BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

In the Matter of	:	DOCKET NO. 960833-TP
	:	DOCKET NO. 960846-TP
Petitions by AT&T Communications of the Southern States, Inc., MCI Telecommunications Corporation, MCI Metro Access Transmission Services, Inc., and American Communications Services, Inc., and American Communications, Services of Jacksonville, Inc., for arbitration of certain terms and conditions of a proposed agreement with BellSouth Telecommunications, Inc., concerning Interconnection and Resale under the Telecommunications Act of 1996.	:	DOCKET NO. 960916-TP

THIRD DAY - MID-MORNING SESSION

VOLUME 14

Pages 1981 through 2145

PROCEEDINGS: **HEARING**

BEFORE: CHAIRMAN SUSAN F. CLARK
COMMISSIONER J. TERRY DEASON
COMMISSIONER JULIA L. JOHNSON
COMMISSIONER DIANE K. KIESLING
COMMISSIONER JOE GARCIA

DATE: **Friday, October 11, 1996**

TIME: Commenced at 9:05 a.m.

PLACE: Betty Easley Conference Center
Room 148
4075 Esplanade Way
Tallahassee, Florida

REPORTED BY: ROWENA NASH HACKNEY
H. RUTHE POTAMI, CSR, RPR
Official Commission Reporters

APPEARANCES:
(As heretofore noted.)

WITNESSES - VOLUME 14

PROCEEDINGS

(Transcript follows in sequence from Volume 13.)

CHAIRMAN CLARK: Let's call the hearing back to order. Dr. Emmerson, have you been sworn in?

WITNESS EMMERSON: I have not.

CHAIRMAN CLARK: Would you stand and raise your right hand. (Witness sworn.)

Mr. Carver.

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DR. RICHARD D. EMMERSON

was called as a witness on behalf of BellSouth Telecommunications, Inc. and, having been duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. CARVER:

Q Dr. Emmerson, would you please state your full and your business address?

A Yes. My name is Richard Emmerson. My business address is 341 La Amatista, Del Mar, California.

Q By whom are you employed and in what capacity?

A I'm employed as the President and CEO of INDETEC International Incorporated. I'm here on

behalf of BellSouth.

Q Did you prefile testimony in this docket?

A Yes, I did.

Q I'm going to go through it one by one. As to AT&T, you filed direct testimony consisting of 24 pages and rebuttal testimony consisting of 38 pages. And there are no exhibits to that testimony; is that correct?

A That is correct.

Q And as to MCI, you have filed direct testimony that would be 26 pages, 15 pages of rebuttal testimony and no exhibits; is that correct?

A That is correct.

Q And as to ACSI, 24 pages of direct testimony and 14 pages of rebuttal testimony and again no exhibits; is that correct?

A Yes, sir, that's correct.

Q Do you have any changes to any of your testimony?

A No.

Q If I were to ask you today the questions that appear in your testimony, would your answers be the same?

A Yes, they would.

MR. CARVER: Madam Chairman, I request that

Dr. Emmerson's testimony be inserted into the record. It would be direct and rebuttal for each of the three.

CHAIRMAN CLARK: The direct testimony filed by Mr. Emmerson in the AT&T, MCI and ACSI dockets and rebuttal testimony filed in those dockets will be inserted in the record as though read.

DIRECT TESTIMONY OF DR. RICHARD D. EMMERSON

ON BEHALF OF BELLSOUTH TELECOMMUNICATIONS, INC.

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 960833-TP

AUGUST 12, 1996

INTRODUCTION

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS.

A. My name is Richard D. Emmerson. I am the President and CEO of INDETEC International, Inc. I am testifying on behalf of BellSouth Telecommunications ("BST" or the "Company"). My business address is 341 La Amatista, Del Mar, CA 92014.

Q. WHAT EXPERIENCE AND QUALIFICATIONS DO YOU HAVE PERTAINING TO YOUR TESTIMONY?

A. My academic qualifications include a Ph.D. in economics from the University of California, Santa Barbara in 1971. From 1971 through 1979, I was a full-time member of the Economics Department at the University of California, San Diego (UCSD). Since 1979, I have taught continuously (part time) at UCSD; I was the Director of the Executive Program for Scientists and Engineers (EPSE) at UCSD during 1990-1991, and I continue to teach courses on costing and pricing for EPSE at the present time. I have written articles in professional economic

journals, and I have performed research projects for government agencies and private industry. I have also served as an expert witness in antitrust and business litigation cases. I have testified before many Public Service Commissions on various economic and policy subjects such as access charges, bypass, rate structure, competition, terminal equipment pricing, network services pricing, and cost analyses in the jurisdictions of California, Colorado, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Maine, Michigan, Minnesota, Montana, Nevada, Oklahoma, Pennsylvania, Virginia, Washington, Washington D.C., and Wisconsin, as well as in Canada. Over the course of the past 12 years, my provision of expert witness testimony in over 40 telecommunications regulatory hearings has aided in establishing appropriate cost standards in several jurisdictions within the industry. I have also worked for regulators and telephone companies in nearly a dozen foreign countries during the past three years.

My work experience includes past positions as Senior Vice President of Criterion Incorporated, President of the Institute for Policy Analysis, and President of Economic Research Associates. These companies performed economic analysis for competitive firms, regulated firms, government agencies, regulatory commissions, and trade associations. INDETEC International, Inc. provides consulting and training services to international telephone companies, Lucent Technologies, the United States Telephone Association (USTA), Bellcore, Commission staff members, partners and managers of large accounting and consulting firms, and interexchange companies (these services were formerly offered through INDETEC Corporation and Emmerson Enterprises, Inc.).

During the past 20 years, I have taught a wide variety of courses ranging from basic economics for telecommunications to highly specialized courses in incremental cost study methodology. State regulatory commission staff members from numerous states periodically attend my classes in order to improve their understanding of current economics for telecommunications.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. AT&T Communications of the Southern States, Inc. ("AT&T") has petitioned the Florida Public Service Commission ("FPSC" or "Commission") to arbitrate certain terms and conditions in its negotiation with BST regarding interconnection, unbundled network elements ("UNEs"), and resale of existing services. I discuss the basic economic principles which should underlie the Commission's consideration of these issues and I respond to certain positions raised by AT&T in its petition.

A LOCAL EXCHANGE COMPANY (LEC) SHOULD NOT BE PROHIBITED FROM PRICING ITS SERVICES TO OBTAIN CONTRIBUTION TO RECOVER ITS SHARED AND COMMON COSTS

LEC Shared Costs are Significant

Q. AT&T PROPOSES THAT BST PRICE ITS UNBUNDLED NETWORK ELEMENTS (UNES) AND INTERCONNECTION SERVICES EQUAL TO INCREMENTAL COST.[1] DO YOU AGREE WITH THIS PROPOSAL?

A. No, I do not. A multiservice network-based Local Exchange Company (LEC) has shared costs which must be recovered by pricing services above incremental cost.

Q. ARE THE SHARED COSTS OF A MULTISERVICE NETWORK-BASED LEC LIKE BST SIGNIFICANT?

A. Yes, they are. Shared costs include some of the costs of general engineering of the network, right-to-use fees that apply to multiple functionalities, portions of many physical facilities, the cost of capital and depreciation expenses on facilities which are not directly attributable to individual services, operating expenses and even taxes. For example, Mr. Frank Kolb of BellSouth, in Georgia Public Service Commission Docket 5755-U (page 3) testified: "Q. COULD SOUTHERN BELL PRICE ALL OF ITS SERVICES AT INCREMENTAL COST? A. Not if Southern Bell wants to stay in business. The incremental cost of all services provided by Southern Bell represents approximately 50% of the total cost of doing business."

[1] AT&T's Petition for Arbitration at pages 35 and 39.

Similarly, Barb Smith of Southwestern Bell Telephone, in Kansas Docket No. 190,492-U (page 7) testified: "SWBT has conducted a preliminary analysis in Texas that shows that the difference between the sum of the LRIC studies for all services and the total costs of the company in Texas will be at a minimum in the range of 40% to 50%. I would expect Kansas to have shared and common costs in the same range. Pricing services equal to the LRIC or TSLRIC will not allow SWBT to recover significant portions of its costs."

I personally have supervised both cost studies and the development of cost study methodologies. I find that I am unable to assign or determine a methodology to assign between 40% and 55% of a LEC's total forward looking costs to individual services using incremental cost principles.

Q. PLEASE EXPLAIN WHY SOME COSTS DO NOT APPEAR TO BE INCREMENTAL TO SERVICES.

A. First, many activities performed by LECs cannot be found to vary with the LECs' scope of services. Examples are activities such as: creating, updating and maintaining large computer systems for customer and network administration; executive function, legal and administrative work pertaining to the corporate entity as a whole. Indeed, extended unresolved disputes about how to fully distribute costs can be explained by a lack of a clear cost causitive relationship. Thus engineering and activity based studies do not assign all costs to services.

Second, econometric techniques have not demonstrated a statistically significant relationship between individual services and general overhead expenses, perhaps because there is little independent variation in LECs' scopes of services or because there is no such relationship.[2]

Finally, the very nature of many costs is clearly shared. Resources (such as certain rights to use fees, computer programming, and general organizational activities) are performed once without the need to expand the scale of activities to accommodate greater volumes of business including adding products or services.

Q. DO YOU BELIEVE THAT A LEC HAS CHARACTERISTICS WHICH CAUSE IT TO TEND TO HAVE A HIGHER PROPORTION OF SHARED COSTS THAN OTHER COMPETING FIRMS?

A. Yes, there are several factors which I believe will cause a LEC, like BST, to tend to have a higher proportion of shared costs than other competing firms. These factors include: 1) a large number of services offered; 2) network-based service provision; 3) a franchise obligation to provide ubiquitous service over broad geographic areas; 4) large scale and lumpy investment characteristics; 5) predominance of services rather than products; and 6) "leasing" of virtually no unbundled components from other providers.

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[2] There certainly is a relationship between a LEC's overall size an its shared and common costs. There is no evidence, however, that size measured by the firm's Scope of services matters; it appears that all costs (TSLRIC, shared, and common) are all proportionately smaller, perhaps because the population, geography, and/or overall operations are smaller.

Q. WHAT DO YOU MEAN WHEN YOU SAY LEC'S ARE "LEASING" VIRTUALLY NO UNBUNDLED COMPONENT?

A. I have used the term lease in a generic sense to mean using the facilities of others (at a price) rather than buying or building one's own facilities. LECs will tend to own rather than lease facilities. In contrast, a high proportion of Inter Exchange Company (IXC) and Alternative Local Exchange Company (ALEC) costs may be comprised of expenditures to lease facilities from LECs. At one point in time, AT&T claimed that approximately 60% of its toll revenues were paid to LECs for access services. Therefore the leasing of LEC facilities (i.e., access payments) became part of the direct cost or incremental cost of AT&T's toll service. An ALEC too may lease a significant proportion of its facilities from LECs and, therefore, will necessarily have a higher proportion of incremental costs and a smaller proportion of shared costs, vis-à-vis the LECs. To illustrate, the cost of leasing meeting rooms is generally more "variable" (with respect to use) than is owning ones own facilities. Thus the incremental cost of any type of given type of use would be higher for leased rooms.

Q. IF A NETWORK-BASED COMPANY LIKE BST IS REQUIRED TO SET RATES FOR EACH SERVICE JUST SUFFICIENT TO COVER LONG-RUN INCREMENTAL COST (LRIC), WILL THAT COMPANY RECOVER ALL OF ITS COSTS AND EARN A REASONABLE PROFIT?

A. No, it will not. Service prices which only generate total revenue equal to the sum of all service incremental costs will not cover total cost. As I have discussed, there are shared costs incurred by a company, especially a multiservice network-based company like BST, which are *not* incremental to any one service but which are never the less valid costs of engaging in its business activities. In total, service revenues must exceed service incremental costs by a margin sufficient to recover all costs of the firm, including the shared costs of the firm. Even if it were determined that some costs presently categorized as shared and common were incremental after all, prices would need to cover those higher costs and contribute toward the remaining (nonincremental) costs. To simply assure that each service does not receive a subsidy, by establishing all service prices at, or slightly above, LRIC, does not guarantee that a provider recovers all of its costs. BST cannot be said to have priced its services to attain a reasonable profit until its prices are set sufficiently above LRIC to recover its shared costs. In short, if BST is required to set service prices at LRIC, with no provision for shared costs which must necessarily be incurred to provide business services, then it can not earn a profit on those services.

Q. CAN YOU ILLUSTRATE THIS POINT WITH A NUMERICAL EXAMPLE?

A. Yes. Consider products A & B each with an incremental cost per unit of $.25 and with demand of 100 for each service. The incremental cost for the sum of the units demanded is $25 for A and $25 for B. However, to produce either A or B the firm must also spend $50 per period on a right to uses fee; say a computer operating system. In this simple example, the $50 is a shared cost of these two

products. The firm has found a source of economic efficiency: it can produce both A and B spending $50 once rather than twice (once for each product). Obviously, if the prices per unit of both services A and B are forced to equal their incremental costs of $.25, the firm will face a loss of $50 per period. Similarly, if the firm is forced to price one of its services at incremental cost, the firm will face a loss unless it can double the contribution margin on its remaining service. The greater the efficiencies of sharing facilities and costs, the larger the shared costs of the firm and the greater the need to price services in excess of LRIC. In other words, such increased efficiencies will increase shared costs but with a more than offsetting reduction in incremental costs. However, these larger shared costs must be recovered for the firm to remain in business.

Q. ARE SHARED FACILITIES AND SHARED COSTS BENEFICIAL?

A. Yes, the increased efficiencies from sharing facilities and costs is desirable for the firm and desirable for society as well. However, these costs must be recovered from the services which the firm provides; forcing service prices equal to LRIC does not allow for the recovery of the shared costs which are beneficial to society. It is inappropriate to penalize a company for improving its efficiency by not allowing recovery of shared costs. To illustrate this, recall products A and B described earlier where the incremental costs per unit for each is $.25, the shared cost is $50, and 100 units of each service are demanded. Consider what occurs if a new machine becomes available which costs $75 per period but which reduces the incremental cost of both services from $.25 to $.10. With demand for A and B at 100 units the new machine offers the opportunity to reduce total

costs from $100 to $95 (i.e., $75 + $10 + $10). Society is clearly better off with the use of the new machine; however, if the company is artificially constrained to price any of its services at incremental cost, it is difficult for the company to make the economic decision which is best for society.

Competition Tends to Drive Prices to Costs (Including Shared Costs)

Q. YOU RECOMMEND REJECTING THE PROPOSAL TO PRICE SERVICES OFFERED TO OTHER TELECOMMUNICATIONS PROVIDERS AT LRIC. DOESN'T COMPETITION DRIVE PRICES TOWARD COSTS?

A. Yes, it does. However, competition does not necessarily drive prices to LRIC.[3] Competition tends to drive prices to a point where all valid business costs are just recovered, and shared costs are valid costs of business activity. When competition drives prices toward costs, these shared costs are a component of the costs a provider must recover, even in the most competitive of markets.

Q. SHOULD PRICES FOR INTERMEDIATE SERVICES (I.E., SERVICES NOT SOLD TO END USERS) BE ALLOWED TO MAKE A CONTRIBUTION TO HELP RECOVER THE SHARED COSTS OF A FIRM?

[3] If a firm only provides a single product, all of its costs are generally included in a calculation of LRIC. Because the majority of the economics literature implicitly or explicitly deals with single product production, a casual reading of parts of the economics literature would lead one to believe that competition drives prices toward LRIC; this is true only for a single product firm.

A. Yes, in a competitive environment, every activity must be allowed to make a reasonable contribution to help recover the shared costs of the firm. Many firms strictly offer business-to-business services, i.e., they only offer intermediate products or services to other firms and do not sell to end-users.[4] Many of these firms may have substantial shared costs which must be recovered from the prices of the intermediate products or services which they sell to other firms. In general, firms in real markets selling intermediate services have shared costs which must be recovered through the prices of the intermediate products or services which they sell to other firms. It is obvious in these instances that providers must obtain a reasonable contribution from each intermediate service or they will be unable to continue in business.

Even Intermediate Services Sold to Competing Providers Should Not be Precluded From Making a Contribution Toward Shared Costs

Q. IF ONE ASSUMES THAT ONE OR MORE OF THE SERVICES IN THIS PROCEEDING IS A MONOPOLY SERVICE, OR AN ESSENTIAL SERVICE, SHOULD THAT SERVICE BE PRECLUDED FROM PROVIDING A REASONABLE CONTRIBUTION TOWARD THE SHARED COSTS OF THE LEC?

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[4] Catalogs and directories exist for "business-to-business" products and services; many of these products are used as components or inputs to produce products for final consumers. Some of the firms which are largely or completely intermediate-products firms are obvious and well known such as Intel, Boeing, McDonal-Douglas, U.S. Steel, Alcoa Aluminum, or Peabody Coal. However, many other firms which one might consider as final goods producers, such as Beatrice Foods, Detroit Diesel, Kellogg, Phillip Morris, Proctor & Gamble, or Frito Lay, provide relatively few, if any, products to end users. These firms rely on other firms to actually provide products to end users. Certainly, any firm which only provides intermediate services must recover all of its shared costs from those intermediate services.

A. No, all services should be allowed to provide a reasonable contribution to the shared costs of the LEC.

First, it is likely that the reason a service or service element is essential precisely because it is produced most efficiently as a unique element in the supplier's scope of services buy sharing costs.[5] Thus there necessarily would be shared costs to be recovered.

Second, it is possible that a telecommunications provider would *only* provide services which some customers would consider to be "monopoly" or "essential" services. Such classifications do nothing to make the shared costs of a firm disappear or be magically recovered elsewhere. Under such a rule, a LEC which provides some "monopoly" or "essential" services as well as other services, would be faced with attempting to recover most if not all of its shared costs from the "other" services at a time when expanding competition makes it difficult or impossible to obtain such contribution.

Q. WOULD THE AT&T POSITION, THAT UNBUNDLED NETWORK ELEMENTS (UNES) BE PRICED AT INCREMENTAL COST, LEAD TO PERVERSE RESULTS AS LOCAL COMPETITION EXPANDS?

[5] An essential facility is a component which cannot be equally efficiently produced, acquired or substituted by another firm. This occurs when one firm has economics of scope which cannot be replicated by another firm. These economies are the very source of shared and common cost which would not be recovered with prices equal to incremental costs.

A. Yes, it would appear that AT&T may not object to service prices which are above incremental cost (indeed, AT&T prices above its incremental costs to recover its unique shared and common costs); rather AT&T objects to prices of what it claims are monopoly components which are greater than incremental cost and which provide some contribution to the shared costs of the LEC. As AT&T or other companies enter the facilities-based segment of the market and offer equivalent or alternative UNEs, these companies, like BellSouth, will need to recover their joint and common costs. A market price will emerge which, in all likelihood, will be higher than BellSouth's incremental cost. It appears that AT&T would then allow BST to raise its prices for these services which would lead to higher end user prices. Therefore, under the AT&T proposal, as local competition expands, prices for unbundled intermediate component services (which were previously considered as monopoly components) would be allowed to rise in order to contribute to the significant shared costs of the LEC. This leads to the perverse result that the expansion of local competition would lead to increased prices rather than decreased prices.

In contrast, starting with intermediate services priced to correctly provide a reasonable contribution toward shared costs could emulate competitive results from the outset of the establishment of the unbundled services.

Q. ISN'T IT UNFAIR FOR AN ALEC TO PAY MORE THAN THE LRIC FOR A SERVICE IF IT BELIEVES THAT IT NEEDS THAT SERVICE TO PROVIDE ITS OWN SERVICES?

A. No, it is not. The incremental cost of services represents only a portion of the total costs of a LEC. LEC shared facilities and shared costs are shared by end-user services by those interconnecting with the LEC, and by those who use the LEC's unbundled facilities to which their value added services are appended. This is especially true in the increasingly competitive environment today. Similarly, I expect that each of the components or intermediate services which the ALEC purchases from *other* sources (such as switch providers and other carriers) are priced to provide a reasonable contribution to the shared costs of those other suppliers. I don't expect AT&T to provide services to a reseller at LRIC even though the reseller may need the services it receives in order to provide its own services. I don't expect AT&T to price its own access services at LRIC. As a general matter, I expect that an ALEC "needs" most of the facilities and factors of production they purchase, not just the ones they purchase from a LEC; however, this does not preclude prices for each of these components from generating a contribution to its provider.

Q. DOESN'T AN ALEC HAVE TO RECOVER ALL OF ITS SHARED COSTS FROM END-USER SERVICES?

A. No, I expect that most ALECs will obtain some combination from both intermediate services (including access services to IXCs) and end-user services. The very nature of competition to date, with the terms "alternative access vendor" or "competitive access provider" indicates that providing intermediate services (e.g., access to IXCs) will be a significant service and a source of contribution. To the extent that the ALECs have shared costs, I expect they must

obtain contribution from both intermediate and end-user services. Every firm must recover its shared costs from the services it provides. For example, to the extent that an ALEC only provides access services to IXCs, it must obtain all of its contribution, to recover its shared costs, from those intermediate services.

However, the critical distinction is that the ALEC has the opportunity to utilize the ubiquitous facilities of the incumbent LEC when and where it chooses. An ALEC facing a franchise obligation has no such opportunities.

Forcing LECs to price intermediate services at LRIC would allow ALECs to utilize the shared facilities and shared costs of the LEC ubiquitous network when and where they choose without contributing to the recovery of LEC shared costs. By doing so, the ALEC would avoid incurring the associated shared and common costs. Without a contribution from intermediate services, the LEC's end-user customers must provide *all* of the contribution to cover its shared costs; however, both the LEC's end-user customers and the ALECs purchasing unbundled LEC component services share in the capabilities of the LEC's ubiquitous network.

Q. HOW ARE THE CIRCUMSTANCES FOR THE INCUMBENT LEC AND THE ALEC DIFFERENT?

A. ALECs will benefit from the incumbent's economies of scope. When an incumbent LEC provides an unbundled loop, for example, the incumbent LEC does not share in the benefits associated with any shared costs of the ALEC

purchasing the unbundled loop. Even with local interconnection, it is the incumbent LEC which has placed a ubiquitous network of facilities in advance of the demand for services in order to satisfy carrier of last resort obligations to serve customers in a timely fashion. Facilities-based ALECs have far greater latitude to build facilities if, when, and where they choose, utilizing the facilities of the LECs in all other instances. The reverse is not true at this time.

Q. IF THE LEC IS PRECLUDED FROM OBTAINING A REASONABLE CONTRIBUTION FROM INTERMEDIATE SERVICES, WHAT WILL BE THE EFFECT ON THE LEC'S END-USER CUSTOMERS?

