

APPENDIX F

Figure 4

LEC Overhead Expenses Vary in Proportion to Directly Assigned Costs

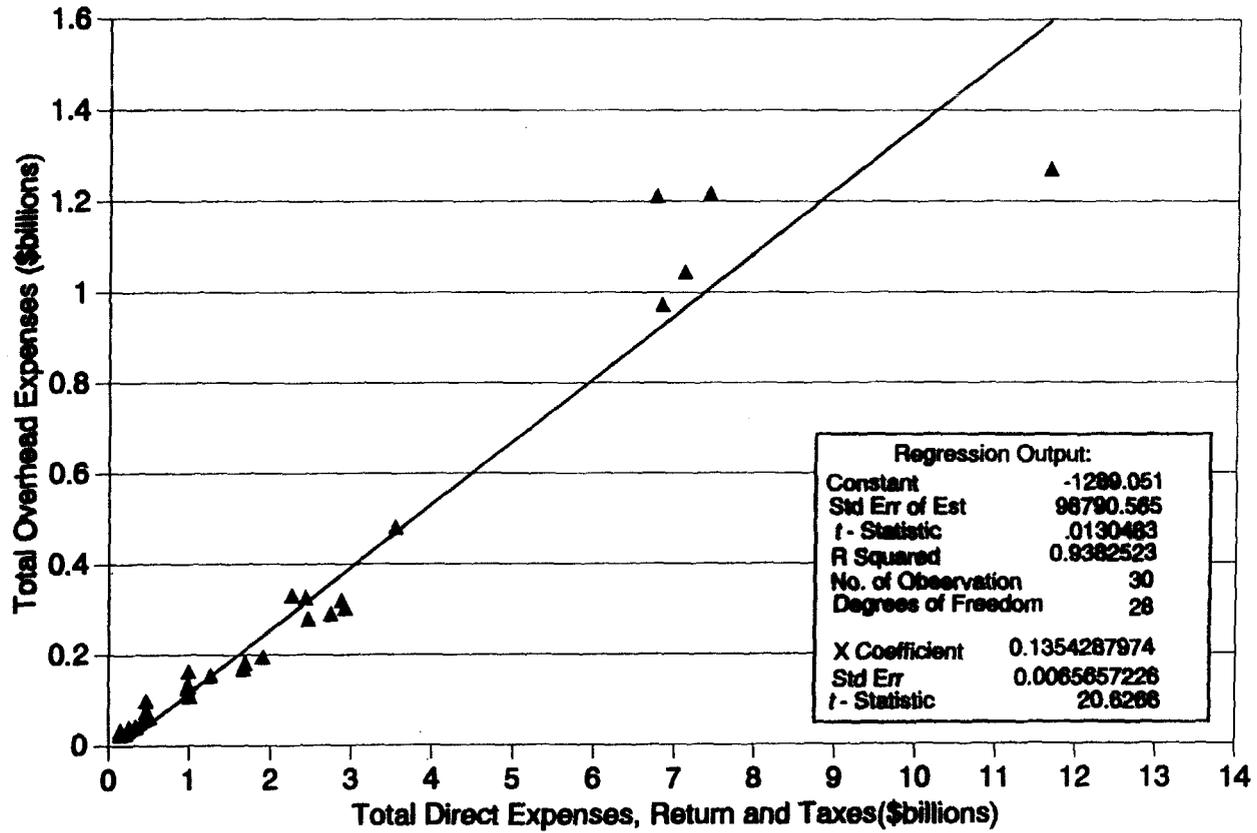


Table 4

**RELATIONSHIP OF OVERHEAD EXPENSES
TO TOTAL DIRECT EXPENSES**

	<u>Total Overhead Expenses¹</u>	<u>Total Direct Expenses, Return and Taxes</u>	<u>Overhead as a % of Total Direct Expenses, Return and Taxes</u>
NV Bell	\$26,841	\$142,472	18.84%
Contel NY	35,496	151,978	23.36%
BA - DE	28,483	218,291	13.05%
Rochester Tel.	41,957	259,503	16.17%
Contel CA	43,540	338,248	12.87%
GTE-HI	61,386	455,280	13.48%
GTE-Midwest	75,817	472,109	16.06%
BA-DC	65,554	484,356	13.53%
Cin. Bell	100,518	465,617	21.59%
BA-WV	64,909	508,684	12.76%
WI Bell	128,832	979,975	13.15%
IN Bell	110,089	1,006,396	10.94%
GTE FLA	133,643	985,520	13.56%
GTE-South West	164,270	993,474	16.53%
SNET	155,511	1,264,382	12.30%
BA - VA	170,905	1,666,653	10.25%
BA - MD	182,808	1,691,240	10.81%
OH Bell	196,575	1,903,657	10.33%
GTE-North	332,389	2,258,779	14.72%
MI Bell	280,470	2,466,242	11.37%
GTE - CA	327,873	2,430,049	13.49%
Ill Bell	291,880	2,747,155	10.62%
BA-PA	321,611	2,884,478	11.15%
BA-NJ	304,012	2,929,628	10.38%
NET	482,632	3,543,877	13.62%
NY Tel	973,074	6,832,165	14.24%
Pac Bell	1,213,208	6,757,287	17.95%
SWB	1,046,630	7,106,857	14.73%
USWEST	1,218,024	7,424,470	16.41%
Bell South	1,272,152	11,656,714	10.91%

Note:

1. Total Corporate Operations Expenses include Account's: 6711, 6712, 6721-6726, 7370,7540

Sources:

FCC Statistics of Communications Common Carriers, 1993/1994 Edition, Table 2.1 and Table 2.9

APPENDIX G

**Before the
PUBLIC SERVICE COMMISSION
OF THE STATE OF DELAWARE**

In the Matter of the Development of
Regulations for the Implementation of
the Telecommunications Technology
Investment Act

PSC Regulation
Docket No. 41

**STAFF PROPOSED RULES
FOR IMPLEMENTATION OF
THE TELECOMMUNICATIONS TECHNOLOGY INVESTMENT ACT
(Price Regulation)**

December 22, 1994
(REVISED March 8, 1995)

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- (17) Quarterly State Rate Case Report;
- (18) Quarterly ARMIS 43-01;
- (19) Quarterly ARMIS 43-05.

7.5. Petition to discontinue reports. A Telecommunication Service Provider may petition the Commission to discontinue the provision of a report upon a showing that such report is no longer necessary in order for the Commission to fulfill its obligation under the Act including the Commission's ability to make requisite determinations regarding the continuation or elimination of the Price Regulation pursuant to Rule 3.6.

