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BELLSOUTH

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Nancy H. Sims
Director – Regulatory Relations

September 24, 1998

Mrs. Blanca S. Bayo
Director, Division of Records and Reporting
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399

980000A

Subject: Comments Regarding Study 2 (Fair and Reasonable Rates)
Reference Docket No. 980733-TL

Dear Mrs. Bayo:

As required by the Florida Legislature, the Florida Public Service Commission (FPSC) is to report on four aspects of residential basic local telecommunications service with respect to "the fair and reasonable Florida residential basic local telecommunications service rate." The areas to be considered include: 1) affordability, 2) value of service, 3) comparable residential basic local telecommunications rates in other states, and 4) the cost of providing residential basic local telecommunications service in Florida

In preparation for the FPSC workshops, attached are comments prepared by Daonne Caldwell, Dr. William Taylor, and Dr. Robert Harris to discuss each of these areas. I would note that the testimony of Dr. Randall Billingsley and Mr. David Cunningham, pertaining to cost of capital and depreciation, respectively, is also attached. Due to the voluminous nature of the attachments to Mr. Cunningham's and Mr. Billingsley's testimony, they have not been attached. Both gentlemen submitted testimony on their topics as part of the Universal Service Docket 980696-TP, thus, the attachments are on file with the FPSC in this Docket. In addition, on behalf of BellSouth, GTE and Sprint, Don Perry has prepared comments regarding the value of service and affordability. Mr. Perry's comments will be transmitted separately by GTE.

Since each of these subjects are interrelated, each participant is not dedicated to one subject. However, each topic is addressed. Ms. Caldwell's comments are being filed in this proceeding on behalf of BellSouth. Ms. Caldwell will address the methodology and process used by BellSouth to develop the costs included in BellSouth's contribution analyses. Since costs are an integral part of the contribution analyses, Ms. Caldwell will also comment on the process used to calculate the contribution for each of the services contained in the FPSC Staff's data request. BellSouth's results for these categories of services are attached to Ms. Caldwell's comments.

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Harris
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Taylor
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Caldwell
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Attachments
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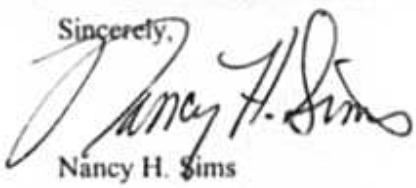
Dr. William Taylor's comments are filed on behalf of BellSouth and Sprint. Dr. Taylor will respond to the value of service issue. In addition, Dr. Taylor will explain the relationship between cost and price and outline the appropriate costs to be used for pricing decisions. Comments filed by Dr. Robert Harris on behalf of BellSouth, GTE, and Sprint will com, ement Dr. Taylor's presentation with actual results from a BellSouth marketing perspective in addressing the affordability and value of service issues. Dr. Harris will also compare BellSouth's residential rates with those of other states, both within the BellSouth region and on a national basis.

If you have any questions or need any additional information, please call me.

Sincerely,



Nancy H. Sims

cc: W. D'Haeseleer
All parties of record
R. G. Beatty
William J. Ellenberg II

BELLSOUTH TELECOMMUNICATIONS, INC.

REBUTTAL TESTIMONY OF G. DAVID CUNNINGHAM

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 980696-TP

SEPTEMBER 2, 1998

Q. PLEASE STATE YOUR NAME, ADDRESS AND POSITION WITH BELLSOUTH TELECOMMUNICATIONS, INC. (HEREINAFTER REFERRED TO AS "BELLSOUTH" OR "THE COMPANY").

A. My name is G. David Cunningham and my business address is 3535 Colonnade Parkway, Birmingham, Alabama 35243. My position is Director in the Finance Department of BellSouth.

Q. ARE YOU THE SAME G. DAVID CUNNINGHAM WHO FILED DIRECT TESTIMONY IN THIS DOCKET?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. The purpose of my testimony in this proceeding is to respond to the direct testimony of Michael J. Majoros, representing AT&T and MCI, regarding the economic lives used in BellSouth's calculation of universal service costs.

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Q. PLEASE REVIEW THE LIVES THAT BELLSOUTH USED IN ITS UNIVERSAL SERVICE COSTS CALCULATIONS.

A. The asset lives used in BellSouth's universal service costs calculations were provided in Exhibit GDC-1 of my direct testimony. These lives are supported by BellSouth's 1998 Florida Depreciation Study, which was attached to my direct testimony as Exhibit GDC-2. These forward-looking lives appropriately reflect the impact of rapid technological changes taking place in the telecommunications industry.

Q. WHAT IS THE BASIS OF THE LIVES THAT MR. MAJOROS RECOMMENDS FOR UNIVERSAL SERVICE COSTS CALCULATIONS?

A. In general, Mr. Majoros recommends that the projection lives prescribed by the FCC in 1995 for booking depreciation expense on an interstate basis be used in universal service costs calculations.

Q. DO YOU AGREE THAT LIVES PRESCRIBED BY THE FCC ARE APPROPRIATE FOR THIS APPLICATION?

A. No, I do not. As I stated in my direct testimony in this proceeding, the lives currently prescribed by the FCC, particularly for the technology-sensitive accounts, are much too long. Mr. Majoros states in his

testimony that the projection lives prescribed by the FCC are forward-looking. BellSouth believes that the FCC has not properly assessed the impact of technological evolution and increasing competition to determine appropriate forward-looking lives.

As I stated in my direct testimony, BellSouth currently establishes its own depreciation rates for intrastate purposes in Florida, under authority granted by Price Regulation implementation. However, when the Florida PSC did establish intrastate depreciation rates for BellSouth, they were considerably more progressive than the FCC in determination of appropriate asset lives for depreciation purposes. The Florida PSC historically prescribed Average Remaining Lives, not "Projection", economic lives as used in BellSouth's BCPM study. However, projection lives corresponding to the Average Remaining Lives last prescribed by the Florida PSC for intrastate depreciation purposes can be determined, and are shown in Exhibit GDC-4.

BellSouth's Depreciation Study, provided as Exhibit GDC-2 in my direct testimony, provides detailed analysis to support forward-looking lives significantly lower than those prescribed by the FCC, particularly for the technology-sensitive accounts.

Q. ON PAGE 6 OF HIS TESTIMONY, MR. MAJOROS REFERENCES A STREAMLINED, SIMPLIFIED DEPRECIATION RATE-SETTING PROCESS DEVELOPED BY THE FCC. HE GOES ON TO SAY

THAT, WITH THE SIMPLIFIED APPROACH, "THE FCC REAFFIRMED ITS FORWARD-LOOKING ORIENTATION". WHAT COMMENTS DO YOU HAVE?

A. As described in my direct testimony, the streamlined process that the FCC set up as part of CC Docket No. 92-296 was intended to reduce unnecessary regulatory burdens and their associated costs. Simplification was not designed to assure forward-looking lives.

Q. MR. MAJOROS POINTS TO AN INCREASE IN THE DEPRECIATION RESERVE OVER TIME AS EVIDENCE THAT FCC-PRESCRIBED LIVES HAVE BEEN FORWARD-LOOKING. HE STATES ON PAGE 9 OF HIS TESTIMONY THAT "A RISING RESERVE PERCENT IS GENERALLY A POSITIVE SIGN THAT THE DEPRECIATION PROCESS IS WORKING WELL". HOW DO YOU RESPOND TO HIS STATEMENTS?

A. As stated in my direct testimony in this proceeding, the fact that the reserve has grown over time is not an indication that the reserve is at the appropriate level. The critical issue here is not just that the reserve has increased over the past few decades. The issue is whether the reserve has increased enough to handle retirements that will occur because of the dramatic paradigm shift in the telecommunications industry.

Q. MR. MAJOROS PRESENTS HISTORICAL RETIREMENT RATES TO OFFER "CONFIRMATION OF THE FORWARD-LOOKING NATURE OF CURRENT FCC PRESCRIPTIONS". HOW DO YOU RESPOND?

A. Mr. Majoros focuses on historical data, just as the FCC has done in prescribing BellSouth's depreciation lives. As stated in my direct testimony, BellSouth does not believe that simply looking at the past can possibly indicate what will happen in the future with equipment that is sensitive to rapid changes in technology.

Q. MR. MAJOROS REFERENCES STATE COMMISSION ORDERS IN HIS TESTIMONY WHICH HAVE ADOPTED THE FCC'S PRESCRIBED LIVES FOR USE IN TELRIC CALCULATIONS. WHAT COMMENTS DO YOU HAVE REGARDING HIS STATEMENTS?

A. While some state commissions have ordered that FCC-prescribed lives be used, state commissions such as Missouri, California, and Michigan have endorsed the use of economic lives similar to those used in BellSouth's BCPM study.

In January 1998 the Michigan PSC, in Docket U11280, modified its earlier decision to approve FCC prescribed lives for use in TELRIC calculations. The Commission stated, "On reconsideration of this issue, the Commission is persuaded that the asset lives proposed by Ameritech Michigan are more forward-looking than those that the

Commission initially adopted in the July 14, 1997 order. As such, the Commission concludes that they are more reasonable than the FCC prescription lives, which more closely resemble cost-based regulation than TSLRIC principles. The Commission agrees with Ameritech Michigan and the Staff that, in a more competitive environment, the development of new technologies and a greater sensitivity to customers' need can be expected to stimulate new investment and hasten the obsolescence of existing equipment."

Q. MR. MAJOROS ATTEMPTS TO SUPPORT HIS RECOMMENDATION OF FCC-PRESCRIBED LIVES BY NOTING ON PAGE 14 OF HIS TESTIMONY THE FOLLOWING QUOTE FROM THE FCC REGARDING TOTAL FACTOR PRODUCTIVITY CALCULATIONS:

> "WE CAN THINK OF NO REASON WHY INCUMBENT LECs SHOULD BE PERMITTED TO USE DIFFERENT DEPRECIATION RATES FOR DIFFERENT REGULATORY PURPOSES."

WHAT OBSERVATIONS DO YOU HAVE AS TO THIS STATEMENT?

A. Mr. Majoros seems to be confused. BellSouth does not propose to use something different here than for other regulatory purposes. The lives used in BellSouth's BCPM Study are consistent with those used to determine the depreciation rates currently being booked in Florida for intrastate and for external reporting purposes.

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. Mr. Majoros recommends that lives prescribed by the FCC in 1995 for interstate depreciation purposes in Florida be used in BellSouth's BCPM Study. These lives are inappropriately long, particularly for the technology-sensitive accounts. The lives provided in my direct testimony in this proceeding in Exhibit GDC-1 were developed by performing detailed analyses of each asset account. These lives are appropriate for use in BellSouth's calculation of universal service costs.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

BELLSOUTH TELECOMMUNICATIONS INC. AND SPRINT -FLORIDA INC.

BEFORE THE

FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 980696-TP

REBUTTAL TESTIMONY OF

DR. RANDALL S. BILLINGSLEY

SEPTEMBER 2, 1998

I. INTRODUCTION

Q. Please state your name, occupation, and business address.

A. My name is Randall S. Billingsley. I am a finance professor at Virginia Polytechnic Institute and State University. I also act as a financial consultant in the areas of cost of capital analysis, financial security analysis, and valuation. My business address is: Department of Finance, Pamplin College of Business, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061-0221.

This rebuttal testimony presents my independent professional opinions and is not presented by me as a representative of Virginia Polytechnic Institute and State University.

Q. Have you previously submitted testimony in this proceeding on behalf of BellSouth Telecommunications Corporation (BST) and Sprint-Florida, Incorporated (Sprint-FL)?

A. Yes.

Q. Have you prepared exhibits to accompany this testimony?

A. Yes, my testimony and 12 exhibits were prepared by me or under my direction and supervision.

II. PURPOSE OF REBUTTAL TESTIMONY AND SUMMARY OF CONCLUSIONS

A. PURPOSE OF REBUTTAL TESTIMONY

Q. What is the purpose of your testimony in this proceeding?

A. My purpose is to rebut Mr. John I. Hirshleifer's direct testimony on behalf of AT&T Communications of the Southern States, Inc. (AT&T) and MCI Telecommunications Corporation (MCI). He erroneously estimates the cost of equity capital for BST to be only 9.35% to 9.96% and BST's overall average cost of capital to be in the range of only 7.94% to 9.05%. Mr. Hirshleifer also incorrectly estimates the cost of equity capital for Sprint-FL (characterized as Central Telephone and United Telephone, which merged together to form Sprint-Florida on December 31, 1996) to be only 9.74% and Sprint-FL's overall average cost of capital to be in the range of only 7.97% to 9.12%. In rebutting Mr. Hirshleifer's testimony I also rebut the cost of capital assumptions made in the testimony of Mr. Don J. Wood, filing on behalf of MCI and AT&T in this proceeding. Mr. Wood presents Release 5.0a of the HAI Model sponsored by AT&T and MCI in an effort to determine the forward-looking economic cost of providing basic local telecommunications service in Florida. In so doing, he indicates

that "[t]he Model has been run using the proposed intrastate cost of capital described in the testimony of John Hirschleifer" (Direct Testimony, p. 16, lines 4-5). Since my rebuttal shows that Mr. Hirshleifer significantly underestimates the capital costs for both BST and Sprint-FL, Mr. Wood's cost analysis is biased due to his reliance on Mr. Hirshleifer's incorrect cost of capital estimates.

I also update my direct testimony that was submitted to the Florida Public Service Commission (Commission) on August 3, 1998 in this proceeding. Thus, I determine the reasonableness of the use of an overall cost of capital of 11.25% in the cost studies of BST and Sprint-FL and estimate the companies' forward-looking costs of capital in light of updated capital market and company data. This provides evidence useful in preparing universal service fund cost studies in the state of Florida.

