer them to competitors. Second, they have asserted that such systems are available from alternative sources of supply. As a result, they are not engaging in direct or indirect discrimination by withholding access.

If these tactics are successful, the RBHCs have defused the cost issue associated with not providing operations and support-system access as a BSE and BSA. Given that an alternative exists, differences in the cost of competing enhanced services would be a result of differences in the efficiency of the various operations and support systems. The affiliated ESPs would have better cost characteristics because of the BOCs' experience with these systems.

Similarly, it is not surprising that ESPs and others see a competitive advantage through obtaining access to BOC-controlled operations and support systems. These systems have demonstrated their good quality and durability over the years. Consequently, access to BOC-controlled operations and support systems would reduce the long-term costs of the ESPs. Specifically, they could more rationally and systematically incur the expenses associated with gaining experience and expertise in the construction and operation of these systems. Simultaneously, they can improve their revenue streams by upgrading the quality and efficiency of their enhanced services.

The competitive tension accompanying the requests for access to the BOC-controlled operations and support systems is, therefore, a result of the FCC's decision allowing affiliated ESPs to offer enhanced services that may be integrated with the BOCs' basic services. If the enhanced services of the RBHCs' affiliates continued to be offered on a separated basis, they could not benefit from the operations and support systems of the BOCs.

A larger issue is associated with requests for access to the BOCs operations and support systems. If such access is provided as a BSE and BSA, it would also be available to the interexchange carriers as long as no use and user restrictions exist. There is nothing inherently wrong with

such a result. In fact, by offering this capability to the interexchange carriers, the RBHCs will be helping to improve the competitiveness of the interLATA market while increasing their potential for additional regulated revenues. The operations and support systems of AT&T's rivals will be supplemented, and the BOCs will have another set of services to offer on a regulated basis.

Additional regulated revenues and an improved competitive process in the interLATA market, however, may not be an acceptable business results for the RBHCs. Most RBHCs seem to prefer that new revenue sources fall on the deregulated side of their operations. Furthermore, they have no incentives to increase the staying power of AT&T's interLATA rivals. These firms have already indicated their strong desire to enter the interLATA market as quickly as possible.[208] It is precisely for these reasons that actions by state and federal regulatory are appropriate to ensure the rapid availability of access to the operations and support systems of the BOCs.

There are other reasons why the RBHCs might be required to direct their BOCs to provide operations and support-system access as a regulated service. Because these network capabilities cannot be developed quickly and inexpensively, they have structural characteristics similar to the local transmission facilities that are controlled by the BOCs. Paralleling the potential for the physical bypass of the local network, it would follow that only alternative suppliers of local exchange service would find it beneficial from a cost point of view to develop and market operations and support systems that equal or are superior to the systems used by the BOCs. Since these alternative carriers are only beginning to establish a foothold in a limited number of metropolitan areas, access to BOC-controlled operations and support systems may need to be offered as an ONA service that couples BSEs with a BSA.

Furthermore, efforts might be taken to ensure that the degree of openness of the BOCs' network is not disproportionately influenced by the

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[208] As a means of reducing fears that RBHC entry into the interLATA market would seriously disrupt the existing competitive process to the detriment of AT&T and its rivals, efficient and easy access to BOC-controlled operations and support systems could be one of the indicators that would trigger the decision to let the RBHCs into the interLATA market.

RBHCs' beliefs that they are relinquishing a competitive advantage when they supply a particular service on terms and conditions that are consistent with established regulatory principles. Supposing that alternative operations and support systems exist independently of the ability to carry local exchange traffic, it is still true that sufficient reason has not been established to keep this portion of the BOC network closed to ESPs and other users. To demonstrate why this is so, consider a hypothetical case where an equal quality operations and support system is available from a third party and the BOC-supplied access is detariffed.

Under these assumptions, the business issue is not fully resolved by the existence of a viable alternative operations and support system that the ESPs can use to help manage the portions of their networks that they own. A complete solution requires a mechanism that provides independent monitoring, trouble-shooting, and diagnostics for the BOCs' portions of the ESPs' total, composite networks. Let us assume, therefore, that the required mechanism has been built into the alternative operations and support system.

To support this system, the RBHCs would have to develop access arrangements that accommodate software packages owned and operated by third parties. The concept of a "permissive window" could easily become a characteristic of such an access arrangement. Essentially, such a window would allow "foreign applications software" to direct BOC hardware that performs trouble-shooting and diagnostic functions. Because a physical interface represents access to the computers that control the BOCs' operations, the permissive window introduces significant network security and integrity issues.

There is, however, a substitute for the permissive window. If the RBHCs developed access arrangements that permitted the joint operation of two ESP-controlled software applications systems, physical access to the BOCs' computers would not be required.[209] A nonpermissive window would be constructed to pass information between the ESPs and the BOCs. This

[209] At a minimum, the joint operation of two ESP-controlled network management systems is necessary to maintain competitive balance in the enhanced services industry because this is the structure and capability of the operations and support system access that will be provided to the RBHC-affiliated ESPs.

information would be fed to software systems that perform the network management functions on the BOC-supplied portion of the ESPs' networks. With such a configuration, a procedure would have been established removing the need for a physical interface between the ESP-controlled applications software and the BOCs' computers. Instead, this software would operate on BOC-supplied data passed to the ESP through the nonpermissive window. These computer operations, along with similar operations on internally supplied data, would provide the ESP with a complete picture of its network at all times.

The second proposal for access to the BOCs' operations and support systems is less complicated. A nonpermissive window involves fewer problems in terms of network security and integrity because only data are passed from the BOCs' computers to the ESPs' computers. Additionally, this concept is consistent with the developing standards for an integrated services digit network (ISDN).

Each network management system will contain features and functions that are unique to the ESPs that use them. Therefore, the network management protocols will not be the same for all systems. However, the design of each system will contain a standardized interface that facilitates the transfer of data from the BOC to the ESP. Such a standard configuration implies that the ESPs and BOCs will not be able to traverse each others networks, but will be able to talk to each other.

Conclusion

ONA is often viewed as the quid pro quo that the RBHCs had to provide if they wanted the authority to produce enhanced services on an unseparated basis. Because of this, the FCC has moved to help ensure that this change in market structure will also mean increased economic efficiency. For example, the affiliated ESPs will be able to take advantage of the economies of scale and scope that are realized when basic and enhanced services are offered on an integrated basis. The nonaffiliated ESPs will have more choices and flexibility in designing their enhanced services.

But the increase in economic efficiency will not be free. Its price will be an increase in the direct variable costs of providing an enhanced service. This counterintuitive result occurs for two reasons. First,

providing BSEs and BSAs involves spending additional resources that must be recovered by the RBHCs and their BOC subsidiaries. Second, the pursuit of a more efficient allocation of resources will involve either a measured rate structure, or a flat rate with a relatively higher imputed usage volume than is currently associated with an end-user business line.

To its credit, the FCC has not equated economic efficiency with a short- run reduction in the costs of the ESPs. Economic efficiency involves an allocation of resources that maximizes economic welfare subject to two constraints. First, the ONA services economic-welfare-enhancing effects are constrained by the economic-welfare effects from all other products and services. Second, the price of a particular product or service should be at least as high as the marginal cost of producing the last unit of the product or service. Neither constraint nor the overall objective of maximizing economic welfare guarantees cost reductions for goods and services that are used to produce other goods and services.

Since the ESPs' production costs will not necessarily decline as a result of implementing ONA, the FCC has not declared the marketing aspects of ONA to be distinct and separable from its technological and regulatory aspects. Instead, it has exerted its influence on the RBHCs' ONA business strategies through decisions relating to definitions of technical equality and technical uniformity, acceptable methods for minimizing transport costs, Type I and Type II unbundlings' costs and benefits, and the availability of new forms of access.

Besides not succumbing to pressures to guarantee a reduction in the cost of every service or product used to produce an enhanced service, state and federal regulatory authorities will have to protect themselves against the influence of hidden biases that may be part of the RBHCs' ONA plans. A deregulation tilt, for example, will likely subject regulatory authorities to constant pressures aimed at heading them to substitute CEI standards for ONA standards. The most notable aspect of such a substitution is the abandonment of the principle that the BOCs are obligated to provide ONA services to nonaffiliated ESPs that are not used by affiliated ESPs. A technological tilt, however, subjects these regulatory authorities to pleas for increasing the rate of investment in the network to meet the demands of the ESPs. For example, the justification for an extended and accelerated deployment of Bell Atlantic's SS7 might be that it is the best existing

vehicle for introducing local, intrastate, and interstate enhanced services to large and small end users.

The definition of technical equality is also affected by the RBHCs' ONA biases. Technical equality is more than the level of signal attenuation experienced by the nonaffiliated ESPs. It involves access to network capabilities for which there are no other feasible and ubiquitous substitutes.

Successfully coping with the RBHCs' ONA interests will require state and federal regulatory authorities to rely heavily on the market demand studies that will be submitted as partial justification for introducing new BSEs and BSAs. Absent some significant change in the policy perspectives and quantitative capabilities of these interested parties, the best available market demand estimates for new ONA services will emerge from the staffs of the RBHCs. If safeguards are not devised to prevent this result, ONA's implementation surely will devolve into the implementation of CEI. That is, the vast majority of new ONA services will tend to be those desired by the affiliated ESPs and will increase their competitiveness in relation to the nonaffiliated ESPs.

Because each RBHC has its own business strategy to enter the enhanced services market on an unseparated basis, the FCC cannot neglect to provide these firms with incentives that promote technical and nontechnical uniformity in the furnishing of ONA services. The FCC could, for example, alert the RBHCs that the continuation of the status quo is an unacceptable way to deal with these issues. To signal its resolve, the FCC could increase its oversight of the IILC to ensure that resolution of the technical uniformity issue occurs in a timely manner; that is, before the ongoing evolution of each BOC network makes national or multiregional technical uniformity less likely.

Except for Ameritech, the RBHCs have studiously avoided providing an explanation of the business reasoning that lies behind their furnishing of ONA services. Consider the fact that several BSEs in the RBHCs' ONA plans are functionally equivalent, if not identical, to existing custom calling services. The most notable are the call-forwarding capabilities that will be available shortly to affiliated and nonaffiliated ESPs. Consider, in this regard, the fact that each RBHC has stated that one of the criteria for including a network capability in the initial set of BSEs is that providing

these capabilities to the ESPs must be possible within one year after the approval of their ONA plan. Consequently, prior technologically based justifications for not providing these services are suspect, as well as the current justifications suggesting they can be offered now.

The history of the RBHCs casts doubt on their assertions that it is technically infeasible at present to provide intraswitch interfaces that join alternative transmission facilities with an end office's features and functions. These connections would likely utilize facilities, practices and procedures similar to those used to interconnect BOCs at the interexchange carriers' points of presence. Since these access interfaces have not caused the interexchange carriers to raise issues of floor space or network security, the RBHCs may need to explain fully why these issues would raise significant technical problems when interfaces are located within the BOCs' end offices. Even though the interconnection of a BOC's transmission facilities at an interexchange carrier's point of presence does not provide the BOC with access to the features and functions of the interexchange carrier's toll switches, the transfer of traffic must occur without disturbing either carrier's network security. Therefore, the network security precautions currently taken at the point-of-presence interface may be directly transferable to an end-office interface.

The debate and analysis of the RBHCs' ONA business strategies eventually will reach the point where the interested parties disagree over the definition of essential. The nonaffilliated ESPs likely will support a definition that implies that each of their requests for ONA services should be met as soon as possible. The RBHCs' definition likely will imply that only a subset of these service requests should be fulfilled right now and in the immediate future. The problem facing state and federal regulatory authorities is that both alternative definitions reflect reasonable but nonetheless special interest positions.

Because the RBHCs' networks are roughly homogeneous, strong incentives drive them toward a narrowly focused definition of essential. Rough homogeneity is also the reason why the RBHCs would find it easier to reach a consensus that can be implemented. Furthermore, the similarity across networks will make presentations and explanations of the definition more simple and direct.

Because the nonaffiliated ESPs' services are diverse and their networks are nonhomogeneous, strong incentives exist for them to develop a broadly focused definition of essential. Clearly, it would create disadvantages for a particular ESP or group of ESPs if either's request for a new network capability was determined to be nonessential by the application of a consensus definition.

The organizational and technical differences between the nonaffiliated ESPs and the RBHCs work against resolution of this issue by the IILC. Notwithstanding its bylaws, the stronger institutional position of the RBHCs would result in a narrow definition of essential. This result would reduce the effectiveness of the essentiality test as a tool for opening the BOCs' networks. A narrowly focused essentiality test would be used to keep the network closed.

A decision making forum, separate from the IILC, is required to avoid the adverse competitive effects of a narrow definition of essential and the implementation problems of a broad definition of this concept. Before state and federal authorities leap to fill this void, however, they should be aware that they will find themselves delving into the technical operations of the network and the business planning of the RBHCs, their affiliated ESPs, and their nonaffiliated enhanced-services competitors.

CHAPTER 4

REGULATORY STRATEGIES FOR IMPLEMENTING ONA

Introduction

ONA is a multi-dimensional business effort that includes product development, marketing, and market research activities. Each addresses issues of varying strategic and tactical importance. No where are these issues more important than to the RBHCs' management of their public, legislative, and regulatory affairs. As a result, state and federal regulators and legislators will necessarily have to deal with the intricate issues associated with implementing ONA. Moreover, public policymakers are expected to deal with them in such a manner as to not provide the RBHCs with significant opportunities for anti-competitive behavior and unwarranted price discrimination.

The regulatory strategies developed for implementing ONA are not latecomers to the debate. Very early in this process, the state and federal regulators established several principles that would guide the decisions that affect the implementation of ONA. Federal regulators decided, for example, that ONA tariffs submitted in their jurisdiction would not contain use and user restrictions, if at all possible. Additionally, these tariffs would incorporate the Comparably Efficient Interconnection (CEI) standards.[210] State regulators, for their part, adopted the principle that single line business and residential customers should benefit, whenever possible, from the introduction of ONA services. If these consumer benefits are not available, then the "plain old telephone services" should not be burdened with price increases because of the practices and procedures that

[210]Federal Communications Commission, Phase I ONA Order, 8.

are used to implement ONA.[211] These and other regulatory strategies will be examined in the sections that follow.

Technical and Non-Technical Uniformity for ONA Services

Uniformity issues have been the foci of ongoing regulatory debates. ESPs with a national orientation and the FCC tend to lean toward as much uniformity as practicable. Conversely, the RBHCs and state regulatory commissions tend to lean toward regulatory strategies that promote the individuality of each RBHC and the uniqueness of each geographic region that is served by such a firm. These differences are not surprising given the objectives and perspectives of each group.

The nationally oriented and larger ESPs promote tariff and technical uniformity for ONA services because these attributes simplify the development, marketing, and billing of enhanced services. The FCC embraces these types of uniformity because tariff uniformity accelerates the review of interstate ONA tariffs and technical uniformity reduces the number of questions that the FCC will have to deal with after complaints are filed by the users of ONA services.

The RBHCs promote individuality and flexibility because these attributes protect their bottom lines and improve their business positions. For example, flexibility in the manner of providing an ONA service helps to insulate the RBHCs from adding non-productive BSEs and BSAs solely because of a regulatory decree of technical uniformity for interstate ONA services.

The state regulatory commissions embrace lesser degrees of tariff and technical uniformity than does the FCC. From their perspective, this type of uniformity may affect the level of discretion that they have in the review of investment decisions. Furthermore, technical uniformity may impose additional responsibilities and costs, if ONA policies are coordinated across state boundaries. Tariff uniformity is not fully embraced either because it may improve the relative position of consumers and ESPs in one state at the expense of others is a neighboring state. And

[211]Annual Meeting of the National Association of Regulatory Utility Commissioners, Resolution Regarding Open Network Architecture (San Francisco: National Association of Regulatory Utility Commissioners, 1988).

lastly, uniform ONA tariffs for intrastate services, mandated for each state, may conflict with other intrastate telecommunications policies.

Distinction Between Uniformity and Ubiquity

Because of the varying regulatory strategies associated with uniform ONA services, it is important to make a distinction between this concept and the concept of ubiquity.[212] Uniformity refers to a particular ONA service that is provided in two or more states, and perhaps by two or more RBHCs. A uniform ONA service does not have to be provided in every state, or in every locality of a single state. Ubiquity implies on the other hand that a particular ONA services is provided in every state. A ubiquitous ONA service is not, however, synonymous with technical and tariff uniformity across these states.[213]

Given these distinctions, uniformity does indeed have a role to play in the implementation of ONA. It requires that an ONA service conforms to pre-specified tariff policies and pre-determined technical standards that transcend state boundaries. The RBHC is not, however, compelled to offer this service, if a sufficient level of state or demand has not been verified for that service. Or given insufficient demand, the RBHC may elect to provide the service in a manner that deviates from the national uniformity criteria.

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[212]Although this distinction may appear to some to be elementary, it is nonetheless necessary because uniformity and ubiquity at times have been used interchangeably during the ONA debate. The enhanced services industry appears to be the most persistent proponent of this interchangeability. This group appears to suggest that the uniform introduction of an ONA service involves its almost immediate availability whenever this service is demanded by a nationally oriented ESP.

[213]Perhaps, ubiquity should be defined as the availability of a particular ONA service in every locality of every state. There is clearly theoretical merit to such a definition, but its adoption would create serious practical problems during the research and development phases of creating public policies for the implementation of ONA.

Technical Uniformity or Market Demand

When the demand for an intrastate ONA service is minimal, the additional costs that are required to obtain technical uniformity with other states may result in the waste of limited resources. One reason for the low level of demand may be that this ONA service is important only to ESPs with local foci and geographically restricted customer bases. In this case, expenditures to attain even a minimal level of national or regional technical uniformity would deprive the RBHC of some funds that could be used to meet its more pressing needs.

But equally clear is the fact that the decisions on technical uniformity can not be totally driven by an estimate of market demand. Another important and mitigating criterion is the cost of developing technically uniform ONA services. If it costs no more to build in technical uniformity, then technical uniformity would seem to be the preferable public policy.

The constrained dominance of technical uniformity over market demand appears necessary because there are instances when the absence of technical uniformity may harm the public interest. Assume that sufficient market demand does not exist for the introduction of a technically uniform ONA service, but that the incremental costs of technical uniformity are negligible. Assume, furthermore, that this ONA service is desired by at least one nationally oriented ESP. And, assume, lastly, that the market demand criterion dominates the technical uniformity criterion. Technical uniformity is certainly feasible under these conditions, but it is not required. Absent the constrained dominance of the technical uniformity criterion, this ONA service could be provided differently within each state jurisdiction, much to the distress of the national ESP. This firm would, therefore, have to deal, for no apparent reason, with minor variations in interconnection formats, and features and functionalities of this technically non-uniform ONA service.

Jurisdictional Dimensions of Tariff Uniformity

Uniformity extends beyond the technical characteristics of an ONA service. It is also a factor in the practices and procedures that will be

used to provide an ONA service. Uniformity may affect the structure of the tariff for an ONA service, and the terms and conditions that are contained therein. For example, tariff uniformity may require the co-ordination of the installation, ordering, maintenance, and testing procedures of several RBHCs. Or, it simply may require identical installation and ordering intervals across RBHCs.

Essentially, tariff uniformity has two dimensions. They are the potential for uniformity between the intrastate and interstate regulatory jurisdictions, and tariff uniformity between the intrastate jurisdictions themselves. Either dimension represents an additional reason for cooperation and coordination.[214] A potential example of such cooperation and coordination is the development of a tariff policy that is acceptable to state and federal regulatory jurisdictions and to each state public utility commission.[215]

The FCC, for its part, has expressed an interest in some degree of tariff uniformity strategy that cuts across state and federal regulatory boundaries. In an apparent attempt to further this regulatory strategy among the state public utility commissions, it has chosen its interstate access tariff as the exemplar for ONA tariff uniformity.[216] The history of this tariff indicates that it is possible to develop uniform formats and nomenclature that do not remove all the RBHCs' business incentives. Furthermore, this tariff has proven itself to be useful in the comparison and evaluation of interstate access charges across BOCs.[217] And finally, the interstate access tariff has increased the FCC's understanding of access charge issues. However, the FCC also appears to recognize that a lesser degree of tariff uniformity may be necessary for dual jurisdiction ONA services because of the diversity of use to which these services may be put.

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[214]Federal Communications Commission, Phase I ONA Plan Order, 108, para. 213.

[215]Given the need for state and federal cooperation and coordination concerning the implementation of ONA, the FCC has accepted the suggestion of the National Association of Regulatory Utility Commissioners to convene a Section 410(b) Joint Conference. See: Ibid., 110. para. 217.

[216]Ibid., 143, para. 278.

[217]Ibid., 108, para. 208.

The Role of Interstate ONA Tariffs

Interstate ONA services raise general tariff problems that can only be solved through a cooperative effort on the part of the two regulatory jurisdictions, the RBHCs, and the enhanced services industry. These problems include the threshold question of when an ONA tariff should ever be submitted to the FCC, and the subsidiary question of what are the purposes that are fulfilled by an interstate tariff.

Regulatory Jurisdiction of ONA Services

Jurisdictionality of an ONA tariff has become an issue because the FCC did not preempt the state commissions in this area. As far as the FCC is concerned, however, the submission of ONA tariffs does not represent an "either-or" decision on the part of the RBHCs. The FCC has mandated that the RBHCs must submit an interstate tariff for interstate ONA services, and they must submit intrastate tariffs for intrastate ONA services. That is, the FCC will not permit an RBHC to submit only interstate tariffs for its ONA services.[218]

These policy decisions establish, as far as the FCC is concerned, specific regulatory jurisdictions for ONA services. ONA services that are designed to be used to provide interstate enhanced services are interstate ONA services. ONA services that are designed to be used to produce intrastate enhanced services are intrastate ONA services. Thus, the FCC has once again reaffirmed that the jurisdictional character of the end user service, in this case an enhanced service, determines the jurisdictional character of the telecommunications services that are used to produce that end user service. Thus, for the first time, the FCC has implied that an enhanced service may be associated with a regulatory jurisdiction, even though these categorizations have not been made in the past. This reasoning had heretofore been used to justify the distinction between intrastate and interstate access for interexchange carriers.

[218]Ibid., 160, para. 309.

The interexchange carrier access method appears to be appropriate for determining the jurisdictionality of the ONA services. Take, for example, an enhanced service with the following production characteristics. First, the ESP has located necessary peripheral equipment, hardware, and software in the same Local Area Transport Area (LATA) as its customers. Second, the production process for this enhanced service requires access to a data base that may be centralized or decentralized. Third, this particular ESP has elected to use a centralized data base, but one located outside of the LATA. Thus, some of its customers will have to use a data base that is not physically within their LATA. Fourth, this enhanced service does not require the calling party to directly interact with the data base. That is, the ESP retrieves pre-existing data from the data base, and it is the responsibility of the ESP to update and maintain its accuracy.

The application of the interexchange carrier access method indicates that the preceding enhanced service is jurisdictionally intrastate. Calling and called parties are both located in the same state and the same LATA. The spatial location of the data base is not an issue because the calling party does not directly interact with it. As a result, the data base is simply a component of the production process for the enhanced service.[219]

The interexchange carrier access method implies that the routing of a call or message is irrelevant to the determination of its regulatory jurisdiction. Therefore, an enhanced call or message that is routed to another state for switching or the receipt of additional information remains an intrastate enhanced service as long as it originates and terminates in the same state. [220] It would appear on this basis that the ONA services connecting the end user to the ESP are intrastate, and the data links connecting the ESP to its data base are interstate.

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[219] The access of the data base represents an intermediary transaction wherein the ESP calls itself.

[220] The interexchange carrier access method for determining the jurisdiction of an enhanced service does not impact the line of business restrictions of the Modified Final Judgement. It would still be the case that the BOC could not provide the service that links the ESP's data base to its equipment, hardware or software in another state. What the method does affect is the selection of the tariff that the interexchange carrier will use to bill the ESP.

Similar to a voice grade call that is routed to another state for switching, an enhanced service, using a non-interactive data base, should be viewed as a composite of its production process, where each stage of this process is independent from the others. Each stage is then treated as a separate telecommunications service that should be assigned to its appropriate regulatory jurisdiction. Thus, the enhanced service under consideration is comprised of three separate services. The two stages representing the communication between the calling and called parties are intrastate, and the transmission between the business locations of the ESP is interstate.

The Purpose of an Interstate ONA Tariff

The FCC has decided that the interstate ONA tariffs should conform to its Part 69 access charge rules. The purpose is to introduce cost based ONA rates. Because the interstate ONA tariffs will conform to the Part 69 rules, they are also expected to further economic efficiency, the competitive process, rationalized investment, new products and services, and consumer surplus.

Several regulatory problems are created as a result of the FCC's decision to use the fully distributed cost principles of its Part 69 rules. For example, the current Part 69 rules, applicable to the switching component of an interstate feature group, can not accommodate the degree of unbundling that is required for the implementation of ONA.[221] Thus, the FCC has opened a docket to address this issue.[222] Furthermore, interstate ONA services have the potential to generate new opportunities for inter-jurisdictional tariff shopping by mixing and matching interstate and intrastate ONA services.[223] The FCC could have preempted inconsistent state

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[221] Federal Communications Commission, Phase I ONA Plan Order, 146, para. 283.

[222] Federal Communications Commission, Amendments to the Creation of Access Charge Subelements for Open Network Architecture: Notice of Proposed Rule Making, Common Carrier Docket No. 89-79 (Washington D.C: Federal Communications Commission, adopted March 30, 1989, released May, 9, 1989).

[223] This issue arises because it may be technically possible and economically advantageous to combine an interstate BSE with an intrastate BSA, or an interstate BSA with an intrastate BSE.

ONA tariffs in order to eliminate this type of tariff shopping. But instead, it elected to disallow the matching of an interstate BSE with an intrastate BSA.[224]

Another problem that emerges along with the interstate ONA tariff mandate is the need for an interstate BSA to transport the interstate BSEs. The FCC solved this problem by requiring that all interstate BSEs should be compatible with interstate access services wherever and whenever possible.[225] What this does is to minimize the costs of implementing interstate ONA services without seriously restricting the development of the interstate enhanced services market. The most likely candidates for the purchase of interstate ONA services are interexchange carriers turned ESPs.

New Regulatory Issues Created by Interstate ONA Services

Interstate access services are the primary interstate BSAs because they are technically similar to several of the intrastate BSAs that have been proposed by the RBHCs.[226] Yet, it appears that this quick and dirty solution for introducing ONA services into interstate commerce creates some difficult regulatory issues. Although interstate access services are currently the primary transport arrangements for interstate enhanced services, this may not always be the case. The RBHCs will eventually have to develop new interstate BSAs for those interstate BSEs that can not be made technically compatible with the interstate access services. These new BSAs could create arbitrage opportunities within the federal regulatory jurisdiction.

Take, for example, a new interstate BSA that does not contain a carrier common line charge rate element. If this service is otherwise technically equivalent to the existing interstate access services, then its price in

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[224] Federal Communications Commission, Phase I ONA Plan Order, 143, para. 279. The FCC deferred consideration of the "mix and match" issue until its upcoming review of its Part 69 Rules. Federal Communications Commission, Part 69: Notice of Proposed Rule Making, 7, para. 43. The FCC rejected "mix and match" as an alternative for the ESP access charge exemption.