8. Incremental cost methodology.

8.1. Purpose. The methodology described in this section shall be followed by the Telecommunications Service Provider for the calculation of incremental costs to be used by the Commission in enforcing the prohibitions against cross-subsidization contained in Section 710(a) of the Act and as set forth in Rules 4.8.1, 4.8.2 and 4.9 of these Rules; to demonstrate compliance with the rules regarding pricing, price changes, and pricing flexibility, and the requirements and limitations thereon, as provided for in Rule 6 of these rules; and to demonstrate compliance with the rules regarding the imputation of rates for basic services as defined in Rule 2.16. herein that are used separately or in combination in order to provide a discretionary service (Rule 6.2.3), or for basic or discretionary services as defined in Rule 2.16. herein that are used to provide a competitive service (Rule 6.3.1).

8.1.1. Direct application of the incremental cost standard and imputation requirement. Calculations of incremental costs utilizing the methodology described in these rules shall be used by the Telecommunications Service Provider to demonstrate compliance with the incremental cost and imputation standards identified below.

8.1.1.1. That for any proposed rate decrease for a Basic Service, including those decreases that would result from an application of the Price Index, the proposed rate is not lower than the incremental cost to the Telecommunications Service Provider of providing such Basic Service.⁶⁸

8.1.1.2. That the proposed rate for a Discretionary Service equals or exceeds the sum of the rate(s) for the basic services as defined in Rule 2.16. herein utilized in its provision plus any additional incremental costs incurred by the Telecommunications Service Provider and not covered by the rate(s) for the basic services as defined in Rule 2.16. herein to provide the discretionary

68. Section 707 (c) (3)

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service.⁶⁹ For the purpose of calculating "additional incremental costs" to comply with this requirement, the Telecommunications Service Provider will identify and include all such incremental costs that are not explicitly included in the rates for such basic service(s).

