

BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

 In the Matter of : DOCKET NO. 980696-TP
 :
 Determination of the cost of :
 basic local telecommunications :
 service, pursuant to :
 Section 364.025, :
 Florida Statutes. :

VOLUME 3

Pages 362 through 521



PROCEEDINGS: HEARING

BEFORE: CHAIRMAN JULIA L. JOHNSON
 COMMISSIONER J. TERRY DEASON
 COMMISSIONER SUSAN F. CLARK
 COMMISSIONER JOE GARCIA
 COMMISSIONER E. LEON JACOBS, J

DATE: Monday, October 12, 1998

TIME: Commenced at 9:40 a.m.

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

REPORTED BY: H. RUTHE POTAMI, CSR, RPR
 Official Commission Reporter

APPEARANCES:
 (As heretofore noted.)

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P R O C E E D I N G S

1
2 (Transcript follows in sequence from
3 Volume 2.)

4 MR. COX: Next witness is BellSouth and
5 Sprint Witness Randall S. Billingsley.

6 MR. CARVER: Dr. Billingsley has both direct
7 and rebuttal testimony. He also has a total of 28
8 exhibits, and there is some overlap in numbering. He
9 has 1 through 16 direct exhibits, and then 1 through
10 12 rebuttal exhibits for a total of 28, and I request
11 that both his direct and rebuttal be inserted into the
12 record and that the exhibits be marked for
13 identification and admitted.

14 CHAIRMAN JOHNSON: How are they labeled?
15 Are they RB?

16 MR. CARVER: Yes, ma'am. It's RSB for both
17 the direct and rebuttal.

18 CHAIRMAN JOHNSON: Okay. We will insert his
19 direct and rebuttal testimony into the record as
20 though read; identify RSB-1 through 16 on direct and
21 RSB-1 through 12 on redirect as Composite Exhibit 7
22 and admit it into the record as though -- admit it
23 without objection.

24 (Exhibit 7 marked for identification and
25 received in evidence.)

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

3

4 **II. PURPOSE OF STATEMENT AND SUMMARY OF CONCLUSIONS**

5 **A. PURPOSE OF STATEMENT**

6

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

8

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

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

17

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

20

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

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

2
3 In the first approach I apply the DCF model to a group of firms identified as
4 comparable in risk to BST and apply the model to another group of firms identified as
5 comparable in risk to Sprint-FL. Average costs of equity capital are calculated by
6 applying the DCF model to each of these two separate groups of comparable firms in
7 order to provide objective, market-determined costs of equity capital for BST and
8 Sprint-FL. In the second approach, I use the CAPM to estimate the cost of equity
9 capital for the group of publicly traded firms that is comparable in risk to BST and also
10 for the publicly traded group of firms that is comparable in risk to Sprint-FL. Finally, I
11 conduct a risk premium analysis.

12
13 The cost of equity for BST is in the range of 15.26% to 15.28% using the comparable
14 firm group DCF model approach. Under the same approach, the cost of equity for
15 Sprint-FL is in the range of 14.88% to 15.07%. The CAPM approach indicates that
16 BST's cost of equity capital is in the range of 14.61% to 14.64% and that Sprint-FL's
17 cost of equity is in the range of 14.32% to 14.35%. The risk premium approach
18 indicates that the expected return on the overall equity market, as measured by the
19 S&P 500, is currently between 13.63% and 14.86%. Billingsley Exhibit No. RSB-1
20 explains how my analytical approaches are consistent with well-accepted regulatory
21 and economic standards in cost of capital analysis. From these analyses, I conclude
22 that the current cost of equity capital for BST is within the range of 14.61% to 15.28%
23 and that the current cost of equity for Sprint-FL is within the range of 14.32% to
24 15.07%.

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

3

4 A. Two indirect tests of the reasonableness of each company's use of an 11.25% overall
5 cost of capital are performed. A direct test of reasonableness is also used to evaluate
6 this rate. The first indirect test uses each company's reported book value capital
7 structure and embedded cost of debt. BST's reported capital structure is 58.50% equity
8 and 41.50% debt and its embedded cost of debt is 6.33%. Sprint-FL's reported book
9 value capital structure is 60.89% equity and 39.11% debt and its embedded cost of debt
10 is 7.21%. An overall cost of capital of 11.25% using these parameters implies a cost of
11 equity of 14.74% for BST and 13.84% for Sprint-FL. The second test uses an equity
12 ratio for BST of 60%, an associated debt ratio of 40%, and a current forward-looking
13 cost of debt of 6.65%. The second test for Sprint-FL uses an equity ratio of 59.58%
14 and a debt ratio of 40.42% but uses Sprint-FL's current forward-looking cost of debt of
15 7.02%. An overall cost of capital of 11.25% implies a cost of equity of 14.32% for
16 BST and 14.12% for Sprint-FL. These two indirect tests logically imply costs of equity
17 that are lower than or within my estimated range for BST's cost of equity capital of
18 14.61% to 15.28% and lower than my estimated range for Sprint-FL's cost of equity of
19 14.32% to 15.07%.