[225] Federal Communications Commission, Phase I ONA Plan Order, 141, para. 276.

[226] Ibid., 142, para. 278.

relation to the prices of the other services becomes important. If the price of the new access arrangement is less than the prices of existing access services, then the interexchange carriers may elect to reduce their costs by using the new access arrangement to supply interstate basic services. A similar situation occurs with the unbundling of an existing interstate feature group. If the interexchange carrier does not need all of the features of a feature group, it may be able to reduce its over all costs by purchasing new unbundled access arrangements that contain fewer features and functions.

The potential for tariff shopping in the federal regulatory jurisdiction concerns state and federal regulators. Tariff shopping, in the instance just outlined, implies the underrecovery of jurisdictionally interstate non-traffic sensitive costs. The already proven, substitute revenue recovery mechanism is the subscriber line charge (SLC). Interstate ONA services, therefore, may be the catalyst that allows the FCC to continue its policy of increasing the SLC in order to rationalize the pricing of interstate end user services.

Although the FCC is not yet prepared to require an ESP to use an interexchange carrier, interstate access service to provision an enhanced service, it has adopted the interim solution that an ESP must use such an access arrangement with an interstate BSE. This approach, for the moment, sidesteps the issue of the ESPs' access charge exemption.[227] This means that an ESP, for the time being, will be able to provide an interstate enhanced service by using intrastate BSAs and BSEs. Consequently, very few ESPs, in the near-term, will be purchasing interstate BSEs. However, it does appear certain that interexchange carriers will purchase interstate BSEs.

[227] The access charge exemption permits an ESP to be treated as an end user for access charge purposes. Consequently, ESPs have in the past provided interstate enhanced services over technical service configurations that use intrastate basic telecommunications services.

The ESP Access Charge Exemption

The nationally oriented Value Added Networks (VANs) such as Telenet and Tymnet have made it clear that they do not believe that it is cost effective to use interexchange carrier, interstate access as one of the basic services that underlie their enhanced services. This assertion implies that they view the continuation of the access charge exemption as vital to their continued survival.

Description and Analysis of the Access Charge Exemption

The access charge exemption permits an ESP, at its option, to be treated as an end user whenever it purchases its access to the switched network. As a result, an ESP may use a local exchange service to connect its interstate, intrastate, or local facilities to those of the serving LEC. Or, an ESP may decide to employ intrastate or interstate access services to connect its facilities to the serving LEC.

The most popular of these two possibilities, to date, has been to use the local exchange services in the production of enhanced services. It is true generally that monthly prices of access services are greater than the monthly prices for flat-rated usage-sensitive local exchange services. Therefore, it is not surprising that very few, if any ESPs, have elected the option to use access services in the production of their enhanced services.

At the time of its inception, the access charge exemption made a great deal of sense. The FCC had decided that AT&T and the soon to be divested BOCs would supply enhanced services through fully separate subsidiaries.[228] This decision obviated any economies of scale and scope that AT&T and the BOCs may have enjoyed in their enhanced services production functions. Thus, the access charge exemption served the dual purpose of encouraging the production of enhanced services by the BOCs as well as by the ESPs that were not affiliated with the Bell System.

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[228] Federal Communications Commission, Second Computer Inquiry: Final Decision, 77 FCC 2d 384.

The logic of the access charge exemption became even more persuasive with the divestiture of the BOCs from AT&T. As AT&T and the RBHCs entered the enhanced services market in rivalry with the existing ESPs, it would be necessary to increase the monitoring of their regulated and deregulated costs. Although the separate subsidiary requirement simplified this allocation of the costs of AT&T and the RBHCs, the access charge exemption removed the need for these firms to perform intrastate and interstate cost separations with respect to the basic services that were used to provide an enhanced service. Essentially, as a result of the access charge exemption, every basic service used in the production of an enhanced services was jurisdictionally intrastate.

Prior to its Computer III Report and Order, the FCC had begun an investigation of the effects the ESP access charge exemption, or alternatively, the implications of requiring an ESP to use an interstate access service when it provides an interstate enhanced service.[229] There may have been several sources of motivation for this investigation. A perception may have existed that the enhanced services industry was sufficiently mature to withstand an increase in its costs of doing business. Another possibility may have been that this industry was perceived as not fairly supporting the recovery of the costs that it was causing. Recall most ESPs appear to have been using flat-rate local exchange services to provide interstate as well as intrastate enhanced services. But, a third possibility is that the FCC had begun to exhaust its ways to reduce the prices of interstate voice grade services. The SLC was about to reach its maximum, and the transition to the interstate/intrastate "75/25" Gross Allocator was well on its way.

The last possibility should not be totally discounted. The only remaining sources for switched access charge reductions are the stimulation of voice traffic, and the introduction of new voice and data services that use switched access. Both of these activities are beyond the direct control of the FCC. Consequently, they can not be relied upon to guarantee the continued reduction in the prices of domestic Message Toll Service (MTS).

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[229] Federal Communications Commission, Part 69: Notice of Proposed Rule Making, 5-7, paras. 29-47.

However, the inclusion of the ESPs' minutes of use in the interstate access charge pool would provide another guaranteed source of continued reductions of interstate switched access charges.

Whatever the reason for the FCC's investigation of the ESPs' access charge exemption, it had an unintended side effect. If an ESP had to purchase basic services out of the interexchange carrier, interstate access tariff when it provided an interstate enhanced services, some criteria had to be developed to identify the jurisdictional character of the enhanced service. These criteria were not necessary under the access charge exemption since it permitted an ESP to provide an interstate enhanced service via a production process that utilized an intrastate basic service.

The ESPs, as an industry, strongly opposed this regulatory initiative. Issues were raised that the removal of the access charge exemption would chill the development of the enhanced services that would be used by small business and residential customers. Another specter was that existing customers would no longer find enhanced services to be cost effective.[230] But, these business positions may be shielding from view the ESPs' greatest concern with respect to the removal of the access charge exemption. They may be interpreting the existing exemption as a preemption of state authority over access arrangements for enhanced services. Thus, if the FCC approved the use of switched and special access services for interstate enhanced services, then the states would be free to require switched and special access services for intrastate and local enhanced services.

Impact of the Access Charge Exemption on Implementing ONA

The existence of an access charge exemption for ESPs has already affected the evolution and pricing of ONA services. In terms of service evolution, the FCC has shied away from any interventionist policies in the area of interstate BSAs. It does not want to cause the RBHCs to incur research and development costs that could be stranded because most ESPs may not elect to use such a transport arrangement as long as the access charge

[230] CompUServe Corporation, ONA Comments (Washington, D.C.: CompUserve Corporation, 1988) 22; MCI Communications Corporation, ONA Comments (Washington D.C.: MCI Communications Corporation, 1988) 28, n. 48.

exemption exists. Instead, the FCC has focused its attention on defining the status of an interstate BSE; that is, any basic service requested by an ESP, meeting the BSE-selection criteria, and currently classified by the RBHCs as either an interstate BSE or an intrastate BSE, CNS, or ANS.[231] These interstate BSEs, in principle, have been proven to have utility to the ESP, technical and costing feasibility, and an estimated market demand that is sufficient to justify their production.

Another reason why the FCC has chosen to avoid, for the time being, the issue of interstate BSAs is its decision to require that interstate BSEs must be utilized only in conjunction with a federally tariffed BSA which, at the moment, requires an ESP to combine these BSEs with interexchange carrier access services.[232] This decision, by extension, mandates "full" federal tariffs for interstate BSEs; that is, the inclusion of these services in a federal access tariff, the application of federal ratemaking principles, and the application of federal regulatory review procedures.[233] Although these conditions may change with the adoption of price cap regulation, they currently place two restrictions on the pricing behavior of the RBHCs.[234] First, the price of an interstate BSE must be based on fully distributed cost (FDC) methods. Second, an RBHC is not permitted to cross-reference a state tariff in a federal tariff, or to otherwise make a state tariff feature or function available with a service that is tariffed in the federal jurisdiction.

In the course of placing the second restriction on the RBHCs' ONA plans, the FCC has reached the decision that it will not grant requests for a blanket waiver of those sections of the FCC's rules that prohibit the reference to a state tariff in an federal tariff. This decision does not, however, preclude the RBHCs and other interested parties from requesting waivers on a case-by-case basis. What is needed in these instances is an adequate justification for the waiver.[235] But, the case-by-case waiver option creates an interesting dilemma when the ONA service is an intrastate

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[231] Federal Communications Commission, Phase I ONA Plan Order. 59, 68-70, paras. 112, 130-135; See also: Ibid., 65, para. 125, n. 241.
[232] Ibid., 143, para. 279.
[233] Ibid., 143, para. 279, n 631.
[234] Ibid.
[235] Ibid., 143, para. 279, n. 632.

BSA.[236] In particular, the RBHC may be establishing a predicate for the "mixing and matching" of interstate and intrastate ONA services. This is a problem that the RBHCs had hoped to avoid.

Access Charge Exemption and the Part 69 Review:

The access charge exemption for ESPs will be addressed in one fashion or another as the FCC revisits the structure and content of its access tariffs. During this investigation, the FCC will decide whether an ESP access charge exemption, not necessarily the current one, could co-exist with the decision to require the submission of federal tariffs for interstate ONA services.[237] There is a legitimate concern among the ESPs that the FCC's actions, directed at the revision and approval of ONA Plans, may eliminate the opportunity for continuing any type of access charge exemption.[238]

As a means to alleviate some of those concerns, the FCC has decided to extend the existing access charge exemption. ESPs may continue to use intrastate, basic, end user services to produce interstate enhanced services.[239] Moreover, the FCC appears to have adopted a "clean slate" approach for defining the relationship between the existing access charge exemption and the BSEs that are becoming available as a result of the implementation of ONA. That is, the RBHCs are not required to provide interstate BSEs to an ESP that has elected to reduce its costs by utilizing the Computer II access charge exemption, thereby purchasing an intrastate BSA.

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[236] The case-by-case waiver process for an intrastate BSE does not create a business and regulatory dilemma. The FCC would not be expected to approve a waiver that involves a BSE that is not priced in conformance with federal cost principles. If this expectation is met, it follows that instances of a case-by-case waiver of the federal prohibition against cross-referencing would involve only those intrastate BSEs that are priced equally with interstate BSEs.

[237] Federal Communications Commission, Phase I ONA Plan Order, 166, para. 318.

[238] Ibid., 166, para. 318.

[239] Ibid., 160-61, 165, paras. 309-312, 318.

Decoupling of the access charge exemption from the availability of interstate BSEs is clearly an important component of the implementation of ONA. First and foremost, it is a necessary element of the FCC's prohibition against the "mixing and matching" intrastate and interstate services. An ESP, for example, would not be able to produce an interstate enhanced services that utilizes a local business line and an interstate BSE, even if the RBHC's ONA Plan does not prohibit an ESP from a combination of ONA and end user services. Of course, this ESP could produce an intrastate enhanced service that utilizes a local business line and an intrastate BSE, if this combination is permitted by the RBHC and the state regulatory commission. Since an existing local exchange service sans interstate and intrastate BSEs remains available to ESPs and an existing local exchange service cum BSEs may be available to ESPs, the FCC has concluded that the tying together of an interstate BSA and interstate BSE does not represent the removal of the access charge exemption.[240]

Access Charge Exemption and the Choice of ONA Services

Regardless of the decision that the FCC reaches concerning the structure and application of an access charge exemption for ESPs, the current exemption will remain within the interstate access tariff until the completion of the Part 69 review. However, an ESP is not under an obligation to use local, end user services to produce local, intrastate, and interstate enhanced services. As far as interstate services are concerned, an ESP may, on its own initiative, elect to erect an interstate enhanced service on the foundation of interexchange carrier, interstate access.[241] Similarly, an ESP could decide to employ intrastate access services in the production of intrastate enhanced services.

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[240] Ibid., 155, para 301.

[241] Ibid., 165, para. 318. Citing First Data Resources, Inc, Memorandum Opinion and Order, Mimeo no. 4732, released 5/28/86; Northwestern Bell Telephone Company, Memorandum Opinion and Order, 2 FCC Rcd 5986 (1987) 5986, para. 1, appeal pending sub non. Northwestern Bell Telephone Company versus FCC, no. 87-1745 (D.C. Cir) (pet. for rev. filed 12/4/87).

Interim Federal Tariffs for ONA Services

The access charge exemption for ESPs is one of the reasons why the FCC has chosen to follow the path of interim federal tariffs for ONA services. Interim tariffs provide the FCC with the time that it needs for the revision of its Part 69 rules, while they simultaneously establish the ESP access charge exemption as an option. That is, these tariffs represent new alternatives to the existing local exchange services that the ESPs have used to produce their enhanced services.

That these tariffs are necessarily interim is undeniable. MCI, for example, has raised questions concerning the implications of placing interstate BSAs in the federal access tariffs. This interexchange carrier has suggested that the present federal access charge rules may prevent a BOC from assessing the non-traffic sensitive and traffic sensitive charges to ESPs.[242] Prohibitions such as these, if allowed to remain in effect, could therefore result in flat-rate interstate BSAs. Such a pricing approach, however, has not been predominant at the FCC for many years.

Another reason for interim federal tariffs for interstate BSEs is that these services have the potential to improve the quality of interstate basic services. What is required of them, for this purpose, is that they are available to domestic interexchange carriers in a form that is suitable for use in the production of domestic message toll services. Under current FCC rules, these characteristics would not obtain if the FCC prematurely decides that interstate BSAs, other than interstate feature groups for interexchange carriers, are the only services that are to be used for the transport of BSEs subject to the regulatory jurisdiction of the FCC.

Supply Effects of the Interim Federal ONA Tariffs

Interim tariffs provide a glimpse of the permanent regulatory policies that are likely to accompany the implementation of ONA, and the deployment of ONA services. Take, for example, the interim tariff requirement that the RBHCs must offer all BSEs technically compatible with existing interstate

[242] MCI Communications Corporation, ONA Comments, 28, n. 42.

access services in the federal tariffs.[243] This seemingly straightforward condition on the availability of an ONA service in the federal jurisdiction allows the FCC to ignore the Common ONA Model. Recall that any intrastate ONA service that meets the BSE selection criteria is automatically deemed to be an interstate BSE when it is technically feasible and cost effective to combine them with interstate access services.[244] Thus, intrastate CNSs and ANSs are immediately convertible into regulated interstate ONA services at the convenience of the FCC. Since tariffs are not required for ANSs, this means that there may not be any separate category for CNSs in the federal ONA tariffs.[245]

This aspect of the interim ONA tariffs means that consumers will not be able to purchase CNSs or ANSs as an interstate services. Or conversely, every jurisdictionally interstate ONA service is regulated, and there will be a tariff submitted to the FCC for review and approval. Thus, the supply of interstate ONA is increased. Moreover, the FCC retains its authority to make ONA deployment, availability and pricing decisions without being encumbered by the classification of ONA services by the RBHCs and state regulatory commissions. Recall that every interstate ONA service is likely to be either a BSE or BSA.

The FCC has elected to maximize its flexibility on the supply-side aspects of ONA policy because it views the service classifications of the Common ONA Model as somewhat arbitrary. Therefore, it does not believe that the Common ONA Model should produce binding constraints when it comes to construction of federal ONA tariffs or the interpretation of federal tariff policies.[246]

Another effect on the supply of ONA services is that interim tariffs allow the FCC to pursue its ONA policies without relinquishing its perceived jurisdiction over a wide range of ONA issues. For example, the FCC has stated that it will not require federal tariffs for CNSs that do not meet the BSE selection criteria. Apparently, it is concerned about introducing

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[243] Federal Communications Commission, Phase I ONA Plan Order, 13, para. 10; 114, para. 226.
[244] Ibid., 47-48, para. 86.
[245] Ibid., 114, para 226.
[246] Ibid., 47, para. 86.

ONA services with unproven market demand into its access tariffs. Yet, the FCC has not elected to reduce the supply uncertainties associated with this type of CNS because it has also indicated that it is unwilling to cede its jurisdiction over them.[247] Therefore, RBHCs may some day find themselves submitting federal tariffs for these services.

Clearly, the supply of interstate ONA services will be affected by the access charge exemption for ESPs. Continuation of federal policy may reduce the quantity supplied of interstate ONA services because an ESP may elect to forego their productivity enhancing characteristics in exchange for the lower cost local exchange services. Conversely, discontinuation of the access charge exemption implies an increase in the quantity supplied of ONA services. ESPs would not have an alternative to use in the production of their enhanced services.

Jurisdictional Cost Effects of Interim ONA Tariffs

Technical compatibility between interstate BSEs and access feature groups introduces several twists in the relationship between state and federal regulatory agencies. Assume, for example, that an ESP elects to use an interstate feature group for its access to a BOC network. This service can also be used to provide intrastate, interLATA enhanced services, and intraLATA enhanced services, as well as local enhanced services. It is possible, therefore, that the interim federal ONA tariffs may shift, disproportionately, more revenues than costs to the interstate jurisdiction.

Further exacerbating this potential problem is that any intrastate BSE that is technically compatible with an interstate feature group must be unbundled and offered in the federal access tariff.[248] This mandated action could have detrimental effects on intrastate revenues, whenever the price of an interstate BSE is substantially less than the price of the functionally equivalent intrastate BSE. An ESP, after finding it to be cost effective to use interstate access, may simply employ the interstate BSE to also provide intrastate enhanced services.

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[247] Ibid., 142, para 277, n. 628.
[248] Ibid., 48, para. 86.

The utilization of interstate access as an interstate BSA will most likely be the business strategy of the interexchange carriers turned ESP. AT&T, MCI, US Sprint, and other facilities-based interexchange carriers already purchase interstate access to provide their basic services, and these ongoing expenditures are sunk costs as far as their enhanced services operations are concerned. Consequently, it would be financially rational for them to choose to use interstate access and interstate BSEs to provide interstate, and perhaps intrastate, enhanced services. This type of marketing activity amounts to a reversal of the status quo, where local exchange services have been used by the national oriented ESPs such as the value-added networks (VANs) to provide interstate enhanced services.

Stated in this manner, the implication of technically compatible interstate feature groups and BSEs is clear for the VANs. If these firms want to exploit the advantages of interstate BSEs that are priced on the basis of cost, then they must increase their transmission costs by substituting interexchange carrier, interstate access for their existing local exchange services. The VANs, in the past, have vigorously opposed this substitution when it was proposed without the possibility of cost-based interstate BSEs that are expected to improve their efficiency and innovations.

It remains to be seen how the VANs and other ESPs will react to increases in their interstate transmission costs, if they are offered new and more powerful basic services as the quid pro quo. For example, these firms may choose not to employ interstate access services on an interim basis and forego the efficiencies of the interstate BSEs because they can continue to use to intrastate BSAs and BSEs to provide interstate enhanced services. But, this business decision may be short-lived.

The rates and charges for interstate BSAs, be they the current access services or something different, affect the competitive positions of the VANs. Specifically, their competitive position is apt to deteriorate, if the transition to the interstate BSAs is not a wrenching and expensive experience for their rivals such as interexchange-carriers-turned-ESPs. This possibility introduces marketing and product development incentives

that suggest that the VANs and other ESPs may not find it attractive to continue to use local exchange services to provide enhanced services.

The market and political pressures facing the enhanced services industry, all cast in the positive light of an advancing information age society, make it a virtual certainty that an interstate BSE will be transported, ultimately, over transmission services that are less costly than interexchange carrier, interstate access. What is unknown is whether these alternative services will be designed to preclude their use by interexchange carriers to provide basic services. That is, it is uncertain as to whether the less costly, interstate BSA will contain features and functions such as the 1+ dialing capability that is a necessary feature of competitively supplied interstate basic services. Let us assume that they do not contain these features and functions.

Since the assumed type of interstate BSA is technically inferior to existing interexchange carrier, interstate access, it does not represent a threat of tariff shopping. But, these new BOC services will nonetheless be less costly than the existing interstate access. Consequently, an avenue will be open for entrepreneurial activity in the enhanced services market as far as an interexchange carrier is concerned.

But, enhanced services are not the only marketing opportunities that are opened by the new interstate BSAs. Because they may be technically inferior to the existing access arrangements for interexchange carriers, these firms have been provided with an incentive to increase the amount of intelligence in their switches. It may well turn out to be the case that their switches could be modified to provide the functionalities that are missing from the interstate BSA at a cost that is less than current interstate access rates. Or, it may be that peripheral equipment can be collocated in the IXC's switch to provide these features. Either result is equivalent to facilities bypass, and it may well be that this long-feared phenomenon will be a result of enhancements to the interexchange carriers' switches and not the result of mispriced interstate access services.

The bypass dynamics are quite interesting. Although the new interstate BSA is likely to be offered at a price that is greater than the end user rates that an ESP currently pays for access to the BOC network, this price is still likely to be less than what is charged for interstate access service. An interexchange-carrier-turned-ESP can exploit this difference by

engaging in research and development that is aimed, simultaneously, at reducing its cost of providing basic services and increasing its profile in the enhanced services market. These cost reductions, obtained by improving on the intelligence of the interexchange switch, will increase the profitability of the interexchange carriers. At the same time, however, the RBHCs may experience revenue reductions as the interexchange carriers substitute the interstate BSAs for existing access services. These revenue shortfalls will place upward pressure on the prices of interstate BSAs and downward pressure on the prices of interstate access services. Both of these effects harm the VANs.

The VANs may be expected to counteract these trends with research and development efforts of their own. These efforts are apt to be targeted toward the reduction of their costs, and they are likely to involve the further unbundling of the BOC network. The effect of these forces is facilities bypass without the risks attendant to it. Interim federal ONA tariffs may, therefore, be the beginning of further increases in the SLC.

General Tariff Principles for BSAs

Notwithstanding the disputes over whether it has the authority to order an RBHC to submit federal tariffs for BSEs or BSAs, the FCC has a definite opinion as to what the tariff environment should be after the Part 69 review. First, full federal tariffs will be submitted for interstate BSAs that are used to produce interstate enhanced services. Second, these tariffs will not affect the practice of using local, end user services to produce intrastate and interstate enhanced services. It is the FCC's belief that this tariff environment accommodates its own interstate access and ONA policies, the needs of the ESPs, and the public interest concerns of the state regulatory commission.[249]

[249] Ibid., 166, para. 319.

Regulatory Jurisdiction of BSAs

ONA services are expected to be jurisdictionally separate; that is, separate tariffs will be submitted for intrastate and interstate BSEs and BSAs.[250] This regulatory policy represents the basis of the FCC's decision to deny the "mixing and matching" of, say, an interstate BSE and an existing local, end user service. It is possible that "mix and match" would be an aggressively pursued ESP strategy, if the prices for interstate BSEs are cost-based and the prices for intrastate BSEs are not.

BSAs as Substitute for Collocation of Equipment in Central Offices

After several rounds of comments and apparently much deliberation, the FCC believes that price parity between the BSAs used by the affiliated and non-affiliated ESPs is an acceptable substitute for collocation.[251] It has, therefore, accepted the principle that "competitive equity" exists whenever all ESPs are required to use the same rate schedule for monthly, flat-rated end user transport services.[252]

The FCC will not countenance the abuse of this principle. Rate schedules for intrastate and interstate BSAs are not permitted that effectively offer the lowest rates to only a RBHC-affiliated ESP. Conversely, the RBHC is not required to price an BSA at a rate that is lower

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[250] Ibid., 147, para. 279.

[251] The relationship between price parity and collocation is one of substitution; that is, price parity is an equitable, if not cost-based, alternative to collocation. Thus, price parity is meant to approximate the treatment of a non-affiliated ESPs, as if, its equipment had been placed in the central office of the BOC. This practical solution to the denial of collocation opportunities must, of course, be tempered by common sense. For example, an ESP should not be offered complete price parity, if it has chosen, and continues to choose, to locate its equipment a significant distance from its serving central office. Consequently, a price parity tariff should contain an element of distance sensitivity. Yet, a price parity tariff should not be finely distance sensitive, wherein small changes in distance from the serving central office are associated with large changes in rates.

[252] Federal Communications Commission, Phase I Further Reconsideration ONA Order, 3 FCC Rcd 1148, n. 93. These services also include flat-rated CNSs, interstate BSEs, and intrastate BSEs.

than the prices for functionally equivalent local, end user transport services.[253] This tariff principle throws into doubt any assertion that the FCC's pursuit of economic efficiency is identical to lowering the costs of production for ESPs.

Tariff Structure for Interstate BSAs

It would not be surprising if these general tariff principles are applied to determine the changes in the Part 69 rules that are required for the implementation of interstate ONA services, and the development of an interstate BSA that is different from an existing interexchange carrier, interstate access service. One of the questions that the FCC may have to answer is MCI's query as to whether an interstate tariff for an interstate BSA can, legally, contain traffic-sensitive and nontraffic-sensitive cost components as long as the ESPs' access charge exemption exists.[254] MCI's question hints at a major obstacle that the FCC has erected for itself by its denial of the legitimacy of use and user restrictions for ONA services, and the ambiguity that it has attached to CEI resale parameter.

Assume, for the moment, that: (1) a third party is permitted to resale BSAs to ESPs and interexchange carriers, and (2) use and user restrictions do not exist for an ONA services. Further assume that traffic-sensitive and nontraffic-sensitive charges are not included in the tariff for an interstate BSA. What is to prevent an ESP, say MCI, US Sprint, or AT&T, from buying these interstate BSAs and substituting them for existing access services? Presumably, it could be the absence of the "1+ dialing" functionality in the interstate BSA. Without Feature Group C or D signalling, the interstate voice grade market would be thrown back into the age before "equal access". That is, all interstate customers, including those of AT&T, will have to dial twenty-two or more digits to complete a traditional long distance call.

Similarly, what is there that will prevent an ESP from buying interstate BSAs that does include "1+ dialing" capabilities and reselling

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[253] Federal Communications Commission, Phase I Reconsideration ONA Order, 2 FCC Rcd, n. 261.

[254] MCI Communications Corporation, ONA Comments, 35, n. 48.

them to interexchange carriers? Because it has been assumed that these BSAs will not contain a common carrier line charge (CCLC) or other traffic-sensitive rates, it is possible that resale of this type could produce revenue shortfalls for the RBHCs. These shortfalls would result in higher prices for other services, or lower dividends and/or retained earnings for the stockholders. [255]

Tariff shopping by the interexchange carrier may be avoided by continuing and modifying the existing access charge rules. What could be continued is the FCC's policy that interstate access, and only interstate access, can be used by facilities-based interexchange carriers to produce basic voice or data services. In terms of modification, the FCC may find it necessary to extend this existing policy to production of their enhanced services. That is, an interexchange carrier would have to use interstate access services to provide an interstate enhanced service, while an ESP, unaffiliated with an interexchange carrier, could produce the same enhanced service by using either an interstate BSA or local, end user service.

The asymmetric treatment of interexchange-carriers-turned-ESPs and other ESPs may be defensible on either of two points. First, interexchange carriers, by virtue of their voice grade networks, have the opportunity to exploit economies of scale and scope that are unavailable to the other ESPs. In fact, these other ESPs have to rely on interexchange carriers for any interLATA services that are used to produce and/or deliver their enhanced services to their customers. Second, it would be counter-productive to permit or require an interexchange carrier to purchase two sets of essentially equivalent facilities - one to provide enhanced services and the other to provide basic services. What appears to be a reasonable alternative approach is to develop interstate ONA services that are built on the foundation of, and compatible with interstate access, and then to develop interstate BSAs that are not substitutes for this access.