8.1.1.3 That the proposed rate for a Competitive Service is not below the sum of the costs of the basic and discretionary services as defined in Rule 2.16. herein utilized in its provision plus any additional incremental costs incurred by the Telecommunications Service Provider and not covered by the rate(s) for such basic and discretionary services that are used to provide the competitive service.⁷⁰

8.1.1.4 For the purpose of calculating "additional incremental costs" to comply with this rules 8.1.1.2 and 8.1.1.3, the Telecommunications Service Provider will identify and include all incremental costs that are not explicitly included in the calculation of the incremental cost of providing the Discretionary and/or Basic Services.

8.1.1.4.1. For purposes of this rule only, for multi-rate element services, the imputation test must be passed for the service as a whole, provided that revenues generated by services provided under volume discounts or targeted to a specific customer category are treated as separate services and must satisfy the imputation requirements on a stand alone basis.

8.1.1.4.2 Individual customer contracts must satisfy the imputation requirements for each contract, and for each separate service within the contract, on a stand alone basis.

8.2. Type of studies to be performed and assumptions. Cost studies performed in compliance with these rules shall be long run, forward-looking, incremental studies.

8.2.1. Long run. Long run shall be defined to mean a planning horizon in which full replacement of all plant, equipment and other investment is physically possible if economically justified, but not so long that all existing plant will have become worn out and in need of replacement merely because of its age or physical condition; it is a time interval over which consideration of various architectural strategies, including but not limited to total plant replacement, incremental enhancement of existing resources, or some combination thereof, can be considered and acted upon in a prudent and economically efficient manner. Any cost study in

69. Section 708 (a)(1); Section 708 (a)(2).

70. Section 709 (1); Section 709 (2).

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compliance with these rules shall reflect the data, assumptions, and results of the Technology Investment Analysis to be conducted in accordance with Rule 8.2.2 supporting the selected architectural strategy(ies), and shall assign costs to individual services as defined in Rule 2.16. herein in the same manner and on the same basis as such assignments were made or assumed, whether implicitly or explicitly, in the aforementioned Technology Investment Analysis.

8.2.2. Technology Investment Analysis. For purposes of this rule, a Technology Investment Analysis shall mean a present value discounted cash flow comparison of the projected revenues and costs, including capital expenditures, ongoing operating expenses, and all tax effects attributable thereto, of each alternative investment scenario that is considered. These alternatives must include at a minimum continuation under the "present mode of operation" (PMO) over the entire planning horizon. If full or substantial⁷¹ replacement of existing facilities or network architecture is considered, the scenarios studied must include alternative replacement schedules with a range sufficient to permit identification of the least-cost solution for the continued provision of existing basic services only. Such alternative replacement scenarios shall consider inter alia, technological and cost conditions projected to exist at the time of replacement. The discount factor to be used in conducting Technology Investment Analyses shall be adjusted to appropriately reflect the degree of risk inherent in each scenario examined.

8.2.3. Assumptions.

8.2.3.1. Network architecture. The present network architecture will be assumed to remain in-place over the long run planning horizon adopted for Rule 8.2.1., unless the Telecommunications Service Provider has determined, through a Technology Investment Analysis as defined in Rule 8.2.2. that replacement of such architecture is economically efficient and prudent, even where the in-place facilities are still capable of furnishing service of adequate quality and quantity.

8.2.3.2. Total demand assumption. The Telecommunications Service Provider's choice of forward looking, least cost technologies shall be consistent with the level of output necessary to meet reasonable forecasts of demand for all Basic services using the plant, equipment, or other investment in question over the study period. Demand assumptions must be consistent with demand assumptions included in the Technology Investment Analysis described in Rule 8.2.2.

8.2.3.3. Increment to be studied. For purposes of all studies

71. The term "substantial" as used here means a replacement of at least 50% of the net book value of a given telephone plant in service (TPIS) account as defined in the 47 CFR 32.2111 and 32,2441.