B. SUMMARY OF REBUTTAL OF MR. JOHN I. HIRSHLEIFER'S

TESTIMONY ON BEHALF OF AT&T AND MCI

Q. What issues does your rebuttal focus on in Mr. Hirshleifer's direct testimony concerning capital costs of BST and Sprint-FL?

A. My rebuttal explains the errors and inconsistencies in Mr. Hirshleifer's discounted cash flow (DCF) and capital asset pricing model (CAPM) analyses of BST and Sprint-FL's costs of

equity capital, his cost of debt estimation, his recommended capital structure, and his misunderstanding of the nature and significance of the riskiness of investing in the telecommunications industry. His errors in estimating the costs of equity for BST and Sprint-FL using the DCF approach include: 1) use of a highly subjective three-stage model that is not representative of the investor's perspective; 2) use of growth rate forecasts that do not reflect consensus investment community expectations; 3) inappropriate and unsupported reliance on BellSouth, the other regional Bell holding companies (RBHCs), and selected independent telephone companies as comparable in risk to BST and Sprint-FL; 4) failure to adjust for flotation costs, and 5) failure to use the appropriate form of the DCF model that recognizes the quarterly payment of dividends.

Mr. Hirshleifer's CAPM errors in calculating the costs of equity for BST and Sprint-FL include: 1) significant underestimation of the equity risk premium in part due to the use of his flawed three-stage model, and 2) arbitrary exclusion of all members of the Standard and Poor's Composite 500 Index (S&P 500) from capital cost analysis that do not have a dividend yield of at least 2%. These errors explain why his CAPM estimates of the costs of equity for BST and Sprint-FL are so seriously underestimated.

My rebuttal shows that Mr. Hirshleifer's cost of debt analyses are flawed by his reliance on dated market information from December of 1997. He also incorrectly includes debt in his analyses that was not issued to finance long-term telephone network assets and that was issued by the parent holding companies of BST and Sprint-FL. Moreover, Mr. Hirshleifer places too

much reliance on book values in determining his recommended capital structure. Finally, I show that Mr. Hirshleifer's views on the risks that are relevant to assessing capital costs in the telecommunications industry are confused and inconsistent. In the same vein, I show that his argument that the business of leasing network elements is of relatively low risk is unsupported.

C. SUMMARY OF UPDATED BST AND SPRINT-FL COST OF CAPITAL ANALYSES

Q. Please describe the approaches that you use to update your estimates of the costs of equity capital for BST and Sprint-FL and summarize your conclusions.

A. I use the same approaches that were used in my previously filed direct testimony in this proceeding. The updated cost of equity for BST is in the range of 14.45% to 14.46% using the comparable firm group DCF model approach. Under the same approach, the updated cost of equity for Sprint-FL is in the range of 14.43% to 14.53%. The CAPM approach indicates that BST's updated cost of equity capital is in the range of 14.20% to 14.40% and that Sprint-FL's updated cost of equity is in the range of 14.30 to 14.50%. The risk premium approach indicates that the expected return on the overall equity market, as measured by the S&P 500, is currently between 13.79% and 14.86%. From these updated analyses, I conclude that the current cost of equity capital for BST is within the range of 14.20% to 14.46% and that the current cost of equity for Sprint-FL is within the range of 14.30% to 14.53%.

Q. Please describe how you evaluate the reasonableness of using an overall cost of capital of 11.25% in the cost studies of BST and Sprint-FL using updated data and summarize your findings.

A. I use the same approach as that in my previously filed direct testimony in this proceeding. Two indirect tests of the reasonableness of each company's use of an 11.25% overall cost of capital are performed. A direct test of reasonableness is also used to evaluate this rate. The first indirect test uses each company's reported book value capital structure and embedded cost of debt as of June 30, 1998. BST's reported capital structure is 56.44% equity and 43.56% debt and its embedded cost of debt is 6.39%. Sprint-FL's reported book value capital structure is 60.05% equity and 39.95% debt and its embedded cost of debt is 7.13%. An overall cost of capital of 11.25% using these parameters implies a cost of equity of 15.00% for BST and 13.99% for Sprint-FL. The second test uses an equity ratio for BST of 60%, an associated debt ratio of 40%, and a current forward-looking cost of debt of 6.60%. The second test for Sprint-FL uses an equity ratio of 59.58%, a debt ratio of 40.42%, and uses Sprint-FL's forward-looking cost of debt of 7.02%. An overall cost of capital of 11.25% implies a cost of equity of 14.35% for BST and 14.12% for Sprint-FL. These two indirect tests logically imply costs of equity that are within or only about 50 basis points higher than my estimated range for BST's cost of equity capital of 14.20% to 14.46% and that are lower than my estimated range for Sprint-FL's cost of equity of 14.30% to 14.53%.

As a direct test of reasonableness, I rely on my updated forward-looking equity and debt costs along with the market value-based capital structures of each company to estimate an overall cost of capital for BST in the range of 13.14% to 13.36% and an overall cost of capital for Sprint-FL in the range of 13.10% to 13.29%. This indicates that the use of an 11.25% rate in

its cost studies understates BST's forward-looking overall cost of capital by 189 to 211 basis points and underestimates Sprint-FL's forward-looking overall cost of capital by 185 to 204 basis points. Therefore, the use of an 11.25% cost of capital in the cost studies of BST and Sprint-FL is reasonable and quite conservative in light of updated capital market data.

II. REBUTTAL OF MR. HIRSHLEIFER'S DIRECT TESTIMONY ON *BEHALF OF AT&T AND MCI*

A. ERRORS IN DCF COST OF EQUITY ANALYSIS

1. FAILURE TO REFLECT INVESTORS' PERSPECTIVE

Q. Is Mr. Hirshleifer's use of a three-stage DCF model representative of investors' valuation perspective and is it a common approach in regulatory proceedings?

A. No, Mr. Hirshleifer's three-stage model is complex, subjective, and uses growth rate forecasts that reflect his own opinions rather than those of the investment community. Due to these limitations, three-stage approaches are not commonly used in regulatory proceedings. Mr. Hirshleifer's results do not provide insight into the current or forward-looking equity capital costs of BST or Sprint-FL.

Mr. Hirshleifer's three-stage approach makes use of firm-specific investment community consensus growth rate forecasts, as measured by Institutional Brokers Estimation Service

(IBES), for only the first stage (five years) of his analysis. After this five-year period, he assumes a second stage of 15 years during which the growth rate falls from the initial IBES growth rate to a projected growth rate for the overall U.S. economy by the end of the 20th year. After that time, Mr. Hirshleifer assumes that the growth rate remains at that projected rate for the economy indefinitely (Direct Testimony, p. 24, line 7 - p. 28, line 19).

Mr. Hirshleifer's analysis misses the mark in the current proceeding. The goal here is to estimate BST and Sprint-FL's costs of meeting their equity investors' return requirements in market terms. Thus, the analysis should reflect the investment analysis process and expectations of investors. Mr. Hirshleifer's analysis of the costs of equity for BST and Sprint-FL departs from investors' perspective by substituting his expectations for those of investors for two out of the three stages in his analysis.

Q. How relevant is Mr. Hirshleifer's criticism of the constant growth DCF model on the basis that telecommunications firms' projected growth rates are not sustainable "into perpetuity?"

A. Mr. Hirshleifer's criticism of the constant growth version of the DCF model is practically irrelevant and misguided in the current context. He observes that:

> ... modern telephone companies are composed of a variety of businesses, some of which - such as cellular - are expected to grow at rates of 30 percent or more in the short run. Such high growth rates are clearly not sustainable into perpetuity, so that the simple constant growth model cannot be applied ... (Direct Testimony, p. 20, lines 22 – p. 21, line 3).

Mr. Hirshleifer's unsupported apparent concern is that "telephone companies are composed of a variety of businesses" that cannot be captured by a single growth rate. However, investors routinely price securities for firms composed of numerous business units by evaluating the net contribution of each unit to the overall growth of the firm.

Mr. Hirshleifer's rejection of the constant growth DCF model because he assumes that telephone company growth rates are "not sustainable into perpetuity" does not adequately relate valuation theory to practice in light of realistic investor concerns. While the constant growth DCF model does theoretically assume a constant growth rate for perpetuity, there is no evidence that investors practically consider perpetuity in their valuation decisions. Simply put, the present value of the cash flows projected from an investment beyond the foreseeable future is so small that it has little practical effect on investors' decisions. While it is very difficult to forecast the distant future, it is also not practically relevant to attempt to do so in a present value sense.

Mr. Hirshleifer's theoretical criticism of the constant growth DCF model is irrelevant. His decision to replace it with a three-stage DCF model only introduces a more subjective, complicated approach that substitutes his growth forecasts for those of the investors who are actually putting money into stocks.

Q. What support does Mr. Hirshleifer offer for limiting the long-term growth of telecommunications firms to the growth rate of the U.S. economy?

A. He offers only his opinion that "[a] perpetual growth rate that exceeded the growth rate of the economy would illogically imply that eventually the whole economy would be comprised of nothing but telephone companies" (Direct Testimony, p. 24, lines 13-15). Mr. Hirshleifer's observation has no practical relevance in assessing the usefulness of the constant growth DCF model in the current proceeding. Investors could easily believe that telecommunications firms' consensus growth rate projections are sustainable beyond the next five years to the foreseeable future but less than forever, which is not a realistic emphasis of investors in their valuation efforts anyway.

Q. Would you provide an example that shows how unrealistic Mr. Hirshleifer's constraint on the long-term growth rate is?

A. Yes. Consider that the IBES and Zacks current (August 1998) consensus five-year growth rate forecasts for MCI are 11.85% and 12.25%, respectively. Mr. Hirshleifer would presumably argue that these rates are unsustainable beyond five years and that the use of either rate for a longer period of time would imply that MCI would eventually dominate the U.S. economy. However, according to **Value Line's** most recent report on MCI (July 10, 1998), the company's average earnings growth rate over the past ten years has been 25%, which is more than twice the Zacks or IBES consensus growth rate for twice the time period.

From a practical perspective, I believe that most investors would relate these projections to the past performance of MCI and thereby use them to assess MCI's foreseeable future. It does not seem reasonable that such investors would be tempted to conclude that "eventually the whole econc y would be comprised of nothing but telephone companies" or MCI in particular. Further, Mr. Hirshleifer offers no evidence to support his use of a second stage that is 15 years long. Why not 10, 25, or 30 years? His three-stage model is unnecessarily subjective, unrepresentative of investors' growth rate expectations, contrary to investors' realistic concerns, and particularly useless in the dynamic telecommunications industry. While Mr. Hirshleifer's model is admittedly inventive, it is not informative concerning the realistic, market-based capital costs of BST or Sprint-FL.

Q. In attempting to justify his use of a three-stage rather than a constant growth version of the DCF model, Mr. Hirshleifer cites a book by Professor Aswath Damodaran as a key reference (see pages 22-23 and footnotes 13 and 15 of his testimony). Is Mr. Hirshleifer's decision to use a three-stage version of the model consistent with Damodaran's stated conditions under which the model is appropriate?

A. No, Mr. Hirshleifer's use of the three-stage model is inconsistent with the circumstances described for the best use of the model. Damodaran indicates that "... this may be the more appropriate model to use for a firm whose earnings are growing at very high rates ..."

(**Damodaran On Valuation**, John Wiley & Sons, 1994, p. 119). Damodaran considers a growth rate to be "very high" if it exceeds 25%.

Attachment JH-4 shows that none of the companies to which Mr. Hirshleifer applies his three-stage DCF model have growth rates over 25%. Thus, his decision to use this form of the model is inconsistent with the conditions for its appropriate use described in the Damodaran reference cited in his testimony.

Q. Does this reference cited by Mr. Hirshleifer discuss any limitations in using the three-stage version of the DCF model?

A. Yes. In comparing the three-stage model to the other versions of the DCF model, Damodaran observes that:

> ... it requires a much larger number of inputs: year-specific payout ratios, growth rates, and betas. For firms in which there is substantial noise in the estimation process, the errors in these inputs can overwhelm any benefits that accrue from the additional flexibility in the model (**Damodaran on Valuation**, John Wiley & Sons, 1994, pp. 118 -119).

Damodaran's concern over the effect of "substantial noise" is particularly relevant to Mr. Hirshleifer's analysis. He applies a three-stage DCF model to the RBHCs, GTE, and selected independent telephone holding companies. The dramatic effects of deregulation, increasing

competition, the implementation of the Telecommunications Act of 1996, and industry consolidation certainly introduce much noise into the estimation of such firms' equity costs. Thus, Mr. Hirshleifer's DCF model is particularly inappropriate for estimating the costs of equity of BST and Sprint-FL. My methodological approach is more reliable because it uses a group of firms that is demonstrably comparable in risk to BST and a group of firms that is demonstrably comparable in risk to Sprint-FL. These two groups of firms, which capture comparable firms across industry lines, are not seriously affected by such "noise." Further, my approach does not require the highly subjective inputs that Mr. Hirshleifer's three-stage model does.

Q. Mr. Hirshleifer alleges that his version of the three-stage DCF model is different from that presented by Professor Damodaran but does not explain the nature of the difference or why it is supposedly significant. Would you explain Mr. Hirshleifer's statement and how it relates to the sections of Professor Damodaran's book concerning the three-stage model?

A. Yes. Mr. Hirshleifer's vague statement is:

> It should be noted that what he [Damodaran] calls the "three-stage model" is different from the model I employ and is not comparable. Damodaran's "H model" is more comparable to the model that I use (Direct Testimony, p. 58, footnote 15).