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[255] Price cap regulation does not reduce the incentive to raise prices for other services as a result of the revenue shortfall assumed to occur as a result of the resale of interstate BSA. Although profits are only monitored in this alternative form of regulation, any reduction in profits makes it easier to raise selected prices to their maximum levels during each round of permissible price changes.

Resale of Interstate BSAs

Developed prior to the unbundling of existing basic services or the local network, the CEI resale parameter deals with the relationship between existing basic services that are used by affiliated and non-affiliated ESPs. It establishes that existing basic services that are used to produce enhanced services should be available on the same terms and conditions, and sold at published prices, to all ESPs. CEI resale did not state, or at that time imply, that basic services could be resold by one ESP to another ESP, or by an ESP to an end user or interexchange carrier, or by an end users and interexchange carriers to an ESP.

Yet, the FCC subsequently blurred this clear picture of CEI resale when it transported and grafted the CEI parameters onto its ONA decision. In that decision, the FCC adopted the stance that an interstate BSA (or BSE) would be available for resale to any customer.[256] Thus, the nexus was broken between the interstate ONA service and the ESP, and as a result, an interstate BSA (or BSE) no longer has to be used to produce an enhanced service in order to be resold to another third party. The apparent result being that CEI resale has been converted into the Wide Area Telephone Service (WATS) model for the resale of basic services; that is, interexchange carriers, end users, and ESPs are entitled to resale unadorned BSEs and BSAs to each other.

The WATS Model for the resale of interstate BSAs creates numerous tariff shopping opportunities, if these ONA services employ Feature Group C or D signalling, and the associated tariffs contain price discrimination between interstate access services and interstate BSAs. Price discrimination represents the prerequisite for tariff shopping, and the "1+ dialing" inherent in Feature C and D signalling establishes that these two distinct interstate services may be substitutable.

Several approaches are available for solving the tariff shopping problems that are implicit in the current CEI resale parameter. The FCC could clarify this parameter by prohibiting the resale of interstate BSAs

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[256] Federal Communications Commission, Phase I ONA Plan Order, 169, para. 325.

unless these BSAs are subsumed in the production of an enhanced service. Resale restrictions of this type have already been approved by the FCC for use in the intrastate regulatory jurisdiction. It has noted, however, that this approval rests on the requirement that only pre-existing resell restrictions are permissible, if and only if, they are currently imposed on the general body of ratepayers and not just the ESPs.[257] In these instances, the functional equivalent of an unadorned interstate BSA--the local, end user service--is never resold as a stand alone service. What is permitted, however, is for an ESP to sell an enhanced service that happens to utilize an interstate BSA as part of its production process.

Another potential solution is to require that an interstate BSA must terminate at the ESP's own premise, and not the premises of a customer of the ESP. This condition places the reseller of an interstate BSA at a disadvantage, since it must find a way to interconnect its customers with the resold, interstate BSA.

Other more radical possibilities for influencing the resale of interstate BSEs include: (1) phasing-in the carrier common line charge (CCLC) on ESPs; (2) repricing of all the interexchange carrier, interstate access charge rate elements; (3) increasing the cost of interstate access services; and (4) eliminating the CCLC and rolling these costs into the prices of other basic services. None of these alternative approaches is, however, appealing. Each involves a major disruption in various telecommunications markets, and none of the elements in this set of potential solutions solves the tariff shopping problem. They instead accommodate the effects of tariff shopping between services that are available within the jurisdiction of the FCC.

Regulatory Concerns with BSAs

In addition to the review of the interexchange carrier, interstate access tariff's local switching elements, the FCC will also review the CCLC and transport elements of this tariff before it decides on the structure of

[257] Ibid.

an interstate BSA.[258] Some members of the regulatory community oppose this review, if it is expected that the result will be interstate BSAs that do not include non-traffic sensitive costs.[259] It appears that these parties fear, as previously noted, that such interstate BSAs could generate revenue shortfalls that would have to be recovered from intrastate services.

Another regulatory concern, thus far unaddressed, is the implications of not requiring the RBHCs to wait for the completion of the Part 69 review before they offer interstate BSEs and BSAs through the interstate access tariffs.[260] Assume that a RBHC wants to provide an interstate BSA to complement its interstate BSEs, and the access charge exemption is still in place. Can the RBHC suggest in its waiver that it wants to modify the interstate access tariffs in such a way that an ESP does not have to pay the CCLC? Or, does the RBHC have to offer the interstate BSE on a cost basis, while supplying it over existing access services? Or, can an RBHC offer the interstate BSE on a market-value basis, and request a waiver of the "mix and match" prohibition because tariff shopping between interstate and intrastate BSEs is no longer a problem? The approval of any of these waiver requests has the potential to strongly influence the outcome of the ensuing Part 69 review. For example, the approval of the last waiver request would suggest that the FCC would be willing to forego its cost-based pricing principles, if the prices of state and federal ONA services are juggled to prevent tariff shopping between regulatory jurisdictions.

Putting aside, for the moment, these two concerns, the Part 69 review does have aspects that could benefit the consumers of local, end user services. Ameritech notes, for example, that a review and modification of the Part 69 rules will permit it to place the costs of developing and providing unbundled, interstate BSEs and interstate BSAs on the ESPs. An

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[258] Ibid., 145, para. 282.
[259] State of Michigan and Michigan Public Service Commission, Indiana Utility Regulatory Commission, and the Public Utility Commission of Ohio, ONA Comments (Columbus: State of Michigan and Michigan Public Service Commission, Indiana Utility Regulatory Commission, and Public Utility Commission of Ohio, 1988) 17.
[260] Federal Communications Commission, Phase I ONA Plan Order, 144, para 281, n. 636.

important consequence of this action is that these costs are, then, not charged, directly or indirectly, to other switched access customers.[261]

Entwined with task of benefiting the residential and single line business customers is the FCC's upcoming decision on the access charge exemption for ESPs. This already contentious issue has been made all the more difficult because a consensus does not exist on the philosophy and reasoning that lies behind this exemption. The FCC views it as the grant to an ESP of the option to use either interstate access or local, end user services in the production of interstate enhanced services. Because the regulatory community has not chosen to address the jurisdictional issues surrounding enhanced services, this exemption has, in practice, also amounted to the grant of an option of not using intrastate access services to produce intrastate enhanced services.

The ESPs, especially the more mature VANs, appear to take a different view of the exemption. They seem to see it as an FCC rule that mandates that they do not have to pay interexchange carrier access charges in the state or federal regulatory jurisdictions. In other words, it is not that they have the option to use interexchange carrier access services or a local, end user service to produce "nonjurisdictionalized" enhanced services. Instead, the exemption is perceived as a barrier that blocks the LECs from forcing ESPs onto the interexchange carrier access tariffs of either jurisdiction.

These different perspectives collide when the discussion of general tariff principles for BSAs turns to what constitutes the forced imposition of interexchange carrier access charges on ESPs. An ESP perceives any regulatory decision that provides them with an incentive to use such access services as the withdrawal of its access charge exemption.[262] For example, an ESP is apt to conclude that the tying together of the purchase of a BSA and BSE is a "sneak attack" on its access charge exemption. Conversely, the FCC does not appear to believe that the access charge exemption has been

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[261] Ameritech Operating Companies, Open Network Architecture Plan of the Ameritech Operating Companies (Chicago: American Information Technologies Corp., 1988) 127.

[262] CompUserve Corporation, ONA Comments, 22-24; Telenet Communications Corporation, ONA Comments (Reston: Telenet Communications Corp. 1988) 45, n. 38.

disturbed by its decision that an RBHC may require an ESP to purchase a BSA in order to purchase a BSE, if and only if, the RBHC also continues to provide the existing services to that ESP.[263] In fact, the FCC has implied that BellSouth's ONA Plan had violated its access charge exemption.[264] BellSouth had proposed that it would join the coupling of BSAs and BSEs with the denial of any right for an ESP to continue to utilize existing local, end user services to produce existing enhanced services.

General Tariff Principles for BSEs

The RBHCs, through their development of the Common ONA Model, have drawn some clear distinctions between BSAs and BSEs. The main distinctions, however, are that an ESP must choose a complete set of features and functionalities from a predetermined list of available options before a BSA becomes operational, whereas the choice of a BSE is limited by the selection of an operational BSA. By using this dividing line between BSAs and BSEs, it is possible to develop some general tariff principles for BSEs that are independent of the general tariff principles for BSAs.

Tying of BSAs and BSEs

Because BSEs are optional and dependent on the selection of a BSA, the FCC imagines that the tying together of the purchase of BSA and selected BSEs represents sufficient protection against the tariff shopping and subsequent revenue loss that are feared by BellSouth and Southwestern Bell.[265] But more importantly from the FCC's perspective, the coupling of BSAs and BSEs is an easy way to obtain significant price reductions for intrastate BSEs that are currently marketed by the BOCs as vertical services. Because the purchase of a BSA and BSE is coupled, an RBHC would

[263] Federal Communications Commission, Phase I ONA Plan Order, 155, para. 301.
[264] Ibid., 146, para. 284.
[265] Ibid., 168, para. 323.

not have to lower the price of any vertical service already sold directly to end users.[266]

These tariff principles may be applied to BSEs regardless of the approaches used to cost and price these network features or functionalities. Additionally, it is supportable even if the RBHC chooses to discontinue the availability of existing "plain old telephone services" to ESPs. However, coincident with a regulatory policy of continuing the availability of existing local exchange services at existing prices, the regulatory strategy of tying together the purchase of BSA and BSE becomes a vehicle for increasing the choices that are available to ESPs. The caveat is that only non-substitutable BSAs and BSEs can be priced on a cost basis. A necessary parameter is that any jointly-used BSAs and BSEs are less limiting than the existing telecommunications services.[267]

Making these observations with respect to Ameritech's ONA Plan, the FCC has found that tying together the purchase of BSAs and BSEs is not a fatal flaw.[268] This conclusion is not surprising when it is noted that the FCC believes that vertical services are priced above their costs, and that the tying together of BSAs and BSEs will permit Ameritech to offer prices for BSEs that are lower than the prices for currently tariffed, comparable features.[269] The disadvantage of this approach, however, is that the FCC has foregone the opportunities for ONA cost containment that emerge when technically compatible BSEs are combined with existing, basic transport services.[270]

The Ameritech approach for developing BSE tariffs is consistent with the FCC's views that ONA should encourage the growth of the enhanced

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[266] Ibid., 164, para. 316.
[267] Ibid., 163, para 315.
[268] Ibid.
[269] Ibid., n. 751.
[270] The choice between tying together the purchase of BSAs and BSEs and allowing an ESP to combine a technically compatible BSE with existing basic transport services is essentially a selection between two cost reduction opportunities for the ESP. In the first instance, the price of the BSE declines in relation to an existing vertical service that is marketed directly to end users. In the second instance, the price of an existing basic transport service, at least at the local level, tends to be less than the expected prices for the newly introduced BSAs.

services market,[271] and it should not result in the deployment of services that may be used as substitutes for existing local exchange services.[272] The intent of the FCC is to avoid the creation of the situation where the RBHCs are required to couple an incremental cost-based BSE with local business lines. The FCC's fear is that such a requirement would drive the RBHCs to the submission and defense of special ESP tariffs that are not available to other classes of customers - a result that goes against its decision to disallow all use and user restrictions in the interstate ONA tariffs.[273] Furthermore, the FCC does not want to be placed in the position of being the cause of RBHC initiatives to revamp their current rate structures for local exchange services.[274]

Use and User Restrictions

The FCC is not willing to approve an ONA Plan that includes use or user restrictions. For example, the BellSouth ONA plan contains a restriction on the services that an ESP can purchase. In particular, an ESP can not continue to use any existing local access service--the equivalent of a BSA--to produce enhanced services is BellSouth's franchised areas. The FCC has disapproved this aspect of the BellSouth plan.[275] Its position is that the interexchange carriers and others should be able to purchase ONA services, and the use of these services should not be restricted as they are combined with normal interstate access arrangements.[276]

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[271] Federal Communications Commission, Phase I ONA Plan Order, 162-163, para. 314.
[272] Ibid., 162, para. 313, n. 746.
[273] This fear can be overcome without requiring the purchase of BSAs and BSEs to be tied together. If, instead, the FCC makes a distinction between substitutable and non-substitutable ONA services, then it could establish incremental cost as the basis for setting the price of non-substitutable ONA services and reserving market-based prices for substitutable ONA services. In this way, tariff shopping opportunities could be eliminated without reducing the flexibility and availability of ONA services to ESPs. This alternative solution will be developed in more detail in chapter 6 of this report.
[274] Federal Communications Commission, Phase I ONA Plan Order, 167, para. 320.
[275] Ibid., 166, para 318. See also: Ibid., 167, paras 321-322.
[276] Ibid., 168, para. 323, n. 770.

Conversely, the FCC's position on use and user restrictions for BSEs does permit an RBHC to continue existing, generally imposed intrastate use restrictions on these ONA services.[277] Therefore, it follows that the FCC does not oppose the restriction of CNSs to end users, while BSEs are made available to end users, interexchange carriers, and ESPs. This regulatory-strategy-as-tariff-principle is related to the FCC's belief that tying together the purchase of BSAs and BSEs is more than sufficient protection against tariff shopping; and therefore, use and user restrictions are not necessary to avoid this phenomenon.[278]

The tension between the two alternatives for avoiding tariff shopping is that the FCC perceives use and user restrictions as anti-competitive, while it perceives the tying together of BSAs and BSEs as a way to lower the costs of the increasing number of options that are being made available to the ESPs through the implementation of ONA.

Continuation of Existing Services to ESPs

Also related to the FCC's position on use and user restrictions is its decision that the submission of BSE tariffs should not disrupt the existing operations of the ESPs. Consequently, the FCC has required that current tariffs must remain in effect for the existing services that the EPSs have traditionally used to produce enhanced services.[279] Ameritech has elected to meet this requirement by continuing the availability of existing services, and choosing to price its ONA services on a cost basis that follows the access charge exemplar. The key characteristic of this proposal is that Ameritech has requested, and has been granted, the authority to price its intrastate BSAs differently from the way that it prices its local exchange services.[280] Most ESPs have rejected this approach as being too limiting for their interests.

NYNEX, on the other hand, has taken a slightly different approach that may be more to the liking of the ESPs. NYNEX will permit an ESP to continue

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[277] Ibid., 168, para. 323, n. 771.
[278] Ibid., 168, para. 323.
[279] Ibid., 13, para. 10.
[280] Ibid., 163, para 315.

its subscription to an existing local exchange service, and to add technically feasible BSEs to this service in accordance with the ESPs own business judgment.[281] Telenet appears willing to accept this position. It has argued that it needs continued availability of various types of business services whether or not it elects to purchase a BSE or BSA.[282] The National Association of Regulatory Utility Commissions and Dun and Bradstreet should also be comfortable with the NYNEX approach. It does not appear that NYNEX's introduction of intrastate BSAs and BSEs will adversely affect the prices or availability of existing services, or an end user's capability to use these services in the standard fashion.[283]

The FCC's approval of the Ameritech and NYNEX's approaches for continuing the availability of existing local exchange services to ESPs reflects its concern that the withdrawal of such services could disrupt the enhanced services industry more than limitations on the use of new ONA services.[284] Take, for example, ESPs such as answering and alarm services. Although these firms are technically sophisticated and do have uses for new network capabilities, they do not have the resources to reconfigure their services because of changes in the costs, terms, and conditions of interconnecting with the BOC's network. For them, ONA means new network features and functions that can be added to existing features, functions,

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[281] New York Telephone Company and New England Telephone and Telegraph Company, ONA Reply Comments (White Plains: New York Telephone Company and New England Telephone and Telegraph Company) 74. NYNEX is supported in this position by Tymnet, CONAP, and Dun and Bradstreet. See: Tymnet-McDonnell Douglas Network Systems Company, ONA Comments (San Francisco: Tymnet-McDonnell Douglas Network Systems Company 1988) 40; Coalition of Open Network Architecture Parties, ONA Comments (Washington D.C.: Coalition of Open Network Architecture Parties 1988) 67; Dun and Bradstreet, ONA Comments (Washington D.C.: Dun and Bradstreet 1988) 39. Dun and Bradstreet states that it is theoretically correct to engraft ONA services onto existing tariffs.

[282] Telenet Communications Corporation, ONA Comments, 46.

[283] National Association of Regulatory Utility Commissioners, ONA Comments (Washington D.C.: National Associations of Regulatory Utility Commissioners 1988) Appendix 2. Dun and Bradstreet, ONA Comments, 7, 39-40. See also: Electronic Data Systems, ONA Reply Comments (Dallas: Electronic Data Systems 1988) 6; Coalition of Open Network Architecture Parties, ONA Reply Comments (Washington D.C.: Coalition of Open Network Architecture Parties 1988) 4.

[284] Federal Communications Commission, Phase I ONA Plan Order, 167, para. 322.

and transport arrangements. Therefore, they tend to feel that it is imperative that currently utilized, local exchange services continue to be available to them on the bases of prices, terms, and conditions that predate the implementation of ONA.

The continued availability of existing local exchange services also supports other ONA policy objectives that have developed by the FCC. These services represent the existing choices of the ESPs. Hence, the ONA services, particularly the coupled intrastate BSAs and BSEs, represent an increase in the choices that are available to the ESPs. That is, the ESPs can elect to use the new intrastate BSAs and BSEs subject to the pricing policies of the state public utility commissions, or these firms can continue to operate in their current modes of production.[285]

ESPs, furthermore, have the ability to exercise the access charge exemption, if they are able to continue to use existing, local exchange services to produce enhanced services.[286] But, this exemption represents, essentially, the the ability of the ESP to designate the regulatory jurisdiction of the basic transport service that underlies its production of an enhanced service. Consequently, it creates separations, as well as, tariff shopping issues.

Although the FCC has not yet addressed any separations issues that are associated with the implementation of ONA, it has begun its attack on tariff shopping issues with its refusal to permit the "mixing and matching" of interstate BSEs with intrastate BSAs or local exchange services. However, the prohibition against "mix and match" has the effect of requiring an ESP to combine an interstate BSE with either an interstate BSA or an interexchange carrier, interstate access service. Since not one RBHC has, to date, offered an interstate BSA, it follows that interstate access services are the only vehicles for the use of an interstate BSE by an ESP. Thus, it appears that an ESP will not be treated as an end user whenever it uses an interstate BSE to produce an enhanced service.

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[285] Ibid., 166, para. 319.
[286] Ibid., 166, para. 318.

"Mix and Match" Prohibition

The effective elimination of the access charge exemption in the interstate jurisdiction, via the "mix and match" prohibition, is acceptable to the interexchange-carrier-turned-ESP. These firms already purchase interstate access; and therefore, they incur only additional usage-related access expenses if they choose to use an interstate BSE to provide an interstate enhanced service. The other ESPs, however, are not in this favorable position. They do not currently purchase interstate access services of any type. How will these firms provide interstate enhanced services in rivalry with the interexchange-carrier-turned-ESP? The answer to this question raises some serious questions about the financial viability of the VANs and other nationally oriented ESPs.

Because these new, interstate, network capabilities will be available only to those ESPs that purchase interstate access services, the interexchange carriers may have a competitive advantage in the interstate enhanced services market. Assume, as an example, that the price of an interstate BSE is less than the price of an identical intrastate BSE, and that monthly, incremental, interstate access costs are larger than the monthly costs of a substitutable, local exchange service. Further assume that all other costs are equal between the interexchange carrier and its rivals. Under these assumptions, the price of the interexchange carrier's, interstate, enhanced service will be less than the price of a rival's interstate, enhanced service, if and only if, the price differential between the interstate and intrastate BSEs is greater than the price differential between the interstate and intrastate transport costs.

This result could easily occur when an interexchange carrier appends, say, call-forwarding/busy or call-forwarding/ring no answer, to a normal interstate call. The calling party, instead of being returned a busy signal, is given the option of leaving a message with <u>its</u> interexchange carrier. If the option is selected, the called number and the call is forwarded to the interexchange carrier's message center, and the calling party leaves a message. Subsequently, the interexchange carrier contacts the called party and delivers the message. In this example, the calling party is billed the costs of an end-user-to-network call plus the costs of a network-to-end-user call. The access charges for this "deferred, interstate

call" may be charged against the basic, interstate, message toll services, and the enhanced service's cost would then only be the cost of the interstate BSE.

Federal Position on State Tariffs for ONA Services

As far as the pricing of ONA services is concerned, the FCC has accepted the principle that the state public utility commissions have the authority to set the rates, terms, and conditions for the the use of intrastate BSEs and BSAs.[287] Building upon this foundation, the FCC has also recognized that these commissions are not under any obligation to set cost-based or any other particular rates for these ONA services. Consequently, the FCC has no intention of requiring a RBHC to offer a cost-based BSE for purchase with an existing, flat-rated or usage-sensitive local exchange service.[288]

Like so many of the FCC's ONA policy decisions, the FCC's parameters for the pricing of intrastate ONA services have been constructed to minimize the opportunities for tariffing shopping as a result of the deployment of ONA services that do not include use and user restrictions. This focus is not surprising. Tariff shopping is one of the most often cited, potential, problems with the implementation of ONA. In fact, the fear of tariff shopping has been so pervasive that not one RBHC has proposed the combination of a cost-based BSE with a flat-rated local exchange service. Their intrastate pricing proposals are either a cost-based BSE with a usage-sensitive BSA, or a market-based BSE with a local business line.[289]

Another indication of the FCC's "hands off" attitude concerning the pricing of intrastate ONA services is that it has not sought to preempt the state public utility commission from assessing intrastate access charges when an ESP connects with the BOC network.[290] This position is consistent with the opinion that the access charge exemption for ESPs applies only to decisions between interstate access services and local exchange services.

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[287] Ibid., 166, para. 320.
[288] Ibid.
[289] Ibid., n. 764.
[290] Ibid., 165, para. 318.

It also appears to be a signal that the FCC is prepared to shed the access charge exemption, if it receives sufficient support for this action from the state public utility commissions.

Perhaps as a means of gaining this support, the FCC has decided that it will not encroach upon the pricing of CNSs that has been deemed to be appropriate by the state public service commissions. What this decision means in practice is that the so-called "vertical services" can continue to contribute to the support of basic local exchanges services such as single line business and residential services.

The FCC could have attempted to require the submission of cost-based prices for any local loop feature or function that is used to provide interstate enhanced services.[291] This action would have been more consistent with the position that the FCC has taken with respect to the pricing of BSEs. After all, CNSs are regulated ONA services, as defined by the Common ONA Model which the FCC has approved. Therefore, its decision not to extend its reach to the pricing of features and functions on the local loop appears to be a conciliatory move on the part of the FCC. Further support for this hypothesis is that the FCC has not abandoned its perceived authority over the pricing of CNSs that are used to provide interstate enhanced services. It has simply chosen not to exercise it at this time in order to preserve some balance between old and new telecommunications policies.[292]

The FCC has, however, hedged its bets on this important ONA policy issue. It has stated that it may, in the future, require federal tariffs for any CNS that carries interstate traffic.[293] This implied threat of federal intervention places a cloud over the evolution of ONA. By retaining the power to impose federal tariffs for CNSs, the FCC has re-enforced its "mix and match" prohibition. That is, it has held open the threat of isolating the evolution of ONA services, if state tariff policies are sufficiently in conflict with the federal policy objectives of reasonably priced and unbundled ONA services that serve to stimulate the growth and development of the enhanced service industry.

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[291] Ibid., 47, para. 85.
[292] Ibid., 144, para. 280.
[293] Ibid., n. 635.

It appears that the way to avoid running afoul of the pricing parameters that the FCC has suggested for ONA services is to determine and define, clearly, the features, functions, and characteristics of the local exchange portion of the local loop.[294] This effort will not be easy for state and federal regulators. ESPs, on the strength of the access charge exemption, are apt to claim that the Common ONA Model's ESP access link is equivalent to an end user's network facilities; that is, the local exchange portion of the local loop. Contrarily, the RBHCs will, perhaps, propose that the ESP's access link is functionally equivalent to the access facilities portion of the local loop because an ESP attaches its network facilities, no matter how minimal, to the BOC's network. Clearly, the resolution of these opposing interpretations will have an important impact on the implementation of ONA and the intrastate pricing methods for ONA services.

Take, for example, the current federal regulatory strategy as it would be applied to developing an intrastate tariff for a BSE such as call-forwarding. Because this BSE is a factor of production, the FCC believes that its price should be determined on a cost-basis. That is, this telecommunications service should be neither be a source of a subsidy, nor a recipient of a subsidy. This cost-based predisposition, however, is not extended to the pricing of an identical call-forwarding service that is appended the local facilities that connect an end user to the telecommunications network. Traditionally, the price of this value-added service has been based on value-of-service concepts that have served to generate a substantial contribution toward the support of other more basic, residential phone line.[295] This practice is justified by the assertions that a residential phone line is a source of a positive externality for the

[294] Ibid., 48, para. 86, n. 161.
[295] Ibid., 166, para. 320. See also: BellSouth Corporation, South Central Bell Telephone Company, and Southern Bell Telephone and Telegraph Company, BellSouth Open Network Architecture Plan (Atlanta: BellSouth Corporation, South Central Bell Telephone Company and Southern Bell Telephone and Telegraph Company 1988) 69; New England Telephone and Telegraph Company, ONA Reply Comments (Boston: New England Telephone and Telegraph Company 1988) 16-17.

society, while a vertical service represents a "non-essential" service that does not produce positive or negative externalities.

Because a residential service has been deemed to be a source of benefit to the society, it follows that it should be offered at a price that is below its market-clearing price determined on an incremental cost basis. It also follows that a vertical service should be offered at a price that is above its market-clearing priced determined on the same cost basis. As a result, a "non-essential" service is the source of a required subsidy if a service that generates a negative externality is not available for taxation.

It seems that the FCC has categorized a BSE as a telecommunications service that lies somewhere between "absolutely essential" and "sufficiently non-essential". As a result, the FCC does not feel compelled to shift the market supply curve of a BSE either inward or outward. The FCC seems to be content to let the marketplace determine the price and quantity demanded and supplied of a BSE.

Conclusion

On the surface, uniformity for ONA services is not an irrational public policy. It does not involve the wasteful expenditure of resources to provide a locally, unwanted ONA service. Instead, it suggests nothing more than workable similarities between the operations, conditions, terms, rate structure, and nomenclatures of comparable ONA services that are offered by different RBHCs. Uniformity does, however, have a submerged issue. It is the estimation of the market demand for an ONA service. Uniformity quickly turns to ubiquity without agreement on the threshold level of market demand that will determine when an ONA service must be provisioned uniformly. Absent this ONA implementation parameter, an ESP could demand uniformity and require the RBHCs to incur the associated costs, merely on its contention that uniformity would be good for its business.

It is necessary to employ some restraints during the initial design phase of an ONA service. Although the RBHC, at that time, may not be obligated to provide an intrastate ONA service in a particular manner, it is not free to design a service in a manner that precludes uniformity at a later date. While this restriction on the design of an intrastate ONA

service may increase its cost, it appears to be necessary for the efficient development of the enhanced services market.