A. The burden on LEC end-user customers of recovering shared costs will continually increase in such a scenario. Assume that BST's total costs are $100, with $50 of shared costs and $25 of incremental costs for residential local service and $25 of total incremental costs for all other services. Also assume that residential service generates $25 in revenue, just covering its incremental costs. Initially then, on average each service (other than residential local service) must generate $2 in contribution for each $1 of incremental cost; i.e., the other services must provide on average 200% contribution to recover the $50 of shared costs.[6]

For simplicity, also assume that BST initially had 100% market share of the other end-user services in its territory. Later, other end-user service providers

[6] For simplicity we ignore demand elasticity in this example without loss of generality.

enter by purchasing unbundled loops and other unbundled BST facilities which are priced at incremental cost, capture 50% of the end-user market for these other services. BST must now obtain $4 in contribution above its incremental costs (i.e., a 400% contribution) from each of *its* end-user customers. If residential local service is subsidized to some degree, as the economics literature suggests, then the contribution levels must be even higher in each scenario.

Peculiarly, both the new end-user service providers (ALECs) and BST explicitly or implicitly utilize at least a portion of BST's shared facilities and receive some of the benefits of its shared costs. However, when unbundled components are priced at incremental cost, only BST end-user customers will pay for the benefits of the shared facilities and shared costs. Obviously, this creates an artificial advantage for ALECs and an unsustainable disadvantage for BST.

Q. IF THE LEC IS FORCED TO PRICE INTERMEDIATE SERVICES AT LRIC, WOULD THE EXISTENCE OF A RATE CAP FURTHER CONSTRAIN THE LEC'S ABILITY TO RECOVER ITS SHARED COSTS?

A. Yes, absolutely. Without contribution from its intermediate services, the LEC will be forced to attempt to raise prices for its services offered to end-user customers. Obviously, the existence of a rate cap on end-user services would constrain or preclude such shared cost recovery.

PRICING UNES AT INCREMENTAL COST WOULD RETARD THE GROWTH OF FACILITIES-BASED COMPETITION

Q. DOES PRICING UNES AT INCREMENTAL COST PROVIDE AN INCENTIVE FOR FACILITIES BASED COMPETITION?

A. Certainly not. A competing firm would virtually never choose to take the risk of constructing facilities when it has the opportunity to "lease" unbundled components from the incumbent LEC priced *at incremental cost*. First, the lessor avoids incurring the shared cost altogether. Further the competing provider can lease facilities priced at incremental cost at the time, scale, location and duration of its choosing and it can change any of these factors as market conditions change. Even its incremental costs can be abruptly reduced, unlike the costs to the owners of the leased facilities. Pricing unbundled components at LRIC will essentially guarantee that alternative providers will construct no new facilities to compete with the incumbent LEC. This, of course, is contrary to both economic efficiency and the job-promoting intentions of the Telecommunications Act of 1996.

WHOLESALE DISCOUNTS MUST BE BASED ON RETAIL RATES AND THE COSTS THAT WILL BE AVOIDED BY THE LEC, NOT ON NOTIONS OF OPERATIONAL PARITY OR JUMP-STARTING COMPETITION

Q. WHAT DOES THE TELECOMMUNICATIONS ACT OF 1996 ACT SAY IN REGARD TO ESTABLISHING A WHOLESALE DISCOUNT?

A. SEC. 252(d)(3) states: "a State commission shall determine the wholesale rates on the basis of retail rates charged to subscribers for the telecommunications services requested, excluding the portion thereof attributable to any marketing, billing, collection, and other costs that will be avoided by the local exchange carrier."

Q. DOES THE STATEMENT IN THE ACT ESTABLISHING THE CONSIDERATION OF "COSTS THAT WILL BE AVOIDED" CORRESPOND TO THE ECONOMIC PRINCIPLE OF COST CAUSATION?

A. Yes, it does. Recognition of the costs that will be avoided corresponds to the economic principle of cost causation in instances in which costs may be reduced.

Q. DOES AT&T'S PROPOSAL COMPORT WITH THE ACT IN YOUR OPINION?

A. No, it does not. AT&T proposes an additional 15% retail cost adjustment for "full operational parity" and a 10% - 15% adjustment to "jump-start" competition. These adjustments are not supported by economics and they are completely unrelated to a wholesale rate which reflects the costs that BST will avoid.

Q. SHOULD A CALCULATION OF AVOIDED COSTS FOR THIS PROCEEDING REFLECT THE RETAIL COSTS WHICH AT&T (OR

ANOTHER WHOLESALE CUSTOMER) HAS INCURRED OR WILL OCCUR?

A. No. Such costs are irrelevant to the calculation of the costs which the LEC will avoid. AT&T may be able to readily leverage its existing retail functions or it may have to duplicate some of the retail functions of BST. Section 252(d)(3) of the act is quite clear: it is the costs that will be avoided by the LEC which determine the wholesale discount, not costs which must be incurred by AT&T.

Q. YOU STATED THAT THE AT&T RECOMMENDATION IS NOT SUPPORTED BY ECONOMICS. IN MARKETS WITHOUT ECONOMIC REGULATION DON'T LOWER QUALITY SERVICES COMMAND LOWER PRICES?

A. In most markets lower quality services are often, but not always, provided at lower prices. When the lower quality of service has a correspondingly lower cost of providing the service, there is a very strong tendency for the price of the service to be lower as well. Often, however, the lower level of quality does not produce a lower cost. For example, in publishing, reprints of a specific article, even in some volume, are often of lower quality *and higher price* than the comparable service of obtaining the entire published package. Similarly, in order to make lodging available where and when it is needed, the cost of a motel room may be higher, and the quality lower, than one's own home. Markets determine these matters.

When BST provides a wholesale service, the costs that will be avoided are simply what they are. If there is a quality differential which has a corresponding cost differential, it will be reflected in the costs that will be avoided.

Q. SHOULD THE WHOLESALE DISCOUNT BE INCREASED TO JUMP-START COMPETITION?

A. No. The Act and the economic principle of cost causation/avoidance are quite clear; the wholesale discount should be based on the costs that BST will avoid. "Jump-starting" competition is unrelated to cost avoidance and should be ignored.

It appears that the intent of the Act is to encourage facilities-based competition, allowing the purchase of unbundled components and the resale of services in order to allow a smooth and rapid transition to competition and to allow firms to avoid inefficient replication of facilities. To "jump-start" resale is at odds with the implied intent of the Act. It can even preclude more efficient providers of facilities from entering into markets.

In addition, it is hard to imagine that AT&T needs the kind of jump-start that one sometimes hears discussed for infant industries. It is also hard to imagine AT&T offering the Regional Bell Operating Companies (RBOCs) an additional jump-start discount on interLATA services when the RBOCs are allowed to provide interLATA services.

Q. WHAT DOES THE ACT STATE IS BST'S DUTY WITH REGARD TO RESALE?

A. SEC. 251(a)(1), for example, states that BST has the "duty not to prohibit, and not to impose unreasonable or discriminatory conditions or limitations on, the resale of its telecommunications services."

Q. IS THERE AN ECONOMIC REASON WHY SERVICES WHICH ARE CROSS-SUBSIDIZED SHOULD HAVE A "REASONABLE" LIMITATION ON RESALE?

A. Yes. There are at least two economic reasons that cross-subsidized services, i.e., service offered at rates to end-users which are priced below incremental cost, should have some reasonable limitation on resale. First, the resale of cross-subsidized services could increase the demand for the service leading to a greater subsidy to be borne by the incumbent LEC, BST in this case. To the extent that resellers will market harder or more creatively, then the subsidy burden imposed on BST will increase.

And second, BST itself must incur costs equal to the incremental cost of providing the subsidized service each time the service is sold. To allow other firms to resell the service, and to use it as a competitive springboard to offer other services, now or in the future, is not competitively neutral. Such opportunities shift the benefits of the subsidy from the consumer to the alternate provider.

Q. WHAT ALTERNATIVES ARE AVAILABLE FOR "REASONABLE" LIMITATION ON THE RESALE OF SERVICES WITH RESPECT TO CROSS-SUBSIDIZED SERVICES?

A. Two alternatives are possible: To proscribe the resale of cross-subsidized services, except at the discretion of the LEC, or to establish a retail market price at or above incremental cost from which resale prices are calculated.

Q. HOW CAN A RESELLER SURVIVE FINANCIALLY IF IT MUST PAY A MARKET PRICE FOR A SERVICE WHICH IS OTHERWISE PROVIDED BY BST AT A CROSS-SUBSIDIZED RATE?

A. The reseller can survive in the same way in which BST survives: by offering other profitable services which are of value to customers in order to finance the subsidy. The difference is that resellers have the choice of when, where, and at what scale to enter the market while BST must serve all customers in a timely manner, relying on these same implicit subsidies. Of course, if and when the subsidy source become explicit, either the reseller would need access to the funds or BST could afford to sell the service at the cross subsidized rates, obtaining the rest of the market price from the subsidy.

PREVENTING A PRICE SQUEEZE

Q. AT&T SUGGESTS THAT PRICING UNES ABOVE INCREMENTAL COST CREATES PRICE SQUEEZES ON NEW ENTRANTS.[7] IS THIS CORRECT?

A. No, it is not. An anticompetitive price squeeze is based on the relationship between prices wholesale (input) prices and retail prices. It is not determined by the price of the input itself.

Note that AT&T also claims that price of switched access is fourteen times its TSLRIC.[8] If AT&T's claims were correct, no firm would be able to provide intraLATA toll services; they would have been completely squeezed out of the intraLATA segment of the market. Of course, the reason firms do survive offering intraLATA toll services is that an anticompetitive price squeeze is not established by the price of the input itself, rather it is determined by the relationship between input and final end-user prices. Forcing BST to price its services at TSLRIC to prevent a price squeeze is simply bad business, bad economics and bad regulatory policy.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes it does.

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[7] AT&T's Petition for Arbitration at page 36.

[8] AT&T's Petition for Arbitration at page 40.

REBUTTAL TESTIMONY OF DR. RICHARD D. EMMERSON
ON BEHALF OF BELLSOUTH TELECOMMUNICATIONS, INC.
BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION
DOCKET NO. 960833-TP
AUGUST 30, 1996

INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Richard D. Emmerson. I am the President and CEO of INDETEC International, Inc. I am testifying on behalf of BellSouth Telecommunications ("BellSouth" or the "Company"). My business address is 341 La Amatista, Del Mar, CA 92014.

Q. ARE YOU THE SAME RICHARD D. EMMERSON WHO FILED DIRECT TESTIMONY IN THIS DOCKET ON AUGUST 12, 1996?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY IN THIS PROCEEDING?

A. AT&T Communications of the Southern States, Inc. AT&T has petitioned the Florida Public Service Commission (FPSC or Commission) to arbitrate certain terms and conditions in its negotiation

with BellSouth regarding interconnection, unbundled network elements (UNEs), and resale of existing services. I discuss the basic economic principles that should underlie the Commission's consideration of these issues and I respond to certain positions raised by AT&T in its direct testimony, particularly that of Dr. David Kaserman and Mr. Joseph Gillan.

REGULATORY POLICY SHOULD NOT FAVOR ONE ENTRY MECHANISM OVER ANOTHER

Q. DR. KASERMAN SUGGESTS THAT THE COMMISSION SHOULD SEEK TO PROMOTE RETAIL COMPETITION IN THE SHORT RUN. DO YOU AGREE?

A. No. First and foremost, the Telecommunications Act of 1996 ("Act") reflects a balanced approach to the various opportunities for competitive entry by new entrants. Resale and purchase of unbundled network elements, which Dr. Kaserman refers to as retail competition, should not be preferred over facilities-based competition, which Dr. Kaserman refers to as wholesale competition. Both are equally important to the pro-competitive goals of the Act. While retail competition may develop more rapidly at first, the Commission should not embrace an approach that discourages facility-based competition. Second, the idea that anything or anyone other than free markets can pick winners and losers in the competitive arena has been soundly

debunked. The Commission should strive to eliminate any legal or regulatory barriers to competition and prevent the improper exercise of market power to restrict competition, but should avoid trying to pick particular firms or competitive strategies as winners.

Thus, Dr. Kaserman's suggestion that, "at least for the immediate future, considerable emphasis must be placed on competition at the retail stage...as the most viable vehicle for pro-competitive change", is suspect. Creating large retail discounts or pricing unbundled network elements artificially low to aid retail competition in the short term is likely to limit competition to the retail arena, turning a short term bias into a long term one. Although large retail discounts may favor retail competitors, it will directly reduce the incentives of facilities based entrants to enter the market and will result in reduced or eliminated competition from firms that would otherwise build their own networks

Q. DOESN'T DR. KASERMAN'S ANALOGY TO THE DEVELOPMENT OF COMPETITION IN THE INTEREXCHANGE MARKET SUPPORT THIS POSITION?

A. No. Assuming for the sake of argument that the interexchange market is competitive, discounts and pricing strategies like those proposed by AT&T, and supported by Dr. Kaserman, were not necessary to the development of competition in that market. Firms like MCI and Sprint simply bought services from AT&T for resale in the same way that other

large customers did. These firms may have received volume discounts, but not resale/wholesale discounts. Discounts on access charges, which non-dominant interexchange carriers received, related to differences in dialing patterns that end users experienced. It is rather amazing that AT&T and others have evidently forgotten that those access discounts were for "unequal" access, and went away as carriers converted to FGD. The standard claim at that time was that customers using FGA had to dial 20 or more digits, while AT&T's customers only dialed 11. Such discounts were not regulatory mandates to "jump start" competition in a resale market to set the stage for facilities-based competition. Moreover, as far as I am aware, AT&T was not calculating any discounts using forward looking incremental costs.

There are other differences which render the analogy inappropriate. For example, when MCI and Sprint sought to enter the interexchange market, they were upstart firms confronting certain competitive disadvantages, like lack of brand recognition. AT&T is not in the same position. AT&T has perhaps the most recognized brand in the world, as well as access to large capital resources. Regulatory handicapping of BellSouth is not appropriate for firms like AT&T and MCI.

Q. DR. KASERMAN SUGGESTS THAT IT IS IMPORTANT TO REDUCE THE ENTRY RISK FOR COMPANIES ENTERING THE LOCAL EXCHANGE MARKET? DO YOU AGREE?

A. No. The Act was designed to remove legal and regulatory barriers to competition in all telecommunications markets, not to make entry risk free. Again, the marketplace should, and only the marketplace can, determine winners and losers. Regulatory policy should not attempt to eliminate risks that a firm entering any market will confront. AT&T needs to get into the local market to protect its own earnings. Margins in interstate toll will evaporate as more and more Bell operating companies are granted interLATA authority.

PRICING SERVICES AT TRADITIONAL LRIC DOES *NOT* PRODUCE A PROFIT FOR THE LEC; RATHER, IT GUARANTEES THAT THE LEC WILL *NOT* RECOVER ITS SHARED INVESTMENTS AND SHARED COSTS.

Q. DOES THE TELECOMMUNICATIONS ACT OF 1996 (THE "ACT") SPECIFICALLY PROVIDE FOR A REASONABLE PROFIT IN THE PRICING STANDARDS ESTABLISHED FOR ARBITRATION?

A. Yes it does. Section 252(d), in discussing pricing standards, states that "interconnection and network element charges" "may include a reasonable profit." The Federal Communications Commission's ("FCC's") recently released *First Report and Order ("Order")* on local

competition and related topics also states that prices "will include a reasonable allocation of forward-looking joint and common costs."[1]

Q. DO DR. KASERMAN AND MR. GILLAN ASSERT THAT A PRICE EQUAL TO INCREMENTAL COST OR TSLRIC YIELDS A PROFIT FOR THE LEC?

A. Yes, as surprising as it may seem, both Dr. Kaserman and Mr. Gillan suggest that a price equal to TSLRIC yields a profit to the LEC. This claim appears to be based on the fact that TSLRIC includes a component for the cost of capital.

Q. IF INCREMENTAL COST OR TSLRIC INCLUDES THE COST OF CAPITAL, DOES A SERVICE PRICE EQUAL TO INCREMENTAL COST OR TSLRIC PRODUCE A PROFIT?

A. No, but contrasting terms like profit and contribution clearly will help substantially in the debate here. BellSouth does not make "profits" on individual services or elements because of BellSouth's joint and common costs. Particular services or elements may make a contribution to BellSouth's total costs, and, if enough services or elements make contributions, BellSouth as a firm may make a profit in the accounting sense. BellSouth as a firm does not make a profit in the economic sense of the word until it has recovered all its joint and

[1] *Order* at ¶ 672.

common costs and a return on the capital invested in its operation as a whole.

It is critical to recognize that an incremental cost calculation only includes the cost of capital (both the cost of debt and equity) for the investments which are directly attributable to the service in question. If each service is priced equal to its incremental cost, then the incremental cost of each service, including a return on the directly attributable capital, will be recovered, but the common costs of the firm will remain completely unrecovered, and the firm certainly will not generate a profit.

Consider again the numerical example of the provision of services A and B that I offered in my direct testimony. Products A & B each have a traditional incremental cost per unit of $.25 and with demand of 100 for each service; their total incremental cost is $25 per service. However, to produce either A or B, the firm must also spend $50 per period on a machine; in this simple example, the $50 is a common cost of these two products. Of the total $25 incremental cost of service A, assume that $3 represents the cost of equity for a normal return to pay shareholders for the investment in the capital equipment that is specifically attributable to the provision of service A. Even when the firm has recovered the $25 of traditional incremental cost for A and the $25 of traditional incremental cost of B, both $25 including a return on investment to shareholders for *that portion* of the capital investment,

the firm must still recover an additional $50 in common costs. Without generating $100 in revenue in total, the firm cannot be said to recover its costs.

Q. FOR A LEC, DOES PRICING SERVICES AT TRADITIONAL LRIC OR TSLRIC LEAD TO A LOSS?

A. Yes. It is completely nonsensical to suggest that any (and implicitly every) multiservice firm can earn a "reasonable profit" simply by pricing its services at traditional LRIC or TSLRIC. LECs have common costs that must also be recovered. By pricing services A and B at incremental cost, my hypothetical firm does not earn a reasonable profit, rather it suffers an economic loss of $50.

Q. ARE THERE SIGNIFICANT JOINT AND COMMON COSTS IN THE OPERATION OF BELLSOUTH'S FLORIDA NETWORK?

A. Yes, I described the significance of these costs in my direct testimony.

Q. DO THESE JOINT AND COMMON COSTS APPEAR IN INCREMENTAL COST MEASURES?

A. No. Incremental cost measures like LRIC, TSLRIC and the FCC's proposed TELRIC are not intended to and do not account for joint and common costs because those costs are not incremental. Thus,

although TSLRIC, for example, allows for a return on capital attributable to a particular service, it does not allow any contribution to shared costs or any return on capital employed that is not attributable to a particular service.

Q. ARE JOINT AND COMMON COSTS REAL COSTS?

A. Yes, these are costs that are necessarily incurred in order for BellSouth to remain in business, as they are incurred by every other multiproduct firm. In fact, because there are substantial joint and common costs, BellSouth can provide services more efficiently. BellSouth, however, cannot ignore these costs. If these costs are not recovered, the services or elements that benefit from sharing facilities and costs will disappear from BellSouth's offerings.

Q. IS THE TELRIC MEASURE PROPOSED BY THE FCC LIKELY TO RESULT IN THE ATTRIBUTION OF ALL JOINT AND COMMON COSTS?

A. TELRIC may result in the attribution of more joint and common costs than a TSLRIC measure, but many joint and common costs are likely to remain unattributable.

To the extent that more joint and common costs are attributable to elements under the TELRIC measure than to services under the

TSLRIC measure, the cost of those elements will increase. It should surprise no one then if TELRIC prices would be substantially greater than the incremental cost of the various underlying services.

Q. HAS THE FCC RECOGNIZED THAT JOINT AND COMMON COSTS ARE REAL COSTS THAT MUST BE RECOVERED BY BELLSOUTH IN THE PRICES OF ITS UNBUNDLED ELEMENTS?

A. Yes. The FCC recognized in its Order in Docket 96-98 at Paragraph 696 that joint and common costs must be recovered in the prices for unbundled elements.

Q. DOES DR. KASERMAN PROPOSE A METHOD TO RECOVER JOINT AND COMMON COSTS?

A. Yes. He proposes that instead of BellSouth recovering any portion of the joint and common costs of its network through unbundled elements and interconnection, which Dr. Kaserman refers to as a "subset" of BellSouth's services, that it instead recover these costs through other products and services like vertical services and Yellow Pages.

Q. DO YOU AGREE THAT BELLSOUTH CAN RECOVER THE JOINT AND COMMON COSTS OF ITS NETWORK FROM RETAIL SERVICES LIKE YELLOW PAGES ADS AND VERTICAL SERVICES?

A. No. First, a discussion of Yellow Pages has no place in this docket. Even if it did, the directory publishing business is a separate line of business carried on by an affiliate of BellSouth in a competitive environment. Prices for those services are already subject to competitive pressure. Dr. Kaserman tells the Commission "it is absolutely essential that regulators abandon existing policies of cross-subsidization and inefficient pricing and substitute efficient pricing structures," but tells the Commission that BellSouth should look to recover its joint and common costs from its telephone operations from its yellow pages and vertical services. What would purchasers of yellow pages advertising say about paying for the joint and common costs of BellSouth's network elements?

Second, the FCC Order in 96-98 requiring BellSouth to make vertical services available at TELRIC prices seems to undermine, or at least be inconsistent with, Dr. Kaserman's position. For example, BellSouth would be required to make vertical services available to competitors at the unbundled TELRIC price. If joint and common costs are simply allocated to retail services rather than to the underlying network elements, competitors purchasing the unbundled elements will be able to price substantially below BellSouth's now-inflated retail costs. Competitors purchasing unbundled elements will have no joint and common network costs of providing the service because they can simply purchase it from BellSouth; their costs are variable, not fixed. Thus, allocating joint and common costs to retail services that are

available as unbundled network elements effectively means that BellSouth will not recover its joint and common costs.

Q. WHAT WOULD BE THE EFFECT OF DENYING RECOVERY OF JOINT AND COMMON COSTS IN THE PRICES OF UNBUNDLED ELEMENTS?

A. There would be two effects. First, new firms considering undertaking the risk of entering the market on a facilities basis would be aware that successful entry would yield, at most, recovery of the incremental costs of entry, without the possibility of contribution towards the firm's joint and common costs and without any reward for the risk of entering. These firms would be unlikely to undertake the risks of entry.

Second, BellSouth, faced with receiving no contribution from the unbundled network elements towards its joint and common costs, would have to balance the returns on other investments that could yield at least some contribution, with investing in new elements and its carrier of last resort obligations. Just as the incentives created by such pricing would make new entrants less likely to enter on a facilities bases, they would make BellSouth less likely to invest in facilities. To the extent BellSouth may be constrained by its legal obligations to invest in new facilities, pricing without recovery of joint and common costs is unfair.

Q. HOW SHOULD JOINT AND COMMON COSTS BE ALLOCATED?

A. The fundamental issue, of course, is not allocation but recovery. In competitive markets, firms recover joint and common costs by pricing above incremental costs where demand permits. Allocating these costs to elements for which there are competitive alternatives, is likely to result in the costs not being recovered because purchasers will turn elsewhere. In addition, to the extent that the recovery of joint and common costs is artificially precluded for one set of services (UNEs), this will send the wrong signals to the market and to BellSouth internally. For example, because the allocation of costs for a particular element may be too high relative to the market, BellSouth and new entrants will invest in such elements even though such investment would be inefficient.