As noted above, Mr. Hirshleifer describes his three-stage model as follows:

> The first stage lasts five years ... The second stage is assumed to last 15 years. During this stage the growth rate falls from the high level of the first five years to the growth

rate of the U.S. economy by the end of year 20. From the twentieth year onward the growth rate is set equal to the growth rate for the economy because rates greater than that cannot be sustained into perpetuity (Direct Testimony, p. 24, lines 7-13).

Professor Damodaran's description of the three-stage model shows that he and Mr. Hirshleifer use the same basic approach:

> The three-stage dividend-discount model combines the features of the two-stage model and the H model. It allows for an initial period of high growth, a transitional period in which growth declines, and a final stable-growth phase (**Damodaran on Valuation**, John Wiley & Sons, 1994, pp. 117).

For further perspective, consider Professor Damodaran's description of the H model:

> The model is based on the assumption that the earnings growth rate starts at a high initial rate (g_a) and declines linearly over the extraordinary-growth period (which is assumed to last 2H periods) to a stable growth rate (g_n) (**Damodaran on Valuation**, John Wiley & Sons, 1994, pp. 115).

Q. Does there appear to be any significant difference between the three-stage DCF model used by Mr. Hirshleifer and the three-stage model discussed by Professor Damodaran?

A. No. Mr. Hirshleifer apparently does not realize that the three-stage model discussed by Professor Damodaran closely fits his described model. It appears that Mr. Hirshleifer does not understand that his model is essentially an extension of the multi-stage H model to which he refers. Thus, Mr. Hirshleifer's statement that his model is "not comparable" to Professor

Damodaran's three-stage model is suspect and reflects a fundamental misunderstanding of the methodology that he uses to estimate the costs of equity for BST and Sprint-FL. This draws into question the overall reliability of his cost of capital analyses of BST and Sprint-FL.

INCORRECT RELIANCE ON BELLSOUTH, THE OTHER RBHCS, AND SELECTED INDEPENDENT TELEPHONE COMPANIES AS COMPARABLE IN RISK TO BST AND SPRINT-FL

Q. What justification does Mr. Hirshleifer give for applying the DCF and the CAPM approaches to BellSouth, the other RBHCs, and selected independent telephone companies as firms comparable in risk to BST and Sprint-FL?

A. Mr. Hirshleifer offers no justification for the use of the supposedly comparable firms listed in Attachment JH-2. He only observes in passing that they are "selected as likely comparables" (Direct Testimony, p. 26, lines 4-6) and that they "... were derived from the list of telephone operating companies in Standard and Poor's Industry Survey" (Direct Testimony, p. 15, lines 3-4). Thus, Mr. Hirshleifer assumes that BST is comparable in risk to BellSouth, the other RBHCs, and selected independent telephone companies. He does not demonstrate comparability. Similarly, for Sprint-FL (referred to as Centel and United) he "... assumes that the cost of equity for the provision of universal service is approximated by the average cost of equity for the whole set of the telephone holding companies" (Direct Testimony, p. 16, lines 17-

20). Mr. Hirshleifer conducts no systematic, empirical analysis using objective screening criteria to identify firms comparable in risk to BST or comparable in risk to Sprint-FL.

In contrast to Mr. H leifer, I identify comparable firms by measuring risk and statistically determining risk comparability. My analysis shows that neither the RBHCs, as a group, nor the independent telephone companies are comparable in risk to BST or to Sprint-FL.

3. FAILURE TO ADJUST FOR FLOTATION COSTS

Q. Do you agree with Mr. Hirshleifer's opinion that it is appropriate to ignore the impact of flotation costs in estimating the costs of equity capital for BST and Sprint-FL?

A. No, I do not agree with his opinion. Mr. Hirshleifer attempts to justify ignoring flotation costs because the prices of the companies' stock "... has accounted for flotation costs already" (Direct Testimony, p. 54, lines 23-25). While his argument implicitly assumes that flotation costs materially affect equity costs, he presents no evidence that the market has made such an adjustment. Mr. Hirshleifer's failure to adjust for flotation costs biases his cost of equity estimates downward.

4. FAILURE TO ADJUST FOR QUARTERLY DIVIDEND PAYMENTS

Q. Is Mr. Hirshleifer's use of the annual form of the DCF model consistent with the investor's perspective on valuing equity securities?

A. No. Mr. Hirshleifer uses the annual form of the DCF model even though all of the members of his sample of supposedly comparable firms pay dividends on a quarterly basis. The annual form of the DCF model does not accurately portray the investor's perspective, and consequently, significantly underestimates the costs of equity capital of BST and Sprint-FL.

Consider the example of how the returns on an Individual Retirement Account (IRA) differ when compounded quarterly rather than annually. The opportunity to earn a return quarterly rather than annually has a significant effect on the value of an IRA to an investor. The same economic principle is at work when investors value the opportunity to receive dividends on a stock quarterly rather than annually.

Suppose that you invest $2,000 in an IRA account today and expect to earn 8% per year. If your money earns the 8% compounded annually, you will have about $13,697 before taxes in 25 years. Alternatively, if your money earns the 8% compounded quarterly, you will have about $14,489 before taxes in 25 years. Thus, your IRA will be worth about $792 more if your returns are compounded quarterly rather than annually. This $792 difference is present because you earn an effective rate of about 8.24% under quarterly compounding rather than just 8% annually. Obviously, investors would prefer to have $792 more in 25 years and would consequently prefer that their 8% return be compounded quarterly rather than annually.

When Mr. Hirshleifer argues that it is unnecessary in cost of capital analysis to consider that dividends are received by investors quarterly, he essentially argues that investors are indifferent to whether dividends are paid annually or quarterly. Similarly, Mr. Hirshleifer essentially argues that the IRA investor in the above example would not care whether he or she could earn an extra $792. Yet the common sense of the investor's perspective in both cases convincingly demonstrates that if quarterly compounding is not considered in cost of capital analysis the implied rate of return is underestimated.

Q. Would you provide an everyday analogy that concretely shows how Mr. Hirshleifer's failure to adjust his cost of equity estimates in light of the quarterly payment of dividends is misguided?

A. Yes. Consider whether Mr. Hirshleifer would likely prefer to be paid by AT&T and MCI for his cost of capital consulting work just once a year or at the completion of each case. While it would be inappropriate for me to speculate on his personal preferences, it is reasonable to believe that Mr. Hirshleifer might price the services that he provides to AT&T and MCI differently if he were paid only at the end of each year. This is because being paid only at the end of the year would adversely affect his ability to invest or otherwise use his earnings. By analogy, investors derive the market prices of stocks in light of their ability to reinvest dividends quarterly rather than just annually. Investors' implied return requirements consequently reflect the impact of quarterly rather than annual dividend payments in a manner

that is analogous to how Mr. Hirshleifer might prefer to be paid more frequently than annually for the services that he provides to AT&T and MCI.

B. ERRORS IN CAPM COST OF EQUITY ANALYSIS

Q. Is Mr. Hirshleifer's estimate of the equity market risk premium using the three-stage DCF model economically meaningful?

A. No, it is not economically meaningful. Mr. Hirshleifer uses his flawed three-stage DCF model to estimate an expected return on the overall equity market, as measured using selected members of the S&P 500 index, of only 9.82% (see Attachment JH-6).

Q. What effect does Mr. Hirshleifer's exclusion of all members of the S&P 500 not paying a dividend yield of at least 2% (p. 36, lines 11-13 of Mr. Hirshleifer's testimony) have on his estimated market return of only 9.82%?

A. Mr. Hirshleifer's arbitrary screening criterion biases downward his estimated expected return on the market and thereby causes all of his CAPM calculations to underestimate equity capital costs. This partially explains why his analysis underestimates the overall capital costs of BST and Sprint-FL as well.

Consider the type of firms that pay a dividend yield of less than 2%. Such firms typically pay lower dividend yields because they reinvest above-average amounts in their businesses. Thus, lower dividend yields are associated with higher growth companies that have higher equity capital costs. Mr. Hirshleifer's screening criterion consequently excludes those members of the S&P 500 likely to have the highest capital costs and thereby underestimates the expected returns composing the market proxy. His CAPM-based equity costs that use this biased measure of equity market expectations clearly produce unrealistically low capital cost estimates.

C. ERRORS IN COST OF DEBT ESTIMATION

Q. What mistakes does Mr. Hirshleifer make in estimating the costs of debt of BST and Sprint-FL?

A. Mr. Hirshleifer fails to measure the cost of debt that is relevant to determining the forward-looking costs of BST and of Sprint-FL providing universal service in Florida. First, he inappropriately relies on the costs of debt issued by the parent holding companies of BST and Sprint-FL as well as the costs of debt issued by subsidiaries of those holding companies in cases where the proceeds have not been used to finance telephone network assets. Specifically, in Attachment JH-3a Mr. Hirshleifer inappropriately uses the costs of debt issued by BellSouth Corporation and BellSouth Capital Funding as proxies for BST's debt costs. Similarly, in Attachment JH-3c he inappropriately uses the costs of debt issued by Sprint Corporation and Centel Capital as proxies for Sprint-FL's debt costs. Second, Mr. Hirshleifer's cost of debt estimates for both BST and Sprint-FL rely on dated debt market information from December of

1997. Thus, Mr. Hirshleifer's cost of debt analysis is unreliable because it relies on inappropriate debt securities and uses historical debt market data that produces backward-looking estimates.

ERRORS IN RECOMMENDED CAPITAL STRUCTURE

Q. Do you agree with Mr. Hirshleifer's heavy reliance on book value capital structures?

A. No, I do not. Mr. Hirshleifer gives equal weight to book values and market values in producing his capital structure recommendations for BST and Sprint-FL. He relies on book value capital structures to determine the low end of his recommended cost of capital ranges, while market value capital structures produce the high end of his ranges. The use of market values is theoretically appropriate and consistent with establishing a forward-looking cost of capital for use in a universal service fund proceeding such as this one.

Market values deserve higher weight because they are dynamically determined in the marketplace by investors, while book values are the result of historical accounting practices. One-time accounting events that do not change market values can significantly alter book values. Examples of one-time events include restructuring charges, the adoption of SFAS 106 for Other Post-Employment Benefits, and the discontinuance of regulatory accounting under SFAS 71. Additionally, the point in time at which a company issued stock in the past can influence backward-looking book values, while forward-looking market values are not

affected.

Over time, market values vary from book values as investors change the stock price in reaction to new information. If a new event or announcement significantly enhances or detracts from shareholder value, that change is immediately translated into a market value change, while there is likely to be no immediate change in book value. Mr. Hirshleifer's over-reliance on book values is unrepresentative of the investor's perspective and introduces yet another downward bias to his cost of capital estimates.

Mr. Hirshleifer's recommended capital structures for BST and Sprint-FL are also flawed by his inappropriate reliance on dated capital market information from December of 1997. Thus, as is the case in his cost of debt estimates for BST and Sprint-FL, Mr. Hirshleifer recommends backward- rather than forward-looking capital structures.

E. MISUNDERSTANDING OF THE NATURE AND SIGNIFICANCE OF THE RISKINESS OF INVESTING IN THE TELECOMMUNICATIONS INDUSTRY

Q. Do you agree with Mr. Hirshleifer's observations about the supposedly low relative risk of "leasing" local exchange telephone network elements to retail providers and providing universal service?

A. No. Mr. Hirshleifer only offers his unsupported opinion that "[t]hese businesses should have relatively low risk compared to many of the risky business endeavors being pursued by the telephone holding companies" (Direct Testimony, p. 49, lines 17-19). However, he also acknowledges that "... there remains some risk that consumers, particularly business users, will bypass the network as other alternatives become available" (Direct Testimony, p. 51, lines 22-24). Mr. Hirshleifer consequently recognizes the significant risk of consumers and businesses bypassing the networks of BST or Sprint-FL but only offers his unsubstantiated opinion that this is a "low risk" endeavor. Once again Mr. Hirshleifer substitutes his opinion for that of investors in appraising capital costs.

Q. Why is leasing long-term telephone network assets particularly risky?

A. The leasing of long-term assets can be quite risky, especially when leasing rates are regulated. In order for BST or Sprint-FL to earn reasonable returns on their network assets, they must obtain revenues over the leasing period that cover their costs and appropriate risk-adjusted profits. However, BST and Sprint-FL are partially dependent on regulators rather than solely on the market to obtain such returns. Mr. Hirshleifer obviously recognizes that regulators' decisions may well not be appealing to shareholders' when he notes:

> There is still the risk of regulation itself. The rate of return a network is allowed to earn depends on the outcome of proceedings such as this and remains somewhat uncertain (Direct Testimony, p. 51, lines 17-19).

Because such uncertainty implies risk to investors, Mr. Hirshleifer acknowledges that there is substantial risk in the leasing of BST's or Sprint-FL's network elements. This risk implies higher required rates of return and capital costs. However, Mr. Hirshleifer's comments on the supposedly low relative risk of network leasing are inconsistent with his recognition of high regulatory risk and the significant risk of consumer and business bypass of the local service networks of BST and Sprint-FL. Moreover, building and owning network facilities to lease to competitors is particularly risky when one considers that the leases tend to be short-term in nature. A competitor that builds up a sufficient number of customers can subsequently choose to build its own facilities, thus stranding the incumbent local exchange company's (ILEC's) facilities.

Q. How does technological change affect the risk of investing in long-term telephone network assets?

A. Network facilities reflect a given technology that often becomes obsolete quickly. BST and Sprint-FL must consistently invest to keep their network elements up to date and should have the flexibility to establish leasing rates accordingly. However, as noted above, they do not have this ability under current regulations. This risk of technological obsolescence makes leasing network elements risky. Thus, such obsolescence imposes costs and therefore risks. The leasing of BST's and Sprint-FL's network assets poses significant risks to their investors that put upward pressure on their costs of equity.