Multiple-use ONA services represent another issue in need of resolution. These services are likely candidates for use in the production of a variety of services that do not conform to the definition of an enhanced service. For example, one BSE may be useful for the production of a basic service by an interexchange carrier. Or, another BSE may be integrated into the production process of a larger end user such as a commercial bank, hotel, or hospital. This diversity could easily affect the degree of technical and non-technical uniformity that can be attained across RBHCs.

Perhaps, the prospect of multiple-use ONA services led the FCC to adopt interim, federal ONA tariffs as it sorts through the implications of dual jurisdiction ONA services. Economy of effort would therefore suggest that these tariffs will contain hints of the permanent, federal policies on the pricing and availability of ONA services. Take, for example, the fact that the FCC has signalled its belief that existing access services are a suitable basis for constructing permanent tariffs for interstate BSAs. If the Common ONA Model is left unchanged, this signal suggests that most of the future interstate BSEs will be technically compatible with interstate access services as well as interstate BSAs.

It is also reasonable to conclude that these tariffs will have an impact on the ESPs' initial investments as they respond to the implementation of ONA. For example, interim ONA tariffs, tying the use of interstate BSEs to the purchase of interstate access services, permit the ESPs to maintain their existing network configuration during the interval that the FCC reviews its access charge exemption for ESPs. Without this protection against rate shock and tariff shopping, the FCC would not be able to investigate the issue.

Lastly, the jurisdiction of an ONA service is rapidly becoming the most important regulatory issue in the ONA debate. Much of the discussion on this topic has been directed toward understanding the routing characteristics of an enhanced services call, message, or data packet. It is not obvious, however, that an analogy can be drawn between the network routing of a basic service and the network routing of an enhanced service. A basic service is, for the most part, a transmission between two end users. Intermediate data

base queries are used to facilitate this transmission, rather than to add or extract information from it. Thus, a basic service begins at the location of the calling party and ends at the location of the called party.

An enhanced service, on the other hand, involves the electronic transfer of information to and from an information repository. End users then access this information, on demand, through the telecommunications facilities of an ESP and RBHC. Consequently, the ESP does not own the information that is desired by its customer. It simply provides access to that information. Thus, the logical structure of an enhanced service is totally defined by three components. They are: (1) an end-user-to-network transmission, (2) a network-to-network transmission, and (3) a network-to-end-user transmission. Hence, a consumer of an enhanced service initiates a sequence of calls that is meant to first reach an ESP that then accesses an information repository that, in turn, releases information that the ESP transfers to the calling party. The calling party could, presumably, purchase direct access to the information repository, if it desired to do so. After all, this type of access has been sold to the ESP.

The sequential characteristics of an enhanced service call suggest that the interexchange carrier approach for determining the jurisdiction of a call may not be completely applicable for ONA services. That is, the configuration of an enhanced service is not essentially an engineering exercise as it is with a basic service. Instead, an enhanced service's configuration is, at least partly, dependent on the structure of the information repositories that must be accessed in order to provide that service. It is therefore always an open questions as to where and when the first leg of an enhanced service call ends, and the second leg begins.

CHAPTER 5

REGIONAL BELL HOLDING COMPANIES' PRICE AND NONPRICE POLICIES FOR IMPLEMENTING ONA

Introduction

The RBHCs' approaches to the submission of tariffs for ONA services differ along two dimensions. First, not every RBHC intends to continue allowing existing local exchange service to serve as ESP access to the public switched network. Hence, the introduction of ONA services would restrict the availability of existing local exchange services to ESPs. Second, some RBHCs object to submitting ONA tariffs in the state and federal regulatory jurisdictions. These companies would prefer to submit state-only tariffs for these services, and to cross-reference these tariffs when the services are used to provide an interstate enhanced service. Price policies related to ONA services also differ across the RBHCs. Some firms intend to use cost-based prices, exclusively, to introduce ONA services to the public. Others feel that market-based prices provide the flexibility required to deploy new and repackaged services economically. Some of these policies may change subsequently to further review by the FCC.

RBHC Service Availability and Jurisdictional Policies

Acceding to ESP requests and the wishes of the FCC, NYNEX and US West intend to continue the availability of existing local exchange services as access arrangements used to provide enhanced services. They also will permit the ESP to combine these services with BSEs.[296] US West, however,

[296]New York Telephone Company and New England Telephone and Telegraph Company, ONA Reply Comments (White Plains: New York Telephone Company and New England Telephone Company, 1988) 74; US West Inc., Open Network Architecture Plan of US West, Inc. (Washington D.C.: US West, Inc., 1988) 27.

does state that this policy may not be in place forever.[297] Concerns over tariff-shopping opportunities and the evolution of the traffic profiles for the enhanced-services industry may require it to offer usage-sensitive and distance-sensitive BSAs that may supplant existing local exchange services as the primary means of access for ESPs.

Ameritech, Southwestern Bell, and perhaps Pactel, also intend to continue making available existing local exchange services for use by an ESP. These companies, however, will not allow the use of a BSE in conjunction with business lines and other forms of local exchange service.[298] An ESP can either forego the use of BSEs and continue to employ its existing form of access to the network or forego its existing form of access and use BSEs and BSAs to provide its enhanced services. By excluding the commingling of local exchange services and BSEs, these RBHCs imply that intrastate and interstate-special-access, interstate-switched-access, and packet-switched access services are acceptable BSAs.

Bell Atlantic and BellSouth have taken different approaches to continuing the availability of local exchange services to ESPs. Bell Atlantic appears to keep its options open leading to an ambiguous position. While existing local exchange services may continue to be legitimate access arrangements for ESPs, it is unclear whether a BSE can be purchased for combination with these services. The FCC has asked for further clarification of Bell Atlantic's intentions with respect to continuing the availability of existing local exchange services to ESPs. BellSouth's initial position, by contrast, is not ambiguous at all. Existing local exchange services will not be offered to an ESP for any purpose.[299] As noted in the preceding chapter, the FCC has rejected this position.

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[297]US West, Inc., Open Network Architecture Plan of US West, Inc., 20.
[298]Ameritech Operating Companies, ONA Reply Comments (Chicago: American Information Technologies Corp. 1988) 6; Southwestern Bell Telephone Company, Southwestern Bell Telephone Company's Open Network Architecture Plan (St. Louis: Southwestern Bell Telephone Company 1988) 92. See also: Federal Communications Commission, Phase I ONA Plan Order, 119, para. 240. The FCC is unclear as to whether Pactel intends to allow an ESP to use existing local exchange services to furnish enhanced services.
[299]BellSouth Corporation, South Central Bell Telephone Company, and Southern Bell Telephone Company, BellSouth Open Network Architecture Plan (Atlanta: BellSouth Corporation, South Central Bell Telephone Company, and Southern Bell Telephone and Telegraph Company, 1988) Attachment Q, Section A32.8.3.

Alternatively, it has instructed BellSouth to continue to make existing local exchange services available to ESPs. BellSouth, however, does retain the flexibility to couple BSAs and BSEs, thereby foreclosing opportunities for ESPs to use BSEs in combination with the existing local exchange services.

The RBHCs' positions on the appropriate regulatory jurisdiction for submitting ONA tariffs are clustered similarly. Ameritech, NYNEX, Pactel, and US West intend to submit state and federal tariffs for ONA services.[300] Southwestern Bell intends to submit federal tariffs for BSAs, but would prefer not to submit interstate tariffs for BSEs. Instead, it has sought permission to cross-reference the interstate BSEs to its state enhanced-services-interconnection tariff.[301]

BellSouth prefers to tariff all of its ONA services at the state level only, but suppressed this preference and intends to submit federal tariffs for interstate ONA services.[302] Bell Atlantic opposes dual jurisdictional tariffs for BSEs, even if they were part of an end-to-end interstate service.[303] It, however, does intend to use the interstate access tariffs as the vehicle for its federal ONA tariffs.[304]

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[300]Ameritech Operating Companies, Open Network Architecture Plan of the Ameritech Operating Companies (Chicago: American Information Technologies Corp. 1988) 94-95; New York Telephone Company and New England Telephone and Telegraph Company, Open Network Architecture Plan of the Nynex Telephone Companies (White Plains: New York Telephone Company and New England Telephone Company, 1988) 96; Pacific Bell and Nevada Bell, Pacific Bell and Nevada Bell Plan to Provide Open Network Architecture (San Francisco: Pacific Bell and Nevada Bell, 1988) 22; US West, Inc., Open Network Architecture Plan of US West, Inc., 363.

[301]Southwestern Bell Telephone Company, Southwestern Bell Telephone Company's Open Network Architecture Plan, 96, Figure 3.

[302]BellSouth Corporation, South Central Bell Telephone Company, and Southern Bell Telephone and Telegraph Company, ONA Reply Comments (Atlanta: BellSouth Corporation, South Central Bell Telephone Company, and Southern Bell Telephone and Telegraph Company, 1988) 59.

[303]Bell Atlantic Telephone Companies, ONA Reply Comments (Washington D.C.: Bell Atlantic Telephone Companies, 1988) 21-22.

[304]Ibid., 3.

Analysis of RBHC Tariff Policies

Every RBHC is concerned about introducing tariff-shopping opportunities into its service territory. Although these firms universally agree that tariff shopping is not in their best interests, they do not agree on how to prevent it. Some turn to coupling the purchase of BSEs and BSAs. Others prefer use and user restrictions. The resolution of the tariff-shopping issue is necessary for the successful implementation of ONA. A suggested solution to this problem is presented in the next chapter. The following analysis simply touches upon some of the themes that the RBHCs have adopted to correct tariff shopping and other problems with the implementation of ONA.

Comments on Ameritech's Tariff Policy

Several ESPs support the jurisdictional approach for submitting ONA tariffs taken by Ameritech. AT&T, Telenet, Tymnet, and Coalition of Open Network Architecture Parties (CONAP) appear pleased with the explicit acceptance that the policy of dual jurisdiction for the submission of ONA tariffs is valid.[305] AT&T is particularly happy with the consistency between the state and federal ONA tariffs.[306] Ameritech has provided this consistency by placing the tariffs for ONA services in the intrastate and interstate interexchange carrier access tariffs.

Although each of the remaining RBHCs has agreed to submit, more or less, state and federal ONA tariffs, the enhanced-services industry has not tended to support these carriers to the degree that it supported Ameritech. Perhaps this lack of enthusiasm reflects the apparently lukewarm commitment of these RBHCs to dual jurisdiction over ONA services.

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[305] American Telephone and Telegraph Company, ONA Comments (Washington D.C.: American Telephone and Telegraph Company, 1988) 11-12; Coalition of Open Network Architecture Parties, ONA Comments (Washington D.C.: Coalition of Open Network Architecture Parties, 1988) 67; Telenet Corporation, ONA Reply Comments (Reston: Telenet Corporation, 1988) 8; Tymnet-McDonnel Douglas Network Systems Company, ONA Comments (San Francisco: Tymnet-McDonnel Douglas Network Systems Company, 1988) 37.

[306] American Telephone and Telegraph Company, ONA Comments, 12.

Comments on Bell Atlantic's Tariff Policy

Bell Atlantic's aversion to dual regulation of ONA services, even if a BSE was used with an interstate access tariff, has generated specific responses from ALC Corporation, an interexchange carrier, and CONAP, an enhanced service provider association. If dual regulation is a problem, ALC proposes that tariffs for all mixed-use ONA services should be submitted only to the FCC.[307] CONAP suggests a three-part compromise to resolve this issue. First, the appropriate intrastate rates would apply to intrastate usage and the appropriate interstate rates would apply to interstate usage when this mixed-use could be measured. Second, the appropriate intrastate and interstate rates would apply when the percentage of intrastate usage could be estimated. Third, interstate rates would apply when estimates of the percentage of intrastate usage could not be provided.[308]

Both the CONAP and ALC responses create an incentive difficult for state commissions to police. Whenever interstate rates are lower than intrastate rates, the ALC solution would give a strong incentive for an ESP to declare that a particular ONA service was a mixed-use service. Such a declaration would transfer revenues, and presumably costs, from the state commissions' jurisdiction. A similar incentive occurs with the CONAP solution. In this instance, however, an ESP would declare that it is not possible to provide and estimate of the percentage of intrastate usage. This declaration places the burden on the BOC to provide the estimate. To date, this has proven to be impossible in the arena of interexchange carrier access services.

Comments on BellSouth's Tariff Policy

The critical elements of BellSouth's tariff policy are: 1) use and user restrictions placed on ONA services, and 2) discontinuing the availability of existing local exchange services to ESPs. BellSouth defended both of

[307] ALC Corporation, ONA Comments (Washington D.C.: ALC Corporation, 1988) 9-10.
[308] Coalition of Open Network Architecture Parties, ONA Comments, 70-71.

these tariff restrictions on the basis of preventing tariff shopping.[309] This RBHC argued that the unavailability of an intrastate BSE as an option to an existing local exchange service increases the difficulty of end-user tariff shopping.[310]

These positions elicited an immediate negative response from the enhanced-services industry. Noting that increasing the difficulty of end-user tariff shopping should not be the reason for making existing local exchange services unavailable to ESPs, this industry flatly rejected BellSouth's tariff policy. Citing BellSouth's intentions to remove existing local exchange services from the list of services that may be purchased by them and to place use and user restrictions on the ONA services they could purchase, the nonaffiliated ESPs concluded that BellSouth's implementation of ONA would put them at a competitive disadvantage.

Responding to BellSouth's assertions of potential tariff-shopping opportunities, the TeleCommunications Association notes that end users would not be able to purchase BSEs,[311] and the Association of Telemessaging Services International, Inc. asserts that ESP-only tariffs would necessarily involve price discrimination and market segmentation, possibly introducing cross-subsidization opportunities for BellSouth.[312]

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[309] BellSouth Corporation, South Central Bell Telephone Company, and Southern Bell Telephone and Telegraph Company, BellSouth Open Network Architecture Plan, 69-70.

[310] BellSouth Corporation, South Central Bell Telephone Company, and Southern Bell Telephone and Telegraph Company, BellSouth Open Network Architecture Plan, Attachment Q, Section A32.2E. Per the BellSouth ONA plan, a BSE is exclusively an option to a BSA or interexchange carrier access service. This restriction forces an end user to purchase a BSE and BSA where the tariff format is a distance-sensitive access link, a monthly flat rate for features and functions, and a usage-sensitive and distance-sensitive price for interoffice transport. Since most existing local exchange services for end users in BellSouth's service territories have flat monthly rates, it is unlikely that an end user will purchase BSEs and BSAs. Essentially, the required purchase of the BSA may make the BSE too expensive to substitute for an existing vertical service.

[311] Tele-Communications Association, ONA Comments (Washington D.C.: Tele-Communications Association, 1988) 14.

[312] Association of Telemessaging Services International, Inc., ONA Comments (Washington D.C.: Association of Telemessaging Services International, Inc., 1988) 36.

As far as US Sprint is concerned, BellSouth has not established a proven and tested position for the imposition of use and user restrictions on the purchase of ONA services. It is not self-evident, argues US Sprint, that intrastate tariff shopping between existing local-exchange services and ONA services must occur absent use and user restrictions. It may be that tariff shopping within a regulatory jurisdiction could be eliminated through pricing policies.[313]

Comments on NYNEX's Tariff Policy

The NYNEX tariff policy for ONA services is to unbundle BSEs to give an ESP the opportunity to combine these services with a wide variety of existing services in addition to newly developed BSAs. Thus for NYNEX, unbundling means unrestricted access to all BSEs through any technically compatible local exchange facility. Such facilities include the local business line tariffed in the state jurisdiction and interstate access lines tariffed in the federal jurisdiction.[314]

NYNEX's method for extending the availability of an ONA service from one regulatory jurisdiction to another appears straightforward. Suppose an ONA service already exists in one jurisdiction, and that a sufficient level of market demand for that service exists in the other jurisdiction. NYNEX will increase the jurisdictional availability for this service either by submitting a tariff in the second regulatory jurisdiction, or by making a cross-reference to the appropriate state tariff.[315] One problem with this approach is that an ESP must demonstrate a sufficient level of market demand to convince NYNEX to extend the ONA service to the other regulatory jurisdiction. This requirement will place heavy burdens on the ESPs merely

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[313] US Sprint Communications Company, ONA Comments (Washington D.C.: US Sprint Communications Company, 1988) 14-16.

[314] New York Telephone Company and New England Telephone and Telegraph Company, Open Network Architecture Plan of the Nynex Telephone Companies, 96.

[315] Ibid., 97. The FCC, as noted in the preceding chapter, has rejected the second element of the NYNEX approach for expanding the jurisdictional availability of an ONA service. It will not allow an RBHC to place a cross-reference to a state tariff in a federal ONA tariff.

to justify the availability of an already existing ONA service in the two regulatory jurisdictions.

NYNEX does not oppose dual regulation for ONA services, although it has suggested that the federal tariffs for ONA services could mirror the state ONA tariffs and still further the FCC's vision of the evolution and growth of the enhanced-services industry.[316]

Comments on Pactel Tariff Policy

Pactel's tariff policies lean toward a new ESP tariff with wider calling areas than currently apply to existing local exchange services. It also favors distance-sensitive rate bands for its state-tariffed ONA services.[317]

According to Pactel, new tariffs are necessary because most of the ESPs' ONA requests are variants of existing services found in the local exchange tariff, or easily placed in that tariff.[318] New tariffs exclusively for use by ESPs would, therefore, represent some protection against tariff shopping.

A Pactel innovation is its offer of a BSE bulk purchase agreement that includes mandatory direct billing to the end users by Pactel.[319] This option allows an ESP to resell BSEs, but prevents it from gaining a marketing and technical presence at the end-users' local-loop facilities. This tariff option, however, is not protected against the substitution of BSEs for vertical services by coalitions of end users. Consequently, Pactel has restricted the availability of the bulk purchase option to those consumers who purchase the appropriate BSAs.[320]

There is some question concerning the relationship between the purchase of BSAs and BSEs when a customer does not execute a bulk purchase agreement

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[316] Idem, ONA Reply Comments, 10, n. 1.
[317] Pacific Bell and Nevada Bell, Pacific Bell and Nevada Bell Plan to Provide Open Network Architecture, 21.
[318] Ibid., 22; See also: Pacific Bell and Nevada Bell, ONA Reply Comments (San Francisco: Pacific Bell and Nevada Bell, 1988) 36.
[319] Pacific Bell and Nevada Bell, Pacific Bell and Nevada Bell Plan to Provide Open Network Architecture, 22.
[320] Ibid., 45.

with Pactel. The FCC, for example, cannot discern whether a BSE can be purchased without the purchase of a BSA.[321] This ambiguity arises because Pactel has noted that some BSEs do not require a BSA. Therefore, a BSA has been developed only when it was technically necessary.[322]

Comments on Southwestern Bell's Tariff Policy

Southwestern Bell's tariff policy is in its formative stages. This RBHC wants the flexibility to introduce an ESP-only tariff when it is tactically and strategically necessary to do so. Like many of the other RBHCs, it does not want to introduce tariff-shopping opportunities into service territories.

Comments on US West's Tariff Policy

The fundamental tenet of US West tariff policy is that the use of a BSE is subject to the conditions that the BSE tariff must be submitted in the same regulatory jurisdiction as the access for that BSE. As a result, the use of a BSE is subject to restrictions placed on the use of the underlying access arrangement. For example, a strictly interstate BSE will be available only to purchasers of interstate access.[323] US West does not see these availability conditions as constituting a use or user restriction within a regulatory jurisdiction.[324]

The US West tariff policy is theoretically sound. It implies the submission of interstate and intrastate ONA tariffs. However, US West's transition from theory to practice introduces some difficulties. US West takes the position that it will submit federal tariffs for only "nonexchange type" BSEs. No definition exists, however, of what constitutes such a service. Another difficulty is that US West will not submit a federal tariff until it is convinced that sufficient demand exists for the

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[321] Federal Communications Commission, Phase I ONA Plan Order, 119, para. 240.
[322] Pacific Bell and Nevada Bell, ONA Reply Comments, 8-9.
[323] US West Inc., Open Network Architecture Plan of US West, Inc., 368.
[324] Ibid.

interstate BSE.[325] As with the introduction of any ONA service, this requirement places a significant burden on the ESP that wants an interstate BSE. The last difficulty is that an interstate BSE is created by cross-referencing an existing intrastate BSE into the interstate access tariff.[326] AT&T objects to this approach because the rates for an interstate BSE would depend exclusively on the regulatory policies of state commissions. Moreover, AT&T points out that this procedure appears to be administratively inefficient.[327]

Issues of Dual Regulation for ONA Services

Except for Ameritech (and to large extent NYNEX), the RBHCs have tended to argue against dual jurisdiction over ONA services. BellSouth, for example, is concerned with the effect that interstate ONA tariffs may have on the pricing arrangements at the state level.[328] There is little doubt, however, that US West has been the most vocal opponent of the regulatory practice.

US West notes that dual jurisdiction over ONA services will generate different intrastate and interstate prices for an ONA service with the same function.[329] US West suggests further that ESPs want different prices for functionally equivalent ONA services because they enable ESPs to lower their costs by tariff shopping. Hence, US West concludes that ESPs who support mandatory federal tariffs for ONA services really desire the capability to "mix and match" jurisdictionally separate ONA services to avoid paying subsidies to implement public policy in the telecommunications industry.[330] Thus, dual jurisdiction for ONA services is not an appropriate public policy.

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[325] Ibid., 363.
[326] Ibid., 363-64, 367.
[327] American Telephone and Telegraph Company, ONA Comments, 13-15. The FCC apparently heeded the concerns of AT&T and others and required the submission of federal tariffs for all interstate ONA services. See, the preceding chapter for a discussion of this decision.
[328] BellSouth Corporation, South Central Bell Telephone Company, and Southern Bell Telephone and Telegraph Company, ONA Reply Comments, 63-64.
[329] US West, Inc., Open Network Architecture Plan of US West, Inc., 363-65.
[330] US West Inc., ONA Reply Comments (Washington D.C.: US West Inc.) 74-75.

US West's description of the motives of some ESPs may be correct. However, its conclusion to forego dual regulation is not correct. Tariff shopping and the avoidance of intrastate or interstate subsidies are not guaranteed by the existence of dual jurisdiction over ONA services. Note in this regard that state and federal interexchange tariffs contain different prices for the same telecommunications function. Yet, not even tariff-shopping opportunities abound for users of these telecommunications services. The point made is that the absence of tariff shopping can co-exist with intrastate and interstate price differences for the same access service. Hence, it may well be that US West's concern over dual jurisdiction may be a red herring.

Consider the following set of circumstances: 1) the existence of two identical, jurisdictionally intrastate and interstate ONA services, 2) that the total cost of providing these services is one hundred dollars each month, 3) that fifty percent of these costs are shared between the two regulatory jurisdictions on the basis of usage, and that the remaining fifty percent are shared equally, 4) that fifty percent of the access usage is intrastate and the fifty percent of the usage is interstate, 5) that these services generate one hundred minutes of total usage each month, 6) that each jurisdiction decides to recover the equally shared costs differently, 7) that one regulatory jurisdiction decides to recovery these costs on the basis of usage, the other on the basis of the number of subscribers to the service, and 8) that fifty subscribers exist for the intrastate service and fifty subscribers exist for the interstate service.

Under these circumstances, the the price of intrastate ONA service is one dollar per minute. The price of the interstate ONA service is 50 cents per minute and 50 cents per customer. Now assume the existence of two identical intrastate and interstate customers, each using 20 minutes of access per month. The intrastate customer pays twenty dollars. The interstate customer pays ten dollars and fifty cents. No subsidies occur because costs are shared equally, traffic is distributed uniformly between the two regulatory jurisdictions, and there are equal numbers of subscribers in each jurisdiction. The different prices are purely a result of differing regulatory policies of each jurisdiction assumed to be caused by different economic and demographic characteristics of the relevant populations.

Dual jurisdiction over ONA services, therefore, means that sustaining price differences between intrastate and interstate exchange access services is possible if and only if practices and procedures that establish the jurisdictional status of this traffic. With these safeguards in place, each jurisdiction may use different price methodologies to the set the charges for functionally equivalent ONA services. It is therefore accepted that different price methodologies are a permissible characteristic of dual regulation as long as each jurisdiction takes the necessary precautions to separate its traffic from the traffic of the other. But, it is further noted that such separation is only required for traffic associated with functionally equivalent intrastate and interstate ONA services. That is, the prerequisite for intrajurisdictional or interjurisdictional tariff shopping is a different price for a functionally-equivalent service.

Under this condition, tariff-shopping opportunities ocur when a telecommunications service from one jurisdiction is a substitute for a telecommunciations service from the other jurisdiction. They also occur when parts of one telecommunications service can be combined with parts of another telecommunciations service. Since the unbundling criterion of ONA envisions such combinations, elections of different regulatory policies in different regulatory jurisdictions raise concerns about "mix and match" as a source of tariff shopping. However as shown below, these concerns are not about dual jurisdiction or different regulatory policies and practices in each jurisdiction. They are concerns about the need for cooperation and coordination between these different regulatory authorities.

US West concern with dual jurisdiction is a concern about the monitoring and transactions costs that may have be incurred to identify the regulatory jurisdiction of an ONA service. Insufficient expenditures in this area could cause monitoring and surveillance failures thereby opening the door for tariff shopping opportunities by the ESPs. If, however, practices were established for identifying the jurisdiction of an ONA service and subsequent procedures were in place for restricting the use of this service to the appropriate regulatory jurisdiction, US West's concern over tariff shopping would most likely rapidly dissipate along with its aversion toward federal tariffs for ONA services.

Dual jurisdiction and different prices for functionally equivalent services are necessary conditions for the existence of tariff-shopping

opportunities. But, they are not sufficient conditions. That is, they permit tariff shopping to occur. However, they do not guarantee that it will occur. The sufficient conditions are dual jurisdiction, different prices for functionally equivalent services, and insufficient monitoring and surveillance procedures. If this set of conditions comes to characteristic the implementation of ONA, tariff shopping may evolve into the most important ONA implementation problem.

Not everyone is opposed to tariff shopping. CONAP suggests, for example, that jurisdictional tariff shopping is proper and to be expected if it results in informed customers taking services out of the most economical intrastate and interstate ONA tariffs.[331] Such tariff shopping, however, would cause serious cost allocation and cost recovery problems for the RBHCs. These problems would threaten their financial stability. Consequently, the CONAP approach destroys any possibility of meaningful differences between the ONA policies of the state and federal regulatory jurisdictions.

Some state public utility commissions have suggested that the submission of intrastate and interstate ONA tariffs may impede their ability to ensure reasonable rates for local exchange services and to review the business decisions that lead to the deployment of additional intrastate investment.[332] Other state commissions suggest that the best way to insure against tariff shopping is to eliminate interstate ONA tariffs.[333]

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[331] Coalition of Open Network Architecture Parties, ONA Reply Comments (Washington D.C.: Coalition of Open Network Architecture Parties, 1988) 8-10.