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performed in compliance with these rules, the relevant increment of output shall be the level of output necessary to satisfy the total forecasted demand and forecasted rate of growth thereof over the planning horizon of the service being studied, consistent with Rule 8.2.2.2. All costs that occur over the long run as a result of the Telecommunications Service Provider's decision to offer a service shall be included in this "total service" methodology.

8.2.3.4. Service-specific fixed costs. All costs which do not vary with individual units of output, or with changes in the level of output, but which are incurred by the Telecommunications Service Provider as a result of its decision to offer a service (or which would not need to be incurred if the service were not offered), shall be included in all incremental cost studies performed in compliance with these rules.

8.3 Services, features and functions.

8.3.1. Basic services. Costs attributable to the ongoing provision of Basic services as defined in Rule 2.16. herein shall be forward looking in nature, and shall reflect the technology, or mix of technologies, that would be chosen for use over the planning horizon as adopted in accordance with Rule 8.2.1. as the most economically efficient alternative for the provision of such Basic services, as determined in accordance with Rule 8.2.1, Rule 8.2.2., Rule 8.2.3.1, Rule 8.2.3.2 Rule 8.2.3.3, and Rule 8.2.3.4.

8.3.2. Discretionary/Competitive services. Costs attributable to the initial and subsequent provision of Discretionary/Competitive services as defined in Rule 2.16. herein shall be forward looking in nature, and shall reflect the differential between the costs as determined in Rule 8.2.2. and those that would be required over the planning horizon as adopted in accordance with Rule 8.2.1. as the most economically efficient means for the provision of such Discretionary/Competitive services in accordance with Rule 8.2.1, Rule 8.2.2, Rule 8.2.3.1, Rule 8.2.3.2 Rule 8.2.3.3, and Rule 8.2.3.4.

8.4. Principle of cost causation. All incremental cost studies performed in compliance with these rules shall follow the principle of cost causation and include in the calculation of the cost of a service all costs that change as a result of the Telecommunications Service Provider's decision to offer the service or provision it in a specific way. Costs shall be attributed to individual services or groups of services based on the following cost causation principle. Cost are recognized as being caused by a service or group of services if:

- a) the costs are brought into existence as a direct result of the decision to provide the service or group of services, or
- b) the costs are avoided if the service or group of services is not provided.

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Category (b) may be invoked if and only if the following conditions can be met (a) the Telecommunications Service Provider can demonstrate that the demand for the service has been declining for a period of at least thirty-six (36) months and is projected to continue to decline, and (b) the Telecommunications Service Provider has undertaken a business case analysis to evaluate the discontinuance of the service. For those services that share the plant, equipment, or other investment with the "cost-causing" service, the correct and relevant incremental cost shall be the cost of the least cost, most efficient technology to provide the service consistent with Rule 8.3.1 and Rule 8.3.2. For the "non cost causing" services, the least cost, most efficient technology may or may not be the technology used to provide the "cost causing" service.

8.5. Required level of consistency among cost studies for different services.

Different services offered by the Telecommunications Service Provider will use consistent incremental cost studies performed consistently with attribution of capital costs and operating expenses to specific services as defined in rules Rule 8.3.1 and Rule 8.3.2 and used in the Technology Investment Analysis defined in rule 8.2.2.

8.5.1. **Inclusion of shared investments.** Where common network facilities or other resources are shared among two or more services, the in use and spare capacity costs shall be apportioned among all such services first in accordance with Rule 8.3.1 and Rule 8.3.2 and then after such apportionment any further apportionment within each of the Basic (Rule 8.3.1) and Discretionary/Competitive (Rule 8.3.2) categories on the basis of relative highest projected lifetime use of the resource by each such service.