Q. Do you agree with Mr. Hirshleifer's views on the risks that are reflected in capital costs?

A. No. Mr. Hirshleifer is incorrect and inconsistent in his testimony concerning the risks that affect capital costs. For example, he emphasizes that:

> ... the risk that a company will lose customers to competition - such as a network leasing company or a local exchange company - is a diversifiable risk which does not increase the risk premium according to capital market theory (Direct Testimony, p. 30, lines 17-20).

Yet, as noted above, in discussing what he presumably considers to be the relevant risks associated with the business of leasing unbundled network elements he notes that "... there remains some risk that consumers, particularly business users, will bypass the network as other alternatives become available" (Direct Testimony, p. 51, lines 22-24).

On the one hand Mr. Hirshleifer argues that the risk of losing customers to competition should not affect capital costs and, on the other hand, he inconsistently asserts that the risk of bypass, which is just one way of losing customers, is relevant and thus affects capital costs.

Mr. Hirshleifer also inconsistently argues that:

> In this case, each of the companies in question is not a diversified telephone holding company, but a company in the more specialized (and less risky) business of providing network elements and universal service (Direct Testimony, p. 56, line 14-16).

This observation is logically flawed and inconsistent. If we accept Mr. Hirshleifer's assumption that diversification reduces relevant or priced risk, then the fact that "each of the companies in question is not a diversified telephone holding company" could imply that each is **riskier**, not "less risky" than a diversified holding company. Mr. Hirshleifer's positions on relevant risk are confusing and inconsistent.

Mr. Hirshleifer's view that greater risk of competition is not compensated in the cost of capital is not practically relevant. While this is strictly true in the pristine theoretical world of the CAPM, the practical realities of investing suggest otherwise. Indeed, as noted above, the FCC has stated that "... potential competition could increase the risks facing the incumbent LECs, and thus increase their cost of capital" (Notice of Proposed Rulemaking, Third Report and Order, and Notice of Inquiry, FCC 96-488, December 24, 1996, page 101, paragraph 228). Consequently, in contrast to Mr. Hirshleifer, the FCC views the enhanced risk posed by competition as a practical, significant influence on capital costs. While the CAPM provides useful insights into capital costs, it must be supplemented with other methods that recognize the full array of practical risks facing investors. Mr. Hirshleifer's expressed views on risk are incomplete and logically inconsistent.

F. SUMMARY OF REBUTTAL OF MR. HIRSHLEIFER'S COST OF CAPITAL ESTIMATES FOR BST AND SPRINT-FL

Q. Please summarize your evaluation of Mr. Hirshleifer's cost of equity estimates for BST and Sprint-FL.

A. Mr. Hirshleifer incorrectly estimates BST's cost of equity to be between 9.35% and 9.96% and Sprint-FL's cost of equity to be 9.74% due to numerous errors in his applications of the DCF and CAPM approaches. His DCF model is flawed due to: 1) failure of his subjective three-stage model to reflect investors' perspective; 2) incorrect and unsupported reliance on BellSouth, the other RBHCs, and selected independent telephone companies as comparable in risk to BST and Sprint-FL; 3) failure to adjust for flotation costs; 4) failure to adjust for quarterly dividend payments, and 5) unrealistic underestimation of the risks of investing in telephone network assets in the new, highly competitive environment. Mr. Hirshleifer's CAPM cost of equity analyses for BST and Sprint-FL are also unreliable because they are based on his flawed three-stage DCF model.

Q. Please summarize your assessment of Mr. Hirshleifer's cost of debt and capital structure estimates for BST and Sprint-FL.

A. Mr. Hirshleifer incorrectly estimates BST's cost of debt as 6.65% and Sprint-FL's cost as 6.63% using dated market information from December of 1997. He misestimated each firms' cost of debt at that time because he incorrectly relies on the costs of debt issued by the parent holding companies of BST and Sprint-FL. Further, he incorrectly includes debt issues in his analyses that were not issued to fund telephone network assets. My updated testimony shows

that under current capital market conditions BST's forward-looking cost of debt is 6.60% and Sprint-FL's cost of debt is 6.95%. Mr. Hirshleifer's use of capital market data from December of 1997 makes his cost of debt estimates backward-looking.

Mr. Hirshleifer inappropriately places significant weight on book value capital structures in determining his recommended cost of capital range, thus significantly underestimating the overall cost of capital. Market value capital structures, such as those shown in Billingsley Exhibit Nos. RSB-11 and RSB-12, are appropriate for use in this universal service fund proceeding. Further, Mr. Hirshleifer derives his recommended capital structures using historical information from December of 1997 that makes them backward-looking like his cost of debt estimates.

IV. UPDATED DCF MODEL ESTIMATES OF EQUITY CAPITAL COSTS FOR BST AND SPRINT-FL

Q. How have you updated your analysis since you filed direct testimony in this proceeding on August 3, 1998?

A. Two major elements are present in my updated analysis. First, I use more recent stock, interest rate, growth rate, and beta coefficient data in my statistical analyses. This assures that my capital cost estimates for BST and Sprint-FL are as timely and forward-looking as possible. Second, since filing my direct testimony, 1997 year-end financial data have become available

on a sufficient number of firms to allow me to update my identified portfolio of firms comparable in risk to BST and to update my identified portfolio of firms comparable in risk to Sprint-FL.

Q. What updated cost of equity capital do you estimate for BST using the DCF model presented in your previously filed direct testimony?

A. Billingsley Exhibit No. RSB-1 lists the updated portfolio of 20 firms that are comparable in risk to BST and reports the average cost of equity for the portfolio using both IBES and Zacks growth rate forecasts. The evidence indicates that the cost of equity for BST is in the range of 14.45% to 14.46%.

Q. What updated cost of equity capital do you estimate for Sprint-FL using the DCF model presented in your previously filed direct testimony?

A. Billingsley Exhibit No. RSB-2 lists the portfolio of 20 firms that are comparable in risk to Sprint-FL and reports the average cost of equity for the portfolio using both IBES and Zacks growth rate forecasts. The evidence indicates that the cost of equity for Sprint-FL is in the range of 14.43% to 14.53%.

V. UPDATED CAPITAL ASSET PRICING MODEL ESTIMATES OF EQUITY CAPITAL COSTS FOR BST AND SPRINT-FL

Q. What updated cost of equity capital do you estimate for BST under the CAPM approach?

A. Using July, 1998 data, I estimate an updated risk-free rate of return of 6.14%, an average beta of 0.83 for firms comparable in risk to BST, and IBES and Zacks growth rate estimates that imply an expected return on the S&P 500 of 15.85% and 16.09%, respectively. These objective, market-determined data indicate that BST's cost of equity capital is 14.20% using the IBES growth rate and 14.40% using the Zacks growth rate forecast.

Q. What updated cost of equity capital do you estimate for Sprint-FL under the CAPM approach?

A. I use the same risk-free rate and expected rates of return on the S&P 500 as above and an average beta of 0.84 for the group of firms comparable in risk to Sprint-FL. These assumptions yield a forward-looking cost of equity estimate for Sprint-FL of 14.30% using the IBES growth rate and 14.50% using the Zacks growth rate forecast.

VI. UPDATED MARKET RISK PREMIUM ANALYSES OF THE COST OF EQUITY CAPITAL

A. Aaa- AND A-RATED PUBLIC UTILITY BOND RETURN REFERENCE POINT ANALYSIS

Billingsley Exhibit No. RSB-5 shows that the average expected risk premium relative to Aaa-rated public utility bonds from 1987 to July of 1998 is 6.94%. The average yield on Aaa-rated public utility debt over the most recent three months (May to July of 1998) is 6.85%. Thus, the

average risk premium of 6.94% is added to the recent average Aaa-public utility bond return of 6.85% to yield an expected cost of equity return on the S&P 500 of 13.79%.

Billingsley Exhibit No. RSB-6 shows that the average expected risk premium relative to A-rated public utility bonds from 1987 to July of 1998 is 6.76%. The average yield on A-rated public utility over the most recent three months (May to July of 1998) is 7.07%. Thus, the average risk premium of 6.76% is added to the recent average A-public utility bond return of 7.07% to yield an expected cost of equity return on the S&P 500 of 13.83%.

In summary, risk premium analyses using both Aaa- and A-rated public utility bond return reference points indicate that the expected return on the broad equity market, as measured by the S&P 500, is currently between 13.79% and 13.83%.

B. ADJUSTMENT FOR POTENTIAL CHANGES IN THE RISK PREMIUM OVER TIME

Q. What specific adjustment do you make to update your risk premium analysis in light of the evidence cited in your previously filed direct testimony on the inverse relationship between the risk premium and the level of interest rates?

A. As noted in my direct testimony, during the period of the Harris and Marston study (R. S. Harris and F.C. Marston, "Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts," **Financial Management**, Vol. 21, No. 2, 1992, pp. 63-70), the average risk premium was 6.47% and the average yield on long-term U.S. Treasury bonds was 9.84%. The study finds evidence that the equity market risk premium is expected to change an average of -

.651 of changes in the level of long-term Treasury bond yields. Given that the current average yield on 30-year Treasury bonds is 5.68% (July of 1998), the appropriate current risk premium is 9.18%. This is calculated by multiplying the 4.16% decline in rates since the time period of Harris and Marston's study by -.651 and adding back the average risk premium of 6.47% to the indicated change of 2.71%. This alternative approach consequently provides an expected return on the S&P 500 of 14.86%, which is the current average level of 30-year Treasury yields of 5.68% added to the adjusted risk premium of 9.18%.

Q. What is your conclusion with regard to the equity capital costs of BST and Sprint-FL in light of the most recent capital market data?

A. Based on my updated cost of equity analyses, I believe that BST's cost of equity is in the range of 14.20% to 14.46% and Sprint-FL's cost of equity is in the range of 14.30% and 14.53%.

VII. UPDATED DEBT CAPITAL COSTS OF BST AND SPRINT-FL

Q. What are your updated estimates of the forward-looking costs of debt for BST and Sprint-FL?

A. As in my direct testimony, I use the yields on Aaa-rated bonds as one benchmark in my analysis because this is the bond rating on BST's debt and the yields on A-rated bonds are used as another benchmark because this is the bond rating on Sprint-FL's debt. For the period from May to July of 1998, 30-year U.S. Treasury bonds yielded an average of 5.77%. As shown in Billingsley Exhibit RSB-7, the spread between Aaa-rated public utility bonds and 30-year Treasury bonds averaged 0.80% from October of 1987 through July of 1998. Adding the

average spread of 0.80% to the above recent average Treasury bond yield to maturity of 5.77% produces a yield of 6.57%, which does not reflect the material effect of flotation costs.

As shown in Billingsley Exhibit RSB-8, the spread between A-rated public utility bonds and 30-yc Treasury bonds averaged 1.15% from October of 1987 through July of 1998. Adding the average spread of 1.15% to the above-noted recent average Treasury bond yield to maturity of 5.77% produces a yield of 6.92%, which does not reflect the material effect of flotation costs.

Based on my updated analyses, I believe that BST's forward-looking cost of debt is 6.60% and that Sprint-FL's forward-looking cost of debt is 6.95%.

VIII. REASONABLENESS OF USING AN 11.25% COST OF CAPITAL IN THE COST STUDIES OF BST AND SPRINT-FL

Q. What are the results of your updated first test of the reasonableness of each firm's use of an 11.25% overall cost of capital?

A. As shown in Billingsley Exhibit RSB-9, as of June 30, 1998, BST's reported book value capital structure was 56.44% equity and 43.56% debt and its embedded cost of debt was 6.39%. An overall cost of capital of 11.25% implies a cost of equity of 15.00%. As shown in Billingsley Exhibit RSB-10, as of June 30, 1998, Sprint-FL's reported book value capital structure was 60.05% equity and 39.95% debt and its embedded cost of debt was 7.13%. An overall cost of capital of 11.25% implies a cost of equity of 13.99%.

Q. Please describe the results of the updated second test of the reasonableness of using an 11.25% overall cost of capital in the cost studies of BST and Sprint-FL.

A. Assuming the capital structure that is used in the cost studies of both firms and the forward-looking costs of debt for each firm (6.60% for BST and 7.02% for Sprint-FL), an 11.25% overall cost of capital implies a cost of equity of 14.35% for BST and 14.12%for Sprint-FL.

Q. What are your updated estimates of the overall costs of capital of BST and Sprint-FL?

A. As in my previously filed direct testimony, I use my estimated costs of equity and debt along with the average market value-based capital structures for each of the two groups of 20 firms shown to be comparable in risk to BST and Sprint-FL. The analysis uses a cost of debt of 6.60% and a cost of equity of from 14.20% to 14.46% for BST. As shown in Billingsley Exhibit RSB-11, the updated average market value-based capital structure is 86.06% equity and 13.94% debt. These data indicate that BST's overall forward-looking cost of capital is in the range of 13.14% to 13.36%.

The updated analysis of Sprint-FL uses a cost of debt of 6.95% and a cost of equity of from 14.30% to 14.53%. As shown in Billingsley Exhibit RSB-12, the average market value-based capital structure is 83.72% equity and 16.28% debt. These data indicate that Sprint-FL's overall forward-looking cost of capital is in the range of 13.10% to 13.29%.

Q. What conclusions do you draw concerning the reasonableness of using an 11.25% overall cost of capital in the cost studies of BST and Sprint-FL?