Q. DR. KASERMAN IMPLIES THAT BELLSOUTH DOES NOT HAVE SIGNIFICANT COMMON COSTS IF COSTS ARE CALCULATED AT THE UNBUNDLED NETWORK ELEMENT LEVEL. IS HE CORRECT?

A. No. First, the existence of common costs or economies of scope are well known in the telecommunications industry. It is because of these common costs that the entire issue of cost allocation or fully distributed costs or the full allocation of costs has received so much attention in the industry at different points in time. Economists are fond of describing why allocations of common costs are inappropriate and why

these costs should be recovered on the basis of demand information, rather than simple cost allocation rules.[2] Without common costs in telecommunications there would, of course, be nothing to allocate; the entire issue of fully distributed costs would simply not exist.

Second, Dr. Kaserman's suggestion that common costs are minimal appears to contradict another portion of his testimony. Elsewhere, he claims that other parties have misconstrued AT&T's position on pricing, that AT&T does not preclude pricing retail services above TSLRIC. He implies that the LECs can obtain contribution to recover their common costs from retail services.[3]

In my direct testimony, I illustrated the magnitude of these common costs for LECs (40%-50%) and described why LECs are likely to have a larger proportion of common costs than other firms. In contrast, Dr. Kaserman's testimony on the implied absence of common costs is based on speculation and conjecture. His claim, that the incremental costs of UNEs will somehow absorb all common costs and lead to a firm which has negligible common costs, is simply assertion without theoretical foundation or factual basis. Such claims are not credible in part because UNEs are by definition components which become new services; UNEs are not some radical new product. They will be offered

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[2] The citations from the economics literature are numerous and include articles authored by William Baumol. Dr. Kaserman cites Dr. Baumol in support of his position.

[3] Any such recovery will be difficult or impossible as described on p 11.

for sale to customers like any other service; they are simply services which have been unbundled and did not previously exist. LECs have had unbundled portions of services in the past and it did not seem to cause common costs to somehow disappear.

If common costs are fully absorbed in the incremental costs of the UNEs, the incremental cost of UNEs will be substantially greater than the incremental cost calculations for old services. If one were to sum up the incremental costs of the UNEs that an old service utilizes, this cost sum would be substantially greater than the incremental cost of the old service itself. For BellSouth, for which common costs represent approximately one-half of the total costs of the Company, on average I would expect that if Dr. Kaserman is correct, the sum of the UNE costs must be approximately twice as large as the incremental costs of the old service itself.[4]

EVEN INTERMEDIATE SERVICES SOLD TO OTHER PROVIDERS SHOULD NOT BE PRECLUDED FROM MAKING A CONTRIBUTION TOWARD COMMON COSTS

Q. YOU STATED IN YOUR DIRECT TESTIMONY THAT THE ALEC HAS THE OPPORTUNITY TO UTILIZE THE UBIQUITOUS FACILITIES OF

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[4] On average I would expect one dollar of what was once considered common costs to follow each dollar of incremental cost for the old service.

THE INCUMBENT LEC WHEN AND WHERE IT CHOOSES. IS THIS POINT RELATED TO MR. GILLAN'S TESTIMONY?

A. Yes. Mr. Gillan states that: "Teleport, in fact, has publicly stated that its business strategy is to win customers first and then build facilities in an efficient way to serve them."[5] When customers have an existing supplier, they then have the luxury to slowly negotiate an agreement with a second supplier. The supplier has the opportunity to place facilities after customers and contracts are in place. A LEC facing a franchise obligation has no such opportunities.

Q. DR. KASERMAN SUGGESTS THAT PRICES FOR UNES ABOVE INCREMENTAL COST WOULD INVITE INEFFICIENT ENTRY. DO YOU HAVE AN OPINION IN THIS REGARD?

A. Yes. First, I find it telling and in my mind contradictory that in one breath Dr. Kaserman tells the Commission, "it is absolutely essential that regulators abandon existing policies of cross-subsidization and inefficient pricing and substitute efficient pricing structures," and in the next breath, proposes an artificial regulatory rule to price one subset of "services" at the direct cost of providing them without regard to the need to recover joint and common costs. This is clearly a proposal for handicapping and inefficient pricing.

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[5] Citing Telecommunications Reports, October 16, 1995, page 20.

Second, Dr. Kaserman's opinion appears to be based on a theoretically simple world without common costs; in such a theoretically simple world, prices can exist equal to incremental cost. As I discussed earlier, LECs face significant common costs and the prices in this industry for most services and for most providers are unlikely to equal traditional incremental costs. In the real world of telecommunications, prices for all services, including UNEs, must exceed incremental costs in order to recover common costs.

Third, because of the existence of common costs, establishing prices for UNEs at traditional LRIC or TSLRIC implies even higher prices for retail services than would otherwise exist, if the LEC is to financially survive. Prices for the retail components must now exceed traditional incremental costs by an even greater amount. Obviously, such a result directly contradicts Dr. Kaserman's testimony on economic efficiency; his policy recommendation results in an incentive for inefficient retail entry.

Finally, Dr. Kaserman's testimony on this point is devoid of dynamic considerations. In real markets, firms must make real investments on the basis of current circumstances and expected future circumstances. Much of the important market activity in the real world, and particularly investment and entry decisions, occur because there are transitory windows of opportunity. A firm enters a market or offers a new product

not because the world is in long-run equilibrium, but rather because the world is temporarily out of equilibrium which creates an entry opportunity. The higher the price in the market, the stronger the signal to firms that there is a market opportunity. The higher the price for UNE's, the faster the rate of development of facilities-based competition. Dr. Kaserman's recommendation essentially sends the signal to potential new entrants that there is no opportunity to recover any portion of their own common costs by entering this industry.

WHOLESALE DISCOUNTS MUST BE BASED ON RETAIL RATES AND THE COSTS THAT WILL BE AVOIDED BY THE LEC NOT ON PENALTIES AND CLAIMS OF QUALITY DIFFERENTIALS

Q. IN YOUR OPINION, HAS MR. LERMA PROPERLY INTERPRETED THE SPECIFIC LANGUAGE IN SEC. 252(d)(3) OF THE ACT?

A. No. Mr. Lerma correctly quotes the relevant section of the Act: "a State commission shall determine the wholesale rates on the basis of retail rates charged to subscribers for the telecommunications services requested, excluding the portion thereof attributable to any marketing, billing, collection, and other costs that will be avoided by the local exchange carrier." However, much of the rest of the language in Mr. Lerma's testimony, beginning at page 4, indicates a misunderstanding of the language of the Act and a misunderstanding of the fundamental economic concept of cost causation. For instance, he asserts at page

10, line 24: "[a]gain, the Act specifically lists billing and collection costs as costs that will be avoided." The Act does not state that billing and collection costs will be avoided, but rather it requires that the portion of marketing, billing, collection and other costs that will be avoided will determine the wholesale discount. To simply assume or assert that all costs which are categorized in ARMIS accounts as "marketing," "billing," or "collection" costs, should be included in a calculation of a wholesale discount ignores fundamental economics and the language of the Act.

Q. HAS AT&T ONLY SELECTIVELY RECOGNIZED THE ECONOMIC PRINCIPLE OF COST CAUSATION?

A. Yes. For example, Mr. Lerma at least appears to be willing to accept the economic principle of cost causation for the category of "other" cost, yet he ignores this principle with regard to costs which he deems to be marketing, billing or collection costs.

However, in each instance, the Act indicates, and sound economics dictates, that it is only those costs that will be avoided that should be included in the calculation of the wholesale discount.

Q. HAS MR. LERMA OVERSTATED THE CALCULATION OF THE APPROPRIATE WHOLESALE DISCOUNT?

A. Yes, it appears that he has. First, there will clearly be marketing costs, for example, which are simply unaffected by the movement of some proportion of customers from retail to wholesale offerings. Second, some resources will simply be redeployed as customers move from retail to wholesale offerings, rather than being avoided. For example, an employee dedicated to retail billing functions may be reassigned to wholesale billing activities; clearly the salary and benefits of such an employee will not be avoided as customers move from retail to wholesale offerings.

Q. MR. GILLAN CLAIMS (AT PAGE 17) THAT: "... THE WHOLESALE DISCOUNT SHOULD REFLECT THE FULL REMOVAL OF ALL RETAIL COSTS THAT WOULD BE AVOIDED BY BELLSOUTH IF IT OPERATED IN A WHOLESALE CAPACITY." DO YOU AGREE WITH THIS CHARACTERIZATION?

A. No. Such a calculation will overstate the costs that BellSouth will avoid due to wholesale rather than retail provision for some units of demand. BellSouth will continue to provide both retail and wholesale services going forward and these costs vis-a-vis the previous costs of a higher proportion of retail forms the proper basis for a calculation of the costs that will be avoided. A hypothetical construction of a firm that does not provide any retail services is simply not germane to the calculation of the costs BellSouth will actually avoid. Volume insensitive retail costs will not be avoided nor will any "retail" resources that will be redeployed

to wholesale activities. If BellSouth would truly lose its entire retail segment, the redeployment of resources to wholesale activities would be massive in size and scope.

Q. DR. KASERMAN SUGGESTS THAT RESALE RATES REFLECT THE INCREMENTAL COSTS OF REDUCING OR ELIMINATING BST'S RETAIL STAGE OPERATIONS (P.26)). ARE THERE COSTS INVOLVED IN REDUCING OR ELIMINATING BST'S RETAIL STAGE OPERATIONS?

A. Yes. BST is a vertically integrated firm that undertakes the production, wholesaling and retailing of local telephone service. Vertically integrated firms reap efficiencies from savings on production and transactions costs. Integration of production with wholesale and retail functions in a single firm can substantially reduce transactions costs, especially where complex products and relationships are involved. Thus, there would be substantial costs involved in dividing roles among separate firms with differing incentives in the production and sale of local telephone service. For example, specifying in an enforceable manner the roles that separate retail firms would play in network planning and sharing the cost and risk of network investment would be difficult and costly. BST's vertical integration, similar to that of the major interexchange firms, efficiently aligns incentives within a single company in these situations. Thus, the risks of network construction are spread throughout the production, wholesale and retail sides of the

business, and risks are minimized by the presence of a retail side dedicated to ensuring efficient utilization of the network. Firms that are interested in resale of BST's services as a vehicle to compete with BST may be less interested in furthering efficient investment in and usage of the network, creating substantial additional costs.

Eliminating BST's retail function would not avoid the transactions costs of dealing with independent retail firms. Transactions costs of dealing with independent retailers would include contracting, contract monitoring, marketing and retailer relations costs. To the extent that independent retailers do not agree to undertake the roles played by BST's retail arm in network planning and operation, including assuming risks of network investment, those additional costs must be included in the resale rate.

Q. MR. GILLAN BRIEFLY LISTS THE RESULTS OF A "REGRESSION" STUDY OF THE "MIXED CATEGORY" OF CORPORATE EXPENSES AND COMPANY RETAIL REVENUES. DO YOU HAVE ANY COMMENTS?

A. Yes I do. First, it is difficult to comment in detail since Mr. Gillan has provided almost no details of his analysis or a reason for the choice of the functional form of the model.[6]

[6] The "mixed" accounts are those which Mr. Gillan asserts contain both retail and wholesale expenses.

Second, and perhaps more importantly, simple correlation does not cause costs to be avoided. It should come as no surprise to anyone that larger companies, or larger states have larger corporate overheads and corporate expenses. I would expect a relatively high correlation between any portion of corporate overheads (retail, wholesale or mixed) and any measure of the size of the franchise obligation such as wholesale (i.e. access) revenues, population or even the number of public toilets within the franchise area of each BellSouth state. One can only speculate whether Mr. Gillan would accept allocating such costs to wholesale revenues if I could produce a regression with a similar or superior fit using this variable. Of course, to suggest that corporate overheads will be avoided simply because of the existence of a statistical correlation with retail revenues, is simply not credible. It is not credible to believe that corporate expenses are likely to rise if revenues rise due to a rise in prices for example.

Q. DOES MR. LERMA EMPLOY A SIMILAR TECHNIQUE TO THAT USED BY MR. GILLAN?

A. Essentially, although the method employed by Mr. Lerma makes no pretext of relying on statistical techniques. For example, beginning at page 12, Mr. Lerma describes the loading of other "retail" accounts with

network support, general support services, depreciation-general support, executive and planning, general and administrative, operating other taxes, return and income taxes, and other interest deductions. At page 12, line 11 he simply asserts: "[t]he application of this ratio is reasonable because support expenses will vary directly in proportion to the changes in direct costs that will be avoided."

Mr. Lerma bypasses the pretext of statistical relationships and simply asserts that costs will vary in direct proportion.

Q. IS THE APPROACH USED BY MR. LERMA AND MR. GILLAN SIMILAR TO THE OLD FULLY DISTRIBUTED COST TECHNIQUES USED IN THE PAST IN TELECOMMUNICATIONS?

A. Yes, their approaches are similar to the old fully distributed cost (FDC) techniques.

Q. DOES AN ESTIMATE OF 41.7% OF THE RETAIL PRICE AS A WHOLESALE DISCOUNT COMPORT WITH COMMON KNOWLEDGE IN THE TELECOMMUNICATIONS INDUSTRY?

A. No. This calculation does not pass the industry "red face" test for several reasons. First, Dr. Kaserman and Mr. Gillan discussed the "enormous" or "tremendous" capital investment required for the provision of local service by LECs. However, if one were to believe the

fully distributed cost calculations of Mr. Lerma and Mr. Gillan, the descriptions of the local exchange network over the past few decades would have focused on the "enormous"" *retail* costs of providing such services and how difficult it would be to replicate these retail activities.

Second, in his testimony Dr. Kaserman devotes significant space to discussions of the "monopoly power" of the LECs. The very notion of significant monopoly power for a facilities-based provider and a high proportion of costs that would be avoided through reduced retail activities appears contradictory. It begs the rhetorical question: why would a facilities based provider with significant monopoly power need to spend significant resources on retail activities that would be avoided?

Third, this wholesale discount calculation contradicts a great deal of AT&T's testimony and other material regarding AT&T's estimates of the costs of basic local exchange service. With a business local exchange rate of $44, Mr. Lerma implies that BellSouth can avoid $18.35 ($44 X .417) of retail costs per month. However, AT&T has claimed that total loop costs for the three density zones where the vast majority of business customers are located in Florida are between $11.89 and $9.11 per month.[7] Even AT&T's estimate of the state-wide average of

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[7] Ex parte submission to the FCC by AT&T and MCI in CC Docket No. 97-98, July 3, 1996, page 9.

the costs of basic local exchange service in Florida is only $17.71[8] Certainly it is not possible for BellSouth to be able to construct and maintain the facilities necessary to provide basic local exchange service for $17.71 while simultaneously being able to avoid $18.35 in low cost areas. AT&T's positions are simply contradictory.

Q. DOES THE CUSTOMER MIX WHICH MR. LERMA HAS IMPLICITLY UTILIZED IN HIS DISCOUNT CALCULATION MATCH THE LIKELY CUSTOMER MIX FOR AT&T?

A. No. I expect that AT&T will likely offer resale to a relatively higher proportion of business customers than BellSouth's mix of customers in total. In part, I expect such a mix since the dollar discount for business customers is greater than for residential customers. In contrast, Mr. Lerma's discount calculation is implicitly based on the average mix of business and residence customers. Implicitly, Mr. Lerma has adopted an approach that overstates the costs that will be avoided by no longer providing retail service to business customers.

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[8] *Id.* This includes cost for the following: loop distribution, concentration, and feeder, end office switching, port and signaling, signaling network elements for links, STP and SCP; transport network elements for dedicated, common and tandem switch; and operator systems. In addition, it is claimed that this cost includes a reasonable proportion of overhead costs of the Company.

Q. SHOULD ANY VOLUME INSENSITIVE RETAIL COSTS BE INCLUDED IN THE CALCULATION OF THE COSTS THAT WILL BE AVOIDED?

A. No, not unless there is an expectation that the LEC will lose virtually its entire retail market. The nature of a volume insensitive cost is that it is independent of the volume of retail (in this case) services. If retail volumes fall by 10% from the levels which would otherwise have occurred, by definition the volume insensitive retail costs will not be avoided. The Act is clear that only the costs that will be avoided by the LEC are to be reflected in the wholesale discount.

Q. HAS MR. LERMA INCLUDED COSTS IN HIS CALCULATION THAT MAY BE VOLUME INSENSITIVE?

A. Yes, it appears that he has improperly included costs in his calculation that may be volume insensitive. Mr. Lerma's method will lead to an overstatement of the costs that will be avoided by the LEC.

Q. BEGINNING AT PAGE 26 OF HIS TESTIMONY, IN DISCUSSING WHOLESALE DISCOUNTS, DR. KASERMAN LISTS THREE COMPONENTS WHICH HE CLAIMS SHOULD BE INCLUDED IN A CALCULATION OF THE COSTS THAT A LEC WILL AVOID. DO YOU AGREE WITH HIS DISCUSSION?

A. No. It is not clear if Dr. Kaserman has advanced a listing of items that might theoretically be "avoidable" under certain circumstances or whether he has simply created a list that will produce the greatest discount for AT&T under the greatest variety of circumstances. Dr. Kaserman claims that his "avoided cost pricing rule" will yield economically efficient and pro-competitive outcomes; it does neither and it is inconsistent with other portions of Dr. Kaserman's testimony.

It is critical to recognize that the Act does not call for the calculation of theoretically "avoidable" costs, i.e., costs which might, theoretically be avoided under some contrived circumstances. Rather, the Act mandates recognition of the costs that will be avoided.

Q. IS IT NECESSARY TO FOLLOW DR. KASERMAN'S LIST OF THREE ITEMS WHEN CALCULATING THE COSTS THAT BELLSOUTH WILL AVOID BY PROVIDING A WHOLESALE RATHER THAN A RETAIL UNIT OF SERVICE?

A. No. Dr. Kaserman's list of items and his approach is neither necessary nor useful for calculating the costs that BellSouth will avoid. These three items are unrelated to the language of the Act, they are theoretically incorrect, and are impractical even if they had theoretical value.

The costs that BellSouth will avoid are simply what they are. With regard to Dr. Kaserman's second item, even if one were to accept his speculation of inefficiencies, any inefficiency that exists and is avoided will be reflected in the avoided cost calculation. If BellSouth has inefficiencies which can be avoided, they will be reflected in the avoided cost calculation.

Q. IF, AS DR. KASERMAN IMPLIES, BELLSOUTH HAS SIGNIFICANT INEFFICIENCIES, ARE THERE ANY POLICY IMPLICATIONS?

A. Yes. If BellSouth is, as inefficient as Dr. Kaserman implies, then the Commission probably need engage in no additional regulatory oversight of BellSouth. In unregulated markets, firms that are very inefficient, generally do not survive. The new competitive opportunities, especially the opportunities for facilities-based competition, will make inefficient firms highly vulnerable; the Commission need only step back and allow the market to work to eliminate such inefficiency.

Q. DR. KASERMAN'S THIRD ITEM TO BE INCLUDED IN HIS "AVOIDED COST PRICING RULE" IS "ANY POSITIVE PROFIT." DO YOU HAVE ANY COMMENTS ON THIS ITEM?

A. Yes. I recommend rejecting this item for at least three reasons. First, it appears that what Dr. Kaserman means by "profit" is what would

normally be called "contribution" in the telecommunications industry.[9] Without recovery of common costs, the equity holder will receive no profit whatsoever. Implicitly, Dr. Kaserman asserts that contribution to recover common costs "will be avoided" and that this contribution should be included in the calculation of a discount.

Second, Dr. Kaserman's discussion of "avoidable" costs (his terminology at page 27, line 1) or avoidable profits is based on a vague notion of entitlement. He states: "[l]ikewise, it [the LEC] is no longer entitled (if it ever was) to any excess profits associated with it retail operations." In the next sentence he jumps from his assertion of excess profits and his notion to what the LEC is "entitled," to the simple assertion that all three components will be avoided.

Of course, the common costs of the LEC are not avoided when a portion of BellSouth's retail service is replaced by wholesale activities. Even if one accepts a portion of Dr. Kaserman's convoluted argument and adopts his pricing proposal, the foregone contribution from former retail sales would represent an opportunity cost of wholesale service, not an opportunity cost which is avoided.[10]

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[9] At page 26 he states "(3) any positive profit earned by the ILEC at the retail stage (where positive economic profit is the excess above a normal return on the firm's activities at this stage). (Emphasis in the original).

[10] If one accepts Dr. Kaserman's backwards notice of cost avoidance, one could set the price for the wholesale service at zero; at this price, the LEC would "avoid" all of the retail revenue which would therefore be included in the avoidable cost calculation. Of course a negative price for the wholesale service could be proven in with this notion as well.

Third, Dr. Kaserman's claim that only "positive profits" should be incorporated into his calculation is self serving and internally contradictory.

Q. IS DR. KASERMAN'S PROPOSAL TO PRICE UNES AT TSLRIC INCONSISTENT WITH HIS THREE-PART "AVOIDED COST PRICING RULE?"

A. Yes. To see this, it is useful to think of his UNE pricing rule as establishing the price of one set of inputs or components of the final good provided to consumers. In contrast, Dr. Kaserman's so-called "avoided cost pricing rule" is proposed to, in essence, establish the price for the retail component. In Dr. Kaserman's hypothetical numerical examples at pages 27-31 of his testimony, it is useful to think of the wholesale input (which has a TSLRIC of $7 in his examples) as a single UNE used in the production of the final end-user service. The retail function (which has a TSLRIC of $5 in his examples) is the only other function or component necessary to create a final end-user service. The discount in effect determines the implied price for the retail function or retail input.

In Dr. Kaserman's case 2 (an inefficient ILEC with excess profits) he implicitly proposes an implied price for the retail input of $9, despite a $5 TSLRIC for the retail function. It appears that when AT&T wishes to

purchase a function from BellSouth, such as a wholesale package or a UNE, Dr. Kaserman proposes to price that function at TSLRIC. However, when it appears that AT&T may wish to be in the market of selling a function, i.e., the retail activity, Dr. Kaserman is willing to propose a price that may be substantially greater than TSLRIC.

He also claims at page 29 that "[m]oreover, this rate still promotes efficient entry decisions at both the retail and the wholesale stages." To Dr. Kaserman, sometimes a price at TSLRIC promotes economic efficiency, while at other times a price above TSLRIC promotes economic efficiency. However, such a proposal, no matter how cleverly crafted, is simply contradictory.

Q. DOES DR. KASERMAN'S DISCUSSION AT PAGES 27-31 REVEAL ANYTHING ABOUT HIS NOTION OF PROFIT AND COMMON COSTS?

Yes. It is clear from his case 1, beginning on page 27, that Dr. Kaserman considers a firm efficient only if it has no common costs. To be more realistic, his case 2 should be reworked as "an efficient LEC with common costs." With this more realistic label, it is obvious that Dr. Kaserman proposes that BellSouth be prohibited from recovering any of its common costs from the services that AT&T wishes to purchase, but that it be allowed to recover any and all common costs through the prices of services which will compete with AT&T services.