8.6. **Use of mechanized cost models.** The Telecommunications Service Provider may use all mechanized cost models currently in use, including computer spreadsheets, programs, and models created and maintained by Bell Communications Research (Bellcore), to conduct incremental cost studies in compliance with these rules, provided that all cost principles, guidelines, and requirements set forth in these rules are complied with in full. If the Telecommunications Service Provider plans to discontinue the use of a spreadsheet model, program, or model currently in use, it shall notify the Commission and provide a detailed explanation of how the incremental cost for services currently being calculated using the model in question will be determined. If the Telecommunications Service Provider plans to begin use of a spreadsheet model, program, or model not currently in use, it shall notify the Commission and provide a detailed description of how the proposed spreadsheet model, program, or model will operate, including a list of required inputs, a description processing algorithms, and a description of the model output, and, if commercial software is not being used, an explanation of why commercial software cannot be used to run the model. Models must be distributed to the Commission staff and the Public Advocate.

8.7. **Required documentation.** The Telecommunications Service Provider shall continue to produce the currently available documentation for all incremental cost studies performed in compliance with these rules. In addition, the Telecommunications Service

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Provider will provide the additional documentation necessary to comply with the requirements as set forth in Rule 8.2.2, Rule 8.3.1, Rule 8.3.2, and Rule 8.5.

8.7.1. Treatment of proprietary information. The level of documentation for incremental cost studies performed consistent with these rules may require the production of information that the Telecommunications Service Provider asserts to be proprietary or confidential. Complete documentation, including the asserted proprietary information, shall be provided to the Commission and its Staff and to the Office of the Public Advocate subject to an acceptable proprietary agreement. Such information shall also be provided to others subject to a reasonable proprietary agreement acceptable to the Telecommunications Service Provider. The Telecommunications Service Provider, upon showing of good cause to, and approval of, the Commission, may restrict access to this information to those individuals not responsible for the development, pricing, or marketing of services that are competitive with the service in question of the Telecommunications Service Provider. At no time shall the Commission or Staff or the Public Advocate's access to this information be restricted. Where a required notice includes allegedly proprietary information, a redacted notice shall be distributed to all parties at the required time.

8.8 Timing of studies. A copy of the most current incremental cost studies performed in compliance with these rules shall be furnished by the Telecommunications Service Provider as a part of its annual price index filing for the purposes described in Rule 8.1. The Telecommunications Service Provider may update an incremental cost study during the interval between its annual filings based on a change in the assumptions regarding investment or expenses, but it must do so for all services affected by the changed assumption simultaneously. The Telecommunications Service Provider must update an incremental cost study during the interval between its annual filings whenever an investment is made pursuant to a Technology Investment Analysis.

9.0. Cost allocation methodology.

9.1. Purpose. The methodology described in this section shall be used by the Telecommunications Service Provider to allocate costs among its Basic, Discretionary, and Competitive intrastate services to ensure that revenues from Basic and Discretionary Services are not used to subsidize Competitive Service costs in violation of the TTIA.

9.1.1. The Telecommunications Service Provider shall file reports with its annual price index filing, as otherwise required by these rules and at other times when deemed necessary and appropriate by the Commission, with sufficient detail and documentation for the Commission to determine, based on a proper application of the cost allocation procedures described in these rules, that the following prohibited activities have not occurred during the study period:

- a) The cross-subsidization of Competitive Services with revenue generated by

CONSENSUS COSTING PRINCIPLES

The parties participating in the OAND cost study workshops have reached agreement that the following nine costing principles, with associated explanatory text, should replace the principles and text that appear in Attachment A of the Assigned Commissioner's Ruling.

Principle No. 1: Long run implies a period long enough that all costs are avoidable.

Long run is a period of time long enough so that all costs are treated as avoidable. Variable is synonymous with volume-sensitive and therefore not synonymous with avoidable. Avoidable costs can include both volume-sensitive and volume-insensitive costs. The purpose of this principle is to preclude the possibility of cross-subsidization by ensuring that TSLRIC estimates include all costs necessary to provision a telecommunications service.

Principle No. 2: Cost causation is a key concept in incremental costing.

Cost causation is a consistent and fundamental principle of TSLRIC studies. The principle of cost causation should be utilized to determine the appropriateness of including a cost in a TSLRIC study. The basic principle of cost causation is that only those costs that are caused by a cost object in the long run should be directly attributable to that cost object. Costs are considered to be caused by a cost object if the costs are brought into existence as a direct result of the cost object or, in the long run, can be avoided when the company ceases to provide the cost object.