A. Based on the above updated tests, the use of an 11.25% overall cost of capital by BST is reasonable and quite conservative. Specifically, the two indirect tests indicate that an overall cost of capital of 11.25% implies a cost of equity between 14.35% and 15.00%. These implied rates are within or only about 50 basis points higher than my estimated range for BST's cost of equity of between 14.20% and 14.46%. My overall cost of capital estimate for BST is in the range of 13.14% and 13.36%, which is between 189 and 211 basis points above the 11.25% rate used in the company's cost studies.

Similarly, the use of an 11.25% overall cost of capital by Sprint-FL is reasonable and quite conservative. The two indirect tests indicate that an overall cost of capital of 11.25% implies a cost of equity between 13.99% and 14.12%. These implied rates are between 31 and 41 basis points below my estimated range for Sprint-FL's cost of equity of between 14.30% and 14.53%. My overall cost of capital estimate for Sprint-FL is in the range of 13.10% and 13.29%, which is between 185 and 204 basis points above the rate used in the firm's cost studies.

Q. What are your revised and updated estimates of the equity capital costs for BST and Sprint-FL assuming annual dividend payments and no flotation costs?

A. An annual DCF model that ignores flotation costs produces a cost of equity for BST of 14.35% using IBES growth rate forecasts and 14.34% using Zacks growth forecasts. The same revised DCF model produces a cost of equity for Sprint-FL of 14.34% using IBES growth rate forecasts and 14.43% using Zacks growth forecasts. The revised CAPM approach indicates that BST's cost of equity is in the range of 14.21% to 14.42% and that Sprint-FL's cost of equity is in the range of 14.30% and 14.51%. Thus, under the assumption of annual compounding and no

flotation costs the revised estimate of BST's cost of equity is within the range of 14.21% to 14.42% and Sprint-FL's cost of equity is within the range of 14.30% and 14.51%.

Q. Do you believe that it would be reasonable for BST and Sprint-FL to use an overall cost of capital of 11.25% in their cost studies if flotation costs and quarterly compounding adjustments are omitted from your estimates?

A. Yes. The revised cost of equity capital estimates for BST are in the range of 14.21% to 14.42% and are in the range of 14.30% and 14.51% for Sprint-FL. The same two indirect tests of reasonableness used above imply costs of equity that are within or close to the range of these revised cost of equity estimates for both firms. Further, calculation of the overall costs of capital for each firm in the same manner as described above but using the above revised cost of equity ranges yields a range from 13.15% to 13.32% for BST and produces a range from 13.10% to 13.28% for Sprint-FL. Thus, the use of an 11.25% cost of capital by BST or Sprint-FL in their cost studies is quite conservative even in the absence of adjustments for flotation costs and the quarterly payment of dividends.

Q. Does this conclude your rebuttal testimony?

A. Yes, it does.

DIRECT TESTIMONY OF

DR. RANDALL S. BILLINGSLEY

ON BEHALF OF BELLSOUTH TELECOMMUNICATIONS INC.

AND SPRINT -FLORIDA INC.

BEFORE THE

FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 980696-TP

AUGUST 3, 1998

I. INTRODUCTION

Q. Please state your name, occupation, and business address.

A. My name is Randall S. Billingsley. I am a finance professor at Virginia Polytechnic Institute and State University. I also act as a financial consultant in the areas of cost of capital analysis, financial security analysis, and valuation. More details on my qualifications may be found in Billingsley Exhibit No. RSB-17. My business address is: Department of Finance, Pamplin College of Business, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061-0221.

This statement presents my independent professional opinions and is not presented by me as a representative of Virginia Polytechnic Institute and State University.

Q. Have you prepared exhibits to accompany this statement?

A. Yes, my statement and 17 exhibits were prepared by me or under my direction and supervision.

II PURPOSE OF STATEMENT AND SUMMARY OF CONCLUSIONS

A. PURPOSE OF STATEMENT

Q. What is the purpose of your statement in this proceeding?

A. My purpose is to provide the Florida Public Service Commission (Commission) with a determination of the reasonableness of the use of an overall cost of capital of 11.25% in the cost studies of BellSouth Telecommunications Corporation (BST) and Sprint-Florida, Incorporated (Sprint-FL). In so doing, I estimate the companies' forward-looking costs of capital. This provides evidence useful in preparing universal service fund cost studies in the state of Florida.

B. SUMMARY OF BST AND SPRINT-FL COST OF CAPITAL ANALYSES

Q. Please describe the approaches that you use to determine the costs of equity capital for BST and Sprint-FL and summarize your conclusions.

A. My analysis uses objective market data to determine costs of equity capital for BST and Sprint-FL from three distinct but complementary approaches. Since BST is a subsidiary of BellSouth Corporation and Sprint-FL is ultimately a subsidiary of Sprint Corporation, neither company has equity trading in the market. Thus, there is no direct market evidence on the two firms' costs of equity capital. It is consequently necessary

to infer the costs of equity for BST and Sprint-FL using available market data.

In the first approach I apply the DCF model to a group of firms identified as comparable in risk to BST and apply the model to another group of firms identified as comparable in risk to Sprint-FL. Average costs of equity capital are calculated by applying the DCF model to each of these two separate groups of comparable firms in order to provide objective, market-determined costs of equity capital for BST and Sprint-FL. In the second approach, I use the CAPM to estimate the cost of equity capital for the group of publicly traded firms that is comparable in risk to BST and also for the publicly traded group of firms that is comparable in risk to Sprint-FL. Finally, I conduct a risk premium analysis.

The cost of equity for BST is in the range of 15.26% to 15.28% using the comparable firm group DCF model approach. Under the same approach, the cost of equity for Sprint-FL is in the range of 14.88% to 15.07%. The CAPM approach indicates that BST's cost of equity capital is in the range of 14.61% to 14.64% and that Sprint-FL's cost of equity is in the range of 14.32% to 14.35%. The risk premium approach indicates that the expected return on the overall equity market, as measured by the S&P 500, is currently between 13.63% and 14.86%. Billingsley Exhibit No. RSB-1 explains how my analytical approaches are consistent with well-accepted regulatory and economic standards in cost of capital analysis. From these analyses, I conclude that the current cost of equity capital for BST is within the range of 14.61% to 15.28% and that the current cost of equity for Sprint-FL is within the range of 14.32% to 15.07%.

Q. Please describe how you evaluate the reasonableness of using an overall cost of capital of 11.25% in the cost studies of BST and Sprint-FL and summarize your findings.

A. Two indirect tests of the reasonableness of each company's use of an 11.25% overall cost of capital are performed. A direct test of reasonableness is also used to evaluate this rate. The first indirect test uses each company's reported book value capital structure and embedded cost of debt. BST's reported capital structure is 58.50% equity and 41.50% debt and its embedded cost of debt is 6.33%. Sprint-FL's reported book value capital structure is 60.89% equity and 39.11% debt and its embedded cost of debt is 7.21%. An overall cost of capital of 11.25% using these parameters implies a cost of equity of 14.74% for BST and 13.84% for Sprint-FL. The second test uses an equity ratio for BST of 60%, an associated debt ratio of 40%, and a current forward-looking cost of debt of 6.65%. The second test for Sprint-FL uses an equity ratio of 59.58% and a debt ratio of 40.42% but uses Sprint-FL's current forward-looking cost of debt of 7.02%. An overall cost of capital of 11.25% implies a cost of equity of 14.32% for BST and 14.12% for Sprint-FL. These two indirect tests logically imply costs of equity that are lower than or within my estimated range for BST's cost of equity capital of 14.61% to 15.28% and lower than my estimated range for Sprint-FL's cost of equity of 14.32% to 15.07%.

As a direct test of reasonableness, I rely on my estimated forward-looking equity and debt costs along with the market value-based capital structures of each company to estimate an overall cost of capital for BST in the range of 13.83% to 14.44% and an overall cost of capital for Sprint-FL in the range of 13.39% to 14.05%. This indicates that the use of an 11.25% rate in its cost studies understates BST's forward-looking

overall cost of capital by 258 to 319 basis points and underestimates Sprint-FL's forward-looking overall cost of capital by 214 to 280 basis points. Therefore, the use of an 11.25% cost of capital in the cost studies of BST and Sprint-FL is reasonable and quite conservative.

III. CURRENT STATUS OF COMPETITION IN THE TELECOMMUNICATIONS INDUSTRY

Q. What is the current status of competition in the telecommunications industry?

A. Competition in the telecommunications industry has increased dramatically in recent years. The sources of that increased competition include a greater threat of new entrants in the industry, a significant increase in the number and strength of existing competitors, a greater threat of substitute telecommunications products and services, more intense rivalry among existing competitors in the industry, and enhanced regulatory risk at both the state and the federal levels. Thus, both actual and potential competition have increased and the business risk of the industry has consequently increased. What investors believe about the future competition that the local exchange companies (LECs) will face is critical to cost of capital analysis. Investors' expectations of competition and its impact on risk are reflected in the capital costs faced by Sprint-FL and BST.

Q. Specifically how has competition increased in recent years?

A. The interLATA, intraLATA, and local exchange markets have become much more

competitive in recent years. Large businesses have been able to bypass the LECs' private line and access services using fiber optic networks, microwave transmission and very small aperture terminals (VSAT). The growth of competitive access providers (CAPs) such as Metropolitan Fiber Systems (MFS) and the Teleport Communications Group (TCG) has allowed large business customers in major cities to connect with long distance carriers (interexchange carriers or IXCs) without paying access charges to LECs.

It is clear that investors believe that major CAPs, IXCs, and cable television (CATV) companies are positioning themselves to compete vigorously for customers in the local exchange market. BST and Sprint-FL face heightened potential competition that poses additional risk to their operations and their ability to recoup extensive infrastructure investments. Investors see such competition coming from wired, wireless, and Internet sources. Consider the representative recent observations on competition in **Business Week** ("Zooming Down The I-Way," Andy Reinhardt, Peter Elstrom, and Paul Judge, April 7, 1997, pp. 76-87):

> [O]utside the boardrooms of telecom's giants, innovation is sweeping the wired and wireless world - bubbling up from the bottom. Hundreds of alternative carriers and nimble startups are leaping head-first into the newly deregulated environment (p. 76).
>
> The Internet is also giving rise to new products that could undermine traditional phone services. The one that sends shivers down the spines of telecom execs: software that lets you place phone calls over the net (p. 77).

The Internet is not the only threat to the telephone companies. A slew of startups are finding ways to eat into traditional telephone usage ... PCs are becoming telephone command centers for video conferencing and unified messaging that combines e-mail, fax, and voicemail (p. 78).

The provision of wireless services such as personal communication systems by CAPs, CATV operators, and electric utilities also enhances the ability of customers to completely bypass local exchange services. Wireless services are becoming a viable consumer alternative to LEC services. These alternatives will only increase the competitiveness of that environment and thus magnify the business risk of LEC operations. This growing risk is increasing the costs of raising capital for Sprint-FL and BST.

Q. Has the business risk of the telecommunications industry increased in recent years and is it expected to continue increasing in the future, especially due to the passage of and uncertainties in implementing the Telecommunications Act of 1996?

A. Yes. The passage of the Telecommunications Act and responses to its passage dramatically indicate that business risk has been increasing and will increase even more in the future. The Act, which was signed into law by President Clinton on February 8, 1996, essentially allows local, long-distance, and cable companies to get into one another's businesses. While market pressures have been eroding these limits in recent years, the various competitors are now moving forward rapidly. However, open competition brings a significant increase in risk.

The passage of the Telecommunications Act is apparently viewed as risky by investors, competing telecommunications firms, and by the Federal Communications Commission (FCC). Indeed, the FCC has observed:

> ... [I]ncumbent LECs face potential competition as a result of the Act that they did not face previously. This potential competition could increase the risks facing the incumbent LECs, and thus increase their cost of capital, thus mitigating, to some extent, the factors suggesting that incumbent LECs' cost of capital has decreased since 1990 (Notice of Proposed Rule Making, Third Report and Order, And Notice of Inquiry, FCC 96-488, December 24, 1996, p. 101, paragraph 228).

The implication is that investors are requiring higher rates of return to compensate for the higher investment risk resulting from the new competitive environment fostered by the implementation of the Telecommunications Act.

Q. How have recent mergers and acquisitions changed the nature of competition in the telecommunications industry?

A. Numerous recent mergers and acquisitions have significantly increased the degree of competition among telecommunications firms and consequently have increased the risks faced by industry investors. This implies that investors must increase their return requirements to be adequately compensated for the increased riskiness of holding telecommunications stocks.

Consider the following recently announced key mergers and acquisitions in the

industry: WorldCom / MCI Communications, SBC Communications / Southern New England Telephone (SNET), SBC Communications / Ameritech, Alltel / 360° Communications, and AT&T / Tele-Communications (TCI). The planned acquisition of TCI by AT&T is a significant recent source of greater investment risk. The following comments support the enormous perceived significance of the deal, as reported in **Business Week** ("At Last, Telecom Unbound," Peter Elstrom, Catherine Arnst, and Roger Crockett, July 6, 1998, pp. 24-27):

> ... [I]n an ironic twist, AT&T, the company that has perhaps missed the most opportunities in the new world of digital communications, has come up with the deal that, if it works, will take advantage of all these trends – and could be the catalyst for other deals and business plans that break the bottleneck and finally deliver on the promise of digital convergence. "This is the deal that's going to get competition going," says former FCC Commissioner Reed Hundt. "This is exactly what regulators envisioned – consumers having choice." (p. 24).

The increasing risk that telecommunications investors face results not only from the competitive implications of pending mergers and acquisitions but from the additional uncertainty associated with the often lengthy regulatory approval process. For example, the MCI / WorldCom merger has been reviewed by European and U.S. regulators for months. Indeed, in July of 1998, the European Commission approved the merger subject to the divestiture of MCI's Internet business while the U.S. Department of Justice only approved the merger as MCI agreed to sell its Internet backbone facilities and wholesale and retail Internet businesses to Cable & Wireless PLC. The MCI / WorldCom combination, though widely expected, still awaits final approval by the Federal Communications Commission. Such regulatory uncertainty enhances

investment risk in the industry.