Q. YOU STATED EARLIER THAT DR. KASERMAN'S CLAIM THAT ONLY "POSITIVE PROFITS" SHOULD BE INCORPORATED INTO HIS CALCULATION IS SELF SERVING AND INTERNALLY CONTRADICTORY. WOULD YOU PLEASE EXPLAIN YOUR STATEMENT?

A. Yes. Again, to be clear, recognize that when Dr. Kaserman uses the term profit, he appears to mean "contribution." He claims that only "positive profit" should be included to increase the size of the wholesale discount, and that negative profit (a cross-subsidy) should not be allowed to reduce the size of the discount.

This result is self serving since it provides the largest wholesale discount to AT&T under a variety of situations. Also, I believe the contradictory nature of the argument is at least somewhat obvious: contribution, or profit should only be considered in some instances (when it is positive and will work to increase AT&T's discount) but should be ignored in other instances (when it is negative and will reduce AT&T's discount).

Earlier, I discussed why one must proceed with caution when considering profits or contributions (positive or negative) when calculating the costs that a LEC will avoid. It may, however be instructive to read Dr. Kaserman's own words: "[b]ecause negative

profits are not avoided by selling at wholesale versus retail, the $2 loss involved in the sale of this service does not enter into the calculation of the efficient wholesale discount. That is, negative profits do not constitute avoided costs." It appears that Dr. Kaserman believes that his rule is theoretically correct only at certain times, when it works to his client's advantage.

Q. AT PAGE 19 DR. KASERMAN IMPLIES THAT THE RETAIL FUNCTION SHOULD BEAR THE FULL BURDEN OF THE RECOVERY OF COMMON COSTS. HE APPEALS TO AN ARTICLE BY DIAMOND AND MIRRLESS IN THE ECONOMICS LITERATURE ON TAXATION. DO YOU HAVE ANY COMMENTS?

A. Yes. It is instructive to read part of the quote Dr. Kaserman provides at footnote xv: "In the absence of profits, taxation of intermediate goods must be reflected in changes in final good prices. Therefore, the revenue could have been collected by final good taxation, causing no greater change in final good prices and avoiding production inefficiency."

There are three important implications of this quote. First, it is based on a scenario of zero profits. However, firms in this industry, and many others, obtain contribution and profit from intermediate services; some firms which only provide intermediate services must obtain all their profit and contribution from such services. Second, unlike the quote,

for BellSouth it is not possible that "the revenue could have been collected by final good taxation." BellSouth does not have sovereign taxing authority to recover its common costs through a tax on AT&T's final goods and services. And third, this quote implies that no telecommunications firm, including AT&T should obtain profits or contribution from any service sold to a business customer since all services sold to businesses are used as factor inputs to produce other *final* goods and services. If Dr. Kaserman's position were correct, he must advise his client to stop obtaining any contribution or profit from its business customers since these telecommunications services are intermediate services.

Dr. Kaserman has chosen a very narrow and theoretically simple basis for his recommendation. He selectively ignores not only economic theory and economic literature which is more realistic and applicable, he also ignores the characteristics of real firms and real telecommunications networks.

Q. IS DR. KASERMAN INCONSISTENT IN HIS TESTIMONY IN SUGGESTING THAT BELLSOUTH SHOULD BE FORCED TO PROVIDE A GREATER DISCOUNT THAN THAT REFLECTING THE COSTS THAT BELLSOUTH WILL AVOID?

A. Yes. Dr. Kaserman's recommendation not only contradicts the language of the Act, it contradicts his testimony regarding economic

efficiency. Economic efficiency requires that the wholesale discount reflect only the costs that will be avoided by BellSouth by avoiding a portion of its retail activities.

Dr. Kaserman expresses concern that a price for a UNE greater than incremental cost will induce "inefficient entry" in the facilities-based segment of the market. However, a wholesale discount greater than the costs that BellSouth will avoid will implicitly, according to Dr. Kaserman's testimony, lead to *inefficient entry into the retail market.*

In real markets, vertical integration often leads to lower costs in total. In such instances, it is less costly to have the productive activities within a single firm rather than organized through a set of contracts with multiple firms. However, Dr. Kaserman essentially recommends that if economies of vertical integration exists, the Commission should simply pretend that they do not exist by establishing unreasonably large wholesale discounts that will invite retail entry which Dr. Kaserman's own testimony indicates is economically inefficient.

Q. DOES THIS MEAN THAT IF ECONOMIES OF VERTICAL INTEGRATION EXIST FOR BELLSOUTH, THAT OTHER FIRMS CANNOT COMPETE THROUGH RESALE?

A. Certainly not. It does mean however, that other firms must bring something else to the table. Each firm must be able to utilize its own

costs advantages or its own comparative advantages in offering, something unique to customers via combinations of services, quality, functions, features and prices. And of course, other firms have the opportunity to vertically integrate themselves, including vertical integration in areas which BellSouth is not currently allowed.

Q. DR. KASERMAN MENTIONS THE "HATFIELD" MODEL IN HIS TESTIMONY. IN YOUR OPINION SHOULD THIS COMMISSION CONSIDER THE HATFIELD MODEL OR ITS RESULTS FOR THIS PROCEEDING?

A. No. For a variety of reasons the Hatfield model produces unreliable cost estimates. It should not be considered in this proceeding. For example, in a joint submission, Sprint Corporation and US West, Inc., in CC Docket No. 96-45, filed on July 3, 1996, state at page 2: "Sprint and US West do not support the modifications proposed by Hatfield and E.I. and believe they produce distorted and misleading results."

Q. AT PAGE 13 OF HIS TESTIMONY, MR. ELLISON DISCUSSES BELLSOUTH'S COST OF MONEY AND SUGGESTS THAT A LOWER COST OF EQUITY SHOULD BE USED FOR "MONOPOLY NETWORK ELEMENT." DO YOU HAVE AN OPINION IN THIS REGARD?

A. Yes. I reject the concept of using different costs of equity or costs of money for different services. BellSouth does not acquire debt which is

specific to projects or services, nor does it make equity offerings specific to unbundled network elements. Even if such an approach were theoretically valid, different costs of money for different services would be difficult and costly to implement in practice.

It is also clear that the telecommunications industry is becoming more, rather than less competitive. This proceeding and AT&T's recommendations in this proceeding demonstrate that BellSouth now faces greater risk than even in its provision of services, especially in its provision of unbundled network elements. This cases BellSouth's cost of capital to be higher rather than lower.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes it does.

DIRECT TESTIMONY OF DR. RICHARD D. EMMERSON
ON BEHALF OF BELLSOUTH TELECOMMUNICATIONS, INC.
BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION
DOCKET NO. 960846-TP
SEPTEMBER 9, 1996

INTRODUCTION

Q. PLEASE STATE YOUR NAME GIVE YOUR BUSINESS ADDRESS.

A. My name is Richard D. Emmerson. I am the President and CEO of INDETEC International, Inc. My business address is 341 La Amatista, Del Mar, CA 92014. I am testifying on behalf of BellSouth Telecommunications ("BellSouth" or the "Company").

Q. WHAT EXPERIENCE AND QUALIFICATIONS DO YOU HAVE PERTAINING TO YOUR TESTIMONY?

A. My academic qualifications include a Ph.D. in economics from the University of California, Santa Barbara in 1971. From 1971 through 1979, I was a full-time member of the Economics Department at the University of California, San Diego (UCSD). Since 1979, I have taught continuously (part time) at UCSD; I was the Director of the Executive Program for Scientists and Engineers (EPSE) at UCSD during 1990-1991, and I continue to teach courses on costing and pricing for EPSE at the present time. I have written articles in professional

economic journals, and I have performed research projects for government agencies and private industry. I have also served as an expert witness in antitrust and business litigation cases. I have testified before many Public Service Commissions on various economic and policy subjects such as access charges, bypass, rate structure, competition, terminal equipment pricing, network services pricing, and cost analyses in the jurisdictions of California, Colorado, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Maine, Michigan, Minnesota, Montana, Nevada, Oklahoma, Pennsylvania, Virginia, Washington, Washington D.C., and Wisconsin, as well as in Canada. Over the course of the past 12 years, my provision of expert witness testimony in over 40 telecommunications regulatory hearings has aided in establishing appropriate cost standards in several jurisdictions within the industry. I have also worked for regulators and telephone companies in nearly a dozen foreign countries during the past three years.

My work experience includes past positions as Senior Vice President of Criterion Incorporated, President of the Institute for Policy Analysis, and President of Economic Research Associates. These companies performed economic analysis for competitive firms, regulated firms, government agencies, regulatory commissions, and trade associations. INDETEC International, Inc. provides consulting and training services to international telephone companies, Lucent Technologies, the United States Telephone Association (USTA), Bellcore, Commission staff members, partners and managers of large accounting and consulting firms, and interexchange companies (these services were formerly offered through INDETEC

Corporation and Emmerson Enterprises, Inc.). During the past 20 years, I have taught a wide variety of courses ranging from basic economics for telecommunications to highly specialized courses in incremental cost study methodology. State regulatory commission staff members from numerous states periodically attend my classes in order to improve their understanding of current economics for telecommunications.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. MCI Telecommunications Corporation (MCI) has petitioned the Florida Public Service Commission (FPSC or Commission) to arbitrate certain terms and conditions in its negotiation with BellSouth regarding interconnection, unbundled network elements (UNEs), and resale of existing services. My testimony discusses the basic economic principles which should underlie the Commission's consideration of pricing UNEs and local traffic interchange, and I respond to certain positions raised by MCI in its petition.

A LEC SHOULD NOT BE PROHIBITED FROM PRICING ITS SERVICES TO OBTAIN CONTRIBUTION TO RECOVER ITS SHARED AND COMMON COSTS

LEC SHARED COSTS ARE SIGNIFICANT

Q. MCI PROPOSES THAT BELLSOUTH FIX THE PRICES OF ITS UNBUNDLED NETWORK ELEMENTS (UNES) AT TOTAL SERVICE LONG RUN INCREMENTAL COST (TSLRIC).[1] DO YOU AGREE WITH THIS PROPOSAL?

A. No. A multiservice network-based Local Exchange Company (LEC) has shared costs which must be recovered by pricing services above TSLRIC.

Q. ARE THE SHARED COSTS OF A MULTISERVICE NETWORK-BASED LEC LIKE BELLSOUTH SIGNIFICANT?

A. Yes. Shared costs include some of the costs of general engineering of the network, right-to-use fees that apply to multiple functionalities, portions of many physical facilities, the cost of capital and depreciation expenses on facilities which are not directly attributable to individual services, operating expenses and even taxes. For example, Mr. Frank Kolb of BellSouth, in Georgia Public Service Commission Docket 5755-U (page 3) testified:

"Q. Could Southern Bell price all of its services at incremental cost?

A. Not if Southern Bell wants to stay in business. The incremental cost of all services provided by Southern Bell represents approximately 50% of the total cost of doing business."

[1] MCI's Petition for Arbitration at page 29.

Similarly, Barb Smith of Southwestern Bell Telephone, in Kansas Docket No. 190,492-U (page 7) testified:

"SWBT has conducted a preliminary analysis in Texas that shows that the difference between the sum of the LRIC studies for all services and the total costs of the company in Texas will be at a minimum in the range of 40% to 50%."

I would expect Kansas to have shared and common costs in the same range. Pricing services equal to the LRIC or TSLRIC will not allow SWBT to recover significant portions of its costs.

Q. DO YOU BELIEVE THAT A LEC HAS CHARACTERISTICS WHICH CAUSE IT TO TEND TO HAVE A HIGHER PROPORTION OF SHARED COSTS THAN OTHER COMPETING FIRMS?

A. Yes. There are several factors which I believe will cause a LEC, like BellSouth, to tend to have a higher proportion of shared costs than other competing firms. These factors include: 1) a large number of services offered; 2) network-based provider; 3) a franchise obligation to provide ubiquitous service over broad geographic areas; 4) large scale and lumpy investment characteristics; 5) predominantly producing services rather than products; and 6) "leasing" virtually no unbundled components from other providers.

Q. WHAT DO YOU MEAN WHEN YOU SAY LECS ARE "LEASING" VERY FEW FACILITIES?

A. I have used the term lease in a generic sense to mean not buying or building one's own facilities. LECs will tend to own rather than lease facilities. In contrast, a high proportion of Interexchange Carrier (IXC) and Alternative Local Exchange Company (ALEC) costs may be comprised of expenditures to lease facilities from LECs. At one point in time, AT&T claimed that approximately 60% of its toll revenues were paid to LECs for access services. Therefore, the leasing of LEC facilities (*i.e.*, access payments) became part of the direct cost or incremental cost of AT&T's toll service. An ALEC too may lease a significant proportion of its network from LECs and, therefore, will necessarily have a higher proportion of incremental costs and a smaller proportion of shared costs, vis-à-vis the LECs.

Q. IF A NETWORK-BASED COMPANY LIKE BELLSOUTH IS REQUIRED TO SET RATES FOR EACH SERVICE JUST SUFFICIENT TO COVER TSLRIC, WILL THAT COMPANY RECOVER ALL OF ITS COSTS AND EARN A REASONABLE PROFIT?

A. No. Service prices which only generate total revenue equal to the sum of all services' TSLRICs will not cover total cost. As I have discussed, there are shared costs incurred by a company, especially a multiservice network-based company like BellSouth, which are *not* incremental to any one service but which are never the less valid costs of engaging in its business activities. In

total, service revenues must exceed the sum of all services' TSLRICs by a margin sufficient to recover all costs of the firm, including the shared costs of the firm. To simply assure that each service does not receive a subsidy, by establishing all service prices at, or slightly above, TSLRIC, does not guarantee that a provider recovers all of its costs. BellSouth cannot be said to have priced its services to attain a reasonable profit until its prices are set sufficiently above TSLRIC to recover its shared costs. In short, if BellSouth is required to set service prices at TSLRIC, with no provision for shared costs which must necessarily be incurred to provide business services, then it can not earn a profit on those services.

Q. CAN YOU ILLUSTRATE THIS POINT WITH A NUMERICAL EXAMPLE?

A. Yes. Consider products A & B each with an incremental cost per unit of $.25 and with demand of 100 for each service. The incremental cost for the sum of the units demanded is $25 for A and $25 for B. However, to produce either A or B the firm must also spend $50 per period on a machine; in this simple example, the $50 is a shared cost of these two products. Obviously, if the prices per unit of both services A and B are forced to equal their incremental costs of $.25, the firm will face a loss of $50 per period. Similarly, if the firm is forced to price of one of its services at incremental cost, the firm will face a loss unless it can double the contribution margin on its remaining service. The greater the efficiencies of sharing facilities and costs, the larger the shared costs of the firm and the greater the need to price services in excess of

TSLRIC. In other words, such increased efficiencies will increase shared costs but with a more than offsetting reduction in incremental costs. However, these larger shared costs must be recovered for the firm to remain in business.

Q. ARE SHARED FACILITIES AND SHARED COSTS BENEFICIAL?

A. Yes. The increased efficiencies from sharing facilities and costs is desirable for the firm and desirable for society as well. However, these costs must be recovered from the services which the firm provides; forcing service prices equal to TSLRIC does not allow for the recovery of the shared costs which are beneficial to society. It is inappropriate to penalize a company for improving its efficiency by not allowing recovery of shared costs. To illustrate this, recall products A and B described earlier where the incremental costs per unit for each is $.25, the shared cost is $50, and 100 units of each service are demanded. Consider what occurs if a new machine becomes available which costs $75 per period but which reduces the incremental cost of both services from $.25 to $.10. With demand for A and B at 100 units the new machine offers the opportunity to reduce total costs from $100 to $95 (i.e., $75 + $10 + $10). Society is clearly better off with the use of the new machine; however, if the company is artificially constrained to price any of its services at incremental cost it is difficult for the company to make the economic decision which is best for society.

COMPETITION TENDS TO DRIVE PRICES TO COSTS (INCLUDING SHARED COSTS)

Q. YOU RECOMMEND REJECTING MCI'S PROPOSAL TO PRICE UNBUNDLED NETWORK ELEMENTS AT TSLRIC. DOESN'T COMPETITION DRIVE PRICES TOWARD COSTS?

A. Yes. However, competition does not necessarily drive prices to TSLRIC.[1] Competition tends to drive prices to a point where all valid business costs are just recovered, and shared costs are valid costs of business activity. When competition drives prices toward costs, these shared costs are a component of the costs a provider must recover, even in the most competitive of markets.

Q. SHOULD PRICES FOR INTERMEDIATE SERVICES (I.E., SERVICES NOT SOLD TO END USERS) BE ALLOWED TO MAKE A CONTRIBUTION TOWARD THE RECOVERY OF THE SHARED COSTS OF A FIRM?

A. Yes. In a competitive environment, every activity must be allowed to make a reasonable contribution to help recover the shared costs of the firm. Many firms strictly offer business-to-business services, i.e., they only offer intermediate products or services to other firms and do not sell to end-users.[2]

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1 If a firm only provides a single product, all of its costs are generally included in a calculation of TSLRIC. Because the majority of the economics literature implicitly or explicitly deals with single product production, a casual reading of parts of the economics literature would lead one to believe that competition drives prices toward TSLRIC; this is true only for a single product firm.

2 Catalogs and directories exist for "business-to-business" products and services; many of these products are used as components or inputs to produce products for final consumers. Some of the firms which are largely or completely intermediate-products firms are obvious and well known such as Intel, Boeing, McDonall-Douglas, U.S. Steel, Alcoa Aluminum, or Peabody Coal. However, many other firms which one might consider as final goods producers, such as Beatrice Foods, Detroit Diesel,

Many of these firms may have substantial shared costs which must be recovered from the prices of the intermediate products or services which they sell to other firms. In general, firms in real markets selling intermediate services have shared costs which must be recovered through the prices of the intermediate products or services which they sell to other firms. It is obvious in these instances that providers must obtain a reasonable contribution from each intermediate service or they will be unable to continue in business.

EVEN INTERMEDIATE SERVICES SOLD TO OTHER PROVIDERS SHOULD NOT BE PRECLUDED FROM MAKING A CONTRIBUTION TOWARD SHARED COSTS

Q. IF ONE ASSUMES THAT ONE OR MORE OF THE SERVICES IN THIS PROCEEDING IS A MONOPOLY SERVICE, OR AN ESSENTIAL SERVICE, SHOULD THAT SERVICE BE PRECLUDED FROM PROVIDING A REASONABLE CONTRIBUTION TOWARD THE SHARED COSTS OF THE LEC?

A. No. All services should be allowed to provide a reasonable contribution to the shared costs of the LEC. It is possible that a telecommunications provider would only provide services which some customers would consider to be "monopoly" or "essential" services. Such classifications do nothing to make

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Kellogg, Phillip Morris, Proctor & Gamble, or Frito Lay, provide relatively few, if any, products to end users. These firms rely on other firms to actually provide products to end users. Certainly, any firm which only provides intermediate services must recover all of its shared costs from those intermediate services.

the shared costs of a firm disappear or be magically recovered elsewhere. Under such a rule, a LEC which provides some "monopoly" or "essential" services as well as other services, would be faced with attempting to recover most if not all of its shared costs from the "other" services at a time when expanding competition makes it difficult or impossible to obtain such contribution.

Q. WOULD THE MCI POSITION, THAT UNES BE PRICED AT TSLRIC, LEAD TO PERVERSE RESULTS AS LOCAL COMPETITION EXPANDS?

A. Yes, it would appear that MCI may not object to service prices which are above TSLRIC; rather MCI objects to prices for what it claims are monopoly components which are greater than TSLRIC and which provide some contribution to the shared costs of the LEC. As MCI or other companies enter the facilities-based segment of the market and offer equivalent or alternative UNEs, these companies, like BellSouth, will need to recover their joint and common costs. A market price will emerge which, in all likelihood, will be higher than BellSouth's TSLRIC. It appears that MCI would then allow BellSouth to raise its prices for these services which would lead to higher end user prices. Therefore, under the MCI proposal, as local competition expands, prices for unbundled intermediate component services (which were previously considered as monopoly components) would be allowed to rise in order to contribute to the significant shared costs of the LEC. This leads to the perverse result that the expansion of local competition would lead to increased prices rather than decreased prices.

In contrast, starting with intermediate services priced to correctly provide a reasonable contribution toward shared costs could emulate competitive results from the outset of the establishment of the unbundled services.

Q. ISN'T IT UNFAIR FOR AN ALEC TO PAY MORE THAN THE TSLRIC FOR A SERVICE IF IT BELIEVES THAT IT NEEDS THAT SERVICE TO PROVIDE ITS OWN SERVICES?

A. No. The sum of the TSLRICs of all services only represents a fraction of the total costs of a LEC. LEC shared facilities and shared costs are not shared only by end-user services. This is especially true in the increasingly competitive environment today. Similarly, I expect that each of the components or intermediate services which the ALEC purchases from other sources (such as switch providers) are priced to provide a reasonable contribution to the shared costs of those other suppliers. I don't expect MCI to provide services to a reseller at TSLRIC even though the reseller may need the services it receives in order to provide its own services. I don't expect MCI to price its own access services at TSLRIC. As a general matter, I expect that an ALEC "needs" most of the facilities and factors of production they purchase, not just the ones they purchase from a LEC; however, this does not preclude prices for each of these components from generating a contribution to its provider.

Q. DOESN'T AN ALEC HAVE TO RECOVER ALL OF ITS SHARED COSTS FROM END-USER SERVICES?

A. No. I expect that most ALECS will obtain some combination from both intermediate services (including access services to IXCs) and end-user services. The very nature of competition to date, with the terms "alternate access provider" or "competitive access provider" indicates that providing intermediate services (e.g., access to IXCs) will be a critical service and a critical source of contribution. To the extent that the ALECs have shared costs, I expect them to obtain contribution from both intermediate and end-user services. Every firm must recover its shared costs from the services it provides. To the extent that an ALEC only provides access services to IXCs, it must obtain all of its contribution, to recover its shared costs, from those intermediate services.

However, the critical distinction is that the ALEC has the opportunity to utilize the ubiquitous facilities of the incumbent LEC when and where it chooses. A LEC facing a franchise obligation has no such opportunities.

Forcing LECs to price intermediate services at TSLRIC would allow ALECS to utilize the shared facilities and shared costs of the LEC ubiquitous network when and where they choose without contributing to the recovery of LEC shared costs. Without a contribution from intermediate services, the LEC's end-user customers must provide all of the contribution to cover its shared costs; however, both the LEC's end-user customers and the ALECs purchasing unbundled LEC component services share in the capabilities of the LEC's ubiquitous network.

Q. HOW ARE THE CIRCUMSTANCES FOR THE INCUMBENT LEC AND THE ALEC DIFFERENT?

A. ALECs will benefit from the incumbent's economies of scope. When an incumbent LEC provides an unbundled loop, for example, however, the incumbent LEC does not have the opportunity to share in the benefits offered by any shared costs of the ALEC purchasing the unbundled loop. Even with local interconnection, it is the incumbent LEC which has placed a ubiquitous network of facilities in advance of the demand for services in order to satisfy obligations to serve customers in a timely fashion. Facilities-based ALECs have far greater latitude to build facilities if, when, and where they choose, utilizing the facilities of the LECs in all other instances.