[332] People of the State of California and the Public Utilities Commission of the State of California, ONA Comments (Sacramento: People of the State of California and the Public Utilities Commission of the State of California, 1988) 6; New England Conference of Public Utilities Commissioners, Inc., ONA Comments (Boston: New England Conference of Public Utilities Commissioners, Inc, 1988) 8; New Jersey Board of Public Utilities, ONA Reply Comments (Newark: New Jersey Board of Public Utilities, 1988) 7; Public Service Commission of Wisconsin, ONA Comments (Madison: Public Service Commission of Wisconsin, 1988) 2-4.

[333] Alabama Public Service Commission, ONA Comments (Montgomery: Alabama Public Service Commission, 1988) 2-3; Arizona Corporation Commission, The Colorado Public Utilities Commission, the Idaho Public Utilities Commission,

(Footnote continues on next page)

Unless overturned by court or legislative action, the FCC has established a regime of dual regulation for ONA services. Owing to the newness of ONA, No evidence exists that dual ONA tariffs necessarily change the rate levels or relationships for existing local exchange services or cause tariff shopping. It appears, therefore, that initiative to eliminate dual jurisdiction over ONA services may be premature. Efforts, instead, could be directed to find less intrusive solutions to the problems of tariff shopping, jurisdictional separations, and jurisdictional ratemaking.

For example, it is not apparent that federal ONA tariffs preclude the review of the BOCs' investment decisions by state commissions. Dual jurisdiction means dual ratemaking. Although rates may be set in one jurisdiction without regard to a measure of investment, this does not mean necessarily that rates must be set on the same basis in the other regulatory jurisdiction. The complicating factor is that some limitations may exist on the actions that may be taken by the state commissions after they complete their reviews of the BOCs' investment decisions. The successful federal preemption with respect to establishing jurisdictional separations policies may be the source. It is hoped that the interpretation of this preemption would not prohibit a state commission from removing imprudent investment from the regulated rate base.[334]

(Footnote continued from previous page)
The North Dakota Public Service Commission, The South Dakota Public Utilities Commission, and The Utah Public Service Commission, ONA Comments (Tucson: Arizona Corporation Commission, The Colorado Public Utilities Commission, The Idaho Public Utilities Commission, The North Dakota Public Service Commission, The South Dakota Public Utilities Commission, and The Utah Public Service Commission, 1988) 4.

[334] The issue is whether the FCC's decision to separate a particular BOC investment between the intrastate and interstate regulatory jurisdiction necessarily establishes that such investment is prudent and suitable for recovery through interstate and intrastate rates. As applied to ONA, this issue highlights the relationship between BOC investment decisions, shared facilities, and interstate BSAs and BSEs. That is, must state commissions approve intrastate rates to recover the intrastate portion of shared facilities deployed primarily to provide interstate BSEs and BSAs. In this context, this separation issues may be viewed as one of the factors behind NARUC's court challenge of the FCC's authority to regulate ONA services.

RBHC Price Policies

The pricing policies for ONA services cover the gamut of possibilities. One RBHC, Ameritech, for example, adopts a cost-based approach that is derived from the practices and procedures used to determine the costs of interstate access services for interexchange carriers. The others lean toward market-based approaches that do not rely on the estimation of fully distributed costs for implementing ONA.

The interexchange carrier access-availability concept may be applied without confusion because the interexchange carrier is not, at present, a rival of the local exchange company. It cannot provide local exchange services, and the local exchange carrier cannot provide interLATA toll services. The business circumstances are different for access for an ESP. The local exchange carrier is a rival of the ESP since many enhanced services originate and terminate within a local calling area.

Supra Figure 3-7, the end-user's local-loop facilities are not part of an ESP access service. There is no widely-accepted technical justification for this omission. An ESP must be connected to its end-users if it is to provide services. There is, however, a regulatory justification. The ESPs are not currently assessed a CCLC. This charge contributes to the direct recovery of the end-user's common and multipurpose local-loop facility costs. Assuming that ESP access is technically and functionally equivalent to other forms of access, an interexchange carrier could not forego the substitution of this type of access for existing form of access and maintain its fiduciary responsibility to its shareholders. It is appropriate under these circumstances, therefore, to sever the end-user's local-loop from the ESP access arrangement.

In addition to tariff shopping by interexchange carriers, the RBHCs also are concerned about tariff shopping by end users. If any RBHC subscriber could purchase an ONA service, some BSEs could compete with existing vertical services marketed directly to end users at premium prices. The associated revenue streams, therefore, are important to the RBHCs because they provide financial support for other services that do not command a premium price. The severing of the end-user's local-loop facilities from ESP access helps to protect these revenues whenever it must purchase a BSA to obtain a BSE. The Common ONA Model, however, provides

little protection against end-user tariff shopping when a BSE may be combined with an existing, end user service such as residential and single-line business service.

The effects of ESP access on the pricing of ONA services are examined in the following subsections. This analysis will become part of the foundation of a model ONA tariff designed to prevent tariff-shopping opportunities.

Ameritech ONA Price Policies

Ameritech intends to use the interexchange-carrier-access analogy when pricing ONA services.[335] As a result, the prices for Ameritech's state and federal ONA services will be based on fully distributed costs.[336] Moreover, the structure of its ONA prices will be similar to those used for intrastate and interstate access services that use common local-loop facilities to connect the interexchange carriers to the end users.[337] Ameritech adopted this approach to avoid what it terms the uneconomic incentives.[338] It is apparently alluding to the wasted resources and network inefficiencies caused by jurisdictionally separate facilities for the existing Wide Area Telephone Service Access Lines (WAL).

Incentives for service bypass--an alternative name for tariff shopping --is another issue that Ameritech is concerned about. Suppose that a WAL-like access line is made available to ESPs. Suppose further that Ameritech's ONA tariffs do not include use and user restrictions. Then this WAL-like access would be accessible to interexchange carriers. Now suppose that the WAL-like access sold to ESPs does not include a CCLC. By simply purchasing this WAL-like access, an interexchange carrier could avoid the

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[335] The one access concept not employed by Ameritech is that of the Wide Area Telephone Service Access Line (WAL). This access arrangement would permit an ESP to select dedicated transport facilities in place of the common facilities usually comprising an existing ESP access link.
[336] Ameritech Operating Companies, Open Network Architecture Plan of the Ameritech Operating Companies, 8, 96. Ameritech intends to follow the cost-based pricing rules developed in Parts 61 and 69 of the FCC's rules.
[337] Ibid., 94-95.
[338] Ibid.

usage-sensitive CCLC and local transport charges of its existing form of access to end users.

Ameritech contends that its nonWAL-like-ESP access is appropriate because BSAs and BSEs essentially are changes or additions to existing switched intrastate or interstate access tariffs.[339] What is required to accommodate these changes and additions, however, is the authority to unbundle components of the interexchange carrier-access tariffs.[340] Hence, Ameritech has requested a waiver of portions of the FCC's Part 69 rules.[341] Complementing the waiver of the Part 69 rules, Ameritech, whenever possible, will use intrastate and interstate access rates and rate elements for pricing ONA services. The only rate element that it will not include, for the present, is the CCLC.[342]

A different regulatory treatment is proposed by Ameritech for other ONA services contained in the Common ONA Model. The rates and rate elements of an ANS or CNS will not be found in the access tariffs, but will be included in a state's general exchange tariff.[343] Additionally, it will not reprice these services using cost-based ratemaking principles included in Parts 61 and 69 of the FCC's rules.[344] These initiatives help to prevent tariff shopping by end users. Placing the CNSs in the general exchange tariff and the BSEs in the access tariff makes it uneconomical for an end user to substitute cost-based BSEs for premium-priced CNSs.

Several parties approve of Ameritech's approach for supplying ESP access. Tymnet and CONAP support Ameritech's decision to submit state and federal ONA tariffs.[345] AT&T and Tymnet support the cost-based principles

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[339] Ibid., 93. BSAs are similar, but not identical, to interstate switched access services. The difference, according to Ameritech, is that some of the features and functions of these switched feature groups have to be unbundled and offered as BSEs.

[340] Ibid., 94

[341] Ibid., 93, 127.

[342] Ibid., 96.

[343] Ibid., 32, and Appendix 8, 2. See also: Ameritech Operating Companies, ONA Reply Comments, 19-21.

[344] Ameritech Operating Companies, ONA Reply Comments, 35.

[345] Coalition of Open Network Architecture Parties, ONA Comments, 67; Tymnet-McDonnel Douglas Network Systems Company, ONA Comments, 37.

that will be followed by Ameritech.[346] AT&T also embraces the consistency between the state and federal ONA tariffs that will be part of the Ameritech approach for pricing ONA services. The major advantage, as far as AT&T is concerned, is the increased level of national and regional uniformity that will result.[347]

Bell Atlantic ONA Price Policies

Pursuant to Bell Atlantic's pricing policies, it would prefer to submit only state tariffs for most, if not all, of its ONA services.[348] It appears that Bell Atlantic hold this preference because it believes that state-only tariffs for ONA services would eliminate tariff-shopping opportunities for ESPs between intrastate and interstate regulatory jurisdictions. Bell Atlantic, however, does not appear to be concerned with the costs of policing such a tariff arrangement. Consider the impact of the following sequence of events on state regulatory commissions.

Assume a particular state decision on the price for an ONA service is objectionable to an ESP. This unregulated firm will ask for relief from the FCC. The premise will be an assertion or demonstration that an interstate enhanced-services application exists for that ONA service. If this presumption is established, the ESP will suggest that its interstate commerce is being affected by the decisions of a state commission. It then will conclude that this situation represents an improper exercise of regulatory authority. Therefore, a federal tariff for this ONA service needs to be submitted to the FCC. At this point, a state commission either will have to defend its pricing decision or accept the decision reached by the FCC or a Joint Board.

Another difficulty with Bell Atlantic's approach for pricing ONA services is that it increases the threat of federal monitoring of the states' ONA pricing decisions. This RBHC has not described its generic

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[346] American Telephone and Telegraph Company, ONA Comments, 12; Tymnet-McDonnell Douglas Network Systems Company, ONA Comments, 40.
[347] American Telephone and Telegraph Company, ONA Comments, 12.
[348] Bell Atlantic Telephone Companies, Open Network Architecture Plan, 2-3.

pricing methodology,[349] nor has Bell Atlantic stated its positions on the continuation of existing forms of access to an ESP and the existence of use and user restrictions.[350] What is known with relative certainty is that the pricing for BSAs will be derived from existing pricing methods for local exchange and access services.[351] Bell Atlantic, for example, seems content with using the principles of density-cell pricing for setting the rates for ONA services derived from existing local exchange services.[352] Conversely, it seems to prefer usage-sensitive and distance-sensitive rates when the BSA is derived from switched access services.[353]

BellSouth's ONA Pricing Policies

Most of BellSouth's current ONA services also are existing local exchange services. To avoid introducing tariff-shopping opportunities into its service territories, BellSouth wants to require that an ESP buy all of its services from a new section of the general subscriber service tariff.[354] BellSouth's measure for eliminating tariff shopping is equivalent to renaming and repricing existing local exchange services, while leaving their functionality unchanged. Presumably, these new prices will be markedly different from the existing prices for comparable services.

BellSouth intends to set interstate ONA prices and submit interstate ONA tariffs at its discretion.[355] Whenever interstate ONA services are offered, their rates, however, will be consistent with those found in BellSouth's interstate access tariffs.[356] Symmetrically, the intrastate

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[349] Federal Communications Commission, Phase I ONA Plan Order, 116, para. 232.
[350] Ibid.
[351] Bell Atlantic Telephone Companies, Open Network Architecture Plan, 62, 85
[352] Ibid. 84. Density cell pricing is a common rate structure for residential and single-line business services. Under this rate structure, monthly flat-rate charges for local exchange services are lower in the cells where there are more subscribers.
[353] Ibid., 85
[354] BellSouth Corporation, South Central Bell Telephone Company, and Southern Bell Telephone and Telegraph Company, BellSouth Open Network Architecture Plan, Attachment Q, Section A32.8.3.
[355] Ibid., 70, 74.
[356] Idem, ONA Reply Comments, 59.

access tariff will be used for intrastate, interLATA switched-transport usage.[357] Otherwise, the prices for ONA services will be found in a newly developed ESP section of the general subscriber service tariff.[358] Each of these pricing policies reveals BellSouth's strong intention to have a usage-sensitive prices structure for an ESP's transport facilities.[359]

BellSouth has adopted four principles that it intends to use in pricing ONA services.[360] Each principle fulfills a corporate objective. In turn, each objective reflects BellSouth's belief that it is operating in a competitive marketplace where it does not have market power and where viable alternative services are available to its customers who are ESPs and end users.

The first principle is that the burden of recovering the ONA implementation costs should be placed on the cost-causers who use the network. BellSouth, however, has elected to make its version of this pricing concept more explicit. It wants to recover the costs of ONA from ESPs that use the network. This approach suggests that BellSouth will propose usage-sensitive rates for ONA services wherever and whenever it is possible to have such rates approved by regulatory authorities.

The second principle is that consumers of other regulated services are not to be burdened with higher rates for existing local exchange services to have more enhanced services offered to the public. Consequently, BellSouth has to be particularly sensitive to opportunities for tariff shopping by end users and ESPs. Moreover, BellSouth does not intend to adjust the prices of existing local exchange services as a result of the introduction of ONA services. Hence, the isolation of end users from ESPs is an important pricing policy for BellSouth.

The third principle is that the price levels for the various ONA services need to reflect the value of BellSouth's network to the ESP that purchases these services. BellSouth's use of the word "value" indicates its intention to deviate from the principles of cost-based pricing and to

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[357] Idem, BellSouth Open Network Architecture Plan, Attachment A, Section A323.3G.
[358] Ibid., Attachment Q, Section A32.8.3
[359] Ibid.
[360] Ibid., 68-69.

err on the side of market-based prices. Such an intent is consistent with its belief that it cannot extract monopoly rents from the sale of ONA services; that is, value-of-service price levels are constrained by competitive forces.

The fourth principle is that optimal prices for ONA services have to take into account any cross-elastic effects with existing local exchange services, including interexchange carrier access-services. This principle has been embraced to prevent tariff shopping by an end user since an ESP is restricted to buying BSAs and BSEs from a new ESP-only tariff. The business concern of particular interest to BellSouth is the substitution of a BSE for an existing vertical service. Traditionally, vertical services have been priced to generate a substantial contribution-per-unit-of-sale to the recovery of joint and common costs. BellSouth, therefore, feels it must take the BSE/vertical service cross-elasticity into account to ensure the continuation of these contributions.

BellSouth's four principles for pricing ONA services represent a unified approach to the introduction of ONA services. Furthermore, they address many of the most important issues associated with setting prices for ONA services. ESPs should not benefit at the expense of existing subscribers to access and local exchange services. However, BellSouth has elected to combine these pricing principles with other corporate objectives directed at restructuring its prices and improving its competitive position vis-a-vis the nonaffiliated ESPs.

NYNEX ONA Pricing Policies

The NYNEX price policy is novel. If permitted to do so, NYNEX intends to use a price-band approach in the tariffs for ONA services. Hence, it would be able to make quick upward and downward adjustments to the rates for ONA services, as long as these adjustments fell within a preapproved range.[361] NYNEX also intends to include a business risk premium in the prices for ONA services. This premium is to be set based on the purchase

[361] New York Telephone Company and New England Telephone and Telegraph Company, ONA Reply Comments, 35, n. 54.

commitments made by the ESPs. For example, the risk premium will be lower if the ESPs enter into firm contracts for the purchase of ONA services.[362] Each of these pricing practices is unusual for a services that is produced from bottleneck facilities controlled by a regulated company.

Further complicating the relationship between the prices for ONA services and the prices for existing local exchange services is NYNEX's desire to stimulate demand for ONA services.[363] The stimulation of market demand suggests lower prices for ONA services. But the inclusion of a business risk premium suggests higher prices for these services. NYNEX intends to solve this problem by constructing cost-based rates that imply a minimum rate of return.[364] The business risk premium would then be treated, presumably, as an ESP-specific add on to these cost-based rates. Thus, NYNEX's rates would tend to stimulate network usage whenever an ESP made a firm commitment for the purchase of a given amount of ONA services. The business risk premium would be set close to zero, and the prices for these ONA services would approximate their costs.[365] Given such pricing guidelines, it is likely they will be easily met for ONA services used by NYNEX's enhanced-services affiliates. NYNEX's operating companies will have relatively firm market demand estimates for these services that can be used in estimating costs. Conversely, market demand estimates may not be available for any other ONA service desired by a nonaffiliated ESP because these firms view such estimates as confidential and proprietary.

The differing availabilities of market demand estimates affect NYNEX's pricing policies indirectly. They create strategically important sets of ONA services by reinforcing the relationship between the business risk premium and the usage commitment it imposes on the nonaffiliated ESPs. Given a market demand, the price of ONA service provided by NYNEX varies inversely with the reported level of demand. Hence, a higher price is associated with an ONA service with lower demand, all others things equal. Now assume that a market demand no longer exists, this suggests the

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[362] Ibid., n. 53.
[363] Ibid., 32, n. 44.
[364] New York Telephone Company and New England Telephone and Telegraph Company, Open Network Architecture Plan of the Nynex Telephone Companies, 31.
[365] Ibid.

addition of business risk premium onto the price of the ONA services. Since the absence of a demand estimate is presumed to be more risky than having a low demand estimate, it would follow that the price of the second ONA services would be higher than the price of the first ONA service. Now, accepting the assertion that market demand estimates are more likely to be absent when the ONA service is required primarily by a nonaffiliated ESP, it follows on that higher-than-otherwise prices will apply to ONA services not used by the affiliated ESPs.

No pricing approach can be all things to all people. The NYNEX approach is no exception. NYNEX clearly intends to price its ONA services on the basis of its interpretation of costs.[366] The FCC notes, however, that NYNEX's cost-based approach differs significantly from the procedures and methods used by the FCC to review the prices for interstate access services for interexchange carriers. Yet the FCC is willing to accept the proposed differences because it believes that the NYNEX approach affords an ESP the opportunity to use ONA services in an efficient and economical manner.[367]

Pactel's ONA Pricing Policies

Pactel's overriding pricing policy is that the prices for ONA services will be determined on a case-by-case basis. Embedded within this policy are desires to stimulate the enhanced services market, minimize the risk of new investment and the cost impact on the end user. There also are concerns about the recovery of the total cost of producing an ONA service, and assurances that ONA implementation will not disrupt existing subsidy arrangements.[368] These are important goals to fulfill, but Pactel has provided scant detail as to how it intends to develop prices that will meet these objectives.

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[366] Ibid.

[367] Federal Communications Commission, Phase I ONA Plan Order, 165, para. 317.

[368] Pacific Bell and Nevada Bell, Pacific Bell and Nevada Bell Plan to Provide Open Network Architecture, 15-16.

Southwestern Bell's ONA Pricing Policies

The Southwestern Bell price policy tends to be driven by its tariff policies. This RBHC intends to introduce an enhanced services interconnection tariff containing usage-sensitive rates for the transport elements of the ONA services.[369] This tariff is targeted to contain those intrastate BSEs and BSAs that cannot be provided as part of an intrastate, interexchange carrier access service.

By suggesting the possibility of an ESP-only tariff, Southwestern Bell has raised the issue of use and user restrictions. But it hopes to defuse it by assuring the FCC that such restrictions will not be necessary as long as it can adopt what it calls its "equivalent pricing approach for ONA services."[370] The FCC, however, was not convinced. It wants to know how Southwestern Bell's incremental cost approach to pricing BSAs and BSEs is tied to the "equivalent pricing" approach for maintaining the relationship between the prices of bundled and unbundled services.[371] The equalizing factor appears to be contributions above incremental cost designed to prevent tariff shopping by end users and ESPs.[372] The design feature eliminating tariff-shopping opportunities is rates for equivalently priced ONA services that take into account any cross-elastic effects between the ONA services and the existing local exchange services.[373]

Besides helping to prevent tariff shopping, the contribution above incremental cost also could be structured to provide an incentive for developing new service. But, Southwestern Bell does not fully articulate

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[369] Southwestern Bell Telephone Company, Southwestern Bell Telephone Company's Open Network Architecture Plan, 102-04.

[370] Ibid., 94. Equivalent pricing occurs as long as the sum of the prices of unbundled services are never less than the price of the existing bundled service. See: Ibid., 93.

[371] Federal Communications Commission, Phase I ONA Plan Order, 164, para. 316.

[372] Southwestern Bell views incremental cost as a price floor. Consequently, it intends to let the marketplace determine the level of contribution above incremental cost, thereby avoiding contentions of predation. See: Southwestern Bell Telephone Company, ONA Reply Comments (St. Louis: Southwestern Bell Telephone Company, 1988) 36.

[373] Southwestern Bell Telephone Company, Southwestern Bell Telephone Company's Open Network Architecture Plan, 94.

the mechanics of this incentive. It states only that the contribution above incremental cost should provide some compensation for the additional risk of introducing an ONA service and should help to ensure at least the recovery of directly assigned costs if the market demand estimates fail to materialize.[374] Presumably, in addition to these conditions, Southwestern Bell intends to price these services as low as possible to gain market share and customer acceptance.

Southwestern Bell is clearly comfortable with its "equivalent pricing" condition. It appears to believe that the difference between incremental cost and price has always been part of the ratemaking procedure at state commissions. Moreover, Southwestern Bell states that the differences between incremental costs and prices for ONA services that it will propose are consistent with accepted contributions for like-services that have been approved by state commissions.[375]

US West's ONA Pricing Policy

The US West price policy is not adequately described in its ONA plan or reply comments. What is known is that US West intends to use the ratemaking methodologies that are appropriate for the regulatory jurisdiction of the BSE. As a result, the prices for intrastate or interstate BSEs will be based on either fully distributed costs or long-run incremental costs.[376] Recall that US West does not intend to introduce any new BSAs as part of its initial set of ONA services.

Conclusion

Essential components of any ONA tariff and price policy are the inclusion of ONA services in the interexchange carrier access tariffs and the explicit recognition of the validity of dual-regulatory jurisdiction

[374] Southwestern Bell Telephone Company, Southwestern Bell Telephone Company's Open Network Architecture Plan, 91; Southwestern Bell Telephone Company's, ONA Reply Comments, 34-35.
[375] Southwestern Bell Telephone Company, ONA Reply Comments, 41.
[376] US West Inc., Open Network Architecture Plan of US West, Inc., 366.

over ONA services. Other important features are the continued availability of existing local exchange services at existing prices and the authority to combine these services with technically compatible BSEs.

Optional components of these policies are cost-based prices driven by the FCC's Part 61 and Part 69 rules and prices designed to account for the business risk of introducing new or repackaged network services. Such fully distributed cost-based prices have the potential to repress the demand for ONA services that are not substitutable with existing services, and to create tariff-shopping opportunities for ONA services that are substitutable with existing services. The explicit recognition of business risk has the potential to legitimize large amounts of price discrimination without adding any additional stability to the implementation of ONA.

An unnecessary component of an ONA tariff and price policy is joining together the purchase of a BSA and a BSE. This requirement could easily become a major impediment to competition and represent an attempt to retain as much of a closed network architecture as possible. It also may be that tying the purchase of a BSE and BSA together constitutes a use or user restriction.

CHAPTER 6

GUIDELINES FOR A MODEL ONA TARIFF

Introduction

There are three structural conditions that must be met before tariff shopping can occur in a regulated industry. First, a set of functionally equivalent, or nearly functionally equivalent, services must exist that may be purchased by more than two classes of customers. These customers may reside in the same or different regulatory jurisdictions. Second, the rates for these services must be different.[377] Third, these differences must provide the aforementioned classes of customers with the opportunity to reduce their expenditures solely by substituting one regulated services for another regulated service. Under these conditions, a practical definition of tariff shopping is the ability of customers to select on tariff from any set of tariffs exclusively on the basis of price.

The most important of these structural conditions, functionally-equivalent services, is apt to exist during and after the deployment of ONA services. Consider, for example, the call-forwarding BSEs that have been requested by the providers of answering and voice messaging services. Once these BSEs are deployed, ESPs can employ, for whatever purpose, essentially the same network capabilities as end users. That is, they will have the capability to control the routing of calls between their premises and the premises of their customers.

If use and user restrictions are not placed on the call-forwarding BSE, then an end user is in the position to substitute this BSE for its existing vertical service. If use and user restrictions do not exist for the call-forwarding vertical service, then an ESP has the ability to exchange its BSE

[377]Differences in rates for functionally equivalent telecommunications services may occur as a result of the cost allocation decisions, public policy perspectives, and planning positions of the firms and their state and federal regulators.

for the existing local service. The decision, however, to exercise either of these mutually exclusive options rests on their relative prices. When the price of the vertical service exceeds the price of the BSE, it will be the end users who elect to tariff shop. Conversely, an ESP will tariff shop when the price of the BSE exceeds the price of the vertical service. Fortunately, this unintended consequence of ONA implementation can be avoided. What is required is that the relevant regulatory commissions and the RBHCs devote a great deal of attention to the structure of the ONA tariffs and the rates that they propose or approve for the ONA services.

Table 6-1 juxtaposes the positions of each of the ONA stakeholders on each of the structural conditions for tariff shopping. This figure indicates that ESPs, interexchange carriers and large end users are in favor of establishing the prerequisites to allow them to shop between the tariffs of the RBHCs. The RBHCs do not oppose two of the three tariff-shopping conditions. For the most part, they are willing to offer ONA services that are functionally equivalent to existing basic services, and they anticipate the possibility of having to sell ONA services at prices that differ from the prices of existing services. This concession tends to eliminate pricing strategies as a means of foreclosing tariff-shopping opportunities. Thus, the only alternative left to the RBHCs for eliminating any tariff-shopping potentials is the inclusion of restrictive terms and conditions in the body of the ONA tariffs.

Apparently, federal regulators exhibit the same tendencies toward the structural characteristics of tariff shopping as do the RBHCs. This may be reflect the FCC's intentions for mandating the implementation of ONA. The FCC wants to provide the ESPs with the ability to obtain network capabilities that are currently available to end users. It also wants to promote economic efficiency and stimulate the growth of the enhanced services market by making these network capabilities available to ESPs on the basis of prices that reflect their costs. Hence, it too must eliminate tariff shopping opportunities by nonprice means when the methods used to set the prices of ONA services differ from the methods used to set the prices for the functionally-equivalent local exchange services.

State regulators have not reduced their options concerning the prevention of tariff shopping. Although they have taken positions similar to those of the RBHCs and federal regulators in the areas of making

Table 6-1

ONA STAKEHOLDER POSITIONS ON ESTABLISHING THE STRUCTURAL CAUSES OF TARIFF SHOPPING

Structural Causes of Tariff Shopping

STAKEHOLDERS	Providing Functionally-Equivalent ONA & Existing Services	Setting Different Rates for Functionally-Equivalent ONA & Existing Services	Not Restricting Opportunities to Select the Service with the lowest rate
ESPs	YES	YES	YES
RBHCs	YES	S.P.S.	NO
State Regulators	YES	YES	NO
Federal Regulators	YES	N.P.S.	NO
Others	YES	YES	YES

Source: RHBC ONA Plans and Reply Comments
ESP, State, and Others ONA Comments and Replies

Key: S.P.S. - Several Positions Stated
N.P.S. - No Position Stated

currently existing network capabilities available to ESPs and eliminating the opportunities of these ESPs to reduce their costs simply by substituting one regulated service for another regulated service, they have not reached a consensus on the issue of different rates for ONA services and functionally-equivalent local exchange services. Therefore, they have retained the ability to use price solutions to create an environment that eliminates tariff-shopping potentials.