Q. Is there any capital market evidence that LEC investors believe that the AT&T / TCI deal has increased competition and investment risk in the telecommunications industry?

A. Yes. The announcement of the deal was associated with a significant drop in the stock prices of some key LECs. This adverse reaction to the deal is described in a report by Bloomberg's business information site on the Internet (http://www.bloomberg.com), "Baby Bell Shares Fall as AT&T Targets Local Market," June 24, 1998):

> Shares of Bell Atlantic Corp., BellSouth Corp. and other local telephone companies fell after AT&T Corp., the largest U.S. long-distance telephone company, launched an assault on their market
>
> The Standard & Poor's Telephone Index, which tracks the performance of the local phone company stocks, dropped 23.60 points, or 3.8 percent, to 592.79, the biggest one-day decline since Oct. 27 last year...
>
> AT&T's move would give it direct access to TCI's 10 million customers in the U.S. and break the Baby Bell's stranglehold on the $100 billion-a-year local phone market. "This basically puts AT&T on their doorstep," said Mitchell Weisberg, an information technology consultant who, as an AT&T employee in the early 1980s, helped put together the company's divestiture plan. "There's significant revenue at risk" for the Baby Bells, Weisberg said.

> The local phone companies stand to lose in two ways under the AT&T-TCI combination. Customers in regions where TCI operates cable systems will have the option of using AT&T for local calls, which means lost revenue for that region's Baby Bell. ... What's more, AT&T now has to pay access charges to the Baby Bells for using their network to complete long-distance calls. That won't be the case for calls routed through the TCI network. "It's a certainty this will slow down the earnings growth" of the Baby Bells, said Paul Wright, a telecommunications analyst at Loomis, Sayles & Co., which owned shares of Bell Atlantic and BellSouth as of the end of March. ... The [LEC's] stocks also dropped after Merrill Lynch analyst Daniel Reingold cut his rating on Bell Atlantic, SBC and Ameritech. AT&T's move "increases the perception that the (Baby Bells) will face competitive risk from local entry on both the business and consumer sides," Reingold wrote in a report.

The fact that LEC share prices fell in response to the announcement of the purchase of TCI by AT&T is strong, concrete capital market evidence that investors believe that LEC risk has increased significantly. The above Bloomberg report documents the primary source of concern to be a significant loss in both local call and access charge revenues. The investment community apparently views the deal as the advent of significantly greater competition in the consumer and business segments of the local telephone market.

IV. DCF MODEL ESTIMATES OF EQUITY CAPITAL COSTS FOR BST AND SPRINT-FL

A. FORM OF THE DCF MODEL USED IN THE ANALYSIS

Q. What form of the DCF model do you use to estimate equity capital costs for BST and Sprint-FL?

A. I use the constant growth form of the DCF model that assumes an indefinite or infinite holding period. Since most U.S. firms pay dividends quarterly, I use the quarterly form of the DCF model under the realistic assumption that such dividends are changed by firms once a year, on average in the middle of the year. Specifically, the cost of equity K is calculated as:

$$K = \left[D^q_0 (1 + G) / P_{mkt} \right] + G = \left[D^q_1 / P_{mkt} \right] + G,$$

where G is the most recent average five-year earnings per share growth rate projected by analysts, as reported by either Zacks Investment Research Inc. (Zacks) or by the IBES, and P_{mkt} is the average of the three most recent months (April to June 1998) of high and low prices for the equity. D^q_0 and D^q_1 reflect the most recent annual and the anticipated next year amount of quarterly dividends, respectively. D^q_1 is calculated as:

$$D^q_1 = d_1 (1 + K)^{.75} + d_2 (1 + K)^{.5} + d_3 (1 + K)^{.25} + d_4,$$

where d_1 and d_2 are the quarterly dividends paid prior to the assumed yearly change in dividends and d_3 and d_4 are the two quarterly dividends paid after the given change in the amount paid by a firm. Thus, dividend D^q_1 captures the quarterly payment of dividends that grow at rate G.

In order to reflect the significant effect of flotation costs on the cost of equity, I directly reduce the market price P_{mkt} used in my analysis by a conservative 5 percent. Billingsley Exhibit No. RSB-2 elaborates on the nature and applicability of the DCF model in estimating the cost of capital in regulatory proceedings. It also discusses the importance of adjusting for both the payment of quarterly dividends and for flotation costs.

B. SPECIFIC APPLICATION OF THE DCF MODEL TO ESTIMATE EQUITY COSTS FOR BST AND SPRINT-FL

Q. Specifically how do you apply the above DCF model to BST and Sprint-FL, since neither company has equity trading in the marketplace?

A. Because BST is owned by its parent holding company, BellSouth Corporation, and Sprint-FL is ultimately owned by its parent holding company, Sprint Corporation, neither of the companies have equity trading in the market. It is consequently necessary to infer the equity costs of BST and Sprint-FL by applying the DCF model to each of the two groups of firms identified as comparable in risk to BST and Sprint-FL, respectively.

Q. What method is used to identify firms of comparable risk to BST and firms of comparable risk to Sprint-FL?

A. I use a cluster analysis model to identify firms that are comparable in risk to each firm.

The model is applied first to identify firms that are, as a group, comparable in risk to BST and then it is applied separately to identify firms that are comparable in risk, as a group, to Sprint-FL. Thus, BST and Sprint-FL may be viewed as two distinct "target" firms in a comparative risk analysis of a large sample of firms.

Two dimensions of risk are used to compare firms. First, the financial risk of firms is measured and used as a basis of comparison. Second, business or operating risk is compared among firms. These dimensions are, in effect, averaged in a manner that generates a comprehensive risk profile. Thus, firms are not just compared on a characteristic-by-characteristic basis, they are compared in light of those chosen characteristics and the relationship among those characteristics.

A summary measure expresses the distance between each firm and BST and each firm and Sprint-FL. Two groups of the 20 firms that are closest to each target firm, BST or Sprint-FL, in terms of this summary distance measure are chosen for analysis. A more detailed discussion of this cluster analysis is contained in Billingsley Exhibit No. RSB-5.

Q. How do the individual measures of riskiness relate to the comparability of the group of firms in the clusters in terms of overall riskiness?

A. It may be tempting to single out one company in a cluster of comparable firms and incorrectly compare its various risk measures individually to those of BST or individually to those of Sprint-FL. However, none of the individual companies identified in the BST-comparables portfolio are precisely like BST in every respect nor

are any of the individual companies identified in the Sprint-FL-comparables portfolio exactly like Sprint-FL in every way. The firms are alternative investment opportunities that, in the aggregate, have overall risk similar to that of the given target firm, BST or Sprint-FL.

In summary, none of the individual firms in a cluster are precisely like the given target firm in terms of each individual measure of risk. A cluster should be viewed as a portfolio of firms that, as a group, is comparable in risk to a given target firm, BST or Sprint-FL.

C. DCF MODEL COST OF EQUITY ESTIMATES FOR BST AND SPRINT-FL

Q. What cost of equity capital do you estimate for BST using the DCF model?

A. Billingsley Exhibit No. RSB-3 lists the portfolio of 20 firms that are comparable in risk to BST and reports the average cost of equity for the portfolio using both IBES and Zacks growth rate forecasts. The evidence indicates that the cost of equity for BST is in the range of 15.26% to 15.28%.

Q. What cost of equity capital do you estimate for Sprint-FL using the DCF model?

A. Billingsley Exhibit No. RSB-4 lists the portfolio of 20 firms that are comparable in risk to Sprint-FL and reports the average cost of equity for the portfolio using both IBES and Zacks growth rate forecasts. The evidence indicates that the cost of equity

for Sprint-FL is in the range of 14.88% to 15.07%.

V. CAPITAL ASSET PRICING MODEL ESTIMATES OF EQUITY CAPITAL COSTS FOR BST AND SPRINT-FL

Q. What form of the CAPM do you use to estimate equity capital costs for BST and Sprint-FL?

A. I use the common form of the model, which calculates the risk-adjusted rate of return K as:

$$K = R_f + B\,[R_m - R_f],$$

where R_f is the expected return on a risk-free security like a U.S. Treasury bond, B is the expected beta or systematic risk of the equity security, and R_m is the expected return on a broad index of equity market performance , the S&P 500.

Q. How and where do you obtain the beta coefficient data needed to estimate each company's cost of equity capital using the CAPM?

A. Since BST is a subsidiary of BellSouth Corporation and Sprint-FL is a subsidiary of Sprint Corporation, neither company has its own equity trading in the market and therefore neither company has the beta coefficient required by the CAPM. Thus, as discussed above in my DCF analysis, it is necessary to identify a group of firms that is comparable in risk to each target firm that does have traded equity and therefore

measurable beta coefficients. Consequently, the beta coefficients for the two groups of firms used in my DCF analyses that are identified in Billingsley Exhibit No. RSB-3 for BST and Billingsley Exhibit RSB-4 for Sprint-FL are relied on to estimate equity capital costs. Specifically, the average beta of 0.88 for the portfolio of firms comparable in risk to BST and the average beta of 0.85 for the portfolio of firms comparable in risk to Sprint-FL are each used in the CAPM equation presented above.

The beta coefficients used in my CAPM analyses are the most recent prospective measures supplied by BARRA, a widely recognized provider of data and decision support systems for institutional investors. Billingsley Exhibit No. RSB-6 elaborates on the nature and significance of using prospective rather than historical beta estimates.

Q. How do you estimate the risk-free rate of return needed in the CAPM equation?

A. In order to be consistent with the expectational emphasis of the CAPM, I use the 6.13% average expected yield implied by the prices of the U.S. Treasury bond futures contracts quoted during June of 1998. The prices of these contracts reflect the market's consensus forecast for 20-year U.S. Treasury bonds, the longest maturity with futures data available. Billingsley Exhibit No. RSB-7 describes the futures contracts used in the analysis in more detail and shows the calculations necessary to derive the implied expected future risk-free rate of return.

Q. How do you estimate the expected return on a broad index of equity market performance for use in the CAPM?

A. I use expectational data to estimate the return of the S&P 500 as my proxy for overall equity market performance. Billingsley Exhibit No. RSB-8 elaborates on how the DCF model is applied to estimate the expected return on the S&P 500 using both Zacks and IBES growth rate forecasts. The expected return during the most recent month (June 1998) for which data is available is used in the CAPM analysis.

Q. What cost of equity capital do you estimate for BST under the CAPM approach?

A. Summarizing the results of the above analysis, I use a risk-free rate of return of 6.13%, an average beta of 0.88 for firms comparable in risk to BST, and IBES and Zacks growth rate estimates that imply an expected return on the S&P 500 of 15.77% and 15.80%, respectively. These objective, market-determined data indicate that BST's cost of equity capital is 14.61% using the IBES growth rate and 14.64% using the Zacks growth rate forecast.

Q. What cost of equity capital do you estimate for Sprint-FL under the CAPM approach?

A. I use the same risk-free rate and expected rates of return on the S&P 500 as above and an average beta of 0.85 for the group of firms comparable in risk to Sprint-FL. These assumptions yield a forward-looking cost of equity estimate for Sprint-FL of 14.32% using the IBES growth rate and 14.35% using the Zacks growth rate forecast.

VI. MARKET RISK PREMIUM ANALYSIS OF THE COST OF EQUITY CAPITAL

A. NATURE OF THE APPROACH

Q. What is the market risk premium approach?

A. The market risk premium approach quantifies the risk/return trade-off discussed in detail in Billingsley Exhibit No. RSB-1 on the economic standards used in cost of equity analysis. The equity market risk premium is defined as the difference between the return on a broad basket of equity securities (the "market") and the return on a low-risk or "riskless" benchmark security or portfolio. The return on long-term U.S. Treasury bonds and the return on utility bonds are common benchmarks.

B. SPECIFIC TYPE OF RISK PREMIUM ANALYSIS USED

Q. What specific form of the risk premium approach do you use?

A. I examine the relationship between expected returns on the S&P 500, as estimated by the DCF model using IBES growth rate forecasts, and the current market yields on public utility bonds from October of 1987 to June of 1998. Two public utility bond benchmarks are used: 1) the yields on Aaa-rated bonds, which are used because this is the bond rating on BST's debt, and 2) the yields on A-rated bonds, which are used because this is the bond rating on Sprint-FL's debt. Additional detail on the issues and the techniques associated with calculating the expected return on the market is presented in Billingsley Exhibit No. RSB-8.

Billingsley Exhibit No. RSB-9 shows that the average expected risk premium relative

to Aaa-rated public utility bonds from 1987 to mid-1998 is 6.74%. The average yield on Aaa-rated public utility over the most recent three months (April to June of 1998) is 6.89%. Thus, the average risk premium of 6.74% is added to the recent average Aaa-pu' 'c utility bond return of 6.89% to yield an expected cost of equity return on the S&P 500 of 13.63%.

Billingsley Exhibit No. RSB-10 shows that the average expected risk premium relative to A-rated public utility bonds from 1987 to mid-1998 is 6.57%. The average yield on A-rated public utility over the most recent three months (April to June of 1998) is 7.12%. Thus, the average risk premium of 6.57% is added to the recent average A-public utility bond return of 7.12% to yield an expected cost of equity return on the S&P 500 of 13.69%.

In summary, risk premium analyses using both Aaa- and A-rated public utility bond return reference points indicate that the expected return on the broad equity market, as measured by the S&P 500, is between 13.63% and 13.69%.