For example, within the telecommunications industry, the principle of cost causation is best viewed from the standpoint of providing a service and what costs are necessary to offer that service. All costs caused by a decision to offer a service should be included in a TSLRIC study of that service.

Consensus Costing Principles
R.93-04-003, I.93-04-002

Principle No. 3: The increment being studied shall be the entire quantity of the service provided, not some small increase in demand.

1. TSLRIC studies for "disaggregated pieces"¹ of the LECs' networks shall form the basis of TSLRIC studies for LEC "services"² so that the results of the cost studies for "disaggregated pieces" will be blind to the "services" that use those pieces.
2. The TSLRIC study for each "disaggregated piece" shall use an increment of demand equal to the aggregate demand for that "disaggregated piece" across all its uses as an input to LEC "services" and, if applicable, as a separately tariffed LEC "service." The TSLRIC study for each "disaggregated piece" shall separately identify the volume-insensitive and volume-sensitive costs for that "disaggregated piece," taking into account the entire aggregated demand for the "disaggregated piece."
3. The TSLRIC study for each LEC "service" shall include the volume-sensitive costs of shared "disaggregated pieces" and the total costs (both volume-sensitive and volume-insensitive) for all "disaggregated pieces" or functions that are dedicated uniquely to the LEC "service" being studied.

¹ For purposes of this consensus item, the term "disaggregated piece" has been used in place of the terms "resource," "basic network function" and "basic network component/basic network element" that were used in individual parties' filings. Although not precisely defined here, "disaggregated piece" refers to a higher level of aggregation than "nuts and bolts" items such as line cards, but (typically) a lower level of aggregation than tariffed LEC services. Some "disaggregated pieces" may, however, be offered as separately tariffed services in addition to being used as inputs to bundled LEC services.

² The term "services" refers to separately tariffed LEC service offerings or contracts, which may bundle together "disaggregated pieces" or may offer a single "disaggregated piece" for public purchase.

4. The TSLRIC study for each individual LEC "service" shall not include volume-insensitive costs of shared "disaggregated pieces." Instead, the TSLRIC for the group of services that share "disaggregated pieces" shall include the volume-insensitive cost of the shared "disaggregated pieces" plus all relevant volume-sensitive costs.
5. The total increment of demand at the "disaggregated piece" level is used to determine the size and the characteristics of the technology that shall be used to determine the TSLRIC.

The parties agree that this costing principle would produce costs that are relevant for determining whether cross-subsidization exists. All parties reserve the right to produce or request additional cost studies for other purposes and to identify other purposes for TSLRIC cost studies.

Principle No. 4: Any function necessary to produce a service must have an associated cost.

This principle assumes that any function necessary to produce an output or telecommunication service has an associated cost — whether that cost is volume-sensitive or volume-insensitive. The associated cost necessary to offer a service should in turn be included in a TSLRIC analysis. There shall be a presumption that no costs are sunk unless demonstrated to the contrary. The party seeking to demonstrate sunk costs has the burden of proof.

Principle No. 5: Common costs, if any, are not part of a TSLRIC study, except for a TSLRIC study of the firm as a whole.

TSLRIC studies shall include costs that are often called overhead costs if those costs are caused by the decision to offer the cost object. TSLRIC studies of individual services shall exclude overheads that are not demonstrated to be caused by the cost object. Recognition of such costs will be treated as a pricing issue. No cost shall be assumed to be volume-insensitive common cost on the basis of its accounting treatment.

Principle No. 6: Technology used in a long run incremental cost study shall be the least-cost, most efficient technology that is currently available for purchase.

This principle assumes that a TSLRIC analysis should be based on the existing or planned location of switching and outside plant facilities using the least-cost, most efficient technology. The least-cost technology should reflect a known and proven technology that is clearly identified and is in use, at least partially, today.

Principle No. 7: Costs shall be forward looking.

TSLRIC studies shall be "forward looking"; i.e., they shall not reflect a company's embedded base of facilities. Rather, the study shall account for only the most efficient and cost-effective means of providing the service. Efficiency requires that future costs be taken into account. Future costs must include all cost components required to provision a telecommunications service.