Q. IF THE LEC IS PRECLUDED FROM OBTAINING A REASONABLE CONTRIBUTION FROM INTERMEDIATE SERVICES, WHAT WILL BE THE EFFECT ON THE LEC'S END-USER CUSTOMERS?

A. The burden on LEC end-user customers of recovering shared costs will continually increase in such a scenario. Assume that BellSouth's total costs are $100, with $50 of shared costs and $25 of incremental costs for residential local service and $25 of total incremental costs for all other services. Also assume that residential service generates $25 in revenue, just covering its incremental costs. Initially then, on average each service (other than residential local service) must generate $2 in contribution for each $1 of

incremental cost; i.e., the other services must provide on average 200% contribution to recover the $50 of shared costs.[1]

For simplicity, also assume that BellSouth initially had 100% market share of the other end-user services in its territory. Later, other end-user service providers enter by purchasing unbundled loops and other unbundled BellSouth facilities which are priced at incremental cost, capture 50% of the end-user market for these other services. BellSouth must now obtain $4 in contribution above its incremental costs (i.e., a 400% contribution) from each of its end-user customers. If residential local service is subsidized to some degree, as the economics literature suggests, then the contribution levels must be even higher in each scenario.

Peculiarly, both the new end-user service providers (ALECS) and BellSouth explicitly or implicitly utilize at least a portion of BellSouth's shared facilities and receive some of the benefits of its shared costs. However, when unbundled components are priced at incremental cost, only BellSouth end-user customers will pay for the benefits of the shared facilities and shared costs. Obviously, this creates an artificial advantage for ALECs and an unsustainable disadvantage for BellSouth.

[1] This example ignores demand elasticity without loss of generality.

Q. IF THE LEC IS FORCED TO PRICE INTERMEDIATE SERVICES AT TSLRIC, WOULD THE EXISTENCE OF A RATE CAP FURTHER CONSTRAIN THE LEC'S ABILITY TO RECOVER ITS SHARED COSTS?

A. Yes, absolutely. Without contribution from its intermediate services, the LEC will be forced to attempt to raise prices for its services offered to end-user customers. Obviously, the existence of a rate cap on end-user services would constrain or preclude such shared cost recovery.

PRICING UNES AT INCREMENTAL COST WOULD RETARD THE GROWTH OF FACILITIES-BASED COMPETITION

Q. DOES PRICING UNES AT INCREMENTAL COST PROVIDE AN INCENTIVE FOR FACILITIES-BASED COMPETITION?

A. Certainly not. A firm would virtually never choose to take the risk of constructing facilities when it has the opportunity to "lease" unbundled components from the incumbent LEC priced at incremental cost. In particular another provider can lease facilities priced at incremental cost at the time, scale, location and duration of its choosing and it can change any of these factors as market conditions change. Pricing unbundled components at TSLRIC will essentially guarantee that alternative providers will construct no new facilities to compete with the incumbent LEC.

THE FCC'S UNE PRICING STANDARDS AND COST TERMINOLOGY

Q. WHAT PRICING STANDARD IS ESTABLISHED BY THE TELECOMMUNICATIONS ACT OF 1996 FOR INTERCONNECTION AND UNBUNDLED NETWORK ELEMENTS?

A. Section 252(d)(1) of the Telecommunications Act of 1996 (hereinafter the "Act"), regarding pricing standards for interconnection and network element charges, states as follows:

> Determinations by a State commission of the just and reasonable rate for the interconnection of facilities and equipment for purposes of subsection (c)(2) of section 251, and the just and reasonable rate for network elements for purposes of subsection (c)(3) of such section (A) shall be (I) based on the cost (determined without reference to a rate -of-return or other rate-based proceeding) of providing the interconnection or network element (whichever is applicable), and (ii) nondiscriminatory, and (B) may include a reasonable profit.

Q. IN ITS RECENTLY RELEASED ORDER OF AUGUST 8, 1996,[1] WHAT METHODOLOGY DID THE FCC CONCLUDE SHOULD SERVE AS THE BASIS FOR PRICING UNBUNDLED NETWORK ELEMENTS?

[1] The August 1, 1996 Order in the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, released August 8, 1996, CC Docket No. 96-98 (hereinafter "FCC Interconnection Order I").

A. The FCC concluded that the price for an unbundled network element should be based on the LEC's total service long run incremental cost of that particular network element (which the FCC calls "Total Element Long-Run Incremental Cost," or TELRIC), plus a reasonable share of forward-looking joint and common costs.[1]

Q. PLEASE DEFINE THE MEANING OF THE ACRONYM TELRIC.

A. The acronym TELRIC actually stands for Total Element Long Run Incremental Cost and it is a terminology coined by the FCC in its recent order[2] dealing with the implementation of the unbundling and interconnection aspects of the Telecommunications Act of 1996. However, even within the FCC's order itself there are alternative applications of this term.

Q. HOW IS THE TERM TELRIC USED DIFFERENTLY IN THE FCC ORDER?

A. The term TELRIC, in many places of FCC Interconnection Order I, is used to denote a methodology for developing costs of a set of functions, deemed to be those that proposed competitors either want or need in order to compete with the incumbent company. However, FCC Interconnection Order I also refers to the term TELRIC when referencing a mechanism for setting a price for these proposed functions. The use of the same terminology to refer to two very

[1] FCC Interconnection Order I, paragraph 29 and 672.
[2] FCC Interconnection Order I, paragraph 678.

different disciplines creates a multitude of opportunities for confusion in the application of these principles going forward.

Q. HOW DOES THE TELRIC COST METHODOLOGY DIFFER FROM A TSLRIC OR TOTAL SERVICE LONG RUN INCREMENTAL COST METHODOLOGY?

A. From a cost methodology perspective, specifically excluding pricing considerations and joint or common allocations, there should be no difference in the actual cost methods; only a change in the *cost object* under study. The same principles of cost causation and identification should be used to determine the incremental cost of an element, or a service.

Q. IF THE SAME METHODS, AND THE SAME INPUTS, ARE USED FOR BOTH TELRIC AND TSLRIC STUDIES, HOW WILL THE RESULTING AMOUNTS BE DIFFERENT?

A. A very basic principle is that the result of a cost study is highly interdependent with the question that is being posed. If one assumes that the purpose of a TELRIC study is to develop a price floor (again, excluding the reference to a TELRIC price methodology) for a particular network function then the question is no longer "What is the cost to the company to provide an additional unit of service or product?" Instead, the question has been changed to "What is the cost to the company of providing an element or function of the network in its entirety, without regard to the services consuming it?". For example, in the

case of a TSLRIC study conducted for a particular service, the direct cost of the service would not include any costs that are shared among other services using that capacity of the network. However, a TELRIC study conducted on the elements of the previous service would include as direct costs some of the costs that were identified as shared in the service specific study. Pricing issues aside, the alignment of the cost object under study with the actual network structure in terms of how costs are incurred will serve to reduce shared costs and, instead, drive them to be a direct cost of the object under study.

Q. IF THIS IS TRUE, AND SERVICES ARE CONSTRUCTED DIRECTLY FROM THESE ELEMENTS, CAN THESE ELEMENTS JUST BE ADDED TOGETHER TO OBTAIN THE COST FOR ANY SERVICE?

A. No. As I stated above, the determination of cost for any particular service includes considerations over and above the determination of the elements of which it is constructed. In the previous example, the price floor for an element used in the provision of the service would consider "spare" capacity as a shared cost, to be recovered through prices. If, instead, the study were considered the sum of previously constructed TELRIC studies, that shared cost would have been included as a direct cost of each element and the resulting service "cost" would have a *de facto* allocation of shared costs among all services studied in this manner.

Q. MCI ALSO RECOMMENDS THAT RATES FOR UNES SHOULD BE SET EQUAL TO TOTAL ELEMENT LONG RUN INCREMENTAL COST (TELRIC).[1] DO YOU AGREE?

A. No. FCC Interconnection Order I clearly states that prices for interconnection should not only recover the TELRIC of a particular network element, but prices should be set *above* TELRIC in order to recover the shared and common costs of the firm.

We conclude that, under a TELRIC methodology, incumbent LECs' prices for interconnection and unbundled network elements shall recover the forward-looking costs directly attributable to the specified element, as well as a reasonable allocation of forward-looking common costs.[2]

In other words, a reasonable contribution[3] must be made toward BellSouth's residual shared and common costs (sometimes called "joint and common costs").

Q. PLEASE EXPLAIN THE DIFFERENCE BETWEEN TELRIC AND TSLRIC AS IT RELATES TO SHARED AND COMMON COSTS.

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[1] MCI'S Petition for Arbitration at page 51.

[2] FCC Interconnection Order I, paragraph 682.

[3] By "reasonable contribution", I refer to the level of contribution which would be obtained according to effectively competitive market conditions. It is *possible* that this contribution may be minimal or even zero if market conditions so indicate. Such conditions do not exist in local exchange companies.

A. The FCC suggests that the amount of costs that will be directly attributable will be greater under a TELRIC methodology than a TSLRIC methodology:

Therefore, the amount of joint and common costs that must be allocated among separate offerings is likely to be much smaller using a TELRIC methodology rather than a TSLRIC approach that measures the costs of conventional services.[1]

Q. SINCE MORE COSTS WILL BE DIRECTLY ATTRIBUTABLE UNDER A TELRIC METHODOLOGY THAN A TSLRIC METHODOLOGY, HENCE LEAVING A SMALLER AMOUNT OF COMMON COSTS TO BE RECOVERED, WHY THEN DO PRICES STILL NEED TO BE SET ABOVE TELRIC, RATHER THAN EQUAL TO TELRIC?

A. TSLRIC methodology results in common costs which cannot be attributed to individual services. The amount of these common costs is very significant. Although TELRIC methodology aims to reduce the amount of these common costs, there is no doubt that there will still be a significant amount of common costs which will not be directly attributable to network elements. As explained previously in my testimony, however, the actual amount of common costs will depend on how network elements are defined.

[1] FCC Interconnection Order I, paragraph 678.

The greater the efficiencies of sharing facilities and costs, the larger the shared and common costs of the firm and the greater the need to set prices in excess of TELRIC.[1] In other words, such increased efficiencies will reduce incremental costs but increase shared and common costs. However, these shared and common costs must be recovered for a firm to remain in business.

The increased efficiencies from sharing facilities and costs is desirable for the firm and desirable for society as well. However, these costs must be recovered from the services which the firm provides; pricing at TELRIC does not allow for the recovery of the shared and common costs which are beneficial to society. It is inappropriate to penalize a company for improving its efficiency by not allowing recovery of shared and common costs.

Q. IF PRICING AT TELRIC LEAVES SHARED AND COMMON COSTS UNRECOVERED, SPECIFICALLY HOW SHOULD PRICES BE SET TO GENERATE THE ADDITIONAL REVENUE REQUIRED TO COVER THESE COSTS?

A. Prices should be set based on market conditions in such a way that the contributions from all services (revenues in excess of incremental costs) are sufficient to cover the shared and common costs of the firm. It is the value of the service to the customer and the market conditions for that service, not cost-

[1] The efficiencies due to sharing facilities and costs in the provision of multiple services are sometimes called economies of scope. This is similar to, but may be distinct from, the concept of economies of scale which reflects cost savings from large scale production of a particular (a single) product or service.

based formulas, which will determine how shared and common costs can be recovered in the marketplace. Every network element should provide a contribution toward shared and common costs, based on market conditions. The market place is where prices should be determined. Dr. Alfred Kahn is very emphatic about this point as explained in the following editorial:

The FCC should simply get out of the way and leave the decisions to investors and consumers. The commission should call off its cost-allocation rule making, leave the prices of regulated services where they are and let the market work.[1]

INTERCONNECTION: MUTUAL TRAFFIC EXCHANGE

Q. MCI ADVOCATES MUTUAL TRAFFIC EXCHANGE (MTE) FOR THE INTERCHANGE OF LOCAL TRAFFIC.[2] DO YOU AGREE?

A. No. Mutual traffic exchange is a form of interchange where interconnecting carriers do not explicitly compensate each other for terminating local traffic. Each carrier bills its customers for the services it provides and keeps the revenues but does not bill other carriers for the service of terminating their local traffic. For this reason, MTE is also known as bill and keep.

[1] Kahn, Alfred E., "Ask Not the Bells for Tolls," *Wall Street Journal*, August 6, 1996, page A14.
[2] MCI's Petition for Arbitration at page 45.

MTE is very much in the interest of MCI. It is entirely contrary to competitive outcomes and economic efficiency. The incentives in this arrangement are not to become the most efficient provider of service, but to maximize the opportunity to bill (and keep) revenues. For example, BellSouth acquired both high and low geographical concentrations of revenue by building a large network (pursuant to its universal service and carrier of last resort obligations) and was able to maintain affordable rural rates through statewide average tariffs or limited tariff differentials between urban and rural areas. A new entrant like MCI might be able to bill, say, 50% of BellSouth's revenue while making only 10% of BellSouth's investment (and incurring 10% of BellSouth's cost). A bill and keep arrangement takes all of the contribution from the highest contributing portions of the business (those that the competitor wants to enter) and requires an incumbent LEC like BellSouth to find alternative sources of contribution to sustain its universal service and carrier of last resort obligations. In other words, the arrangement essentially erodes away one of the most important sources of contribution to the universal service and carrier of last resort obligations. A bill and keep arrangement would thus greatly increase the need for funding the LEC's universal service and carrier of last resort obligations and would reward the new competitor in ways not possible in an unrestricted competitive environment. In a competitive environment, an incumbent LEC could win the business where it was most efficient (and lose business where it was inefficient) through flexibly pricing to profitably meet the competition. Similarly, the new entrant would enter the areas with low revenue concentrations if it could more efficiently serve in those areas than could the incumbent. In other words, each player would be

attracted by profit opportunities equally in rural and urban areas depending on who was most efficient, not where they could bill and keep the most revenue and leave the high cost, low revenue business to the carrier with the universal service and carrier of last resort obligations.

Q. IS MTE CONSISTENT WITH COMPETITIVE OUTCOMES?

A. No. Wholesalers do not agree that retailers may keep all revenue received. Even when wholesalers supply each other's retailer (this is the situation between interconnecting retail telephone suppliers), they do not compensate each other simply by allowing each other's retailers to keep all revenues received from further distribution of the goods. Rather, the wholesale and retail transactions are negotiated at "arms length," not bill and keep agreements. The risk of imbalanced compensation is too great to allow such agreements to become common in competitive markets.

In general, in order to avoid inadvertent price discrimination and maintain competitive parity, all transactions among carriers should be explicit. Bill and keep arrangements mask the gross revenue flows among carriers by assuming the net flows are and should be zero (a "net" flow is what one carrier owes the other less what is due back).

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

REBUTTAL TESTIMONY OF DR. RICHARD D. EMMERSON

ON BEHALF OF BELLSOUTH TELECOMMUNICATIONS, INC.

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 960846-TP

SEPTEMBER 16, 1996

INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Richard D. Emmerson. I am the President and CEO of INDETEC International, Inc. I am testifying on behalf of BellSouth Telecommunications, Inc. ("BellSouth" or the "Company"). My business address is 341 La Amatista, Del Mar, CA 92014.

Q. ARE YOU THE SAME RICHARD D. EMMERSON WHO FILED DIRECT TESTIMONY IN THIS DOCKET ON SEPTEMBER 9, 1996?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY IN THIS PROCEEDING?

A. MCI Telecommunications Corporation (MCI) has petitioned the Florida Public Service Commission (FPSC or Commission) to arbitrate certain terms and

conditions in its negotiation with BellSouth regarding interconnection, collocation, unbundled network elements (UNEs), and resale of existing services. The purpose of my rebuttal testimony is to respond to certain positions taken by Dr. Nina Cornell and Mr. Don Wood in their direct testimony for MCI.

THE COMMISSION SHOULD REJECT USE OF THE HATFIELD MODELS

Q. HAS MCI PROPOSED UTILIZING A HYPOTHETICAL MODEL OF TELECOMMUNICATIONS SERVICES?

A. Yes. Dr. Nina Cornell and Mr. Don Wood have recommended that the FPSC rely on the Hatfield models to determine the incremental costs of unbundled network elements, local transport and termination.[1]

Q. DO YOU AGREE WITH DR. CORNELL'S RECOMMENDATION?

A. No. There are a series of models and releases by Hatfield and associates which can generically be called "Hatfield Models." These models cannot be relied upon to provide sound and reliable estimates of TSLRIC costs of telecommunications services or elements. My comments are based on my review of the documentation of these models, my experience with such cost

[1] Direct Testimony of Nina W. Cornell on Behalf of MCI, Docket No. 960846-TP, August 23, 1996, at pages 24 and 36. Direct Testimony of Don J. Wood on behalf of MCI, Docket No. 960846-TP, August 21, 1996, at page 13.

estimation models in general, including those produced by my own company, my discussions with other modelers, my knowledge of traditional engineering/economic cost models, and my knowledge of the types of data which are utilized in such systems.

Q. BASED ON YOUR KNOWLEDGE, DO THE HATFIELD MODELS UTILIZE METHODS WHICH ARE RELIABLE FOR ESTIMATING TSLRIC COSTS FOR UNES, TRANSPORT AND TERMINATION?

A. No. It appears that the Hatfield models do not provide a reliable method for estimating TSLRIC costs for unbundled network elements, transport and termination. The Hatfield models do not reflect the costs of an actual network, they produce a variety of errors, and perhaps most importantly, certain aspects of the modeling process appear to significantly bias the cost estimates downward.

Q. DO THE HATFIELD MODELS PROVIDE A REASONABLE ESTIMATE OF THE COSTS OF AN INCUMBENT LOCAL EXCHANGE COMPANY ("LEC") OR A NEW ENTRANT?

A. No. It appears that the Hatfield models do not provide a reasonable estimate of either a new entrant or an incumbent LEC. The Hatfield models do not reasonably estimate the costs of an existing LEC placing facilities well in advance of the existence of homes and business (I will call this the franchise scenario). Further, the Hatfield models do not reasonably estimate the costs of

a new entrant placing facilities after homes and businesses are completely in place (I will call this the new entrant scenario).

Q. WHAT COST CHARACTERISTICS WOULD EXIST IN THE FRANCHISE SCENARIO?

A. In the franchise scenario the LEC will place facilities well in advance of the actual demand for local service at the time that developments and new construction of homes is about to occur or will possibly occur in order to provide service, or be ready to provide service, to all customers on a timely basis. This leads to relatively high levels of spare capacity at any point in time because growth only slowly catches up with capacity. Moreover, there is lumpiness in investment, uncertainty in demand forecasting, and there are high costs to retroactively expand capacity. Spare capacity leads to relatively high cable material costs.

On the other hand, the franchise scenario, with early placement of facilities, also has some corresponding cost advantages. It provides the opportunity for joint trenching with natural gas lines and limited requirements for cutting through concrete and asphalt and the associated additional labor and safety costs created when working on active streets. This scenario has relatively low structure and installation costs.

Q. WHAT COST CHARACTERISTICS EXIST IN THE NEW ENTRANT SCENARIO?

A. A new entrant may choose to place facilities only after all buildings, business, homes and streets are in place.[2] Under very unlikely conditions, this could lead to relatively high fill factors and relatively low costs for cable material per customer served.[3] On the other hand, the new entrant must face higher costs for structure and installation (e.g., trenches must be dug much more frequently through concrete, asphalt, lawns and flower beds often on busy streets, requiring care to avoid other existing structures). The costs for a new entrant may be greater than the costs in the franchise scenario.

Q. YOU STATED EARLIER THAT THE HATFIELD MODELS DO NOT ADEQUATELY REFLECT EITHER OF THESE TWO SCENARIOS. WHAT COSTS DO THE HATFIELD MODELS REFLECT?

A. The Hatfield models implicitly reflect the low cable material costs of an unrealistic new entrant scenario and yet also reflect structure costs which may be even lower than those which could be obtained in the franchise scenario. The model appears to want to have its cake and eat it too, and then wants some more.

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[2] Of course, calculating costs for a new entrant begs the policy question of how customers received telecommunications services prior to the new entrant and who pays for such costs.

[3] This requires the critical assumption that the new entrant can somehow capture the entire market and serve all customers at a flash cut point in time. Of course, real entrants have no such opportunity.

Therefore, the Hatfield models do not properly reflect the costs that would occur for either scenario. This creates a significant underestimation bias in the models results.

Q. DO THE HATFIELD MODELS ASSUME FICTITIOUS CABLE ROUTES?

A. Yes, the Hatfield models, by utilizing inputs from the Benchmark Cost Model assumes that census block groups (CBGs) are square in shape, are assigned to the wire center closest to the centroid of the CBG, that feeder routes extend to the nearest midpoint of a side of the assumed square perimeter of the CBG (or penetrate 1/4 of the length of a perimeter side into the square CBG). These assumptions do not reflect actual customer locations. It is also not clear that the models even reflect the costs of serving an area which has uniformly distributed population (a stated assumption).

Q. ARE THERE OTHER PROBLEMS WITH THE HATFIELD MODELS?

A. Yes, there are. I have simply listed below some of the factors in the Hatfield models which are unrealistic, imprecise, may lead to certain problems and errors, or are simply wrong:

- Possible underestimation of BELLSOUTH Florida service territory by misassignment of CBGs, miscalculation of areas and/or missing CBGs.
- Assignment of CBGs to the wrong wire centers.
- Assignment of CBGs to the wrong serving LEC.

- Problems related to CBGs served by multiple wire centers and/or multiple LECs.
- Labor and switching cost inputs may be substantially understated.
- Operating expenses may be understated via cable cost multipliers.
- Fill rates for feeder and distribution cable appear unrealistically high leading to unrealistically low costs.
- Fill rates appear to be higher than stated in the models documentation.
- Implied fill rates for serving area interface (SAI) and multiplexing (MUX) appear unrealistically high.
- The models appears to be unwieldy and difficult to run.
- The source for manhole, terminal, splice and serving area interface and other costs appear to be based on "subject matter" expert judgment without documentation or validation.
- The identification of subject matter experts (SMEs) utilized by the models is not clear.
- Where and how SME expertise was utilized is not clear.
- Switching costs appear substantially understated.
- What would be expected as major changes in the model do not lead to major changes in the results of the model.
- The models do not reflect the additional costs of changing facilities which exist in a growing demand environment.
- Cost of money and depreciation costs may be unrealistically low.
- Costs for digital cross connects, SS7 network components and essential network support systems may be excluded or understated.
- Operator position costs appear understated.

Q. DO THE HATFIELD MODELS PRODUCE RESULTS WHICH ARE CONSISTENT WITH THE CURRENT COSTS OF PLACING FACILITIES?

A. No, it appears they do not. For example, engineer James Schaaf, testifying on behalf of Pacific Bell in R-95-01-020 (the universal service cost proxy models docket) in his testimony filed April 17, 1996, considered the Hatfield results and a detailed prospective evaluation of the actual current/prospective costs for Angels Camp, California. Mr. Schaaf stated:

> "The results of the study are that the BCM Hatfield results in a $28,767 total cost for 12,376 feet of feeder distance. This is $2.32 per foot. ... The results of the real world estimation process is $140,043 total cost for the same distance of feeder or $11.32 per foot. As anyone can see, the results of the BCM Hatfield are highly problematic." (Emphasis in original).