C. ADJUSTMENT FOR POTENTIAL CHANGES IN THE RISK PREMIUM OVER TIME

1. EVIDENCE OF CHANGES IN THE RISK PREMIUM

Q. Can any changes in the risk premium be adjusted for so as to increase the confidence in its representativeness?

A. Yes. As elaborated on in Billingsley Exhibit No. RSB-8, studies of the historical

behavior of the equity risk premium indicate that it varies considerably over time. Importantly, there is evidence that the equity risk premium is related inversely to the returns on low-risk benchmark debt securities. Thus, when interest rates decline, the equity risk premium, tends to widen and when interest rates rise, the equity risk premium tends to narrow.

Research on this phenomenon by professors R. S. Harris and F.C. Marston, published in **Financial Management** in 1992, finds that the equity risk premium moves an average of -.651 of contemporaneous changes in the return on a benchmark low-risk security (index). In other words, if interest rates decline by 100 basis points, the equity risk premium will increase by an average of about 65 basis points.

2. SPECIFIC ADJUSTMENT FOR CHANGES IN THE EQUITY RISK PREMIUM OVER TIME

Q. What specific adjustment do you make to your risk premium analysis in light of the above evidence on the inverse relationship between the risk premium and the level of interest rates?

A. During the period of Harris and Marston's study, the average risk premium was 6.47% and the average yield on long-term U.S. Treasury bonds was 9.84%. As noted above, the equity market risk premium is expected to change an average of -.651 of changes in the level of long-term Treasury bond yields. Given that the current average yield on 30-year Treasury bonds is 5.69% (June 1998), the appropriate current risk premium is 9.17%. This is calculated by multiplying the 4.15% decline in rates since the time

period of Harris and Marston's study by -.651 and adding back the average risk premium of 6.47% to the indicated change of 2.70%. This alternative approach consequently provides an expected return on the S&P 500 of 14.86%, which is the current average level of 30-year Treasury yields of 5.69% added to the adjusted risk premium of 9.17%.

Q. What is your conclusion with regard to the equity capital costs of BST and Sprint-FL?

A. Based on my cost of equity analyses, I believe that BST's cost of equity is in the range of 14.61% to 15.28% and Sprint-FL's cost of equity is in the range of 14.32% and 15.07%.

VII. DEBT CAPITAL COSTS OF BST AND SPRINT-FL

Q. How do you determine the current debt capital costs faced by BST and Sprint-FL?

A. The costs of debt capital are estimated using current forward-looking market data.

Q. How can a company's forward-looking cost of debt be empirically estimated?

A A firm's forward-looking cost of debt can be estimated by adding the current yield to maturity on 30-year U.S. Treasury bonds to the average spread (difference) between the yields on such bonds and the yields on benchmark bonds issued by firms similar in risk to the target firm. As discussed above in my broader risk premium analyses, two benchmarks are used to capture the different debt market circumstances faced by BST

and Sprint-FL. Thus, the yields on Aaa-rated bonds are used as one benchmark because this is the bond rating on BST's debt and the yields on A-rated bonds are used as another benchmark because this is the bond rating on Sprint-FL's debt.

For the period from April to June of 1998, 30-year U.S. Treasury bonds yielded an average of 5.83%. As shown in Billingsley Exhibit RSB-11, the spread between Aaa-rated public utility bonds and 30-year Treasury bonds averaged 0.80% from October of 1987 through June of 1998. Adding the average spread of 0.80% to the above recent average Treasury bond yield to maturity of 5.83% produces a yield of 6.63%, which does not reflect the material effect of flotation costs.

As shown in Billingsley Exhibit RSB-12, the spread between A-rated public utility bonds and 30-year Treasury bonds averaged 1.15% from October of 1987 through June of 1998. Adding the average spread of 1.15% to the above-noted recent average Treasury bond yield to maturity of 5.83% produces a yield of 6.98%, which does not reflect the material effect of flotation costs.

Q. What are your estimates of the forward-looking costs of debt for BST and Sprint-FL?

A. Based on my analyses, I believe that BST's forward-looking cost of debt is 6.65% and that Sprint-FL's forward-looking cost of debt is 7.00%.

VIII. REASONABLENESS OF USING AN 11.25% COST OF CAPITAL IN THE COST STUDIES OF BST AND SPRINT-FL

Q. How do you test the reasonableness of using an overall cost of capital of 11.25% in the cost studies of BST and Sprint-FL?

A. I conduct indirect tests using two different sets of assumptions; one using the reported book value capital structures and embedded costs of debt, and the other using the capital structure and the forward-looking costs of debt for BST and Sprint-FL used in their cost studies. In addition to these indirect assessments of the reasonableness of each firm's use of an 11.25% overall cost of capital, I directly estimate each firm's overall cost of capital using the results of my above analyses and the market value of equity-based capital structures for each of the firms. The comparison of my estimated overall costs of capital for BST and Sprint-FL with the 11.25% rate used in the companies' respective cost studies sheds light on the reasonableness of that assumed rate.

Q. Please describe the first test of the reasonableness of each firm's use of an 11.25% overall cost of capital.

A. As shown in Billingsley Exhibit RSB-13, as of March 31, 1998, BST's reported book value capital structure was 58.50% equity and 41.50% debt and its embedded cost of debt was 6.33%. An overall cost of capital of 11.25% implies a cost of equity of 14.74%. As shown in Billingsley Exhibit RSB-14, as of March 31, 1998, Sprint-FL's reported book value capital structure was 60.89% equity and 39.11% debt and its embedded cost of debt was 7.21%. An overall cost of capital of 11.25% implies a cost of equity of 13.84%.

Q. Please describe the second test of the reasonableness of using an 11.25% overall cost of capital in the cost studies of BST and Sprint-FL.

A. Assuming the capital structure that is used in the cost studies of both firms and the current forward-looking costs of debt for each firm (6.65% for BST and 7.02% for Sprint-FL), an 11.25% overall cost of capital implies a cost of equity of 14.32% for BST and 14.12%for Sprint-FL.

Q. How do you estimate BST's and Sprint-FL's overall cost of capital?

A. I use my estimated costs of equity and debt along with the average market value-based capital structures for each of the two groups of 20 firms shown to be comparable in risk to BST and Sprint-FL. The analysis uses a cost of debt of 6.65% and a cost of equity of from 14.61% to 15.28% for BST. As shown in Billingsley Exhibit RSB-15, the average market value-based capital structure is 90.24% equity and 9.76% debt. These data indicate that BST's overall forward-looking cost of capital is in the range of 13.83% to 14.44%.

The analysis of Sprint-FL uses a cost of debt of 7.00% and a cost of equity of from 14.32% to 15.07%. As shown in Billingsley Exhibit RSB-16, the average market value-based capital structure is 87.31% equity and 12.69% debt. These data indicate that Sprint-FL's overall forward-looking cost of capital is in the range of 13.39% to 14.05%.

Q. What conclusions do you draw concerning the reasonableness of using an 11.25%

overall cost of capital in the cost studies of BST and Sprint-FL?

A. Based on the above tests, the use of an 11.25% overall cost of capital by BST is reasonable and quite conservative. Specifically, the two indirect tests indicate that an overall cost of capital of 11.25% implies a cost of equity between 14.32% and 14.74%. These implied rates are below or within my estimated range for BST's cost of equity of between 14.61% and 15.28%. My overall cost of capital estimate for BST is in the range of 13.83% and 14.44%, which is between 258 and 319 basis points above the 11.25% rate used in the company's cost studies.

Similarly, the use of an 11.25% overall cost of capital by Sprint-FL is reasonable and quite conservative. The two indirect tests indicate that an overall cost of capital of 11.25% implies a cost of equity between 13.84% and 14.12%. These implied rates are below my estimated range for Sprint-FL's cost of equity of between 14.32% and 15.07%. My overall cost of capital estimate for Sprint-FL is in the range of 13.39% and 14.05%, which is between 214 and 280 basis points above the rate used in the firm's cost studies.

Q. Are you aware that the Commission has not previously recognized the need to adjust cost of equity estimates for flotation costs or the quarterly payment of dividends?

A. Yes, I am aware of this. I have estimated the costs of equity for BST and Sprint-FL with adjustments for both flotation costs and the quarterly payment of dividends because I believe that these factors affect equity costs. The economic rationales for these adjustments are elaborated in Billingsley Exhibit RSB-2.

Q. What are your revised estimates of the equity capital costs for BST and Sprint-FL assuming annual dividend payments and no flotation costs?

A. An annual DCF model that ignores flotation costs produces a cost of equity for BST of 15.19% using IBES growth rate forecasts and 15.18% using Zacks growth forecasts. The same revised DCF model produces a cost of equity for Sprint-FL of 14.79% using IBES growth rate forecasts and 14.99% using Zacks growth forecasts. The revised CAPM approach indicates that BST's cost of equity is in the range of 14.63% to 14.66% and that Sprint-FL's cost of equity is in the range of 14.34% and 14.37%. Thus, under the assumption of annual compounding and no flotation costs the revised estimate of BST's cost of equity is within the range of 14.63% to 15.19% and Sprint-FL's cost of equity is within the range of 14.34% and 14.99%.

Q. Do you believe that it would be reasonable for BST and Sprint-FL to use an overall cost of capital of 11.25% in their cost studies if flotation costs and quarterly compounding adjustments are omitted from your estimates?

A. Yes. The revised cost of equity capital estimates for BST are in the range of 14.63% to 15.19% and are in the range of 14.34% and 14.99% for Sprint-FL. The same two indirect tests of reasonableness used above imply costs of equity that are below or within the range of these revised cost of equity estimates for both firms. Further, calculation of the overall costs of capital for each firm in the same manner as described above but using the above revised cost of equity ranges yields a range from 13.85% to 14.36% for BST and produces a range from 13.41% to 13.98% for Sprint-FL. Thus,

the use of an 11.25% cost of capital by BST or Sprint-FL in their cost studies is quite conservative even in the absence of adjustments for flotation costs and the quarterly payment of dividends.

Q. Does this conclude your direct testimony?

A. Yes, it does.

BELLSOUTH TELECOMMUNICATIONS, INC.

DIRECT TESTIMONY OF G. DAVID CUNNINGHAM

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 980696-TP

AUGUST 3, 1998

Q. PLEASE STATE YOUR NAME, ADDRESS AND POSITION WITH BELLSOUTH TELECOMMUNICATIONS, INC. (HEREINAFTER REFERRED TO AS "BELLSOUTH" OR "THE COMPANY").

A. My name is G. David Cunningham and my business address is 3535 Colonnade Parkway, Birmingham, Alabama 35243. My position is Director in the Finance Department of BellSouth.

Q. PLEASE GIVE A BRIEF DESCRIPTION OF YOUR EDUCATIONAL BACKGROUND AND BUSINESS EXPERIENCE IN THE TELECOMMUNICATIONS INDUSTRY.

A. I graduated from Morehead State University, Morehead, Kentucky in 1971 with a Bachelor of Arts Degree in Economics. I was employed by South Central Bell in 1972 and held various staff and line assignments in the Kentucky Network Operations Department until mid-1983. In July of 1983, I moved to Birmingham, Alabama with BellSouth Services, Inc., holding positions in the Corporate Affairs Department and later in the Regulatory Department. My current assignment

includes responsibility for Regulatory and Depreciation concerns within the Finance organization.

Q. WHAT ARE YOUR CURRENT JOB DUTIES AND RESPONSIBILITIES?

A. I am responsible for the preparation of depreciation studies for the nine states comprising BellSouth to determine appropriate depreciation parameters and depreciation rates for booking purposes and to meet regulatory requirements as necessary.

Q. HAVE YOU PREVIOUSLY APPEARED IN REGULATORY PROCEEDINGS REGARDING DEPRECIATION ISSUES?

A. Yes. I have testified and also participated in workshops before various state commissions regarding depreciation. I have served as BellSouth's chief representative on several occasions in negotiations with the Federal Communications Commission (FCC) and the various state commissions in depreciation represcription meetings.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony in this proceeding is to present the economic lives used in BellSouth's calculation of universal service costs and to provide information in response to Issue 4 (a). My

testimony will demonstrate the appropriateness of the forward-looking economic lives developed by BellSouth's Depreciation organization and provided for use in BellSouth's first study using the BCPM 3.1 Model (hereinafter referred to as "BellSouth's BCPM Study"), as described by Ms. Caldwell in her testimony in this proceeding.

Q. WHAT LIVES DOES BELLSOUTH CONSIDER TO BE APPROPRIATE FOR USE IN UNIVERSAL SERVICE COSTS CALCULATIONS?

A. The asset lives that were developed and provided for use in BellSouth's BCPM Study are included in Exhibit GDC-1. These are BellSouth's expected economic lives for newly placed plant.

Q. WHAT IS THE SOURCE OF THE LIVES USED IN BELLSOUTH'S BCPM STUDY?

A. The source of the lives provided for use in BellSouth's BCPM Study is the 1998 BellSouth Florida Depreciation Study, attached to this testimony as Exhibit GDC-2. Projection (economic) lives are defined as the average life expectancy of new additions to plant. The depreciation study also describes average remaining lives and depreciation rates to be used for depreciation booking purposes. These parameters, however, relate to embedded investment and are not used in BellSouth's BCPM Study.

Although this is not a depreciation proceeding, the depreciation study included as Exhibit GDC-2 is being provided to demonstrate the appropriateness of the data.

BellSouth prepared the detailed depreciation study in this exhibit, analyzing the various asset accounts to determine appropriate depreciation parameters for each account. The depreciation study provides explanations of methodology, data and analysis that support the asset lives and other depreciation parameters for asset accounts, including those accounts that are used in BellSouth's BCPM Study.