Principle No. 8: Cost studies shall be performed for the total output of specific services and will use as a basis the basic network functions which comprise the services plus all other service specific costs.

Consensus Costing Principles
R.93-04-003, I.93-04-002

The cost methodology implementation should ensure that costs for services which use the network in the same way are treated consistently in terms of the network functions contributing to their respective costs. Specifically, the parameters of volume, distance and duration, and time of day, as to their effect on cost, should be consistently applied from service to service to the extent that the services use the network in the same way and to the same extent. For example, peak/off-peak cost differences shall be based on the aggregated usage patterns of all directly substitutable services within a given market.

Principle No. 9: The same long run incremental cost methodology shall apply to all services, new and existing, regulated and non-regulated, competitive and non-competitive.

A TSLRIC study shall be based on a specific set of costing principles and data that yields consistent cost results that can be compared to all services, new and existing, regulated and non-regulated, competitive and non-competitive.

Types of Costs

Throughout this discussion, various costing terms have been used. These terms — such as "direct," "indirect," "common" and "joint" — have been taken from the two-volume cost study report submitted to the Oregon Public Utility Commission (PUC) in Docket UM-351 (1993). This report identified the following types of costs associated with basic network functions:

Volume-sensitive costs — Costs that vary with changes in the output measured according to the cost drivers established for the output. (It is important to note that the term volume-sensitive is not synonymous with the terms usage-sensitive or traffic-sensitive.)

Consensus Costing Principles
R.93-04-003, I.93-04-002

Volume-insensitive costs — Costs that do not vary with changes in the quantity of output, but are avoidable by not supplying the output.

Shared costs — Costs that are attributable to a group of outputs but not specific to any one within the group, which are avoidable only if all outputs within the group are not provided.

Service-specific costs — Costs, other than basic network function specific costs, that are caused by offering a service (e.g., service advertising).

Common costs — Costs that are common to all outputs offered by the firm. While these costs are not considered part of a TSLRIC study, recovery of such costs is required.

Recovery of common costs is a pricing issue.

Inclusion of Annual Charge Factors

In Docket UM-351, the Oregon PUC adopted the use of factors and loadings as one of its main costing principles. Factors and loading are used when costs cannot be identified directly. Examples are operations and maintenance, depreciation, taxes and rate of return. These factors and loadings are an appropriate part of a TSLRIC study.

BNF Costs vs. Service-Specific Costs

The LECs will report all investments and associated capital costs (i.e., cost of money, taxes and depreciation) as BNF costs. The LECs will report cash operating expenses other than maintenance expenses as service-specific costs. The parties do not agree as to whether maintenance expenses shall be treated as costs of services or costs of BNFs.

CONSENSUS BASIC NETWORK FUNCTIONS

The parties participating in the OAND cost study workshops have agreed that the following definitions of Basic Network Functions ("BNFs") and specifications of cost drivers for each BNF should replace the discussions of the corresponding categories of BNFs and associated cost drivers that appeared in Attachment B of the Assigned Commissioner's Ruling. Those BNFs that are not specifically addressed in this "Consensus Basic Network Functions" document are not the subject of agreement among the parties.

NETWORK ACCESS CHANNEL

General Category

BNFs for subcategory Network Access Channel.

Pacific Bell³

Feeder

A cost function formula for feeder facilities for each wire center showing cost varying as a function of distance from the wire center.

Distribution

A cost function formula for distribution facilities for each wire center showing cost varying as a function of distance from the serving area interface (SAI).

³ Cost equals unit investment cost.

APPENDIX C

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Consensus Basic Network Functions
R.93-04-003, L.93-04-002

Electronics The service-specific electronic facilities necessary to utilize feeder and distribution for that service.

Fiber Ring A per access line unit cost.

Service Map A map or description of how much fiber ring or feeder and distribution facilities and which service-specific service electronics are necessary to establish network access for each service. The "map" will also include the customer density distribution, by service, for each of the areas for which the facilities information is provided.

GTE

Copper Technology⁴ Cost detail will be provided by density category (e.g., high, medium and low) and by distance for basic level network access channels (i.e., loops). Copper technology will be used for shorter loops (e.g., up to 12 kilofeet).