Q. WHAT ARE THE BCM AND BCM2 AND HOW ARE THEY RELATED TO THE HATFIELD MODELS?

A. The BCM was developed initially "to identify those CBGs in which the cost of providing basic telephone service is so high that some form of explicit high-cost support may be necessary as part of a universal service solution."[4] as a

[4] "Benchmark Cost Model," A joint submission by Sprint Corporation and USWEST, Inc in CC Docket No. 96-45, July 3, 1996, p. 2.

tool to evaluate the need for universal service funding. The Hatfield models utilize the BCM or variants of the BCM for manipulation of demographic data, especially for critical loop investment calculations. However, the BCM was widely criticized as suffering from severe problems that yielded unreliable and unrealistically low cost estimates. By early 1996, the sponsors of the BCM recognized its major shortcomings and stated that work was underway to correct these major shortcomings. By July 1996, the two remaining sponsors of the BCM, USWEST and Sprint, released BCM2 and a set of BCM2 results for all states. BCM2 appears to have corrected the major flaws inherent in the original BCM.

Q. WHAT ARE THE BCM2 RESULTS FOR FLORIDA?

A. The statewide average monthly cost for basic local exchange service is $29.15 in the BCM2 results.[5]

Q. WHAT IS THE COST PROXY MODEL (CPM)?

A. The CPM is a model jointly developed by Pacific Bell and INDETEC International. It enables companies and regulators to quantify the cost of providing universal service. The CPM is based on a consistent, uniform unit of geography, separates operating expenses from investment, separately develops

[5] Id.

structure costs and accounts for efficiency of the LEC. In my opinion, the CPM is based on sound economic, financial and management accounting principles.

Q. DOES THE CPM YIELD RESULTS THAT ARE SIMILAR TO BCM2?

A. Because of the corrections from the BCM1 version, the BCM2 now yields results which are similar to the Cost Proxy Model, even at geographic levels as small as a wire centers.

Q. MR. WOOD CONTENDS THAT MANY OF THE ENHANCEMENTS TO THE BCM2 ARE PRESENT IN THE LATEST VERSION OF THE HATFIELD MODEL[6]. IF CORRECT, WOULD THIS CHANGE YOUR RECOMMENDATION?

A. No. Saying that the Hatfield Model is "new and improved" is far different from demonstrating its superiority to other models. First of all, the new version of the Hatfield Model has not undergone the type of regulatory and other rigorous scrutiny that are normally applied before a model can be adopted for the purposes of public policy and rate setting. Therefore, using the most recent version of the Hatfield Model to estimate the incremental costs of BellSouth's unbundled network elements is not legitimate until the critical underlying BCM Plus model has withstood a thorough formal investigation.

[6] Direct Testimony of Don J. Wood on Behalf of MCI, Docket No. 960846-TP, August 21, 1996, at page 4.

Despite Mr. Wood's reassurances, the latest revision to the Hatfield Model is brand new and untested. In my opinion, this arbitration proceeding is not the place to be introducing new primary cost models. Until the BCM Plus loop cost model is proven superior to other loop costing models, the Hatfield Models should not be used by the FPSC.

Q. DID THE FCC RELY ON THE HATFIELD MODELS AND THE BENCHMARK COST MODEL (BCM) TO DETERMINE THE LEVELS OF ITS LOOP COST PROXIES?

A. No, the FCC utilized the Hatfield and BCM models only to scale the proxy levels across states. The FCC Order states:

> Based on our current information, we believe that both these models are based on detailed engineering and demographic assumptions that vary among states, and that the outputs of these models represent sufficiently reasonable predictions of relative costs differences among states to be used as set forth below to set a proxy ceiling on unbundled loop prices for each state. *We do not believe, however, that these model outputs by themselves necessarily represent accurate estimates of the absolute magnitude of loop costs.*[7] (emphasis added)

[7] The August 1, 1996, Order in the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, released August 8, 1996, CC Docket No. 96-98 (hereinafter "FCC Interconnection Order I") at paragraph 794.

Q. WHAT INFORMATION DID THE FCC UTILIZE IN DETERMINING THE BASE LEVEL FOR ITS LOOP COST PROXIES?

A. In effect, the FCC used the Hatfield and BCM cost estimates to apply the unbundled loop rates established by six states to all other states[8]. These six states are Colorado, Connecticut, Florida, Illinois, Michigan and Oregon. The FCC created its proxy for each state by inflating or deflating a simple unweighted average of the unbundled loop rates approved in these six states. The unweighted average rate was adjusted upward or downward according to whether the Hatfield or BCM cost estimate for a particular state was higher or lower than the simple unwieghted average of the Hatfield or BCM cost estimates for the six benchmark states. Noting criticisms of the Hatfield and BCM models, the FCC concluded:

"For the purposes of setting an interim proxy, however, we note that the criticisms have been directed largely toward the absolute level of cost estimates produced by the models, rather than the relative cost estimates across states. Since our hybrid ceiling explicitly scales the model cost estimates based on existing state decisions and uses the model results simply to compute relative prices, we believe that these criticisms do not apply in the present context[9]."

[8] FCC Interconnection Order I, paragraph 794.
[9] Ibid., paragraph 795.

Q. SHOULD THIS COMMISSION RELY UPON THE FCC'S UNBUNDLED LOOP PROXY RATES IN DETERMINING BELLSOUTH'S RATES FOR UNBUNDLED LOOPS IN FLORIDA?

A. No. The FCC's proxies do not bear a reliable relationship to the incremental costs of providing unbundled loops. The manner in which the FCC derived these proxies is unclear, and the resulting rates may be less than defensible incremental cost estimates. For example, the FCC's proxy rate for Florida is $13.68 per month, but BellSouth's estimate of the monthly long-run incremental cost (LRIC) of supplying two-wire, analog unbundled loops in Florida is much higher.

Q. DR. CORNELL CONTENDS THAT THE FCC'S TELRIC METHODOLOGY REQUIRES STUDYING COSTS AS THOUGH BELLSOUTH IS DIVIDED INTO WHOLESALE AND RETAIL SUBSIDIARIES AND ONLY THE RETAIL SUBSIDIARY PUTS NETWORK ELEMENTS TOGETHER.[10] IS THIS A SOUND METHODOLOGY?

A. No. Putting aside the question of whether her interpretation of the FCC's rules is correct, such a method fails to allow for incremental cost estimates that reflect the cost savings stemming from vertical integration. According to Professor Morris Adelman of MIT, economists describe a firm like

[10] Direct Testimony of Nina W. Cornell on Behalf of MCI, Docket No. 960846-TP, August 23, 1996, at page 20.

BELLSOUTH as vertically integrated "when it transmits from one of its departments to another a good or service which could, without major adaptation, be sold in the market."[11] In his book on antitrust and regulatory economics, Professor Daniel Spulber of Northwestern University explains that cost savings may result from vertical integration because of *economies of sequence*.[12] Cost estimating methods that refuse to allow for the presence of economies of sequence could easily overstate the costs of bundled retail offerings and competitively disadvantage BELLSOUTH.

Q. DR. CORNELL EXPLAINS THAT THE HATFIELD MODEL ADDS A TEN PERCENT MARKUP TO CAPITAL AND NETWORK OPERATIONS COSTS INTENDED TO REFLECT FORWARD-LOOKING OVERHEAD COSTS.[13] DO YOU AGREE THIS PROCEDURE IS PROPER?

A. No. Unfortunately, there is no formula which allows one to take incremental cost estimates and allocate shared and common costs to determine a service price. Incremental cost provides the information necessary to establish a floor for service pricing and part of the information to test for cross-subsidization of services.[14] However, incremental cost information by itself is insufficient to establish the upper bound for pricing or to determine the price of the service itself.

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[11] M. A. Adelman, "Integration and Antitrust Policy," 63 *Harvard Law Review* 27 (1949) at 27.
[12] Daniel F. Spulber, *Regulation and Markets* (Cambridge, MA: MIT Press, 1989), pp. 118-120.
[13] Direct Testimony of Nina W. Cornell on Behalf of MCI, Docket No. 960846-TP, August 23, 1996, at page 26.
[14] Service demand and revenue information provides the other source of information for testing for cross-subsidies.

In general, establishing service prices for the full complement of services a firm offers requires three types of information: 1) incremental cost (establishing the lower bound for the price); 2) market/demand information; and 3) the total shared and common costs of the firm (establishing the total level of contribution required from all services in total to sustain the firm in the long run).

Q. IF NO VALID FORMULA EXISTS, SPECIFICALLY HOW SHOULD PRICES BE SET TO RECOVER A FIRM'S TOTAL COSTS?

A. Service prices should be set based on market conditions in such a way that the contributions from all services (revenues in excess of incremental costs) are sufficient to cover the shared and common costs of the firm. It is the value of the service to the customer and the market conditions facing that service, not cost-based formulas, which will determine how shared and common costs can be recovered in the marketplace. By choosing among rates within the range of attainable contributions, public policy and company objectives can be accommodated. Absent special public policies to the contrary, rates which promote economic efficiency should be preferred over those which harm economic efficiency.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

DIRECT TESTIMONY OF DR. RICHARD D. EMMERSON

ON BEHALF OF BELLSOUTH TELECOMMUNICATIONS, INC.

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 960916-TP

SEPTEMBER 9, 1996

INTRODUCTION

Q. PLEASE STATE YOUR NAME AND GIVE YOUR BUSINESS ADDRESS.

A. My name is Richard D. Emmerson. I am the President and CEO of INDETEC International, Inc. I am testifying on behalf of BellSouth Telecommunications ("BellSouth" or the "Company"). My business address is 341 La Amatista, Del Mar, CA 92014.

Q. WHAT EXPERIENCE AND QUALIFICATIONS DO YOU HAVE PERTAINING TO YOUR TESTIMONY?

A. My academic qualifications include a Ph.D. in economics from the University of California, Santa Barbara in 1971. From 1971 through 1979, I was a full-time member of the Economics Department at the University of California, San Diego (UCSD). Since 1979, I have taught continuously (part time) at UCSD; I was the Director of the Executive Program for Scientists and Engineers (EPSE) at UCSD during 1990-1991, and I continue to teach courses on costing and pricing for EPSE at the present time. I have written articles in professional economic jour-

nals, and I have performed research projects for government agencies and private industry. I have also served as an expert witness in antitrust and business litigation cases. I have testified before many Public Service Commissions on various economic and policy subjects such as access charges, bypass, rate structure, competition, terminal equipment pricing, network services pricing, and cost analyses in the jurisdictions of California, Colorado, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Maine, Michigan, Minnesota, Montana, Nevada, Oklahoma, Pennsylvania, Virginia, Washington, Washington D.C., and Wisconsin, as well as in Canada. Over the course of the past 12 years, my provision of expert witness testimony in over 40 telecommunications regulatory hearings has aided in establishing appropriate cost standards in several jurisdictions within the industry. I have also worked for regulators and telephone companies in nearly a dozen foreign countries during the past three years.

My work experience includes past positions as Senior Vice President of Criterion Incorporated, President of the Institute for Policy Analysis, and President of Economic Research Associates. These companies performed economic analysis for competitive firms, regulated firms, government agencies, regulatory commissions, and trade associations. INDETEC International, Inc. provides consulting and training services to international telephone companies, Lucent Technologies, the United States Telephone Association (USTA), Bellcore, Commission staff members, partners and managers of large accounting and consulting firms, and interexchange companies (these services were formerly offered through INDETEC Corporation and Emmerson Enterprises, Inc.). During the past 20 years, I have taught a wide variety of courses ranging from basic eco-

nomics for telecommunications to highly specialized courses in incremental cost study methodology. State regulatory commission staff members from numerous states periodically attend my classes in order to improve their understanding of current economics for telecommunications.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. American Communications Services ("ACSI") has petitioned the Florida Public Service Commission ("FPSC" or "Commission") to arbitrate unresolved issues that have arisen in its interconnection negotiations with BellSouth. These unresolved issues involve the pricing of three unbundled network elements ("UNEs"). The three UNE's include unbundled loops, loop cross-connects and loop channelization. My testimony discusses the basic economic principles which should underlie the Commission's consideration of UNE pricing.

THE FCC'S UNE PRICING STANDARDS AND COST TERMINOLOGY

Q. WHAT PRICING STANDARD IS ESTABLISHED BY THE TELECOMMUNICATIONS ACT OF 1996 FOR INTERCONNECTION AND UNBUNDLED NETWORK ELEMENTS?

A. Section 252(d)(1) of the Telecommunications Act of 1996 (hereinafter the "Act"), regarding pricing standards for interconnection and network element charges, states as follows:

Determinations by a State commission of the just and reasonable rate for the interconnection of facilities and equipment for purposes of subsection (c)(2) of section 251, and the just and reasonable rate for network elements for purposes of subsection (c)(3) of such section (A) shall be (I) based on the cost (determined without reference to a rate -of-return or other rate-based proceeding) of providing the interconnection or network element (whichever is applicable), and (ii) non-discriminatory, and (B) may include a reasonable profit.

Q. IN ITS RECENTLY RELEASED ORDER OF AUGUST 8, 1996,[1] WHAT METHODOLOGY DID THE FCC CONCLUDE SHOULD SERVE AS THE BASIS FOR PRICING UNBUNDLED NETWORK ELEMENTS?

A. The FCC concluded that the price for an unbundled network element should be based on the LEC's total service long run incremental cost (TSLRIC) of that particular network element (which the FCC calls "Total Element Long-Run Incremental Cost," or TELRIC), plus a reasonable share of forward-looking joint and common costs.[2]

Q. PLEASE DEFINE THE MEANING OF THE ACRONYM TELRIC.

A. The acronym TELRIC actually stands for Total Element Long Run Incremental Cost and it is a terminology coined by the FCC in its recent order[3] dealing with

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[1] The August 1, 1996 Order in the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, released August 8, 1996, CC Docket No. 96-98 (hereinafter "FCC Interconnection Order I").

[2] FCC Interconnection Order I, paragraph 29 and 672.

[3] FCC Interconnection Order I, paragraph 678.

the implementation of the unbundling and interconnection aspects of the Telecommunications Act of 1996. However, even within the FCC's order itself there are alternative applications of this term.

Q. HOW IS THE TERM TELRIC USED DIFFERENTLY IN THE FCC ORDER?

A. The term TELRIC, in many places of FCC Interconnection Order I, is used to denote a methodology for developing costs of a set of functions, deemed to be those that proposed competitors either want or need in order to compete with the incumbent company. However, FCC Interconnection Order I also refers to the term TELRIC when referencing a mechanism for setting a price for these proposed functions. The use of the same terminology to refer to two very different disciplines creates a multitude of opportunities for confusion in the application of these principles going forward.

Q. HOW DOES THE TELRIC COST METHODOLOGY DIFFER FROM A TSLRIC OR TOTAL SERVICE LONG RUN INCREMENTAL COST METHODOLOGY?

A. From a cost methodology perspective, specifically excluding pricing considerations and joint or common allocations, there should be no difference in the actual cost methods; only a change in the *cost object* under study. The same principles of cost causation and identification should be used to determine the incremental cost of an element, or a service.

Q. IF THE SAME METHODS, AND THE SAME INPUTS, ARE USED FOR BOTH TELRIC AND TSLRIC STUDIES, HOW WILL THE RESULTING AMOUNTS BE DIFFERENT?

A. A very basic principle is that the result of a cost study is highly interdependent with the question that is being posed. If one assumes that the purpose of a TELRIC study is to develop a price floor (again, excluding the reference to a TELRIC price methodology) for a particular network function then the question is no longer "What is the cost to the company to provide an additional unit of service or product?" Instead, the question has been changed to "What is the cost to the company of providing an element or function of the network in its entirety, without regard to the services consuming it?". For example, in the case of a TSLRIC study conducted for a particular service, the direct cost of the service would not include any costs that are shared among other services using that capacity of the network. However, a TELRIC study conducted on the elements of the previous service would include as direct costs some of the costs that were identified as shared in the service specific study. Pricing issues aside, the alignment of the cost object under study with the actual network structure in terms of how costs are incurred will serve to reduce shared costs and, instead, drive them to be a direct cost of the object under study.

Q. IF THIS IS TRUE, AND SERVICES ARE CONSTRUCTED DIRECTLY FROM THESE ELEMENTS, CAN THESE ELEMENTS JUST BE ADDED TOGETHER TO OBTAIN THE COST FOR ANY SERVICE?

A. No. As I stated above, the determination of cost for any particular service includes considerations over and above the determination of the elements of which it is constructed. In the previous example, the price floor for an element used in the provision of the service would consider "spare" capacity as a shared cost, to be recovered through prices. If, instead, the study were considered the sum of previously constructed TELRIC studies, that shared cost would have been included as a direct cost of each element and the resulting service "cost" would have a *de facto* allocation of shared costs among all services studied in this manner.

Q. SHOULD THE RATES FOR UNES BE SET EQUAL TO TOTAL ELEMENT LONG RUN INCREMENTAL COST (TELRIC)?

A. No. FCC Interconnection Order I clearly states that prices for interconnection should not only recover the TELRIC of a particular network element, but prices should be set *above* TELRIC in order to recover the shared and common costs of the firm.

We conclude that, under a TELRIC methodology, incumbent LECs' prices for interconnection and unbundled network elements shall recover the forward-looking costs directly attributable to the specified element, as well as a reasonable allocation of forward-looking common costs.[4]

[4] FCC Interconnection Order I, paragraph 682.

In other words, a reasonable contribution[5] must be made toward BellSouth's residual shared and common costs (sometimes called "joint and common costs").

Q. PLEASE EXPLAIN THE DIFFERENCE BETWEEN TELRIC AND TSLRIC AS IT RELATES TO SHARED AND COMMON COSTS.

A. The FCC suggests that the amount of costs that will be directly attributable will be greater under a TELRIC methodology than a TSLRIC methodology:

> Therefore, the amount of joint and common costs that must be allocated among separate offerings is likely to be much smaller using a TELRIC methodology rather than a TSLRIC approach that measures the costs of conventional services.[6]

Q. SINCE MORE COSTS WILL BE DIRECTLY ATTRIBUTABLE UNDER A TELRIC METHODOLOGY THAN A TSLRIC METHODOLOGY, HENCE LEAVING A SMALLER AMOUNT OF COMMON COSTS TO BE RECOVERED, WHY THEN DO PRICES STILL NEED TO BE SET ABOVE TELRIC, RATHER THAN EQUAL TO TELRIC?

A. TSLRIC methodology results in common costs which cannot be attributed to individual services. The amount of these common costs is very significant. Al-

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[5] By "reasonable contribution", I refer to the level of contribution which would be obtained according to effectively competitive market conditions. It is *possible* that this contribution may be minimal or even zero if market conditions so indicate. Such conditions do not exist in local exchange companies.

[6] FCC Interconnection Order I, paragraph 678.

though TELRIC methodology aims to reduce the amount of these common costs, there is no doubt that there will still be a significant amount of common costs which will not be directly attributable to network elements. As explained previously in my testimony, however, the actual amount of common costs will depend on how network elements are defined.

The greater the efficiencies of sharing facilities and costs, the larger the shared and common costs of the firm and the greater the need to set prices in excess of TELRIC.[7] In other words, such increased efficiencies will reduce incremental costs but increase shared and common costs. However, these shared and common costs must be recovered for a firm to remain in business.

The increased efficiencies from sharing facilities and costs is desirable for the firm and desirable for society as well. However, these costs must be recovered from the services which the firm provides; pricing at TELRIC does not allow for the recovery of the shared and common costs which are beneficial to society. It is inappropriate to penalize a company for improving its efficiency by not allowing recovery of shared and common costs.

Q. IF PRICING AT TELRIC LEAVES SHARED AND COMMON COSTS UNRECOVERED, SPECIFICALLY HOW SHOULD PRICES BE SET TO GEN-

[7] The efficiencies due to sharing facilities and costs in the provision of multiple services are sometimes called economies of scope. This is similar to, but may be distinct from, the concept of economies of scale which reflects cost savings from large scale production of a particular (a single) product or service.

ERATE THE ADDITIONAL REVENUE REQUIRED TO COVER THESE COSTS?

A. Prices should be set based on market conditions in such a way that the contributions from all services (revenues in excess of incremental costs) are sufficient to cover the shared and common costs of the firm. It is the value of the service to the customer and the market conditions for that service, not cost-based formulas, which will determine how shared and common costs can be recovered in the marketplace. Every network element should provide a contribution toward shared and common costs, based on market conditions. The market place is where prices should be determined. Dr. Alfred Kahn is very emphatic about this point as explained in the following editorial:

The FCC should simply get out of the way and leave the decisions to investors and consumers. The commission should call off its cost-allocation rule making, leave the prices of regulated services where they are and let the market work.[8]

A LOCAL EXCHANGE COMPANY (LEC) SHOULD NOT BE PROHIBITED FROM PRICING ITS SERVICES TO OBTAIN CONTRIBUTION TO RECOVER ITS SHARED AND COMMON COSTS

LEC SHARED COSTS ARE SIGNIFICANT

[8] Kahn, Alfred E., "Ask Not the Bells for Tolls," *Wall Street Journal*, August 6, 1996, page A14.

Q. ACSI'S PETITION NOTES THAT THE FCC'S INTERCONNECTION ORDER I CALLS FOR PRICING UNE'S AT TELRIC PLUS A REASONABLE SHARE OF FORWARD-LOOKING JOINT AND COMMON COSTS.[9] DO YOU AGREE WITH THIS PRICING POLICY?

A. Yes. A multiservice network-based Local Exchange Company (LEC) has shared costs which must be recovered by pricing services above TELRIC.

Q. ARE THE SHARED COSTS OF A MULTISERVICE NETWORK-BASED LEC LIKE BELLSOUTH SIGNIFICANT?

A. Yes. Shared costs include some of the costs of general engineering of the network, right-to-use fees that apply to multiple functionalities, portions of many physical facilities, the cost of capital and depreciation expenses on facilities which are not directly attributable to individual services, operating expenses and even taxes. For example, Mr. Frank Kolb of BellSouth, in Georgia Public Service Commission Docket 5755-U (page 3) testified:

"Q. Could Southern Bell price all of its services at incremental cost?

A. Not if Southern Bell wants to stay in business. The incremental cost of all services provided by Southern Bell represents approximately 50% of the total cost of doing business."

[9] ACSI's Petition for Arbitration at page 6.

Similarly, Barb Smith of Southwestern Bell Telephone, in Kansas Docket No. 190,492-U (page 7) testified:

"SWBT has conducted a preliminary analysis in Texas that shows that the difference between the sum of the LRIC studies for all services and the total costs of the company in Texas will be at a minimum in the range of 40% to 50%."

I would expect Kansas to have shared and common costs in the same range. Pricing services equal to the LRIC or TSLRIC will not allow SWBT to recover significant portions of its costs.