Q. PLEASE SUMMARIZE BELLSOUTH'S APPROACH IN DETERMINING THE ASSET LIVES USED IN BELLSOUTH'S BCPM STUDY.

A. As demonstrated in the attached depreciation study, numerous methods are utilized to determine the appropriate economic lives of the different asset accounts. One factor used in determining the appropriate lives of all accounts is an analysis of Company planning data. This data is useful in assessing the near term portion of the life cycles of most assets, and is particularly useful when the technology is near the end of its life cycle.

A second factor used in assessing the life of an account is normal mortality, i.e., wear and tear with usage, deterioration with age and accidental removal, breakage, or damage. The technique used to

assess normal mortality is called Historical Mortality Analysis. For some accounts, like poles, Company planning data and normal mortality alone are the major considerations in determining the life. In these cases, the Company does not expect that the future characteristics of this type of plant will differ significantly from the past.

In cases where a newer technology is substituting for an established embedded technology, use of Company planning data and the Historical Mortality Analysis alone to assess the life will generally result in an inappropriately long life. Over the long term, the substitution of a new technology for the old is the primary force driving the displacement of the old technology. Therefore, after initial deployment of the new technology, life analysis techniques that take into account technological substitution must also be used. These technology-sensitive accounts (that is, Digital Electronic Switching, Digital Circuit, Aerial Metallic Cable, Underground Metallic Cable, Buried Metallic Cable) comprise approximately 70% of BellSouth's total plant investment.

Q. HAS THE FCC PRESCRIBED LIVES TO BE USED IN FLORIDA TO DETERMINE DEPRECIATION RATES ON AN INTERSTATE BASIS?

A. Yes. Lives were last prescribed by the FCC in 1995 for booking depreciation expense on an interstate basis in Florida.

Q. DO YOU BELIEVE THAT LIVES PRESCRIBED BY THE FCC ARE APPROPRIATE FOR THIS APPLICATION?

A. No, I do not.

Q. WHY ARE THE LIVES PRESCRIBED BY THE FCC FOR INTERSTATE DEPRECIATION PURPOSES NOT APPROPRIATE FOR USE IN UNIVERSAL SERVICE COST CALCULATIONS?

A. Lives were last prescribed by the FCC in Florida in 1995. These lives, particularly for the technology-sensitive accounts, are much too long. They are based on the old regulatory paradigm in which plant lives were artificially lengthened beyond their true economic lives so that the investment in that plant would be recovered in smaller year-to-year increments over longer periods of time. The assumption under this paradigm was always that BellSouth was entitled to and would recover all of its investments, but over a longer period of time, thus reducing the amount the customer paid in the short term.

In today's competitive environment, however, the marketplace is not likely to allow BellSouth to recover investment based on lives that are inappropriately long. The rapid changes in technology, which BellSouth must embrace in order to stay competitive, shorten asset lives significantly beyond what the FCC has prescribed. BellSouth has emphasized to the FCC that substantially more progress is needed in

moving to lives that adequately reflect the current pace of technology and competitive changes.

With implementation of Price Regulation, BellSouth was given authority to establish its own depreciation rates in Florida beginning January 1998 for intrastate purposes. As a result, BellSouth uses the lives that are supported by the Depreciation Study to determine depreciation rates booked in Florida for intrastate purposes and for external reporting purposes. These lives are significantly shorter than those prescribed by the FCC, particularly for the technology-sensitive accounts.

Q. HAS THE FCC GIVEN ANY INDICATION THAT CHANGES MAY NEED TO BE MADE TO ITS PRACTICES CONCERNING DETERMINATION OF PLANT LIVES?

A. Yes. The FCC has acknowledged the need to examine its depreciation practices in today's environment. On several occasions, the FCC has stated that it has plans to initiate a separate proceeding to undertake a comprehensive review of its depreciation rules. A February 5, 1998, FCC news report listing proposed 1998 review proceedings included the following item: "Depreciation. Consider streamlining or eliminating Commission's methods for prescribing depreciation rates."

In addition, attached to the January 30, 1998, Memorandum Opinion and Order (FCC 98-11) revising depreciation rates for those companies that filed for represcription in 1997, was a separate statement of FCC Commissioner Harold Furchtgott-Roth. His statement included the following: "The Commission's authority to prescribe depreciation rates is merely a vestige of outdated rate-of-return regulation....In today's increasingly competitive environment, there should be no need for the Commission to continue to dictate, even through revised streamlined procedures, depreciation rates or the factors that may be used to compute such rates."

Q. WHAT OTHER OBSERVATIONS DO YOU HAVE AS TO THE INAPPROPRIATENESS OF USING LIVES PRESCRIBED BY THE FCC IN BELLSOUTH'S UNIVERSAL SERVICE COSTS CALCULATIONS?

A. The FCC has emphasized historical data when prescribing BellSouth's depreciation lives. BellSouth does not believe that simply looking at the past can possibly indicate what will happen in the future with equipment that is sensitive to rapid changes in technology. This rear-view mirror approach is clearly not appropriate for projecting the future of this equipment. Emphasis on historical retirement patterns is an indication that one does not expect the future to vary significantly for the past. Even a casual observation of the telecommunications

industry today leaves no doubt that there is an evolution taking place that cannot help but have a major effect on telecommunications assets.

It is clear that forward-looking lives should be used for depreciation purposes and for universal service cost calculations. However, BellSouth believes that the FCC has not properly assessed the impact of technological evolution and increasing competition to determine appropriate forward-looking lives. BellSouth's depreciation study, as demonstrated in Exhibit GDC-2, provides detailed analysis to support forward-looking lives significantly below those prescribed by the FCC, particularly for the technology-sensitive accounts.

Q. ARE THE LIVES USED IN BELLSOUTH'S BCPM STUDY REASONABLE WHEN COMPARED TO LIVES PROPOSED BY OTHER TELECOMMUNICATIONS COMPANIES?

A. Yes. One comparison of lives can be found in Exhibit GDC-3, which lists the lives used in BellSouth's BCPM Study for the major technology-sensitive accounts and the lives that the FCC prescribed in 1994 for AT&T. As shown in this comparison, AT&T's depreciation life for Digital Electronic Switching is 9.7 years. The life that BellSouth uses in its BCPM Study for this account is 10 years. The life prescribed by the FCC in 1995 for BellSouth in Florida was an unrealistically long 17 years. The comparison in this exhibit demonstrates that, for all the major technology-sensitive accounts, the lives used in BellSouth's

BCPM Study are comparable or conservative when compared to the lives last prescribed by the FCC for AT&T as shown in Exhibit GDC-3.

Q. IN THE FLORIDA COST PROCEEDINGS, REFERENCE WAS MADE TO A STREAMLINED DEPRECIATION RATE-SETTING PROCESS DEVELOPED BY THE FCC. PLEASE DESCRIBE THIS PROCESS.

A. As part of CC Docket No. 92-296, the FCC issued a Notice of Proposed Rulemaking in which it stated that it was continuing its "efforts to reduce unnecessary regulatory burdens and their associated costs by undertaking simplification of our depreciation prescription process." The FCC's approach to simplification was to set up ranges of projection life and future net salvage estimates for most of the asset accounts. Under this procedure, if a company is meeting certain predetermined prerequisites and proposes to use projection lives or future net salvage estimates from within these ranges, the company need not submit the voluminous, detailed supporting data otherwise required.

Q. DOES BELLSOUTH BELIEVE THAT THE LIVES SPECIFIED IN THE FCC'S RANGES ARE FORWARD-LOOKING AND APPROPRIATE TO BE USED IN BELLSOUTH'S BCPM STUDY?

A. No. As stated above, the main purpose of this simplification effort was merely to lessen paperwork and the cost of unnecessary regulation. Simplification was not designed to assure forward-looking lives. In fact,

the FCC has prescribed lives lower than these ranges in Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina and South Carolina for some of the major accounts. In Florida, this includes the Aerial Metallic Cable, Underground Metallic Cable, Buried Metallic Cable and Circuit Digital accounts.

Q. WHAT WAS THE BASIS FOR THE PROJECTION LIVES AND FUTURE NET SALVAGE PERCENTAGES THAT WERE USED TO ESTABLISH THESE FCC RANGES?

A. The FCC's ranges were generally developed by nothing more than taking one standard deviation around the mean of the lives and salvage values that the FCC had prescribed most recently for the various accounts for the local exchange carriers. For the first set of accounts for which the FCC ordered ranges, the ranges were based on 1990-1992 represcriptions, and have not been updated since. Lives prescribed in 1990-1992 could hardly be considered forward-looking today.

Q. HOW DO THE ECONOMIC LIVES USED IN BELLSOUTH'S BCPM STUDY COMPARE TO THE LIVES USED TO DETERMINE THE DEPRECIATION RATES BOOKED BY BELLSOUTH IN FLORIDA?

A. The economic lives used in BellSouth's BCPM Study are consistent with those used to determine the depreciation rates currently being booked in Florida for intrastate and for external reporting purposes.

Q. IS THERE ANY MERIT TO A CONCERN RAISED IN OTHER JURISDICATIONS THAT LIVES USED FOR EXTERNAL REPORTING PURPOSES ARE INAPPROPRIATE FOR USE IN THESE STUDIES DUE TO THE "CONSERVATISM" PRINCIPLE OF GAAP?

A. No. The "conservatism" principle of GAAP does not determine BellSouth's lives. BellSouth's economic lives, used for intrastate and external reporting purposes and in BellSouth's BCPM Study, were determined by the approaches described in this testimony and detailed in Exhibit GDC-2. These lives are used to determine depreciation rates that appropriately allocate the cost of BellSouth's assets over their estimated useful lives in a systematic and rational manner.

Q. SOME CONCERN HAS BEEN EXPRESSED IN OTHER JURISDICTIONS AS TO THE APPROPRIATENESS OF THE LIVES USED IN STUDIES FOR A NARROWBAND NETWORK. DO YOU HAVE COMMENTS REGARDING THESE CONCERNS?

A. Yes. The lives used in BellSouth's BCPM Study are based on the economics of providing traditional telecommunications services, and would be appropriate even if the only services BellSouth ever provided

in the future were narrowband, traditional telephony services. Our existing network can be described as narrowband, and fiber deployment in the feeder is already at a significant penetration level. This is due to the advantages of fiber's high capacity, low maintenance and reliability. Deployment of fiber in the distribution will also be driven by these advantages. Fiber deployment in the feeder is greater than that in the distribution because traffic in the feeder can be aggregated and carried more efficiently in larger "pipes". Increasingly, the economics of fiber deployment make it desirable further and further out in the network (closer and closer to the customer premises).

It should be pointed out that many customers use modems that operate at 28,800 bits per second (bps) and greater over our narrowband, voice grade network. Data transmission at these rates meet the current needs of most residential customers. However, customer needs are expanding, and BellSouth is designing today's network to meet customers' growing needs. Today's customers are requesting services that require higher bandwidth, but this is a long way from broadband, cable TV capability. Replacement of today's network will occur due to normal mortality and technological obsolescence, that is, when the current technology is not the most efficient means of providing narrowband service in the future.

Two other characteristics of fiber which are closely related are reliability and maintainability. Customer needs for reliability, which are

increasing, can be met through the use of fiber in our network. Maintenance expense, which the Company is always seeking ways to reduce, can also be improved through the use of fiber. Both factors add to the economic attractiveness of fiber for a narrowband, voice grade network.

As stated above, the lives used in BellSouth's BCPM Study are based on the economics of providing traditional telecommunications services. They do not include future demands for emerging digital and multimedia services, nor do they include the impact of a paradigm shift to a totally competitive marketplace. Including these impacts would likely result in a reduction of lives below the Company's current recommendations.

Q. OTHER PARTIES IN FLORIDA'S COST PROCEEDINGS POINTED TO AN INCREASE IN THE DEPRECIATION RESERVE OVER TIME AS EVIDENCE THAT FCC-PRESCRIBED LIVES HAVE BEEN FORWARD-LOOKING. HOW DO YOU RESPOND?

A. The fact that the reserve has grown over time is not an indication that the reserve is at the appropriate level. The depreciation reserve is the accumulation of all past depreciation accruals, reduced by plant retirements. In an environment in which one technology is rapidly displacing another technology, it is obvious that the depreciation reserve must be built up by appropriate accruals to a level high enough

to handle the inevitable asset retirements. Today, we have two situations in which a major technology displacement is occurring; specifically, digital is replacing analog, and fiber is replacing copper. Never in the history of this industry has technology displacement been so pronounced. Huge retirements of these old technologies are expected in bulk at the end of the technologies' life span. Depreciation accruals over the years have not been high enough, due to inappropriately long prescribed lives for copper and analog related assets, to position the depreciation reserve for the avalanche of retirements that will soon come.

The critical issue here is not just that the reserve has increased over the past few decades. The issue is that the reserve has not increased enough to handle retirements caused by the dramatic paradigm shift that has occurred in the telecommunications industry.

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. BellSouth's Depreciation organization has provided economic lives for use in BellSouth's BCPM Study that were developed by performing detailed analyses of each asset account. The 1998 BellSouth Florida Depreciation Study, which documents this analysis, is attached to this testimony as Exhibit GDC-2. These lives are appropriate for use in BellSouth's BCPM Study. The lives prescribed by the FCC for

depreciation purposes are inappropriately long, particularly for the technology-sensitive accounts.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

CERTIFICATE OF SERVICE
Docket No. 980733-TL

I HEREBY CERTIFY that a true and correct copy of the foregoing was served via F· ·leral Express and Hand Delivery this 24th day of September, 1998 to the following:

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