Although it is extremely important to implement ONA without the creation of tariff-shopping opportunities, this objective is not the only public policy need. Working co-operatively, the RBHCs, regulatory commissions, ESPs, interexchange carriers, and end users could also develop ONA tariffs that stimulate the enhanced services market and benefit consumers who do not exploit the technological innovations that will emerge during the evolution of ONA.

In the five sections that follow, an ONA tariff typology is constructed that eliminates tariff-shopping opportunities between and within regulatory jurisdictions. The purpose of this typology is to separate the real causes of tariff shopping from its imagined causes and to develop price principles for substitutable and nonsubstitutable ONA services. It is used to develop guidelines for a model ONA tariff that preclude tariff-shopping opportunities as new network capabilities are introduced into the local exchange. The design objective is to keep ONA, in tact, as the leading edge of the technological evolution of the telecommunications network. How these guidelines produce a model ONA tariff that eliminates tariff shopping without requiring major changes in the regulatory environment is described a the end of this chapter.

RBHC Measures to Avoid Tariff Shopping

Each RBHC's ONA Plan, to one extent or another, contains measures to prevent what it perceives to be the cause or causes of the tariff shopping. Some of the measures are more encompassing than others, but in the main, they attempt to limit the availability of ONA services. The measures most commonly used are use and user restrictions, the refusal to offer new network services that compete with existing network services, and tying together the purchase of BSEs and BSAs.

Table 6-2 relates these RBHC measures to their effectiveness in stopping the structural causes of tariff shopping from emerging as a result of the implementation of ONA. Use and user restrictions do not prevent the provision of ONA services that are functionally equivalent to existing local exchange services. Neither do they necessarily cause different prices for functionally-equivalent services. Different prices for such service can occur with or without use and user restrictions on ONA services.

As a guideline for constructing a model ONA tariff, use and user restrictions establish a new class of customers from an existing set of customers. This market segmentation generates the need for a new set of tariffs. These tariffs prevent all telecommunications users from choosing the most cost effective means to use ONA services and existing local exchange services. Thus, they may reduce technological efficiency. Furthermore, these tariffs may cause an RBHC to increase its operating costs because it may be eliminating any economies of scale and scope that could accompany the loading of BSEs onto existing access and local exchange services.

Mitigating this shortcoming of use and user restrictions is the possibility that they may eliminate the need for an RBHC to incur additional investment costs merely to modify its existing network to prevent the combination of ONA services with existing local exchange services. Consequently, use and user restrictions, by preventing productivity-lessening changes to the network, could accelerate the rate at which new technologies are offered to the public. Also, use and user restrictions do provide specific benefits when different prices are set for ONA services and local exchange services. When the price of an ONA service is below that of an existing substitute, these restrictions constrain tariff shopping by consumers of the substitute. Conversely, the users of the ONA services are prevented from consuming the existing substitute when the price of the ONA service is higher.

At the other end of the RBHC continuum of measures to avoid tariff shopping is the refusal to offer new network services that compete with existing services. Table 6-2 indicates that this RBHC-business strategy effectively prevents the emergence of all the causes of tariff shopping. The policy issue is the economic costs that are incurred as a result of such a decision. ESPs are not afforded access to improved network capabilities

Table 6-2

RBHC BUSINESS STRATEGIES TO PREVENT TARIFF SHOPPING

Structural Causes of Tariff Shopping

RBHC Business Strategy	Providing Functionally-Equivalent ONA & Existing Services	Setting Different Rates for Functionally-Equivalent ONA & Existing Services	Not Restricting Opportunities to Select the Service with the lowest rate
Use and User Restrictions	Not Effective	Not Effective	Effective
Refusal to Offer New Network Capabilities	Effective	Effective	Effective
Coupling the Purchase or BSAs and BSEs	Not Effective	Not Effective	Effective

Source: Chapter 3, supra

and new technologies simply because they compete with existing capabilities and technologies. Hence, the introduction of productivity-enhancing technologies is slowed. The growth of the enhanced services market is repressed, and the number of options available to consumers of telecommunications services may be reduced.

As a result of a decision not to offer new network services that compete with existing services, an RBHC would not complement its newly developed switching capabilities with new transmission capabilities. Instead, it would minimize its ONA development and implementation costs. This RBHC, as a result, is not apt to offer switching capabilities that are technically compatible with line-side and trunk-side transmission services, even if it is not cost prohibitive to do so. This is an example of how the growth of the enhanced services market would be repressed. Economically and technically feasible ONA services would not be offered to the ESPs.[378]

The refusal to offer new network services is functionally equivalent to adopting a CEI framework for introducing ONA services. This conservative business practice, undoubtedly, lowers the costs of implementing ONA by suppressing the administrative and network costs of ESPs that do not want or require new basic services to provide their enhanced services product lines. But equally indisputable is the effect that the CEI framework impedes the efforts of those ESPs that want to offer leading-edge enhanced services.

By adopting a CEI framework, a RBHC will tend to provide only those new ONA services that its affiliate uses to provide enhanced services. If this strategic behavior is permitted to occur, the RBHC's enhanced services affiliate has been granted the wherewithal to catch-up to the nonaffiliated ESPs. Or conversely, this strategic maneuver prevents the nonaffiliated ESPs from pulling ahead of an affiliated ESP. Either result represents a competitive advantage for the affiliated ESP.

[378]The absence of new network transmission arrangements slows the development of leading-edge enhanced services. Consider only an ESP's need for a trunk-side transmission service that differs from the traditional, interstate and intrastate access services that are used by interexchange carriers. Without such a service, an ESP would be forced to experience a radical change in its cost structure as it substitutes an interexchange carrier access services for an end user, local exchange service. This new cost structure will feed back into the marketing, pricing, and availability of new enhanced services.

Table 6-2 suggests that limiting the flexibility-of-use of BSEs is as effective as use and user restrictions in preventing the structural causes of tariff shopping. It is still possible to provide ONA services that are functionally equivalent to existing local exchange services. Further, it is feasible to set different prices for these substitutable services. The effect of coupling of BSAs and BSEs is to eliminate cost reductions for ESPs and others that would occur because a BSE is combined with an existing local exchange service.

This business strategy also prevents an ESP from selecting network transmission arrangements that are not priced, consistently, with the new network switching features and functions. Although inconsistent with the spirit of the common ONA model that speaks to separate, if not separable, BSA and BSE elements, this tariff-shopping-prevention measure does reflect the strategic nature of the ONA implementation process. By embracing the practice of coupling together the purchase of BSAs and BSEs, the RBHC is essentially saying that it is willing to unbundle its network in a manner consistent with its business plans. However, it is not willing to carve up its basic services network according to the wishes and desires of its enhanced services rivals.

What each of these measures for avoiding tariff shopping indicates is that the RBHCs' ONA Plans are strategic documents. The strategic and tactical issues of pricing an RBHC's ONA services are, therefore, linked to the technical and administrative issues of instituting an open network that is accessible to all providers and users of basic telecommunications services. Illustrative of the strategic nature of the RBHCs' ONA Plans is their virtual unanimity on the issue of unbundling the local network. While they are prepared to unbundle their basic services network as they determine the structure of an ONA services, they are not willing to carry this unbundling to the construction of "stand alone" BSEs that may be combined with transmission services that are provided outside of their basic services' networks.

A relevant ONA issue is whether these RBHC measures for avoiding tariff shopping are disguised forms of anticompetitive behavior, or simply sound business strategies that are designed to maintain the financial and technical viability of the RBHCs. This issue may be better understood by delving into the economic implications of "stand alone" BSEs, use and user

restrictions, and coupling the purchase of BSAs and BSEs.[379] "Stand alone" BSEs have been vigorously rejected by the RBHCs, while use and user restrictions and the coupling of BSAs and BSEs, in general, have been approached cautiously by the RBHCs. These RBHC measures may represent competitive or anticompetitive behavior depending on the circumstances surrounding their implementation.

The refusal to offer "stand alone" BSEs is a legitimate response by the RBHCs when it is meant to prevent the exploitation of their research and development expenditures on new switching features and functions. It can represent, however, an anticompetitive response when it is used to prevent an ESP from deploying a new technology that better suits its needs and is a technology that an RBHC is not yet prepared to offer.

Although a "stand alone" BSE encourages the provision of efficient and innovative enhanced services, it also raises the issue of the appropriate apportionment of risk sharing between the RBHCs, ESPs, and other consumers of telecommunications services. These issues affect the financial future of the RBHCs, and they have an impact on the management of new technologies as they are introduced into the enhanced services and basic services markets.

Consider, as an example, the problems that are encountered by a RBHC that has committed itself to research and development in new switching technologies. This firm must contend with an alternative local exchange carrier such as, say, New York Teleport that seeks to provide the most efficient transport medium for BSEs, but may be unwilling to engage in research and development activities that are associated with the introduction of new switching features and functions. In most industries, this would not be an insurmountable problem. Patents and other restrictive measures are available to protect the competitive advantage that may be generated by research and development activities. At the very least, a rival is required to modify a new technology before it can be used in its production process. Yet, these protections are not available to a RBHC. It must be willing and able to share the fruits of its labor with rivals because of the ONA regulatory framework.

[379]The decision not to supply a "stand alone" BSE can be viewed as a form of a refusal to supply new network capabilities.

On the other hand, the refusal to offer "stand alone" BSEs does have the potential to prevent an ESP from using the most efficient form of transport to provide its enhanced services. This result tends to increase the costs of ESPs, increase the prices of its enhanced services, and repress the growth of the enhanced services market. Such effects could be avoided by striking a balance between the protection of a RBHC's research and development expenditures and the introduction of competition into the local exchange. This task requires that an ESP assume the risks of technology deployment, and the RBHC assume the risks of exploitation if it is unwilling to offer a transport service that an ESP is willing to deploy itself.

In order to compensate for this regulatory intrusion into their business affairs, the RBHCs are apt to hold more tightly to their business strategy of coupling the purchase of BSEs and BSAs. As far as the RBHCs are concerned, this business decision represents a less expensive and less risky alternative to incurring the costs of upgrading their local transmission networks in response to the competitive threats of alternative local exchange carriers. BSA and BSE coupling, therefore, is a rational, competitive response to a local exchange rival that does not engage in switch-related research and development. After all, most alternative local exchange carriers have sought to increase the value of their superior transmission quality by augmenting this investment with new switch intelligence that has been funded and developed by the RBHC. Thus, coupling the purchase of a BSE and a BSA does not, on the basis of this portion of the analysis, represent anticompetitive behavior.

Yet, the coupling of BSAs and BSEs could represent anticompetitive behavior under other circumstances. Assume that the RBHCs have multiple uses for shared transport services that are produced from new network capabilities available as a result of ONA. Assume that some of these uses produce intermediate telecommunications services used by the ESPs as factors of production, and end user telecommunications services that do and do not compete with services that are provided by ESPs. Finally, assume that the costs incurred by an ESP would be lower if it was permitted to combine a technically feasible BSE with an existing local exchange service. The coupling of the purchase of BSA and BSE then results in an unwarranted increase in the costs of an ESP simply for the purpose of reaping the maximum benefit from the economies of scope that are associated with shared

transport services. This is not a competitive response to the actions of the ESPs.

Use and user restrictions may be another matter altogether. If they represent a RBHC's unwillingness to provide economically and technically feasible services to a selected set of customers, then they would necessarily affect the business decisions of its customers. But, these adverse consequences do not occur when use and user restrictions do not affect the delivery of services. In this instance, they discourage the inappropriate use of telecommunications services.[380] Use and user restrictions of this design could be placed on BSEs and BSAs. What would be necessary, however, is assurances that these measures would fulfill the task for which they are designed. In particular, they would have to to prevent tariff shopping. If such prevention does not occur or tariff-shopping opportunities can be eliminated in a more efficient manner, then these restrictions may be eliminated from a model ONA tariff.[381]

Causes of Tariff Shopping

In the course of the ONA debate, several terms and conditions have emerged that could be part of a model ONA tariff. They include: (1) the continued availability of existing services at existing prices; (2) the capability to combine technically compatible BSEs with existing intrastate and interstate basic services; (3) the ability to purchase intrastate and interstate BSEs on a "stand alone" basis; (4) the absence of use and user restrictions in all regulatory jurisdictions; (5) cost-based prices for intrastate and interstate ONA services; and (6) state and federal tariffs

[380]The access tariff limits the use of this service. The interexchange carrier, thereby, is prevented from entering into competition with the LEC. As a result, the structure of the access tariff permits a LEC to tailor the design of its rates and charges for its portion of the local loop facilities.

[381]Assume that use and user restrictions do not eliminate tariff shopping opportunities. These measures then shrink the availability of existing and new network technology. Moreover, they reduce the social and private benefits of developing and deploying new technology by denying its efficient use to the widest population.

for all BSEs.[382] This set of possible model ONA tariff terms and conditions is both the source and the resolution for tariff-shopping opportunities caused by the implementation of ONA.

Take, for example, real tariff-shopping opportunities created by the relationship between cost-based prices for BSEs that are functionally equivalent to existing local exchange services that are priced on a market basis, and the capability to combine these BSEs with existing local exchange transport services. Since local exchange services may compete with BSEs, end users would tend to substitute the cost-based BSEs for their current services because the prices for the latter services tend to provide a substantial contribution in support of residential and single line business service.

Consider, also, the tariff-shopping opportunities that emerge from the interrelationships between the purchase of BSEs on a "stand alone" basis, and the capability to combine these BSEs with any existing transmission service. ESPs as cost-conscious businesses would purchase these BSEs and shop around for the most cost-effective transmission service. This service may, of course, be a local exchange service, an intrastate or interstate access service, or a service of an alternative local exchange carrier. If the ESPs perform this search in an environment of continued availability of existing services at existing prices and the absence of use and user restrictions on ONA services, then ESPs and end users would simply choose the least expensive combination of existing and new services for their communications needs.

Because tariff-shopping opportunities permeate the ONA implementation process, it is necessary to determine which of the above terms and conditions can be included in a model ONA tariff. This sorting out process is necessary because each alternative, in its own right, encourages the growth of the enhanced services market and the introduction of new

[382]The absence of use and user restrictions, cost-based prices for ONA services, federal tariffs for all BSEs, and the continued availability of existing services at existing prices have already been accepted as appropriate by the FCC. The FCC, however, has rejected the combination of an interstate BSE with an existing local exchange service, or the purchase of a BSE on a "stand alone" basis. Similar decisions have not yet been reached with respect to intrastate ONA services.

technologies. An effective way to complete this task is to separate the imagined causes of tariff shopping from its real causes.

Table 6-3 is a typology of the causes and perceived incentives for tariff shopping. These causes arise because at least one or more of the ONA stakeholders would want them to be included as a term or condition in a model ONA tariff. The typology indicates that six out of fourteen potentially desirable components of a model ONA tariff generate real tariff-shopping opportunities. These components are the absence of use and user restrictions, the availability of existing services at existing prices, the mixing and matching of intrastate and interstate ONA and other basic services, ONA services that are substitutable with existing local exchange services, stand alone BSEs offered to promote local competition, and unequal rates for ONA services substitutable with existing services. The imagined causes of tariff shopping are cost-based rates for substitutable and non-substitutable ONA services, market-based rates for substitutable and non-substitutable ONA services, decoupling of BSEs and BSAs, stand alone BSEs that permit transmission facilities ownership by ESPs, dual jurisdiction for ONA services, and unequal rates for jurisdictionally separate ONA services.

Imagined Causes of Tariff Shopping

Several factors believed to cause tariff shopping surfaced in the course of the FCC's ONA proceeding and the related industry fora. They are: 1) dual jurisdiction over ONA services, 2) unequal rates for intrastate and interstate ONA services, 3) cost-based rates for ONA services, 4) market-based rates for ONA services, 5) stand alone BSEs, and 6) uncoupling the purchase of a BSA and BSE. Upon reflection, it appears that these causes of tariff shopping were either incorrect or misleading.

Beginning with the last first, the existence or non-existence of dual regulation for telecommunications services has little, if anything, to do with preventing tariff shopping, stimulating the enhanced services market, or reducing local exchange rates. Even a cursory examination of state and federal tariffs for functionally-equivalent services would indicate that the prices, terms, and conditions of these tariffs rarely are identical. Many reasons exist for this divergence. Most are related to policy decisions on cost allocation and cost recovery. It is reasonable, therefore, to expect

Table 6-3

EFFECT OF PERCEIVED INCENTIVES TO TARIFF SHOP

PERCEIVED INCENTIVES	Effect: Results in Tariff Shopping	Effect: Does not result in Tariff Shopping
Absence of Use and User Restrictions	X	
Availability of Services at Existing Prices	X	
Cost-based Rates for Substitutable ONA Services		X
Cost-based Rates for Non-Substitutable ONA Services		X
Uncoupling of BSAs and BSEs		X
Dual Jurisdiction for ONA Services		X
Market-based Rates for Substitutable ONA Services		X
Market-based Rates for Non-Substitutable ONA Services		X
Mix and Match of Intrastate and Interstate Services	X	
ONA Services Substitutable with Existing Services	X	
Stand Along BSEs to Promote Facilities Ownership ESPs		X
Stand Along BSEs to Promote Local Competition	X	
Unequal Rates for ONA Services Substitutable with Existing Services	X	
Unequal Rates for Jurisdictionally Separate ONA Services		X

the state and federal tariffs for identical ONA services to differ under a system of dual regulation without necessarily causing the introduction of tariff-shopping opportunities.

To show that jurisdictionally unequal rates for identical ONA services are not a cause of tariff shopping, assume that the federal tariffs for ONA services contain the lower priced alternatives. ESPs, as a result, will attempt to optimize the use of the interstate ONA services, regardless of the regulatory jurisdictions that they are operating in. There is always the possibility, however unlikely, that some ESPs may not make sufficient effort to correctly classify intrastate and interstate traffic. Does this business decision on the part of the ESP represent tariff shopping, or the lack of concern with the dictates of the regulatory process? The answer to this question would seem to be the latter. Insufficient attention to jurisdictional classification of telecommunications traffic is possible and practical solely because of inadequate jurisdictional reporting practices. These practices can be corrected given enough interest and effort, thereby establishing that jurisdictionally unequal rates for identical ONA services do not cause tariff shopping. But, such rates do imply that ONA policy discussion may focus at some point on establishing guidelines and developing procedures for accurate percent interstate usage reporting of ONA services.

Because dual jurisdiction over ONA services and jurisdictionally unequal rates for identical ONA services are not causes of tariff shopping, it follows that state-only or federal-only ONA tariffs would not be an effective means for eliminating tariff shopping. Moreover, an ESP or end user would still have the incentive to substitute a lower-priced, functionally-equivalent, state-only or federal-only service for a higher-priced, functionally-equivalent, state-only or federal-only service. All that would be required for this intrajurisdictional tariff shopping is a policy decision establishing regulatory neutrality between the use of ONA and existing local exchange services in the production of any enhanced service.

Because the regulatory jurisdiction of an ONA service is irrelevant as a cause of tariff shopping, dual jurisdiction over ONA services may be employed whenever different ONA policies are adopted by the different regulatory authorities. This approach to setting the prices, terms and

conditions appears to be justifiable, notwithstanding any administrative inconveniences that may be caused by dual ONA tariffs.

Cost-based and market-based rates do not cause tariff shopping for similar reasons. Consider, first, cost-based rates for ONA and existing local exchange services. Notwithstanding how costs are measured for these services, ESPs and end users have the incentive to select the lower-priced telecommunications services over a higher-priced, functionally-equivalent, telecommunications service. Price differentials between functionally-equivalent services are not a function of cost-based rates, they are function of how costs are measured. Similarly, ESPs and end users have an incentive to choose services with lower market-based rates over functionally-equivalent services with higher market-based rates. In this instance, the price differentials are caused decisions designed to fulfill regulatory or corporate objectives. They are not caused by the existence of market-based rates for ONA and existing local exchange services.

To show that stand alone purchase of BSE designed to promote facilities ownership by the ESP is not a cause of tariff shopping, assume that the availability of a stand alone BSE is a a business issue. The RBHCs would not support a stand alone BSE arguing that a a BSE is functionally useless without an RBHC-provided transmission service. Conversely, the ESPs would support stand alone BSEs because they believe this business opportunity enables them to provide an enhanced service more efficiently. Yet, these business issues and their resolutions are not related to creation of price differentials between substitutable telecommunications services.

The impact of the stand alone BSE becomes clearer with the addition of a public policy perspective to the analysis. Opposing the ESPs' position and supporting the RBHC position is the possibility that the stand alone BSE sets the stage for the facilities bypass of the local exchange network.[383] Assume that facilities bypass does occur. This economic decision suggests that the local exchange company may loss revenue. It does not suggest that

[383]Two factors motivate a current user of the local exchange network to bypass these facilities. On the one hand, the LEC may not be able to meet the demands of its customers for lower prices, better quality, or new services. On the other hand, the users of the local exchange network may have made an uneconomic decision. In either event, the LEC's customer is not abusing an existing or new tariff.

selections between RBHC-provided telecommunications services are being made exclusively on the basis of rates shown in the RBHC's tariffs for new and existing telecommunications services which is a source of revenue loss for the RBHC. It is the implication of revenue loss that is used in error to equate facilities bypass with tariff shopping. Consequently, the stand alone BSE is not a tariff shopping issue, although it may be a public policy issue.

The proper tariff-shopping-bypass analogy is service bypass. In this instance, the purchasers balances cost savings against the loss of a particular functionality or feature. Such an activity doe not occur when the purchase of BSAs and BSEs are uncoupled. Although an ESP or end user would be in a position to select the least-costly, RBHC-supplied BSA, they may not be in the position to select a low-cost BSE. Hence, the uncoupling of the purchase of the BSA and BSE may not present the ESP or end user with cost reductions. Thus, uncoupling the BSA and BSE is not a sufficient condition for tariff shopping. However, it does appear to be one of the set of necessary conditions.

Real Causes of Tariff Shopping

Heading the list of the causes of tariff shopping is the FCC's insistence on the absence of use and user restrictions in the federal tariffs for ONA services. This potential guideline for constructing a model ONA creates tariff-shopping opportunities when it exists coterminously with the continued availability to ESPs of existing basic services at existing prices and the production of ONA services that are functionally equivalent to some existing local exchange services. These joint causes of tariff shopping can be overcome through pricing solutions that contain a mixture of cost-based and market-based rates. Another real cause of tariff shopping are prices that stimulate the quantities demanded of BSEs at the expense of existing local exchange services. Tariff shopping is also caused by the "mixing and matching" of intrastate and interstate ONA services. The final cause of tariff shopping is the co-existence of "stand alone" BSEs and the ability of ESPs to "mix and match" interstate and intrastate ONA services.

While there is nothing wrong, in the abstract, with using ONA services outside of the enhanced services market, problems do arise if a lower-priced

ONA service can be substituted for an existing local exchange service. The expectation is that this option will cause an RBHC to lose revenue as a result of the migration away from the higher-priced, existing local exchange service. Two solutions are available to prevent this possibility from occurring. The prices for ONA and substitutable existing local exchange services may be set at identical levels. Or, the expected revenue deficiencies will not materialize because the demand for the ONA service is elastic.[384]

Tariff-shopping opportunities occur when unequal rates for substitutable services co-exist with the absence of use and user restrictions. Eliminating one of these two structural features of ONA implementation could therefore be part of developing a model ONA tariff. It appears to be too risky to include both of these features in an intrastate or interstate ONA tariff simply on the basis of a hope that the prices for the new ONA services will prevent the RBHCs from experiencing any revenue shortfalls as a result of implementing ONA.

In choosing between unequal rates for functionally-equivalent services and absence of use and user restrictions, it would be appropriate to pay attention to the predicted revenue relationships between ONA services, substitutable existing local exchange services, and non-substitutable existing local exchange services. Take, first, the revenue relationship between ONA and substitutable local exchange services. Because these services are in competition with each other, pricing an ONA service above or below the price for a substitutable local exchange service helps to ensure that a sufficient level of revenue will not materialize to cover the development, deployment, and continuing costs of ONA services. This unintended effect occurs because selecting too high a price for the ONA service generates insufficient quantities demanded of that service.

[384]Given an elastic demand for an ONA service, the stimulated revenues as a result of the lower price for the ONA service may more than offset the revenue loss that is expected to occur as the consumers substitute the ONA service for existing basic services. Very little information exists on the characteristics of the demand curve for any ONA service. Consequently, state and federal regulators lack any quantitative evidence that would enable them to dismiss tariff shopping as an adverse effect of the absence of use and user restrictions.

Conversely, setting the price of the ONA service too low causes excessive quantities demanded for that service and insufficient quantities demanded of the higher-priced existing local exchange service. In either instance, the RBHCs would likely seek to make up any revenue losses by charging higher prices for non-substitutable local exchange services.

One way out of this quandary is to establish equal prices for functionally-equivalent ONA, access, and local exchange services. But, this approach is not problem free. Selecting the highest-priced of these services as the equal-price benchmark may retard the growth of the enhanced services or local exchange services market. Assume that the highest-priced service is intrastate switched access. In this instance, low levels of demand for intrastate ONA services may be traced directly to the high prices for some intrastate BSAs. Similarly, reductions in the quantities demand of local exchange services also can be traced to the implementation of ONA. Conversely, shifting the cost recovery burden for existing costs may be the result when the lowest-priced telecommunications service is the benchmark. Assume that local exchange service is the lowest-priced ONA substitute. Although the quantities demanded of ONA and access services may increase, the combination of new prices and new levels of demand for these services may not be adequate to support their cost assignments and allocations.

These two extremes suggest that a policy of equal prices for ONA and substitutable basic services requires a judicious selection of a high-priced or low-priced benchmark. Properly designed, these benchmarks could generate revenues sufficient to reduce the fixed cost burden of the local exchange subscribers, and support levels of demand indicative of growth in the enhanced services market. Meeting these two objectives would require an optimal mix of cost-based and market-based prices.

But for whatever reasons, many users of telecommunications services fear, or have been led to fear, market-based prices for basic services. Sometimes these prices are equated with price discrimination by an unregulated monopolist. That is, a market-based price is seen as the necessary condition for rates that will extract a monopoly rent. These prices also may be viewed as furthering strategic pricing initiatives that benefit the suppliers of the service. In this instance, the perceived problem is that the RBHCs may deliberately place higher than necessary prices on those ONA services that its enhanced services affiliate does not

use, and lower than necessary prices on those ONA services that its affiliate does use.

To understand the fear of market-based prices, the tariff-shopping issue needs to be restated. It is no longer appropriate to consider whether an ESP or end user may take advantage of an RBHC ONA tariff because all economically rational telecommunications users are expected to act to obtain the lower-priced option of two functionally-equivalent telecommunications services. The relevant analytical objective is to uncover the conditions that enable the RBHC to take advantage of its customers through a particular corporate strategy. This task generally reduces to a determination of whether use and user restrictions are appropriate for ONA services. These restrictions, as can be shown, make it easier for an RBHC to set strategic prices for ONA services in a way that could extract an excessive contribution in the support of joint and common costs.