Q. PLEASE EXPLAIN WHY SOME COSTS DO NOT APPEAR TO BE INCREMENTAL TO SERVICES.

A. First, many activities performed by LECs cannot be found to vary with the LECs' scope of services. Examples are activities such as: creating, updating and maintaining large computer systems for customer and network administration; executive function, legal and administrative work pertaining to the corporate entity as a whole. Indeed, extended unresolved disputes about how to fully distribute costs can be explained by a lack of a clear cost causitive relationship. Thus engineering and activity based studies do not assign all costs to services.

Second, econometric techniques have not demonstrated a statistically significant relationship between individual services and general overhead expenses, perhaps

because there is little independent variation in LECs' scopes of services or because there is no such relationship.[10]

Finally, the very nature of many costs is clearly shared. Resources (such as certain rights to use fees, computer programming, and general organizational activities) are performed once without the need to expand the scale of activities to accommodate greater volumes of business including adding products or services.

Q. DO YOU BELIEVE THAT A LEC HAS CHARACTERISTICS WHICH CAUSE IT TO TEND TO HAVE A HIGHER PROPORTION OF SHARED COSTS THAN OTHER COMPETING FIRMS?

A. Yes, there are several factors which I believe will cause a LEC, like BellSouth, to tend to have a higher proportion of shared costs than other competing firms. These factors include: 1) a large number of services offered; 2) network-based service provision; 3) a franchise obligation to provide ubiquitous service over broad geographic areas; 4) large scale and lumpy investment characteristics; 5) predominance of services rather than products; and 6) "leasing" of virtually no unbundled components from other providers.

Q. WHAT DO YOU MEAN WHEN YOU SAY LECS ARE "LEASING" VIRTUALLY NO UNBUNDLED COMPONENT?

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[10] There certainly is a relationship between a LEC's overall size and its shared and common costs. There is no evidence, however, that size measured by the firm's scope of services matters; it appears that all costs (TSLRIC, shared, and common) are all proportionately smaller, perhaps because the population, geography, and/or overall operations are smaller.

A. I have used the term lease in a generic sense to mean using the facilities of others (at a price) rather than buying or building one's own facilities. LECs will tend to own rather than lease facilities. In contrast, a high proportion of Inter Exchange Company (IXC) and Alternative Local Exchange Company (ALEC) costs may be comprised of expenditures to lease facilities from LECs. At one point in time, AT&T claimed that approximately 60% of its toll revenues were paid to LECs for access services. Therefore the leasing of LEC facilities (i.e., access payments) became part of the direct cost or incremental cost of AT&T's toll service. An ALEC too may lease a significant proportion of its facilities from LECs and, therefore, will necessarily have a higher proportion of incremental costs and a smaller proportion of shared costs, vis-à-vis the LECs. To illustrate, the cost of leasing meeting rooms is generally more "variable" (with respect to use) than is owning ones own facilities. Thus the incremental cost of any type of given type of use would be higher for leased rooms.

Q. IF A NETWORK-BASED COMPANY LIKE BELLSOUTH IS REQUIRED TO SET RATES FOR EACH SERVICE JUST SUFFICIENT TO COVER TSLRIC, WILL THAT COMPANY RECOVER ALL OF ITS COSTS AND EARN A REASONABLE PROFIT?

A. No, it will not. Service prices which only generate total revenue equal to the sum of all service incremental costs will not cover total cost. As I have discussed, there are shared costs incurred by a company, especially a multiservice network-based company like BellSouth, which are *not* incremental to any one

service but which are never the less valid costs of engaging in its business activities. In total, service revenues must exceed service incremental costs by a margin sufficient to recover all costs of the firm, including the shared costs of the firm. Even if it were determined that some costs presently categorized as shared and common were incremental after all, prices would need to cover those higher costs and contribute toward the remaining (nonincremental) costs. To simply assure that each service does not receive a subsidy, by establishing all service prices at, or slightly above, TSLRIC, does not guarantee that a provider recovers all of its costs. BellSouth cannot be said to have priced its services to attain a reasonable profit until its prices are set sufficiently above TSLRIC to recover its shared costs. In short, if BellSouth is required to set service prices at TSLRIC, with no provision for shared costs which must necessarily be incurred to provide business services, then it can not earn a profit on those services.

Q. CAN YOU ILLUSTRATE THIS POINT WITH A NUMERICAL EXAMPLE?

A. Yes. Consider products A & B each with an incremental cost per unit of $.25 and with demand of 100 for each service. The incremental cost for the sum of the units demanded is $25 for A and $25 for B. However, to produce either A or B the firm must also spend $50 per period on a right to uses fee; say a computer operating system. In this simple example, the $50 is a shared cost of these two products. The firm has found a source of economic efficiency: it can produce both A and B spending $50 once rather than twice (once for each product). Obviously, if the prices per unit of both services A and B are forced to equal their incremental costs of $.25, the firm will face a loss of $50 per period. Similarly,

if the firm is forced to price one of its services at incremental cost, the firm will face a loss unless it can double the contribution margin on its remaining service. The greater the efficiencies of sharing facilities and costs, the larger the shared costs of the firm and the greater the need to price services in excess of LRIC. In other words, such increased efficiencies will increase shared costs but with a more than offsetting reduction in incremental costs. However, these larger shared costs must be recovered for the firm to remain in business.

Q. ARE SHARED FACILITIES AND SHARED COSTS BENEFICIAL?

A. Yes, the increased efficiencies from sharing facilities and costs is desirable for the firm and desirable for society as well. However, these costs must be recovered from the services which the firm provides; forcing service prices equal to LRIC does not allow for the recovery of the shared costs which are beneficial to society. It is inappropriate to penalize a company for improving its efficiency by not allowing recovery of shared costs. To illustrate this, recall products A and B described earlier where the incremental costs per unit for each is $.25, the shared cost is $50, and 100 units of each service are demanded. Consider what occurs if a new machine becomes available which costs $75 per period but which reduces the incremental cost of both services from $.25 to $.10. With demand for A and B at 100 units the new machine offers the opportunity to reduce total costs from $100 to $95 (i.e., $75 + $10 + $10). Society is clearly better off with the use of the new machine; however, if the company is artificially constrained to price any of its services at incremental cost, it is difficult for the company to make the economic decision which is best for society.

COMPETITION TENDS TO DRIVE PRICES TO COSTS (INCLUDING SHARED COSTS)

Q. DOESN'T COMPETITION DRIVE PRICES TOWARD COSTS?

A. Yes, it does. However, competition does not necessarily drive prices to incremental costs.[11] Competition tends to drive prices to a point where all valid business costs are just recovered, and shared costs are valid costs of business activity. When competition drives prices toward costs, these shared costs are a component of the costs a provider must recover, even in the most competitive of markets.

Q. SHOULD PRICES FOR INTERMEDIATE SERVICES (I.E., SERVICES NOT SOLD TO END USERS) BE ALLOWED TO MAKE A CONTRIBUTION TO HELP RECOVER THE SHARED COSTS OF A FIRM?

A. Yes, in a competitive environment, every activity must be allowed to make a reasonable contribution to help recover the shared costs of the firm. Many firms strictly offer business-to-business services, i.e., they only offer intermediate products or services to other firms and do not sell to end-users.[12] Many of these

[11] If a firm only provides a single product, all of its costs are generally included in a calculation of LRIC. Because the majority of the economics literature implicitly or explicitly deals with single product production, a casual reading of parts of the economics literature would lead one to believe that competition drives prices toward LRIC; this is true only for a single product firm.

[12] Catalogs and directories exist for "business-to-business" products and services; many of these products are used as components or inputs to produce products for final consumers. Some of the firms which are largely or completely intermediate-products firms are obvious and well known such as Intel, Boeing, McDonal-Douglas, U.S. Steel, Alcoa Aluminum, or Peabody Coal. However, many other

firms may have substantial shared costs which must be recovered from the prices of the intermediate products or services which they sell to other firms. In general, firms in real markets selling intermediate services have shared costs which must be recovered through the prices of the intermediate products or services which they sell to other firms. It is obvious in these instances that providers must obtain a reasonable contribution from each intermediate service or they will be unable to continue in business.

EVEN INTERMEDIATE SERVICES SOLD TO COMPETING PROVIDERS SHOULD NOT BE PRECLUDED FROM MAKING A CONTRIBUTION TOWARD SHARED COSTS

Q. IF ONE ASSUMES THAT ONE OR MORE OF THE SERVICES IN THIS PROCEEDING IS A MONOPOLY SERVICE, OR AN ESSENTIAL SERVICE, SHOULD THAT SERVICE BE PRECLUDED FROM PROVIDING A REASONABLE CONTRIBUTION TOWARD THE SHARED COSTS OF THE LEC?

A. No, all services should be allowed to provide a reasonable contribution to the shared costs of the LEC.

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firms which one might consider as final goods producers, such as Beatrice Foods, Detroit Diesel, Kellogg, Phillip Morris, Proctor & Gamble, or Frito Lay, provide relatively few, if any, products to end users. These firms rely on other firms to actually provide products to end users. Certainly, any firm which only provides intermediate services must recover all of its shared costs from those intermediate services.

First, it is likely that the reason a service or service element is essential precisely because it is produced most efficiently as a unique element in the supplier's scope of services buy sharing costs.[13] Thus there necessarily would be shared costs to be recovered.

Second, it is possible that a telecommunications provider would *only* provide services which some customers would consider to be "monopoly" or "essential" services. Such classifications do nothing to make the shared costs of a firm disappear or be magically recovered elsewhere. Under such a rule, a LEC which provides some "monopoly" or "essential" services as well as other services, would be faced with attempting to recover most if not all of its shared costs from the "other" services at a time when expanding competition makes it difficult or impossible to obtain such contribution.

Q. ISN'T IT UNFAIR FOR AN ALEC TO PAY MORE THAN THE TELRIC FOR A SERVICE IF IT BELIEVES THAT IT NEEDS THAT SERVICE TO PROVIDE ITS OWN SERVICES?

A. No. The incremental cost of services represents only a portion of the total costs of a LEC. LEC shared facilities and shared costs are shared by end-user services by those interconnecting with the LEC, and by those who use the LEC's unbundled facilities to which their value added services are appended. This is espe-

[13] An essential facility is a component which cannot be equally efficiently produced, acquired or substituted by another firm. This occurs when one firm has economics of scope which cannot be replicated by another firm. These economies are the very source of shared and common cost which would not be recovered with prices equal to incremental costs.

cially true in the increasingly competitive environment today. Similarly, I expect that each of the components or intermediate services which the ALEC purchases from *other* sources (such as switch providers and other carriers) are priced to provide a reasonable contribution to the shared costs of those other suppliers. I don't expect ACSI to provide services to a reseller at TELRIC even though the reseller may need the services it receives in order to provide its own services. I don't expect ACSI to price its own access services at TELRIC. As a general matter, I expect that an ALEC "needs" most of the facilities and factors of production they purchase, not just the ones they purchase from a LEC; however, this does not preclude prices for each of these components from generating a contribution to its provider.

Q. DOESN'T AN ALEC HAVE TO RECOVER ALL OF ITS SHARED COSTS FROM END-USER SERVICES?

A. No. I expect that most ALECs will obtain some combination from both intermediate services (including access services to IXCs) and end-user services. The very nature of competition to date, with the terms "alternative access vendor" or "competitive access provider" indicates that providing intermediate services (e.g., access to IXCs) will be a significant service and a source of contribution. To the extent that the ALECs have shared costs, I expect they must obtain contribution from both intermediate and end-user services. Every firm must recover its shared costs from the services it provides. For example, to the extent that an ALEC only provides access services to IXCs, it must obtain all of its contribution, to recover its shared costs, from those intermediate services.

However, the critical distinction is that the ALEC has the opportunity to utilize the ubiquitous facilities of the incumbent LEC when and where it chooses. An ALEC facing a franchise obligation has no such opportunities.

Forcing LECs to price intermediate services at TELRIC would allow ALECs to utilize the shared facilities and shared costs of the LEC ubiquitous network when and where they choose without contributing to the recovery of LEC shared costs. By doing so, the ALEC would avoid incurring the associated shared and common costs. Without a contribution from intermediate services, the LEC's end-user customers must provide *all* of the contribution to cover its shared costs; however, both the LEC's end-user customers and the ALECs purchasing unbundled LEC component services share in the capabilities of the LEC's ubiquitous network.

Q. HOW ARE THE CIRCUMSTANCES FOR THE INCUMBENT LEC AND THE ALEC DIFFERENT?

A. ALECs will benefit from the incumbent's economies of scope. When an incumbent LEC provides an unbundled loop, for example, the incumbent LEC does not share in the benefits associated with any shared costs of the ALEC purchasing the unbundled loop. Even with local interconnection, it is the incumbent LEC which has placed a ubiquitous network of facilities in advance of the demand for services in order to satisfy carrier of last resort obligations to serve customers in a timely fashion. Facilities-based ALECs have far greater latitude to build fa-

cilities if, when, and where they choose, utilizing the facilities of the LECs in all other instances. The reverse is not true at this time.

Q. IF THE LEC IS PRECLUDED FROM OBTAINING A REASONABLE CONTRIBUTION FROM INTERMEDIATE SERVICES, WHAT WILL BE THE EFFECT ON THE LEC'S END-USER CUSTOMERS?

A. The burden on LEC end-user customers of recovering shared costs will continually increase in such a scenario. Assume that BellSouth's total costs are $100, with $50 of shared costs and $25 of incremental costs for residential local service and $25 of total incremental costs for all other services. Also assume that residential service generates $25 in revenue, just covering its incremental costs. Initially then, on average each service (other than residential local service) must generate $2 in contribution for each $1 of incremental cost; i.e., the other services must provide on average 200% contribution to recover the $50 of shared costs.[14]

For simplicity, also assume that BellSouth initially had 100% market share of the other end-user services in its territory. Later, other end-user service providers enter by purchasing unbundled loops and other unbundled BellSouth facilities which are priced at incremental cost, capture 50% of the end-user market for these other services. BellSouth must now obtain $4 in contribution above its incremental costs (i.e., a 400% contribution) from each of *its* end-user customers.

[14]For simplicity we ignore demand elasticity in this example without loss of generality.

If residential local service is subsidized to some degree, as the economics literature suggests, then the contribution levels must be even higher in each scenario.

Peculiarly, both the new end-user service providers (ALECs) and BellSouth explicitly or implicitly utilize at least a portion of BellSouth's shared facilities and receive some of the benefits of its shared costs. However, when unbundled components are priced at incremental cost, only BellSouth end-user customers will pay for the benefits of the shared facilities and shared costs. Obviously, this creates an artificial advantage for ALECs and an unsustainable disadvantage for BellSouth.

PRICING UNES AT INCREMENTAL COST WOULD RETARD THE GROWTH OF FACILITIES-BASED COMPETITION

Q. DOES PRICING UNES AT INCREMENTAL COST PROVIDE AN INCENTIVE FOR FACILITIES BASED COMPETITION?

A. Certainly not. A competing firm would virtually never choose to take the risk of constructing facilities when it has the opportunity to "lease" unbundled components from the incumbent LEC priced *at incremental cost*. First, the lessor avoids incurring the shared cost altogether. Further the competing provider can lease facilities priced at incremental cost at the time, scale, location and duration of its choosing and it can change any of these factors as market conditions change. Even its incremental costs can be abruptly reduced, unlike the costs to the owners of the leased facilities. Pricing unbundled components at LRIC will

essentially guarantee that alternative providers will construct no new facilities to compete with the incumbent LEC. This, of course, is contrary to both economic efficiency and the job-promoting intentions of the Telecommunications Act of 1996.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes it does.

REBUTTAL TESTIMONY OF DR. RICHARD D. EMMERSON
ON BEHALF OF BELLSOUTH TELECOMMUNICATIONS, INC.
BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION
DOCKET NO. 960916-TP
SEPTEMBER 16, 1996

INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Richard D. Emmerson. I am the President and CEO of INDETEC International, Inc. I am testifying on behalf of BellSouth Telecommunications ("BellSouth" or the "Company"). My business address is 341 La Amatista, Del Mar, CA 92014.

Q. ARE YOU THE SAME RICHARD D. EMMERSON WHO FILED DIRECT TESTIMONY IN THIS DOCKET ON SEPTEMBER 9, 1996?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY IN THIS PROCEEDING?

A. American Communications Services, Inc. ("ACSI") has petitioned the Florida Public Service Commission ("FPSC" or "Commission") to arbitrate unresovled

issues that have arisen in its interconnection negotiations with BST. These unresolved issues involve the pricing of three unbundled network elements (UNEs): loops, cross-connects and channelization. My rebuttal testimony responds to certain positions taken by Dr. Marvin Kahn who is appearing as a witness for ACSI.

DR. KAHN'S PROPOSAL TO CONSIDER THE MARK-UP ON COMPETITIVE SERVICES SHOULD BE REJECTED

Q. DR. KAHN SUGGESTS LIMITING THE MARK-UP OVER TSLRIC FOR UNES TO THE MARK-UP ON THE MOST COMPETITIVE SERVICES OFFERED BY BST.[1] DO YOU AGREE WITH HIS SUGGESTION?

A. No. Dr. Kahn's method of focusing on those services with the lowest level of contribution is simply illogical; such an approach would lead to financial losses for virtually any multiservice firm. To illustrate this, consider a hypothetical competitive multiservice firm which just earns a normal accounting profit or a zero economic profit. This firm offers three services, A, B, and C, which generate 10%, 50% and 90% contribution margins respectively; for simplicity the dollar contribution is $10, $50, and $90 respectively. On average, the firm earns a 50% ($50) contribution on its services and the total contribution is just sufficient to cover the $150 in common costs of the firm.

[1] Testimony of Dr. Marvin Kahn on behalf of American Communications Services, Inc.at pages 4 and 19.

Now consider the effects forcing the firm to price all of its services at the lowest contribution level of $10 per service or 10%. Each service now only provides $10 in contribution and the firm only recovers $30 of its $150 in common costs; the firm faces an economic loss of $120 and must eventually go out of business. Even if only one of the other service prices is forced down the the 10% level, the firm will still face an economic loss (of either $40 or of $80) and must eventually go out of business.

Almost no firm could survive if all (or even a significant portion) of its prices were forced down to the lowest contribution level of its services. Dr. Kahn's proposal is not only mathematically illogical, it contradicts life-cycle and other marketing principles.

THE COMMISSION SHOULD REJECT USE OF THE HATFIELD MODELS

Q. HAS ACSI PROPOSED UTILIZING A HYPOTHETICAL MODEL OF TELECOMMUNICATIONS SERVICES?

A. Yes. Dr. Marvin Kahn has recommended that the FPSC rely on the Hatfield models for purposes of determining the incremental costs of unbundled network elements.[2]

[2] Id at page 25.

Q. DO YOU AGREE WITH DR. KAHN'S RECOMMENDATION?

A. No. There are a series of models and releases by Hatfield and associates which can generically be called "Hatfield Models." These models can not be relied upon to provide sound and reliable estimates of TSLRIC costs of telecommunications services or elements. My comments are based on my review of the documentation of these models, my experience with such cost estimation models in general, including those produced by my own company, my discussions with other modelers, my knowledge of traditional engineering/economic cost models, and my knowledge of the types of data which are utilized in such systems.

Q. BASED ON YOUR KNOWLEDGE, DO THE HATFIELD MODELS UTILIZE METHODS WHICH ARE RELIABLE FOR ESTIMATING TSLRIC COSTS FOR UNBUNDLED NETWORK ELEMENTS?

A. No. It appears that the Hatfield models do not provide a reliable method for estimating TSLRIC costs for unbundled network elements. Hatfield models do not reflect the costs of an actual network, they produce a variety of errors, and perhaps most importantly, certain aspects of the modeling process appear to significantly bias the cost estimates downward.

Q. DO THE HATFIELD MODELS PROVIDE A REASONABLE ESTIMATE OF THE COSTS OF AN INCUMBENT LEC OR A NEW ENTRANT?

A. No. It appears that Hatfield models do not provide a reasonable estimate of either a new entrant or an incumbent LEC. The Hatfield models do not reasonably estimate the costs of an existing LEC placing facilities well in advance of the existence of homes and business (I will call this the franchise scenario). Further, the Hatfield models do not reasonably estimate the costs of a new entrant placing facilities after homes and businesses are completely in place (I will call this the new entrant scenario).

Q. WHAT COST CHARACTERISTICS WOULD EXIST IN THE FRANCHISE SCENARIO?

A. In the franchise scenario the LEC will place facilities well in advance of the actual demand for local service at the time that developments and new construction of homes is about to occur or will possibly occur in order to provide service, or be ready to provide service, to all customers on a timely basis. This leads to relatively high levels of spare capacity at any point in time because growth only slowly catches up with capacity, there is lumpiness in investment, demand forecasting uncertainty, and there are high costs to retroactively expand capacity. Spare capacity leads to relatively high cable material costs.

On the other hand, the franchise scenario, with early placement of facilities, also has some corresponding cost advantages. It provides the opportunity for joint trenching with natural gas lines and limited requirements for cutting through concrete and asphalt and the associated additional labor and safety

costs created when working on active streets. This scenario has relatively low structure and installation costs.

Q. WHAT COST CHARACTERISTICS EXIST IN THE NEW ENTRANT SCENARIO?

A. A new entrant may choose to place facilities only after all buildings, business, homes and streets are in place.[3] Under very unlikely conditions, this could lead to relatively high fill factors and relatively low costs for cable material per customer served.[4] On the other hand, the new entrant must face higher costs for structure and installation (e.g., trenches must be dug much more frequently through concrete, asphalt, lawns and flower beds often on busy streets, requiring care to avoid other existing structures). The costs for a new entrant may be greater than the costs in the franchise scenario.

Q. YOU STATED EARLIER THAT THE HATFIELD MODELS DO NOT ADEQUATELY REFLECT EITHER OF THESE TWO SCENARIOS. WHAT COSTS DO THE HATFIELD MODELS REFLECT?

A. The Hatfield models implicitly reflect the low cable material costs of an unrealistic new entrant scenario and yet also reflect structure costs which may

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[3] Of course, calculating costs for a new entrant begs the policy question of how customers received telecommunications services prior to the new entrant and who pays for such costs.

[4] This requires the critical assumption that the new entrant can somehow capture the entire market and serve all customers at a flash cut point in time. Of course, real entrants have no such opportunity.

be even lower than those which could be obtained in the franchise scenario. The model appears to want to have its cake and eat it too, and then wants some more.

Therefore, the Hatfield models do not properly reflect the costs that would occur for either scenario. This creates a significant underestimation bias in the models results.

Q. DO THE HATFIELD MODELS ASSUME FICTITIOUS CABLE ROUTES?

A. Yes, the Hatfield models, by utilizing inputs from the Benchmark Cost Model assumes that census block groups (CBGs) are square in shape, are assigned to the wire center closest to the centroid of the CBG, that feeder routes extend to the nearest midpoint of a side of the assumed square perimeter of the CBG (or penetrate 1/4 of the length of a perimeter side into the square CBG). These assumptions do not reflect actual customer locations. It is also not clear that the models even reflect the costs of serving an area which has uniformly distributed population (a stated assumption).