Pair-Gain Technology⁴ Cost detail will be provided by density category (e.g., high, medium and low) and by distance for basic level network access channels (i.e., loops). Pair-gain technology (i.e., fiber cable leaving the central office, a pair-gain device and copper cable) will be used for longer loops. The cost will be

⁴ Unit (or monthly) cost detail, by density category, by distance, and by bandwidth, and examples will be available for mapping to final services.

Consensus Basic Network Functions
R.93-04-003, I.93-04-002

identified for copper cable, fiber cable, support structures (*i.e.*, poles and conduit systems common to both), and pair-gain devices (*i.e.*, electronics).

Fiber Technology

Cost detail will be provided by system size for DS-1 and DS-3 network access channels. Costs will be identified for fiber cable, support structures and associated electronics.

**Channel Performance,
Other Features and
Functions (CP)**

This category of cost will address equipment components (*e.g.*, electronics) which are used in conjunction with the basic network access channel to meet the quality or utility of specific services (*e.g.*, private line).

Cost Drivers: distance from the wire center (or central office); electronics; fiber ring length; size of cable/system; bandwidth; wire center size/density. Pacific's studies may not show facilities' costs varying as a function of density within a wire center, reflecting unit investments per wire center.

BNFs for subcategory NA Channel Connection. The subcategory of BNFs that provide the interface between the NA Channel, the switched network, another NA Channel or a Dedicated Transport interoffice transmission path.

- (1) **Network Access Channel Connection - Switch Interface⁵**
- (2) **Network Access Channel Connection - Cross-connect (i.e., the jumper)**

E.g.:
 - Analog
 - DS-0
 - DS-1
 - DS-3
- (3) **EBCC (i.e., the connection between the point of interconnection and the LEC's cross-connect point)**

E.g.:
 - Analog
 - DS-0
 - DS-1
 - DS-3

SWITCHING AND SWITCHING FUNCTIONS

BNFs for subcategory Switching. The subcategory of BNFs that establish a call and a temporary transmission path through the switch architecture for originating, terminating, intraoffice (single office), interoffice (multi-office) or tandem switching. Each BNF consists of a particular call setup, by time-of-day (TOD) and duration by TOD.

⁵ This is also referred to as non-traffic-sensitive switching (i.e., a line termination, cable to the main distribution frame, etc.).

ISSUE: The TOD cost driver distinguishes between peak and off-peak usage. Pacific Bell defines the peak period as the busy-hour, MCI defines the peak period as the billing period in which the peak occurs (e.g., day).

BNFs for subcategory Switching.⁶

- (a) **BNFs for subcategory Intraoffice (Single-Office) Switching: Setup and Duration.**
- (b) **BNFs for subcategory Interoffice (Multi-Office) Switching - Originating Office: Setup and Duration.**
- (c) **BNFs for subcategory Interoffice (Multi-Office) Switching - Terminating Office: Setup and Duration.**
- (d) **BNFs for subcategory Tandem Switching: Setup and Duration.**

SS7 SIGNALLING NETWORK FUNCTIONS

BNFs for subcategory SS7 Signalling. The subcategory of BNFs that provide the temporary signalling transmission path through the network. The signalling network consists of the signaling links, Signal Transfer Point (STP) and Service Control Point (SCP).

⁶ The cost drivers are (a) for setup: office technology, on-peak/off-peak, digits dialed, forwarding of calling party identification; (b) for duration: office technology, on-peak/off-peak.

BNFs for subcategory SS7 Signaling

- (1) **Setup:** Cost drivers are busy-hour octets.
- (2) **Queries:** Cost drivers are busy-hour octets.
- (3) **Links:** Cost drivers are bandwidth and distance.
- (4) **STP interface:** The bandwidth-specific standard interface to STP node. Cost drivers are number of 56kbs link terminations.

TRANSPORT

General Category

Subcategories within Transport

- 6) **Dedicated Transport - A full period, bandwidth specific (DS-0, DS-1, DS-3) interoffice transmission path between switching offices and/or serving wire centers of an LEC.**

Termination - An interface between the channel connection and the dedicated transport facilities.

(6-1) DS-0 Level