Consider that the consumers of ONA services subject to use and user restrictions are isolated from the other classes of customers that are served by the RBHC. As a result, the exercise of price discrimination on the users of ONA services will not ultimately be eliminated in the long run. This normal characteristic of a market economy does not occur RBHC gains or losses realized by the sale of ONA services will not necessarily leak out into the general ratepaying population. Thus, consumers of existing local exchange services are not troubled by revenue losses from the sale of ONA services. Conversely, subscribers to ONA services have no alternatives when the RBHC experiences excessive gains from the sale of ONA services. The only potential market relief in the latter instance is the appearance of a lower-priced alternative supplier of ONA services.

On the basis of the preceding market dynamics, it appears equitable to reject any conditions on the use of ONA services whenever monopoly rent and strategic pricing opportunities exist for a RBHC. Unfortunately, the very structure of ONA promotes the existence of such opportunities. Excessive gains from the sale of ONA services are possible because alternatives suppliers do not exist at present. Moreover, the distribution of these gains could be manipulated because the ESP affiliates of the RBHCs are not apt to use all of the ONA services requested by their rivals. Hence, the RBHC could price ONA services used by affiliated ESPs at lower rates than ONA services used by nonaffiliated ESPs.

The denial of use and user restrictions as an acceptable guideline for constructing a model ONA tariff means that some other mechanism has to be found to eliminate tariff shopping. Pricing solutions are immediate candidates. However, finding these solutions is complicated by the structure of the common ONA model.

Recall that the common ONA model contains four elements. They are BSAs, BSEs, ANSs, and CNSs. The latter two may be defined as ONA-related services. Of these ONA-related services, CNSs are most often in competition with the BSE component of ONA services. Thus, the RBHCs are saddled with determining prices for services similar to those that the RBHCs are trying to market directly to end users.[385] Revenue protection, therefore, is a factor that complicates the selection of prices for BSEs. Understandably, the RBHCs want to retain the revenues associated with the competing end user services.

Three factors confound the corporate objective of revenue protection. First, the ESPs insist that the RBHCs produce network capabilities that are functionally equivalent to some existing local exchange services (CNSs). Second, they require that the employment of these capabilities may not be inhibited by use and user restrictions. Third, the ESPs expect that the prices for these newly created BSEs will be lower than the prices for the competing local exchange services (CNSs). As a result, the RBHCs fear an overall reduction in revenues if the ESPs' requirements are met. The cause is tariff shopping between BSEs and existing local exchange services (CNSs). Although this expectation casts doubt on the stability of the common ONA model, it does, however, suggest that unequal prices for substitutable BSEs and existing local exchange services (CNSs) is not a viable guideline for constructing a model ONA tariff.

In summary, tariff shopping opportunities are generated by the price relations between substitutable services and the absence of use and user restrictions. If use and user restrictions are prohibited, then intrajurisdictional tariff-shopping opportunities emerge when the prices for substitutable services are unequal. Tariff-shopping opportunities are

[385]These vertical services such as end user call-forwarding and call-waiting generate substantial profits that are used to hold down the prices of residential and single-line business services.

prevented by use and user restrictions regardless of the price relationship between substitutable services. This occurs because substitutable services have been converted into non-substitutable services by regulatory fiat. However, this form of tariff-shopping prevention reduces the availability of telecommunications services to selected classes of customers and can increase opportunities for anticompetitive behavior by the RBHCs. These effects appear to warrant the rejection of use and user restrictions whenever possible. If this decision is made, it would follow that a specific price structure would have to be developed that eliminates the opportunities for tariff shopping.

Price Principles for ONA Services

In this section, several principles are developed that may be used to price ONA services. These principles appear to resolve, effectively, the issue of market-based versus cost-based prices for ONA services. This solution, however, does not include a clear-cut choice of one of these pricing approaches over the other. Instead, it represents a practical solution to a problem that is neither black nor white.

Cost-based Prices for ONA Services

In many instances, cost-based prices are an efficient complement to regulation because they may on occasion serve as a substitute for the discipline of competition. Nevertheless, the determination and implementation of cost-based prices has proven to be difficult. For example, no successes have been recorded with respect to obtaining universal agreement on a fully-distributed-costing methodology for telecommunications services. Similarly, it has proven to be nearly impossible to estimate the marginal cost of a telecommunications service because of data limitations.

Despite the lack of success at these ends of the costing continuum, one seemingly agreeable costing methodology is to assign and allocate costs to a

limited number of relatively homogeneous cost pools.[386] The validity of this approach rests on the principle that rates and charges below the pool's average cost would be balanced by rates and charges that are above it - leading to the conclusion that the rates and charges for the whole group of telecommunications services are based loosely on an understandable concept of costs.

One cost standard likely to receive consideration in the context of relatively homogeneous cost pools is average incremental cost. The problem with implementing this standard is agreeing upon which costs to include in it. One alternative is to assign direct investment and operating costs, asserting that they are a proxy for short-term marginal cost. A second alternative is to include also the indirect investment and operating costs. These costs would be determined on the basis of the preceding direct cost assignments. A third alternative could be to expand the standard to include the joint and common costs that are incurred as a result of the increase in the firm's output level. These costs may be new buildings to house new employees.

At the firm level, the selection of the appropriate incremental cost alternative is affected by business objectives. The costs of new products, for example, may be set according to the first average incremental cost alternative. The purpose is to stimulate the market and gain customer acceptance for the service. Specific interests of the firm are not, however, sufficient criteria for the selection of the proper costing concept for public policy purposes. This more general decision rests on the assessment of a firm's business interests in relation to the market power that it possesses.

When a firm possesses the ability to influence the behavior of its rivals, or to act inconsistently with the assumptions of perfect competition, it may be inappropriate public policy to permit such a firm to

[386] Assignment and allocation to cost pools is the approach that the FCC had followed in its prior form of regulation over the interstate operations of AT&T. The Interim Cost Allocation Manual defines two general cost pools. They are private line and message toll service/wide area toll service. This breakdown corresponds, essentially, to the switched and special access classifications that the FCC uses in its regulation of the RBHCs' interstate access charges.

select a measure of cost for its services that will allow that firm to direct the evolution of the marketplace.[387] It may well be that the prevention of this type of behavior is, in the long-run, more important than providing low-cost services to consumers.

It appears that the second and third average incremental cost alternatives are more suited to preventing the exercise of market power. They minimize the threat of anticompetitive conduct by preventing the cross-subsidization of services that are offered by the multiservice firm. These concepts capture a fuller meaning of the change in total costs as a result of an increase in the output of the firm.

In light of these practicalities of determining cost-based prices for telecommunications services in general, and ONA services in particular, it seems that the use of the either the second or third average incremental cost alternative is the correct public policy. Adoption of either of these measures of cost will accommodate the introduction of ONA services at low prices whenever these network capabilities are not competing with existing access and local exchange services. The use of prices based on either average incremental cost standard is, however, less appealing when the ONA services do, in fact, compete with existing basic services. Such prices may induce tariff shopping, and they may generate revenue losses that the RBHCs may seek to recover from customers that do not use ONA services. The public policy challenge, therefore, is to prevent anticompetitive behavior through the selection of measures of costs that are consistent with the realities of the industrial organization under which the firm must operate, including the revenue requirement for monopoly services.

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[387] Market power is an ambiguous concept. No firm exists that is completely devoid of market power. To some extent, every firm has the capability to behave contrary to the assumptions of perfect competition in the short run. Yet, the ability to influence the behavior of a rival is not dispositive evidence of market power. It may be that the rivals could, if they desired to do so, influence the behavior of the firm. Thus, it appears that a finding of market power rests, to a large degree, on a finding that a countervailing capability does not exist for the rivals of a firm that is alleged to have market power. Such a finding is a judgement call, and as a result, it can not be error free or entirely objective. It is shaped by the preferences of the policymakers and the corporate objectives of the firm.

Market-based Prices for ONA Services

Much of the confusion accompanying discussions of cost-based prices for ONA services may be removed by merely recognizing that the price of any service is never determined, exclusively, on the basis of economic costs.[388] Demand considerations also help to determine the price that consumers will pay for that service. When these considerations assume a dominant role in the price setting process, cost-based prices become market-based prices. Thus, in assessing the possibility of market-based prices for ONA services, it should, perhaps, not be forgotten that market-based prices tend to be an extension of cost-based prices.

In the past, the prices of services used by specific classes of customers were targeted to recover a level of revenue that was deemed appropriate after the firm and its regulators had assessed the underlying market conditions. This method of revenue recovery worked tolerably well because the telecommunications firms was a franchised and virtual monopolist. By targeting the level of revenues to be received from the sale of regulated services, public policy was aimed, more than anything else, at ensuring the absence of monopoly profits and socially disruptive price discrimination. It was taken for granted that different services would not be sold at the same price, and that some level of price discrimination would exist between customer classes. Thus, market-based rates were the norm.

Faith in market-based rates receded along with the erosion of the regulated firm's virtual monopoly. Prevention of monopoly profits fell in importance, while the prevention of anticompetitive behavior rose in importance. Consequently, the overall cost level of a regulated firm became

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[388] Repeatedly, it has been noted that the marketplace sets the price of a product or service on the basis of its cost. The most often cited rule is that the operation of the perfectly competitive market sets price equal to marginal cost for the profit-maximizing firm that produces a single product or service. What often is not made clear is that the marginal cost of this firm is assumed to vary over the range of its output. Thus, the marginal cost for the tenth unit of output will differ from the marginal cost of the hundredth unit of output. As a result of this variation in marginal cost, the level of demand for the product or service has a role to play in determining its price. That is, the price at which a hundred units of output are sold is apt to differ from the price that clears the market for ten units of output.

less of an issue. Instead, more attention was paid to the "contributions over incremental cost" that each service was offering in support of the firm's revenue requirement.[389] As a result, market-based prices became more suspect when they were assessed against the firm's competitors.

Guidelines for a Model ONA Tariff

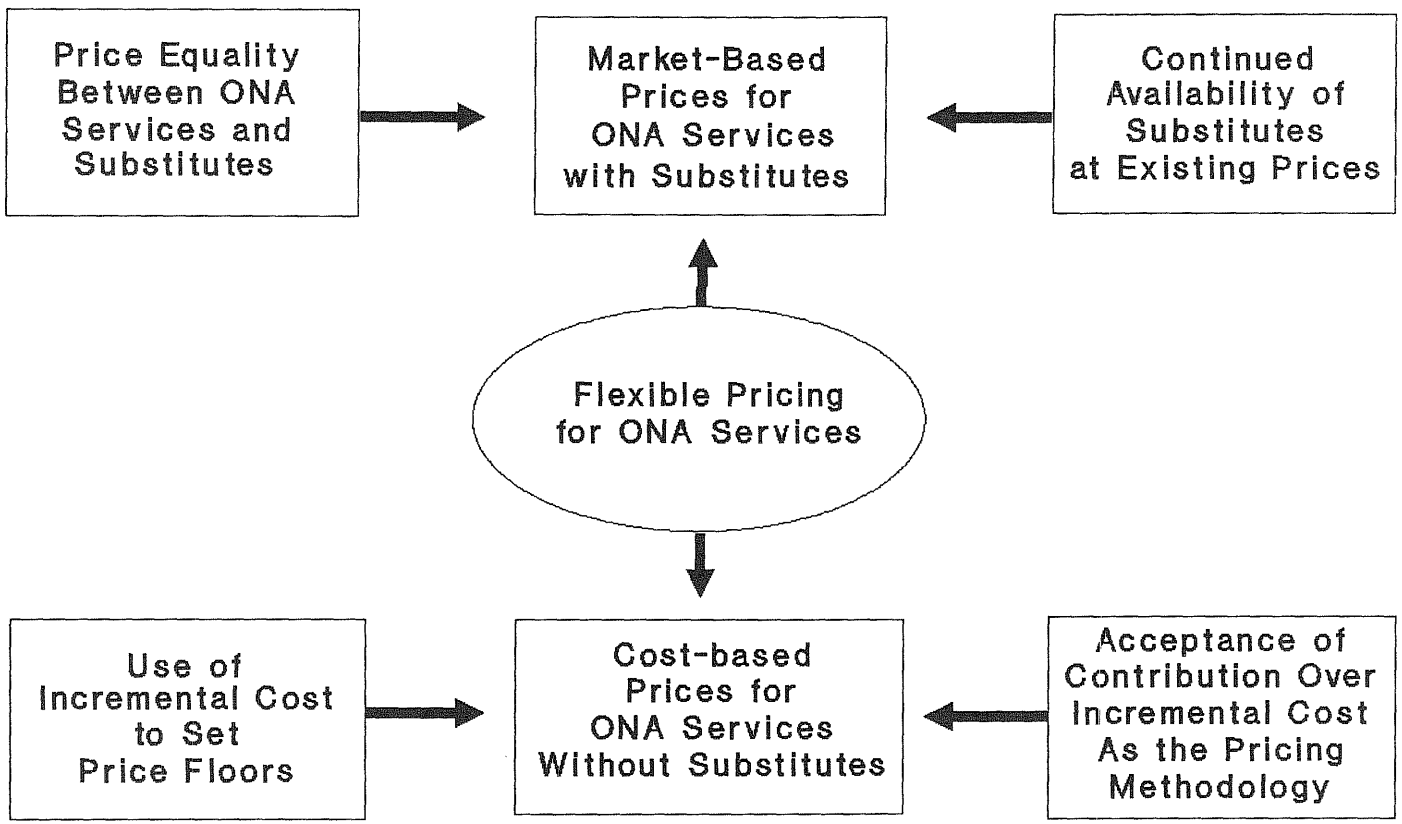
An appropriate place to begin the discussion of the guidelines for a model ONA tariff is with a summary of the causes and prevention of tariff shopping in an ONA environment. It previously has been determined that the primary cause of tariff shopping is unequal prices for substitutable services when ONA services are sold without use and user restrictions. In the preceding section, it was implied that cost-based prices are appropriate for non-substitutable ONA services, and market-based prices are appropriate for substitutable ONA services. In this section, these results are used to develop the guidelines for constructing a model ONA tariff.

Figure 6-1 lists tariff practices that eliminate tariff-shopping opportunities, stimulate the growth of the enhanced services industry, and provide rate relief to local exchange subscribers. Shown therein are seven interrelated practices that balance the objectives of ONA with the realities of the marketplace. The centerpiece is flexible prices for ONA services. This tariff practice supports market-based prices for substitutable ONA services and cost-based prices for nonsubstitutable ONA services. Feeding into market-based prices for substitutable ONA services are the continued availability of existing services at existing prices and price equality between substitutable services. Amplifying cost-based prices for non-substitutable ONA services are the use of a complete measure of average incremental cost basis to set the price floors for nonsubstitutable ONA

[389] An increasing level of competition necessarily affects the prices of new and existing services. The prices of existing services must reflect the effects of new technologies and the introduction of new services. The prices of new services cannot be predatorily low, or exceedingly high. Predatory prices illegally disadvantage the rivals of the firm. Premium prices invite rivals to make uneconomic entry into a market or market segment. It is the balance between uneconomic entry and anti-competitive behavior that will dictate the level of market-based prices for those ONA services that do compete with existing basic services.

Figure 6-1

GUIDELINES FOR CONSTRUCTING A MODEL ONA TARIFF



services and the acceptability of contributions over average incremental cost to set the prices for nonsubstitutable ONA services.

Market-based prices for substitutable ONA services are expected to stimulate the demand for enhanced services, but the rate of market stimulation is expected to be less than what can occur if cost-based prices are set for nonsubstitutable ONA services. Moreover, market-based prices could provide a source of funds dedicated to the reduction of the prices of other local exchange services. Cost-based prices for nonsubstitutable ONA services are expected to be stronger stimulants for the enhanced service market because these prices may be introduced without fears of tariff shopping.

The continued availability of existing services at existing prices joined with the capability to link these services with any technically compatible BSEs can stimulate the enhanced services market to a greater extent than would occur from the development and deployment of entirely new BSAs. Furthermore, the use of what is already there helps to keep down the costs of ONA development. Combined with cost-based prices for nonsubstitutable BSEs and market-based prices for substitutable BSEs, this practice can be implemented without causing tariff-shopping opportunities.

Moreover, the RBHCs do have a limited ability to realign the rates of local exchange services used by the ESPs. Pricing flexibility for nonsubstitutable ONA services enables the RBHCs to structure the prices of these ONA services with the ESPs in mind. For example, the RBHCs are free to use per-attempt or usage-sensitive pricing for the nonsubstitutable and presumably superior BSAs and BSEs.

Flexible Pricing for ONA Services

Under flexible pricing for ONA services, the RBHCs would have the authority to price their BSEs and BSAs, whenever possible, on a cost-driven flat-rate, per-attempt, or usage-sensitive basis depending on the services' market characteristics and their cost structure. The only constraint on RBHC behavior, in this area, could be that these ONA services cannot compete with existing transport or end-user services that are provided by the RBHCs. BSAs and BSEs of this type can compete, however, with the intraLATA network services that are offered by interexchange carriers and alternative local

exchange carriers. Conversely, RBHCs may need the flexibility to price substitutable ONA services on a market-driven basis. These firms need the flexibility to reconcile the cross elasticities that are created by introducing ONA services functionally equivalent to existing local exchange services.

By granting pricing flexibility in the manner described above, the RBHCs would be able to restructure the prices of some of their services to ESPs without disrupting the stability of the existing local exchange, access, and enhanced services markets. Furthermore, permitting new price structures for nonsubstitutable ONA services is consistent with the objective of preventing tariff shopping in an ONA environment. Nonsubstitutable ONA services, by definition, are not a lower cost alternative to an existing basic service.

Market-based Prices for Substitutable ONA Services

Since the RBHCs are presently the dominant firms with respect to providing local exchange network services, their market power needs to be balanced by some factor external to this marketplace. This balance may be attained by setting the prices for substitutable ONA services according to the same regulatory rules and policies that were used to set the price for existing local exchange services. This practice could require the use of market-based prices for such ONA services because the competing local exchange services already have been priced on that basis. Clearly, it would disrupt the basic and enhanced services markets if the implementation of ONA meant the repricing of all existing local exchange services.

Continued Availability of Existing Services at Existing Prices

The continued availability of existing services at existing prices means that ESPs can continue to provide existing enhanced services in the existing manner without disruption to their pricing and marketing practices. In addition to promoting stability in the enhanced services market, this service-availability approach provides incentives that will work toward equalizing the prices of BSAs and functionally-equivalent-transmission services.

Under tariff guidelines suggested herein, technically-compatible BSEs may be used with existing services sold at existing prices. Market-based prices for substitutable ONA service imply an absence of tariff-shopping opportunities for ESPs and end users. But, they also suggest the complete interchangeability of these services. ESPs and end users would be indifferent between such ONA and local exchange services. Therefore, a RBHC may be hard pressed to introduce higher-priced BSAs that are functionally equivalent to existing local exchange transmission services.

Price Equality Between Substitutable ONA and Existing Services

Price equality between vertical services and functionally-equivalent BSEs eliminates tariff-shopping opportunities in the optional features and functions segments of the common ONA model. In addition, this pricing rule can be used to preserve the existing revenues that contribute to the support of residential and single-line business services. What is required is that the prices for the functionally-equivalent BSEs be set equal to the current prices of the competing vertical services. Moreover, a foundation is provided for the introduction of new BSEs that require switch development and/or modifications.[390] This pricing rule substantially reduces the RBHCs' fears that the implementation of ONA will cause an erosion of their revenues from other local exchange services.

Cost-based Prices for Nonsubstitutable ONA Services

Cost-based prices prevent anticompetitive behavior and provide incentives for the optimal evolution of the telecommunications industry. It is an open issue, however, whether cost-based prices for nonsubstitutable ONA services will stimulate the demand for network and enhanced services. Because nonsubstitutable ONA services will tend to be new network services,

[390] New BSEs are expected to reduce the costs of providing enhanced services, or to expand the geographic markets of the ESPs. Either of these results will stimulate the growth of the enhanced services market, an objective of the ONA process.

they are largely unproven in the marketplace. Consequently, their market demand may well turn out to be minimal.

Under minimal market demands, cost-based prices would be suggestive of high-priced ONA services. This result would undermine the rapid development of the enhanced services market. On the other hand, such cost-based prices for nonsubstitutable ONA services would go a long way toward ensuring that the subscribers to existing local exchange services would not experience a price increase that may be traced back to the implementation of ONA. After all, no definition of cost-based prices anticipates the underrecovery of the average incremental costs of providing a new service. Thus, on balance, it appears that cost-based prices for nonsubstitutable ONA services is an appropriate public policy. The users of general subscription services are protected, while the users of the more sophisticated telecommunications services are given the opportunity to consume these services in an economically responsible manner.

Average Incremental Cost Basis for Nonsubstitutable ONA Services

An average incremental cost basis for nonsubstitutable ONA services is expected to stimulate the enhanced services market in three ways. First, new ONA services can be positioned in the marketplace to gain the maximum customer acceptance. The use of average incremental cost permits these services to be priced at the low ends of their cost ranges. Second, the rapid acceptance of these services by ESPs and end users is expected to generate the introduction of more new ONA services. As long as these new ONA services do not cause the erosion of the firm's rate of return, they will continue to be added to the firm's product set. Third, low prices for these ONA services could reduce the ESPs' cost of providing new enhanced services. What is noteworthy is that this benefit is obtained without introducing the threat of tariff shopping. Since the nonsubstitutable ONA service does not have any internal competitors, ESPs and end-users are not presented with any opportunities for tariff shopping.

For purposes of pricing ONA services, average incremental cost would be defined as the additional direct, indirect, joint and common costs, expected to be incurred over a five-year planning horizon due to the scheduled introduction of ONA services. Necessarily, there will be some allocations

involved in this measure of costs. Its adoption, however, will help to fulfill the objective of insulating residential and single-business subscribers from price increases traceable to the implementation of ONA.

When defining average incremental cost in this manner, care should be taken not to include the costs of network research and development that are unrelated to ONA. ONA is not a federally imposed mandate for the development and deployment of a state-of-the-art network with a state-of-the-art architecture. Instead, ONA is a service framework that in one sense determines the evolution of the local exchange network, and in another sense is determined by the evolution of that network. This two-way relationship means that many new services would have been offered to the public regardless of the FCC's decision to use ONA as a partial substitute for structurally-separate enhanced services subsidiaries.

These characteristics of ONA suggest that new network technologies and architectures will be introduced primarily to meet the financial and marketing objectives of the firm. That is, it is to be expected that the RBHCs will decide to make big ticket investments for reasons unrelated to their ONA Plans. As a result, these new network capabilities will support ONA, but ONA will not necessarily drive their deployment and development. The average incremental cost of a nonsubstitutable ONA service, therefore, is likely to be considerably less than one would imagine. Specifically, these costs may be related only to the switch features and functions that are necessary to support ONA.[391]

Contributions Over Incremental Cost for Nonsubstitutable ONA Services

In the course of setting average incremental cost as the basis for nonsubstitutable ONA services, there would not be any expectation that the

[391] Eventually, the concept of ONA will become so entwined with the development of the network that its usefulness in determining average incremental cost will completely disappear. At that time, ONA as a pricing concept will cease to exist, and an ONA service will be nothing more than another new service made available by the RBHCs. Until that time occurs, however, it will be possible with some effort to disentangle the additional costs of ONA from the additional costs of developing and deploying an intelligent network.

prices for all or any of these services must be equal to this measure of economic cost. Such pricing could significantly reduce the benefits that ONA could impart to residential and single-line business subscribers. Contribution over incremental cost may be a source of the funds that an RBHC can use to lower the prices of these other local exchange services. In no instance, however, would the contribution from any nonsubstitutable ONA service exceed an estimate of its "stand-alone" cost no matter how the state or federal regulatory authorities choose to define it.[392]

Contributions above average incremental cost, so limited, could be extracted in two ways. First, RBHCs, ESPs, and regulatory authorities may agree upon a fixed contribution from all nonsubstitutable ONA services. These contributions would be used to support the costs of basic residential and business services. Second, they may decide to let the contribution vary across these ONA services. In this instance, the parties would have to agree to dedicate a specific percentage of these contributions to the reduction of prices for local exchange services.[393]

Conclusion

Absent its frills, tariff shopping is nothing more than the pursuit of a "good deal" that has been made possible by patchwork rate design. It should come as no surprise that users of higher-priced telecommunications services will yield to the pressure to abandon them for lower-priced functionally-equivalent services. The way to vent this pressure is to equalize the prices of these highly substitutable services. To avoid revenue losses, RBHCs against the wishes of some ESPs may use market-based

[392] "Stand alone" cost is traditionally defined as the cost of producing a particular level of output of a particular service under the assumption that the firm chooses the least cost technology for producing only that service and no other service. "Stand alone" cost is, therefore, a purely theoretical and hypothetical measure of cost. As a result, it is a cost measure that is never observable in the marketplace, leading to a search for proxies. One possible proxy is the substitution of fully distributed costs for "stand alone" costs. Such a substitution may be useful, if a regulatory authority is seeking a definable price ceiling for non-substitutable ONA services.

[393] Another source of support for basic local exchange services is the revenues that are received from the sale of ANSs.

prices to equalize the rates for substitutable ONA and existing local exchange services.

ONA regulatory policy could be concerned with the economic performance of the enhanced and basic services markets. This view recognizes the benefits obtainable from an optimal mixture of market-based and cost-based prices for ONA services. Two such benefits would be: 1) an increase in the telecommunications industry's rate of return, and 2) a more even distribution of these profits. The regulated subsidiaries could become more financially sound as they earn contributions over incremental cost from the substitutable and some nonsubstitutable ONA services. However, their profit levels may be held in check as these contributions may be used to finance the development and deployment of new local exchange services that are of immediate use to the population of general subscribers to the local exchange network. ESPs should benefit from the availability of new services that they may use as factors of productions. Their profits could grow as their prices decline because these ONA services increase the market potentials of the ESPs.

A desire to make the implementation of ONA a "win-win-win" proposition for RBHCs, ESPs, and ratepayers has led to the development of guidelines for constructing a model ONA tariff that has the following three characteristics. First, they improve imply ONA tariff that could improve the financial stature of the firms in the industry. Second, they imply rates, terms, and conditions for the purchase of vertical and ONA services that stimulate the enhanced services market and accelerate the introduction of new technologies. Third, they imply contributions over their incremental cost that may be used to reduce the prices of other local exchange services. These benefits accrue to ratepayers because vertical services and substitutable ONA services would earn a premium.

Absent knowledge of the differential demand characteristics between substitutable ONA and existing local exchange services, a "rough justice" solution has been used to balance the needs of the RBHCs and the ESPs. Use and user restrictions have been avoided as the means for controlling tariff shopping because it appears that they restrict the growth of the enhanced services market and the development of new technologies. But as necessary compensation for the RBHCs, it has been suggested that the prices of substitutable ONA and existing local exchange services could be equal to the

premium prices for currently charged for vertical services.
Nonsubstitutable ONA services are best priced on an average incremental cost basis. Although these prices could contain a contribution over incremental cost, the primarily purpose is to grant the RBHCs the authority to offer new network capabilities at prices that will stimulate demand and accelerate their acceptance by the enhanced services industry. Such prices are the means to a "win-win-win" outcome for the implementation of ONA.