Q. ARE THERE OTHER PROBLEMS WITH THE HATFIELD MODELS?

A. Yes, there are. I have simply listed below some of the factors in the Hatfield models which are unrealistic, imprecise, may lead to certain problems and errors, or are simply wrong:

- Possible underestimation of BST Florida service territory by misassignment of CBGs, miscalculation of areas and/or missing CBGs.
- Assignment of CBGs to the wrong wire centers.
- Assignment of CBGs to the wrong serving LEC.
- Problems related to CBGs served by multiple wire centers and/or multiple LECs.
- Labor and switching cost inputs may be substantially understated.
- Operating expenses may be understated via cable cost multipliers.
- Fill rates for feeder and distribution cable appear unrealistically high leading to unrealistically low costs.
- Fill rates appear to be higher than stated in the models documentation.
- Implied fill rates for serving area interface (SAI) and multiplexing (MUX) appear unrealistically high.
- The models appear to be unwieldy and difficult to run.
- The source for manhole, terminal, splice and serving area interface and other costs appear to be based on "subject matter" expert judgement without documentation or validation.
- The identification of subject matter experts (SMEs) utilized by the models is not clear.
- Where and how SME expertise was utilized is not clear.
- Switching costs appear substantially understated.
- What would be expected as major changes in the model do not lead to major changes in the results of the model.
- The models do not reflect the additional costs of changing facilities which exist in a growing demand environment.

- Cost of money and depreciation costs may be unrealistically low.
- Costs for digital cross connects, SS7 network components and essential network support systems may be excluded or understated.
- Operator position costs appear understated.

Q. DO THE HATFIELD MODELS PRODUCE RESULTS WHICH ARE CONSISTENT WITH THE CURRENT COSTS OF PLACING FACILITIES?

A. No, it appears they do not. For example, engineer James Schaaf, testifying on behalf of Pacific Bell in R-95-01-020 (the universal service cost proxy models docket) in his testimony filed April 17, 1996, considered the Hatfield results and a detailed prospective evaluation of the actual current/prospective costs for Angels Camp, California. Mr. Schaaf stated:

> "The results of the study are that the BCM Hatfield results in a $28,767 total cost for 12,376 feet of feeder distance. This is $2.32 per foot. ... The results of the real world estimation process is $140,043 total cost for the same distance of feeder or $11.32 per foot. As anyone can see, the results of the BCM Hatfield are highly problematic." (Emphasis in original).

Q. WHAT ARE THE BCM AND BCM2 AND HOW ARE THEY RELATED TO THE HATFIELD MODELS?

A. The BCM was developed initially "to identify those CBGs in which the cost of providing basic telephone service is so high that some form of explicit high-cost support may be necessary as part of a universal service solution."[5] as a tool to evaluate the need for universal service funding. The Hatfield models utilize the BCM or variants of the BCM for manipulation of demographic data, especially for critical loop investment calculations. However, the BCM was widely criticized as suffering from severe problems that yielded unreliable and unrealistically low cost estimates. By early 1996, the sponsors of the BCM recognized its major shortcomings and stated that work was underway to correct these major shortcomings. By July 1996, the two remaining sponsors of the BCM, USWEST and Sprint, released BCM2 and a set of BCM2 results for all states. BCM2 appears to have corrected the major flaws inherent in the original BCM.

Q. WHAT ARE THE BCM2 RESULTS FOR FLORIDA?

A. The statewide average monthly cost for basic local exchange service is $29.15 in the BCM2 results.[6]

Q. WHAT IS THE COST PROXY MODEL (CPM)?

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[5] "Benchmark Cost Model," A joint submission by Sprint Corporation and USWEST, Inc in CC Docket No. 96-45, July 3, 1996, p. 2.

[6] Id.

A. The CPM is a model jointly developed by Pacific Bell and INDETEC International. It enables companies and regulators to quantify the cost of providing universal service. The CPM is based on a consistent, uniform unit of geography, separates operating expenses from investment, separately develops structure costs and accounts for efficiency of the LEC. In my opinion, the CPM is based on sound economic, financial and management accounting principles.

Q. DOES THE CPM YIELD RESULTS THAT ARE SIMILAR TO BCM2?

A. Because of the corrections from the BCM1 version, the BCM2 now yields results which are similar to the Cost Proxy Model, even at geographic levels as small as a wire centers.

Q. DID THE FCC RELY ON THE HATFIELD MODELS AND THE BENCHMARK COST MODEL (BCM) TO DETERMINE THE LEVELS OF ITS LOOP COST PROXIES?

A. No, the FCC utilized the Hatfield and BCM models only to scale the proxy levels across states. The FCC Order states:

Based on our current information, we believe that both these models are based on detailed engineering and demographic assumptions that vary among states, and that the outputs of these models represent sufficiently reasonable predictions of relative costs differences among states to be used as set forth

below to set a proxy ceiling on unbundled loop prices for each state. *We do not believe, however, that these model outputs by themselves necessarily represent accurate estimates of the absolute magnitude of loop costs.*[7] (emphasis added)

Q. WHAT INFORMATION DID THE FCC UTILIZE IN DETERMINING THE BASE LEVEL FOR ITS LOOP COST PROXIES?

A. The FCC utilized the unbundled loop rates established by six states: Colorado, Connecticut, Florida, Illinois, Michigan and Oregon. The proxy models were utilized to take the costs relationships between states to apply the rates from these six states to all other states.[8]

Q. SHOULD THIS COMMISSION RELY UPON THE FCC'S UNBUNDLED LOOP PROXY RATES IN DETERMINING BST'S RATES FOR UNBUNDLED LOOPS IN FLORIDA?

A. No. The FCC's proxies do not bear a reliable relationship to the incremental costs of providing unbundled loops. The manner in which the FCC derived

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[7] The August 1, 1996, Order in the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, released August 8, 1996, CC Docket No. 96-98 (hereinafter "FCC Interconnection Order I") at paragraph 794.

[8] FCC Interconnection Order I at paragraphs 792 - 794.

these proxies is unclear, and the resulting rates may be less than defensible incremental cost estimates. For example, the FCC's proxy rate for Florida is $13.68 per month, but BST's estimate of the monthly long-run incremental cost (LRIC) of supplying two-wire, analog unbundled loops in Florida is much higher.

Q. DR. KAHN RECOMMENDS DEAVERAGING UNBUNDLED LOOP RATES IN ACCORDANCE WITH THE FCC'S LOCAL COMPETITION ORDER. DO YOU AGREE?

A. NO. I recommend that the Commission proceed cautiously in this regard. To geographically deaverage unbundled loop prices now, before a commensurate deaveraging of end-user rates, or a creation of some sources of new subsidy, would create an inconsistency between unbundled service prices and the basic local exchange rates for end-users. Dr. Kahn's proposal does not create consistent pricing relationships.[9]

BST would need the discretion to offer geographically averaged or deaveraged prices. The existing end-user basic local exchange rates create a continuing competitive vulnerability to BST. Establishing geographically deaveraged unbundled loop rates as recommended in portions of Dr Kahn's Supplemental Testimony simply exacerbates this vulnerability. Such a pricing relationship is

[9]More generally, sustainable prices in a competitive environment must be consistent in several ways. The end-user rates (plus explicit subsidies) must be consistent with both unbundled and resale prices (plus subsidies adjusted for cost differences) and end-user rates (plus explicit subsidies) must be rebalanced based on deaveraged costs consistently.

generally inconsistent with the competitive process and BellSouth should not be forced to establish such inconsistent price relationships.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes it does.

MR. CARVER: Thank you.

Q **(By Mr. Carver)** Dr. Emmerson, could you summarize your testimony, please?

A Yes. My testimony makes four key points. The first point is that while many parties have from time to time advocated pricing half rather than above total element long run incremental costs, or total service long run incremental costs, prices must be set above, not at those costs. And while the Commission may need to exercise judgment as to an appropriate level of contribution toward joint and common costs, joint and common costs do exist within BellSouth, must be covered by their prices, and there is nothing within the economics or business literature which exempts intermediate products, unbundled products, wholesale products or any other unbundled elements at issue in this proceeding.

Second point. With respect to resale discounts, if one discounts retail services when they are sold to wholesalers, who in turn serve BellSouth's customers, those discounts must reflect the realistic cost savings achieved by wholesaling rather than retailing.

In order to appreciate this point, I would urge the Commission to imagine a business, a

restaurant, a convenient store, and ask, if someone approached this business and asked to wholesale products, what discount would be appropriate. The answer would be a discount which dollar for dollar represents costs that can be saved by serving the wholesale supplier rather than the end users. If that discount is deeper than that, the retail prices to the remaining prices must be raised in order to remain financially viable. And that is not only inappropriate from a business perspective, but from an economics as well.

The third point is that BellSouth has taken their network, their costs efficiently incurred, assumed to be efficiently incurred in the future as forward-looking costs and has converted those costs to total element long run incremental costs using the principles and procedures I have recommended to BellSouth. Those costs constitute a proper basis for establishing prices if those prices, again, are marked up above total element long run incremental costs sufficiently to contribute to the joint and common costs of the company.

Finally, I urge the Commission not to accept the Hatfield Model. While I have criticized the Hatfield Model at great length in my testimony, it

contains one irreconcilable fundamental flaw. It has a mathematical error which causes the distribution plant in the model to come short of the ability to reach homes. In other words, if the least cost technology were tin cans and strings, the Hatfield Model would not provide enough string. That's simply due to the arithmetic that the model provides.

In order to convince yourself that this arithmetic is faulty, place a square mile on a page, place the serving area interface as described at the Hatfield documentation at Page 14, select the number of cables based on how many homes you put in that square from the table at Page 19 in the Hatfield documentation, select the cable length as described on Page 15. You will not be able to reach the homes with a pencil and paper distributed throughout that square mile.

In the State of Florida, the majority of census block groups have more than 2,500 homes per square mile. If you place 2,500 homes on small lots, 8,000 square foot lots, and place them in a square mile and try to reach those homes from the serving area interface, mathematically you will come far short of having enough distribution plant to reach those homes. Again, using the same formula as I just

described.

That concludes my summary. Thank you.

MR. CARVER: Dr. Emmerson is available for cross examination.

CHAIRMAN CLARK: Mr. Melson.

CROSS EXAMINATION

BY MR. MELSON:

Q Good afternoon, Dr. Emmerson. I'm Rick Melson representing MCI.

A Good morning.

Q Dr. Emmerson, would you agree that a TSLRIC cost study and a TELRIC cost study should use exactly the same cost methodology with the only difference being the cost object that's being examined?

A In principle the difference -- yes, however, with a qualification. The principle would be the same meaning. The economic principles are the same. The methodologies that would be used to identify the incremental costs would be the same.

However, if the methodology as prescribed by the FCC is followed, there could be some changes between the TSLRIC studies filed, for example before the State Commission, and those which are required by the FCC. For example, the FCC may require the use of a different cost of money than a state jurisdiction;

however, the methodologies and the principles would remain the same, the numerical values may vary.

Q And in the case of a TSLRIC cost study, the cost object that you are looking at is a service; is that correct?

A It is a service, however, the phrase TSLRIC has been used in many jurisdictions, for example in California where it is explicit that the "S" may stand for a service or may stand for a basic network function or an unbundled element. So we have used the word "service" rather loosely in the past.

The FCC used the phrase "total element long run incremental cost" simply to be more explicit about what they were asking for in that order.

Q Okay. And let's be precise. And let's use the FCC terminology and use TSLRIC to refer to study where the cost object is a service and T-E-LRIC, or TELRIC, to refer to a study where the cost object, the thing being studied, is a network element. Is that --

A I'll accept that, yes.

Q And is it your testimony that it would be appropriate for the Commission to use TSLRIC studies to establish price floors for BellSouth's services?

A Yes. Price floors designed to prohibit or eliminate opportunities for cross subsidization would

be based on the economic principles which says the service under study should have an incremental cost, and one should not price below that incremental cost.

Again, in order to comply with regulatory rules, such as those proffered by the FCC or the state commissions, one may need to go beyond that. So I'm speaking two economic principles at this point.

Q All right. And it may help things along if we continue to focus just on the economic principles, because that's really where my questions go. I'm not going to a particular way that the FCC may have defined something.

A That's fine.

Q Would it also be your testimony then that it would be appropriate for the Commission to use TELRIC cost studies to establish price floors for BellSouth's unbundled network elements?

A Yes. But they would -- to say it more precisely, the TELRIC cost studies would be appropriate to establish average revenue floors.

Q And is it also your testimony that the TSLRIC for a service could be different from the sum of the TELRICs for the elements that go to make up that service?

A Yes, that can be the case. It is certainly

conceivable.

Q All right. Well, let me -- I want to walk you through an example, a numeric example, to try to understand that last statement. Assume you've got two elements, A and B. And assume that the TELRIC cost of element A is $5 and assume that the TELRIC cost of element B is $10.

A May I ask for a point of clarification before you proceed?

Q Certainly.

A The phrase "total element" can be interpreted as the FCC interpreted it to mean the average cost or per unit cost of an element. Most often it's used to mean the total cost of an element. If you could clarify whether this is per unit or total, it would help me proceed.

Q Let's say that the average total element long run incremental cost of a network element A is $5?

A Thank you.

Q And the average total element long run incremental cost of element B is $10.

A I'm sorry, did you say 6 in the earlier example?

Q No, I said 5 and 10.

A I'm sorry, I miswrote that. Thank you.

Q If I misspoke, I apologize.

I'm going to ask you to make -- the next assumption is that BellSouth offers a service X that uses only elements A and B. And two more assumptions I want to give you: One is that element A, the $5 element, is an essential input into services provided, retail services, of competitors of BellSouth. Do you understand what I mean by essential input?

A I'm going to interpret that to mean an essential facility as typically discussed in the antitrust economic's literature.

Q That would be fine. And assume for me element B is not an essential input, that it's an input that would be competitively available.

A Yes, sir.

Q Now, going back to your prior testimony that the TSLRIC for a service would not necessarily equal the sum of the TELRICs, in this example would it be fair to say that the TSLRIC of service X might be less than $15, which is the sum of A and B?

A Would you say it one more time? Did you say the total service cost or price? I missed that.

Q Cost. Would it be fair to say that the average total service long run incremental cost of the

service X could be lower than the sum of the average total element long run incremental cost of element A and element B?

A Yes, it can be if there are shared costs with other services which are captured in the element cost of A.

Q And let's assume that that is the case, that there are shared costs with other services that are captured in the element cost of A. And again, just so we can do the math, let's assume that the TSLRIC of that service X is $12, which is $3 below the sum of the parts?

A Yes.

Q Now, let me change gears just a minute. Could you define "a price squeeze" for me?

A Yes. A price squeeze is as distinct from our earlier discussion which pertained to avoiding cost subsidization. It's a situation in which a competitor who is dependent on an input -- you've referred to that here as an essential input -- and dependency means there is no substitute available at a comparable cost.

If the price of that input is set such that an efficient competitor cannot effectively compete with the essential input provider, then that can

constitute a price squeeze. Obviously, there's a separate issue as to whether that constitutes an anticompetitive price squeeze. But, yes, it can. That is the definition of a price squeeze.

Q As a professional economist would you advocate that the price for an essential input be set so as to avoid a price squeeze?

A Yes and no, and I'll explain the yes first. Certainly, one does not want to engage in pricing of inputs in a manner which prohibits more efficient or equally efficient competitors from competing. One does want a price squeeze when the price squeeze is due to differences in efficiency between or among the parties and as the result of weeding out less efficient means of supplying end users.

Q Okay. I guess I had thought that your definition of price squeeze had already included the concept of an efficient -- an equally efficient or more efficient competitor. Was I mistaken on that?

A No, you're not mistaken in that, I just wanted to be very clear about that point.

Q Okay. Now, let's go back to our numeric example. And I'm going to start this by saying I heard your summary where you indicated a belief that prices should be set above TSLRIC or TELRIC, not at

them. But for purposes of my example, I'm going to ask you to assume, just to make the math easier, that BellSouth, in fact, sets the unbundled element prices for A and B at their average TELRIC cost of $5 and $10 respectively, and that BellSouth sets the retail price for service X at its average TSLRIC cost of $12. Are you with me?

A Yes.

Q All right. Now, assume that an equally efficient competitor purchases element A, the $5 element from BellSouth, and provides element B itself. And further assume with me that it then combines the element A purchased from BellSouth and the element B that is self-provisioned and provides service Z that competes with BellSouth service X. Are you still with me?

A Yes, sir.

Q Now, in that situation, the equally efficient competitor, in order to cover its costs, would have to charge $15 for the retail service; is that correct?

A That is correct.

Q And that's the $5 that it pays to BellSouth for the essential input and the $10 equally efficient cost of providing the nonessential input?

A That is correct.

Q And in our example, BellSouth would be charging $12 for service X?

A That is correct.

Q And would you agree with me that that creates a price squeeze as you defined it just a moment ago?

A It may, but it may not. First, the fact that one competitor is dependent on the other automatically implies that they are not equally efficient. So it's hard to accept all of the conditions of your example and be logically consistent, but let's accept that for the moment. Perhaps the dependency is due to a legal restriction on producing this essential input rather than an efficiency difference.

If BellSouth, for example, were efficient because of economies of vertical integration, which are lost when one unbundles, then the answer is that this may not constitute a price squeeze. It may, in fact, simply be eliminating the less efficient competitor who cannot achieve these economies of vertical integration since they can't be achieved in the unbundled environment.

If there are no such economies of vertical

integration, then, yes, it would constitute a price squeeze that would not, as I described earlier however, constitute cross subsidization. And the prevention of price squeezes is not accomplished by having price floors at total service or total element long run incremental costs. Instead it's accomplished through imputation rules which the FCC Order expressed grave concerns about because of the implications for the magnitude of rate rebalancing which that might imply.

Q All right. I think I got most of that. Let me ask this: What you're saying, then is that the application of the -- or the use of average TSLRIC or average TELRIC is a price for deals with cross-subsidization that does not deal with the price squeeze. Is that one of the things you said?

A That is correct, followed by an imputation rule does deal with the price squeeze properly implemented.

Q And would it be your recommendation as an economist that in setting prices for services and elements, that the Commission ought to use a properly implemented imputation policy?

A Again, it depends on whether or not the implementation of an imputation policy is only for

purposes of achieving economic efficiency or whether it is also for purposes of trying to accommodate public policy objectives, such as averaged pricing and universal service maintenance.

In the latter case, it may be the case that an imputation rule would work counter to those public policies while it may work in favor of economic efficiency. I don't want to get too academic about this, so I will just assert this point and leave it to you to follow up or not, if you like.

There need be no conflict between these rules if you relax an assumption which you made in your hypothetical example, and that assumption is that everything must be priced the same; that is, the average revenue is equal to price in setting total element long-run incremental cost based prices. If one allows efficient forms of nonuniform pricing, then the logical conclusions you've just described do not hold.

Q Let me go back to the first part of that answer. Assuming that universal service concerns are addressed through an explicit universal service policy, would it not then be appropriate for the Commission to implement an appropriate imputation policy to go hand in hand with your price floor

recommendations?

A Yes. To be more precise, if universal service funding mechanisms and measurement is done correctly, if rates, end user rates, are properly implemented rebalanced, if resale and interconnection rates are properly implemented set, and there is a sufficient amount of geographic deaveraging in all of the above, then the answer to your question is yes.

Q All right. Thank you, Dr. Emmerson. I've got nothing further.

MR. LEMMER: AT&T has no questions.

MR. HORTON: ACSI has no questions for Dr. Emmerson.

CROSS EXAMINATION

BY MR. PELLEGRINI:

Q Dr. Emmerson, do you have before you an exhibit marked RCE-1?

A I do not. (Pause.) Sorry. Yes, I do.

Q Do you recognize that to be your deposition transcript, September 26th, 1996?

A Yes, sir.

Q Have you had an opportunity to review that transcript?

A I've reviewed most of it. I have not reviewed each and every word.

Q Do you have corrections or omissions?

A I did not find anything which needs corrections in my review.

Q Do you find it as it stands to be a true and accurate depiction of your testimony?

A Yes, sir.

MR. PELLEGRINI: Staff would have RCE-1 marked for identification purposes.

CHAIRMAN CLARK: The next exhibit number I have is 64.

MR. PELLEGRINI: With that Staff has nothing further.

CHAIRMAN CLARK: Redirect.

MR. CARVER: Yes, I have just a couple of questions.

REDIRECT EXAMINATION

BY MR. CARVER:

Q Dr. Emmerson, Mr. Melson asked you some questions that went to, I guess, the difference between a TSLRIC study and TELRIC study. Let me ask you, has BellSouth in the past done a study to establish the cost of the loop?

A Yes, they have.

Q And even though it was called a LRIC or a TSLRIC study, it was done on the loop that is on a

particular element; is that right?

A Yes. The way BellSouth performs cost studies is to study the cost of resources without reference to services and then later aggregates the cost of resources into service costs.

Q Is there anything inherently wrong with doing a TSLRIC study on a loop, or is it just a question of semantics?

A You referred to a TSLRIC, and a difference between that and what? I missed the comparison.

Q Well, I guess what I'm getting to is this: To the extent the study is done on a particular element, it may be called a TSLRIC study, but it's still a study done on an element; is that correct?

A Yes, it is. With respect to loop studies, however, there is one important distinction, and that is that in a service cost study using loops, one would typically use an objective fill factor. In an element cost study, one would typically use an efficient actual forward-looking fill factor.

Q Based on the FCC's definition of a TELRIC study, do things have to be added to the BellSouth TSLRIC study as historically done?

MR. MELSON: Objection. That's beyond the scope of the cross. I asked Dr. Emmerson specifically

about economic theory, and specifically excluded reference to the FCC and its pricing rules.

MR. CARVER: Well, I think he asked him what the difference was between TSLRIC and a TELRIC, so I'm just trying to establish if we take the element study we've got, does that comply with the FCC definition or does something have to be added, so it really goes to the question he asked about the distinction between the two types of studies.

MR. MELSON: I believe Mr. Carver is going to use of TELRIC as a pricing methodology, not as a costing methodology, and my questions went only to the two items as cost studies. Again, I believe it's still beyond the scope of the across.

CHAIRMAN CLARK: I'll allow the question.

WITNESS EMMERSON: Would you repeat the question please?

Q **(By Mr. Carver)** Yes. Based on the FCC definition or does something have to be added definition of a TELRIC study, do things have to be added to the TSLRIC study as historically done by BellSouth in order for it to comply with the FCC definition or does something have to be added definition?

A If one confines the definition of TELRIC to

cost and not to the components to be added to cost to arrive at a TELRIC price, the answer is, no, nothing would need to be added, in my opinion.

Q Thank you. That's all I have.

CHAIRMAN CLARK: Exhibits.

MR. PELLEGRINI: Staff would move 64.

CHAIRMAN CLARK: Exhibit 64 will be admitted in the record without objection. Thank you, Dr. Emmerson.

WITNESS EMMERSON: You're welcome. Thank you.

(Exhibit 64 received in evidence.)

(Witness Emmerson excused.)

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(Transcript continues in sequence in Volume 15.)