CHAPTER 7

RECONCILING THE CONCERNS OF THE ESPs RBHCs AND REGULATORS WITH THE IMPLEMENTATION OF ONA

Introduction

ONA services will, in many instances, be functionally equivalent to existing local exchange services. ESPs want access to the call forwarding and voice messaging capabilities that the RBHCs offer directly to end users. Before such needs can be met, regulated firms and public utility commissions need to eliminate tariff-shopping opportunities that occur when two functionally-equivalent services are offered simultaneously. This is not any easy objective to fulfill. Providing ONA services is a multifaceted activity that includes designing tariffs, setting rates, terms, and conditions, and developing revenue sharing procedures that can imply reductions in the prices of existing local exchange services. Only in this way can the implementation of ONA result in a "win-win-win" situation for RBHCs, ESPs, and ratepayers.

Several pressing concerns have emerged as the RBHCs, ESPs, and regulatory authorities have weaved their ways through the initial phases of implementing ONA. They include the lack of entrepreneurialism in the development to date of ONA and the existence of use and user restrictions to prevent tariff shopping. They suggest concerns about the intentions of the ESPs. Most of these issues are related to the development of prices for ONA services and the distribution of the revenues that are generated from these prices.

ESPs Concerns With ONA

The ESPs expect that the RBHCs will pursue an entrepreneurial approach with respect to the introduction of ONA services. This involves devising new transmission capabilities to complement newly developed network features and functionalities. Thus, the RBHCs cannot realistically elect to minimize

their ONA development and implementation costs by using only existing local exchange services as the ONA transmission vehicles.

By not pursuing opportunities to develop new BSAs, intrastate and interstate feature groups may be the only trunk-side access services available to the ESPs. Most ESPs, however, are unfamiliar with the ordering and installation of these existing access services. Their use, therefore, may involve the ESPs in technical and administrative difficulties. Additionally, the ESPs' cost structure may be radically affected by the use of these services. This new cost structure could feed back into the marketing, pricing, and economic availability of new enhanced services.

The common ONA model is compatible with an entrepreneurial approach to providing ONA services. Yet, its structure does generate problems for the ESPs. Each RBHC views this model as a vehicle for promoting plans for specific enhanced services. It provides them with the opportunity to develop prices and price structures for telecommunications services used as factors of production. For the ESPs, this activity generally means a transition from flat-rated services to usage-sensitive services.

The common ONA model also promotes the controlled introduction of new network services, features, and functions. NYNEX, for example, intends to provide trunk-side BSAs that are different from intrastate and interstate features groups for interexchange carrier access services. Southwestern Bell intends to introduce a BSA that uses an ISDN protocol. These services clearly represent new capabilities for ESPs, but they also represent new bottleneck facilities associated with providing enhanced services. If these services are not designed with the nonaffiliated ESPs' needs in mind, the ESPs may suspect that ONA services may enhance the competitive position of affiliated ESPs at their expense.

In terms of familiarity, the common ONA model meshes well with fully distributed costing methods. On the up-side, this means that ONA services can be developed and offered quickly by unbundling existing local exchange services. Moreover, total costs will decline for those ESPs that elect to use fewer features and functions as they provide enhanced services. On the down-side, this service-provisioning approach implies that costs will increase for those ESPs that seek to use features and functions in addition to those already included in existing local exchange services.

What each of these characteristics of the common ONA model indicates is that the various ONA plans, notwithstanding their other qualities, are business plans. Some RBHCs, for example, intend to allow the combination of ONA services with existing local exchange services. This decision improves the marketability of ONA services. Others intend to prohibit the combination of any ONA service with any existing intrastate basic service. This business practice protects the existing revenue streams. Most ESPs favor the increased marketability of ONA services, but they are concerned about the constraints that the coupling of BSAs and BSEs places on their ability to use network capabilities in the most efficient technological manner.

Carrying this analysis further, many RBHCs want to set prices for ONA services on the basis of what the market will bear, and a set of these RBHCs wants to make ONA prices consistent with their marketing objectives for their enhanced services. Both activities raise red flags for the nonaffiliated ESPs. The former raise issues of market power and monopoly profits that can be used to smooth the way for the RBHC's enhanced services affiliate. The latter imply the possibilities of anticompetitive behavior and price discrimination.

The ESPs also are cautious about the exploitive powers of use and user restrictions. For many years, they have operated under restrictions that have been unilaterally imposed on them by the RBHCs. Most of these restrictions reflect the RBHCs' past unwillingness to provide services that are technically feasible and/or currently offered to end users. Such services include call forwarding, call messaging, distinctive ringing, and stutter dial tones. Sensitive to the past adverse effects of these decisions on their businesses, the ESPs are concerned that similar practices do not occur under the rubric of use and user restrictions. Moreover, it would be poor public policy to shrink the availability of existing and new network technologies. This action reduces the social and private benefits of technology by denying its efficient use to the widest possible population.

Cost-based prices for ONA services is another issue on par with use and user restrictions. ESPs prefer such prices because they are concerned that the RBHCs' market power implies the possibility of exploitive market-based prices for ONA services. In terms of ONA services, the RBHCs' market power

cannot be deflected because an alternative local exchange carrier does not exist that could meet the needs of the ESPs.

Not every ESP concern with the implementation of ONA is defensible. The ESPs desire for federal tariffs for all BSEs may be a subtle play to obtain "stand alone" BSEs and avoid the coupling of BSAs and BSEs within the intrastate and interstate regulatory jurisdictions. Assume an ESP supports the submission of federal tariffs for BSEs. Assume further that this ESP does not support the submission of a federal tariff for BSAs. Assume that the FCC's "mix and match" prohibition is not in force. It will be shown that this ESP desires nothing less than the decoupling of BSAs and BSEs. Consider the following possible purchasing behavior by the ESP.

After the interstate BSE is purchased, it has to be combined, per the common ONA model, with some transmission arrangement. Since the transmission arrangement is assumed not to be part of the federal tariffs for ONA services, this ESP would be free to select any available provider, including the local exchange carrier, an alternative local exchange carrier, or an interexchange carrier. There is little likelihood that an ESP would select an interexchange carrier or alternative local exchange carrier.

The prices of the interexchange carrier's transmission services are usually usage-sensitive, and the ESPs have not supported a transition to usage-sensitive access services. The fiber optic and digital switching facilities of an alternative local exchange carrier meet only the specialized needs of a limited set of enhanced services. Thus, it is expected that an ESP would select an existing basic service from a set of services offered by the local exchange carrier. In this instance, the "stand alone" BSE represents a successful effort to avoid the usage-sensitive pricing of the transport component of an ONA service. The FCC may have had this type of behavior in mind when they voided the possibility of "mixing and matching" intrastate and interstate services.

RBHCs Concerns With ONA

The indefensibility of the ESPs' position on "stand alone" BSEs suggests the defensibility of the RBHCs' position on this issue. Each RBHC holds that a "stand alone" BSE should not be offered to the public. They feel strongly that they should have some latitude concerning how they share

the fruits of their research and development expenditures with the ESPs. For them, "stand alone" BSEs represent the exploitation by the ESPs of research and development expenditures on the features and functions of the next-generation telecommunications switches.

The RBHCs are also concerned about their presumed inability to place use and user restrictions in their ONA tariffs. Although these restrictions clearly limit the use of the local exchange network, their absence cannot be discounted as a source of revenue loss by the RBHCs. Without the protection of use and user restrictions on ONA services, some end users may migrate from higher-priced existing local exchange services to lower-priced ONA services. The only way that such migration would be financially uneventful is if the quantity demanded of the substitutable ONA services falls in the elastic region of the demand schedule for that service. When such demand conditions exist, the expected revenue loss caused by service migration can be offset by the stimulated usage of the substitutable ONA service. However, little or no information exists on the demand schedules associated with ONA services. Consequently, state and federal regulators lack any quantitative evidence that would enable them to dismiss tariff shopping as a result of the absence of use and user restrictions.

Given the linkage between revenue loss and insufficient demand for substitutable ONA services, public debate should focus on how to introduce ONA services under conditions that maximize their use without causing the RBHC to experience an overall reduction in revenues. Additional demand by ESPs and other users of ONA services is the means to the "win-win-win" scenario because these unit sales are the primary source of contribution over incremental costs that can be used to lessen the fixed cost burdens of subscribers to existing local exchange services.

The quantity demanded of ONA services is affected by the continued use of existing local exchange services to provide enhanced services. In general, some ONA services will always be in competition with existing basic services. When the prices for the ONA services are above the prices for the substitutable local exchange services, the possibility exists that a sufficient level of demand will not materialize to justify the RBHCs' decision to offer these ONA services. This possibility can be eliminated, if the RBHC chooses to set the price of substitutable ONA service at the low end of its cost range. The practice, however, exposes the RBHC to the risk

of revenue loss through tariff shopping. Clearly, this effect goes against the achievement of the "win-win-win" result that could accompany the implementation of ONA.

The RBHCs' concern over revenue losses has served to cause the creation of the CNS category of the common ONA model. These vertical services such as call forwarding and call waiting generate substantial contributions that are used to keep down the price of other basic local exchange services. The RBHCs are, therefore, struggling to find a proper pricing policy for substitutable ONA services. In the absence of use and user restrictions--a policy decision that discourages harmful strategic pricing, and encourages the growth of the enhanced services market and the development of new technology--inappropriate prices for this type of ONA service will result in the suboptimal use of the local exchange network. Excessively high prices would cause and the underconsumption of ONA and other telecommunications services. Conversely, low prices for substitutable ONA services produces the overconsumption of ONA services.

Another concern affecting the RBHCs is that the ANS category of the common ONA model will be the source of the erosion of their superior capabilities in the area of operations and support systems for a telecommunications network. For the most part, the RBHCs' potential rivals for the carriage of intraLATA toll and local exchange traffic are relatively immature full service firms. These firms have found it difficult, if not impossible, to design, develop, and deploy operations and support systems equivalent to those of the RBHCs. Network control, monitoring, and diagnostic systems are time consuming and expensive to build. Additionally, they require highly skilled employees to maintain and upgrade them. Thus, the ANS category is the means by which the RBHCs' rivals for basic services can mitigate some of their competitive disadvantages.

Regulators Concerns With ONA

The regulators' concerns with the implementation of ONA tend to be similar to those that concern the RBHCs and ESPs. Some regulators, for example, are concerned about the absence of use and user restrictions in state and federal ONA tariffs. Others suggest that the coupling of BSAs and BSEs may retard the growth of competition in the telecommunications market

in general. There are, however, some areas of concern that are at present the exclusive domain of regulatory authorities.

Regulators are concerned with how the adoption of price cap regulation will affect the implementation of ONA. For the most part, their concerns center around the prices that will be set for new services. Under price cap regulation, these services will be treated differently than existing services. In particular, they are not subject to the dictates of any specific costing procedure during their one-year introductory period. This attribute leaves open the question of how the prices for new, not-before-existing interstate ONA services will be determined. If the costs and prices for these services are developed in a manner dissimilar from that used for interstate access services, then a tariff-shopping potential has been created between interstate BSAs and interstate access services.

The following example illustrates the mechanics of this tariff-shopping opportunity. Assume that the RBHCs developed the prices for interstate BSAs on the basis of average incremental cost plus a margin to cover a variable percentage of fixed costs. If there are no use and user restrictions placed on these services, and if these services are substitutable with interstate access arrangements, then interexchange carriers are apt to take advantage of these presumably lower-cost alternatives. The likelihood of such an event approaches certainty because the assumed procedure is often used to set prices for repackaged services that serve the function of providing existing customers with more options from which to choose. Some interstate ONA services may fall into this category.

Broadly related to the issue of price cap regulation is the effect that market power may have on the development and deployment of ONA services. A purely competitive market is not present in the telecommunications industry. The perfect monopolist, on the other hand, is a vanishing breed. As a result, the appropriate concept for describing the RBHCs is the more nebulous notion of the dominant firm.

Traditionally, market dominance has occupied a prominent place in analysis of anticompetitive behavior in unregulated markets. At an ever increasing rate, it is becoming an important descriptor for many regulated markets. As the competitive process strengthens in these regulated industries, regulators often find themselves devoting more attention to the development of policies that help to ensure that the incumbent, regulated

firms do not employ anticompetitive marketing tactics. Policies to control the behavior of the dominant firm must, however, balance the need for marketing restrictions against the uneconomic protection of the dominant firm's rivals.

Regulatory authorities also find themselves having to deal with the effect that the prices for ONA services will have on separations studies. Prices set at the low end of the cost range can be expected to stimulate the quantity demanded of ONA services, and, in turn, this stimulated usage will transfer costs between state and federal regulatory jurisdictions. Prices set at the high end, on the other hand, will repress the quantities demanded of ONA services, and fewer costs will be reallocated to different regulatory jurisdictions. Whatever the actual result of these cost shifts, the introduction of intrastate and interstate ONA services may require the repricing of existing basic services. This exercise could involve regulators in lengthy and hotly contested hearings.

Although the effects of alternative forms of regulation and existing separations procedures are important sources of regulatory concern, the most difficult issue that the regulators will have to grapple with is the distribution of the revenues that flow from any contributions over average incremental costs for nonsubstitutable ONA services, and market-based prices for substitutable ONA services. These revenues are the sources of the funds that may be used to lower the prices for existing basic services, thereby, bringing the benefits of ONA to the general local exchange subscribers. What the regulators have to deal with is the countervailing opinion that ONA services should not bear any burden or responsibility toward reducing the costs of access and local exchange services. Essentially, the basis of this alternative position is that an adequate supply of ONA services has been decreed by the regulatory authorities in order to accelerate the growth of the enhanced services market. This objective cannot be fulfilled if the ONA services must also contribute to the support of existing basic services that already are priced to recover the firm's total costs.

The most important assumption underlying a public policy to isolate ONA services from all other telecommunications services is that the introduction of each and every ONA service will be a financial and marketing success. That is, the subscribers to the existing basic services will never be called upon to help support the continued offering of an ONA service. Such a

result has not usually been borne out by experience. Rarely do new services immediately cover their costs of development, deployment, and marketing. Initially, these services operate at an accounting deficiency that must be resolved.

The most often used remedy is to attempt to increase the prices of the most inelastic nonsubstitutable, existing basic service. This additional revenue holds the firm harmless from financial deterioration, while allowing it to offer ONA services whose benefits will ultimately trickle down to those who provide a measure of financial support for these services. This interclass-of-service subsidy is justified by the assertion that price increases, so structured, keep down the firm's cost of capital.

The alternative remedy is to let the cost of capital increase to reflect the additional risk that the firm has placed upon itself as a result of its decision to offer untried ONA services with insufficiently demonstrated demand. Once this occurs, regulators do not have any decisive tools that can be used to identify the increase in the cost of capital that is due to the introduction of ONA services. As a result, prices for existing local exchange services will rise regardless of the current form of regulation. In the end, therefore, subscribers to existing services will support some, if not all, of the increased risk occasioned by the introduction of ONA services.

There is a way to isolate local exchange and access service subscribers from the risks of ONA implementation. The regulator can require that the firm's stockholders support the entire burden of any revenue shortfall during the start-up phase. This solution runs into immediate difficulty, however, because the reason for deploying the ONA service is that it is the prerequisite for the removal of another regulatory requirement. Further complicating matters is that this form of stockholder isolation implies that the local exchange and access service subscribers should not share in the benefits, if any, of ONA implementation. It would be difficult, if not impossible, for a state or federal regulatory authority to justify diverting the revenues from a successful ONA service away from the bottom line when the firm's stockholders, not the subscribers to the local exchange and access services, have supported the risks. To obtain the benefits of ONA, therefore, the local exchange and access subscribers will have to bear some of the risks.

The optimal selection of methods for setting the prices for ONA services is a mixture of cost-based for nonsubstitutable ONA services and market-based prices for substitutable ONA services. Unfortunately, the price mix must be preceded by an exercise that identifies and places each ONA service into one of the respective groupings. This task can ideally be accomplished in the long-term through experimentation and observation. Yet, regulators must also provide some direction in the near-term. This requirement suggests market-based prices could be reserved for ONA services that have existing substitutes.

Reconciliation of ONA Implementation Concerns

Each of the concerns of the ESPs, RBHCs, and regulators have to be addressed during the development of a model ONA tariff. ESPs have to feel assured that these new ONA services will enhance, not detract, from their profit potential. RBHCs need assurances that the revenues from existing basic services are protected from tariffing-shopping activities by the ESPs, interexchange carriers, and end users. Regulators have to ensure that the general subscriber population has an opportunity to benefit from the development and deployment of ONA services. Fortunately, these desires are not mutually exclusive.

The mere absence of use and user restrictions does not create a tariff-shopping potential. Equal prices for local exchange and substitutable ONA services in the absence of use and user restrictions prevents tariff shopping. Similarly, the mere existence of unequal prices for local exchange and substitutable ONA services does not cause tariff shopping. Unequal prices for local exchange and substitutable ONA services can be maintained as long as use and user restrictions are operative. Tariff shopping is caused when unequal prices and the absence of use and user restrictions exist simultaneously. It follows, therefore, that a model ONA tariff must contain either use and user restrictions or equal prices for local exchange and substitutable ONA services. In terms of efficiency and market development, the optimal selection is to reject use and user restrictions and to accept equal prices for local exchange and substitutable ONA services. Thus, the concerns of the ESPs and RBHCs have been reconciled. But, what about the concerns of the regulators. Do equal

prices provide the general subscriber population with opportunities to benefit from the implementation of ONA? The answer to this question is a qualified "yes".

The general subscriber population benefits from a "trickle down" effect of equal prices whenever such equal prices contain a premium that can be used to support the joint and common costs of the firm. These "premium prices", however, can not be the source of significant reductions in the quantity demanded of other basic services. If these changes in consumption patterns were to occur, the premiums from the sale of local exchange and substitutable ONA services would have to be used to replace the revenues lost due to the declines in the quantities demanded of other basic services. Assuming these revenue losses to be sufficiently large, the premiums would be completely devoted to this purpose. As a result, none would be left over to lower the rates and charges for residential and single-line business subscribers who are the least likely to be directly benefited by the implementation of ONA.

The most straightforward way to obtain the required trickle down effect is to continue to permit ESPs to use existing services at existing prices to provide enhanced services, while allowing ESPs to combine technically compatible BSEs with these transport services. This public policy not only permits the extraction of a premium by equating the price of substitutable ONA services with existing vertical services, it promotes ONA cost containment for the ESPs. They would not have to learn the administrative procedures for purchasing familiar telecommunications services from a new class of tariffs. Additionally, the continued use of existing services by ESPs serves to protect the past marketing and product development expenditures of these firms. Therefore, the subscribers of these ESPs will not experience any service disruptions as a result of the implementation of ONA.

The continued use of existing services for the providing ONA services does not prevent the RBHCs from developing and deploying new, intrastate, interstate, and local BSAs. Undoubtedly, there will be cases where a BSE will not be technically compatible with existing transmission services. In these instances, an RBHCs will develop the new transport capability, if its market research indicates that a sufficient level of demand does exist to justify the introduction of this BSA. Another incentive for the

introduction of new BSAs is when an ESP agrees to guarantee the recovery of the RBHCs' development and deployment costs for a particular ONA service. Neither of these alternatives are different from those that the suppliers of switch technology impose on the RBHCs. And, equally important, it does not force the ESPs to divulge their business strategies in the course of meeting either of these conditions.

The only shortcoming of equal prices for local exchange and substitutable ONA services arises when the prices for this subset of local exchange services have been set to stimulate the marketplace and to gain customer acceptance. Such existing prices are not apt to provide the level of premiums required to permit the general subscriber population to benefit from the implementation of ONA. However, this may be a moot issue, if the existing prices fall within the elastic range of the demand schedules for the ONA services. In this instance, revenue growth could be sufficient to generate enough dollars to lower the current prices of residential and single line business services.

The coupling of BSAs and BSEs may not be a necessary element of a model ONA tariff. The combination of technically compatible BSEs with existing local exchange and access services maximizes the use of network capabilities. A predisposition in this area, however, might not be consistent with the development of stand alone BSEs. Significant unresolved problems exist concerning the deployment of such ONA services. In particular, a procedure needs to be devised for sharing of risks associated with developing new features and functions for telecommunications switches.

Before considering the introduction of stand alone BSEs, it is necessary to evaluate the costs and benefits of using ONA as the vehicle for introducing facilities-based competitors into the local exchange on a wide-spread basis. Unlike the early competitors in the interexchange markets, such firms are apt to encourage facilities bypass, and not resale or service bypass. The resulting loss of revenue will be more difficult for the RBHCs to recover, even if the RBHCs are granted the flexibility, ex post, to respond to the activities of these competitors.

Furthermore, there are several unresolved cost questions that accompany the development of stand alone BSEs. What, for example, are the costs of developing such BSEs? What are the costs of the network interfaces that they will require? What are the effects on research and development of

permitting a noncontributing third party to share in the benefits of the successful development and deployment of new switch features and functions? It would be important to analyze these issues prior to authorizing the deployment and purchase of stand alone BSEs.

The suggestion to disallow stand alone BSEs at this time is made with some anxiety and reservations. RBHCs could use to this decision as the means for rectifying the imbalance between their transmission quality and the transmission quality of their rivals without suffering any competitive threats. To minimize this possibility, ONA Plans ultimately approved by the state and federal regulatory authorities could include a clause stating that the RBHCs cannot prohibit the interconnection of a BSE with transmission facilities owned by the purchaser of that BSE whenever the RBHCs cannot meet the demands of this customer for service availability or service quality. A clause of this type would preserve the ability of an ESP to use superior transmission services if they are willing to incur the business risks of owning such facilities, while it preserves the RBHCs incentives to engage in the research and development activities required for the introduction of new ONA services. That is, the RBHCs would not obligated to share the benefits of switch-related research and development with alternative local exchange carriers that do not share in the costs.

The wrinkle in the ONA implementation process is the existence of dual regulation for ONA services. Given the differing perspectives and opinions of the regulatory authorities addressing the ONA implementation issues, it is not likely that deference will be given to the decisions of any particular regulatory decision making body. This problem is not mitigated even if the federal regulatory authorities were to remove themselves from day-to-day problems of setting the rates, terms, and conditions for the use of ONA services. Differences of perspective, opinion, and interpretation would still emerge between the state regulatory bodies. Concluding, therefore, that multiple regulatory authorities will oversee the implementation of ONA, it follows that a model ONA tariff must accommodate this structural feature.

Fortunately, dual jurisdictional ONA services can occur without increasing the opportunities for tariff shopping by ESPs, interexchange carriers, or end users. Specifically, one of terms and conditions of interstate ONA tariff could be that interstate BSEs can only be used in

combination with interstate BSAs or existing interstate access services. Similarly, an intrastate term and condition could be that intrastate BSEs should only be used jointly with intrastate BSAs or existing local exchange services. This tariffing approach helps to eliminate tariff shopping without destroying the beneficial aspects of ONA on market, product, and technology development.

In summary, the reconciliation of the ONA concerns of the affected parties involves: 1) the rejection of use and user restrictions, 2) the rejection of unequal prices for local exchange, access, and substitutable ONA services, 3) the rejection of discounting the use of existing services at existing prices to provide enhanced services, 4) the rejection of permitting the purchase of a BSE only with the purchase of a BSA, 5) the rejection of cost-based only or market-based only rates for ONA services, 6) the rejection of federal-only or state-only tariffs for ONA services, and 7) the rejection at this time of stand alone BSEs. Or conversely, it suggests a model ONA tariff that contains: 1) an absence of use and user restrictions, 2) equal prices for local exchange, access, and substitutable ONA services, 3) a mixture of cost-based and market-based rates for ONA services, 4) the simultaneous existence of state and federal tariffs for ONA services, 5) the coupling of BSAs and BSEs only when the BSE is not technically compatible with an existing local exchange or access services, and 6) the continued use of existing services at existing prices to provide enhanced services.

Conclusion

The economic reasoning behind these guidelines for constructing a model ONA tariff is that the implementation of ONA essentially involves the development of specific transport capabilities and the switch features and functionalities. It does not address the development and deployment of a next generation switch or the next generation transmission architecture. In general, the introduction of these next generation technologies will be driven by corporate-wide strategic plans such as the intent to convert the existing local exchange network to an intelligent network architecture.

The new transport and switching capabilities are classified as nonsubstitutable ONA services; that is, services for which there are no

comparable existing local exchange or access services, features, or functions. As a result, these guidelines of a model ONA tariff suggest that the economic costs of these nonsubstitutable ONA service will be a result of incremental investment activities. The costs of these ONA services, accordingly, should tend to fall into the categories of research, development, deployment, administrative, and regulatory expenditures. Therefore, there appears to be a good chance of identifying them.

These guidelines may run into some opposition from those ESPs that view ONA solely as a means to reduce the costs of their existing services. They suggest, for example, that an ESP will experience a cost increase even if it chooses to combine a BSE with an existing local exchange or access service. An ESP that objects to an ONA tariff constructed according to these guidelines, however, would appear to be more concerned about reducing its costs and less concerned with the development and deployment of new features and functions that could be used by ESPs to provide new or improved ONA services.

The premise of these model ONA tariff guidelines is that cost reductions for existing enhanced services would be a fortunate, desirable, but not necessary outcome of the implementation of ONA. This perspective implies two "rules of thumb" for setting the prices for substitutable ONA services. First, the price of an ONA service are best set at levels less than the price of an existing, substitutable local exchange or access services, features, or functions. Second, the price of this particular ONA services should never be more than the price of an existing service. In addition to furthering the equal prices element of the model ONA tariff, these two rules reinforce that section of the model ONA tariff guidelines that supports the combination of BSEs with technically compatible existing transport services whenever possible.

Some debate could arise as to whether the prices for ONA services should be equal to the prices for existing substitutable local exchange or access services. The centerpiece of this opposition is likely to be that such prices will tend to mitigate the stimulative effects of the ONA implementation process. While there is truth in this opposition, its implications are not sufficient to overcome the implications of the equally true position that unequal prices for ONA services and substitutable local

exchange and access services create tariff-shopping opportunities. Consider the following analysis.

Equal prices for ONA services and substitutable local exchange services and access services are not competitively restrictive if it is assumed that the user of the ONA services is adding value to, say, a BSE. Put differently, there is an economic difference associated with an ESP and a RBHC in an ONA environment. The ESP is using the RBHC-provided BSE to produce another telecommunications service that it will market directly to an end user. The RBHC, on the other hand, in general, markets the substitutable local exchange service directly to an end user. At this point, the RBHC has ceased to add value to its services. It is totally appropriate to recognize the differing market roles of an ESP and RBHC when setting the price relationship between ONA and other local exchange services. That is, an ESP should not be concerned about equal prices for an ONA service and a functionally equivalent, existing end user service, if the ESPs is actually adding value to that ONA service.

Yet, an ESP should be concerned if a RBHCs' agenda, unrelated to ONA, should creep into the process of setting prices for ONA services. The ONA implementation process is not the proper vehicle for attacking the price structure of existing services, especially when this attack implies that ESPs would provide their services in a more costly manner. Just as ESPs should not be permitted to turn ONA into a cost reduction exercise, the RBHCs should not be permitted to turn ONA into an exercise bent on changing the prices of existing access and local exchange services.