20

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

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

5
6 **III. CURRENT STATUS OF COMPETITION IN THE**
7 **TELECOMMUNICATIONS INDUSTRY**

8
9 Q. What is the current status of competition in the telecommunications industry?

10
11 A. Competition in the telecommunications industry has increased dramatically in recent
12 years. The sources of that increased competition include a greater threat of new
13 entrants in the industry, a significant increase in the number and strength of existing
14 competitors, a greater threat of substitute telecommunications products and services,
15 more intense rivalry among existing competitors in the industry, and enhanced
16 regulatory risk at both the state and the federal levels. Thus, both actual and potential
17 competition have increased and the business risk of the industry has consequently
18 increased. What investors believe about the future competition that the local exchange
19 companies (LECs) will face is critical to cost of capital analysis. Investors'
20 expectations of competition and its impact on risk are reflected in the capital costs
21 faced by Sprint-FL and BST.

22
23 Q. Specifically how has competition increased in recent years?

24
25 A. The interLATA, intraLATA, and local exchange markets have become much more

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

8
9 It is clear that investors believe that major CAPs, IXCs, and cable television (CATV)
10 companies are positioning themselves to compete vigorously for customers in the local
11 exchange market. BST and Sprint-FL face heightened potential competition that poses
12 additional risk to their operations and their ability to recoup extensive infrastructure
13 investments. Investors see such competition coming from wired, wireless, and Internet
14 sources. Consider the representative recent observations on competition in **Business**
15 **Week** ("Zooming Down The I-Way," Andy Reinhardt, Peter Elstrom, and Paul Judge,
16 April 7, 1997, pp. 76-87):

17 [O]utside the boardrooms of telecom's giants, innovation is sweeping the wired
18 and wireless world - bubbling up from the bottom. Hundreds of alternative
19 carriers and nimble startups are leaping head-first into the newly deregulated
20 environment (p. 76).

21
22 The Internet is also giving rise to new products that could undermine traditional
23 phone services. The one that sends shivers down the spines of telecom execs:
24 software that lets you place phone calls over the net (p. 77).

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

5
6 The provision of wireless services such as personal communication systems by CAPs,
7 CATV operators, and electric utilities also enhances the ability of customers to
8 completely bypass local exchange services. Wireless services are becoming a viable
9 consumer alternative to LEC services. These alternatives will only increase the
10 competitiveness of that environment and thus magnify the business risk of LEC
11 operations. This growing risk is increasing the costs of raising capital for Sprint-FL
12 and BST.

13
14 Q. Has the business risk of the telecommunications industry increased in recent years and
15 is it expected to continue increasing in the future, especially due to the passage of and
16 uncertainties in implementing the Telecommunications Act of 1996?

17
18 A. Yes. The passage of the Telecommunications Act and responses to its passage
19 dramatically indicate that business risk has been increasing and will increase even
20 more in the future. The Act, which was signed into law by President Clinton on
21 February 8, 1996, essentially allows local, long-distance, and cable companies to get
22 into one another's businesses. While market pressures have been eroding these limits
23 in recent years, the various competitors are now moving forward rapidly. However,
24 open competition brings a significant increase in risk.

25

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

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

11
12 The implication is that investors are requiring higher rates of return to compensate for
13 the higher investment risk resulting from the new competitive environment fostered by
14 the implementation of the Telecommunications Act.

15
16 Q. How have recent mergers and acquisitions changed the nature of competition in the
17 telecommunications industry?

18
19 A. Numerous recent mergers and acquisitions have significantly increased the degree of
20 competition among telecommunications firms and consequently have increased the
21 risks faced by industry investors. This implies that investors must increase their return
22 requirements to be adequately compensated for the increased riskiness of holding
23 telecommunications stocks.

24
25 Consider the following recently announced key mergers and acquisitions in the

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

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

15
16 The increasing risk that telecommunications investors face results not only from the
17 competitive implications of pending mergers and acquisitions but from the additional
18 uncertainty associated with the often lengthy regulatory approval process. For
19 example, the MCI / WorldCom merger has been reviewed by European and U.S.
20 regulators for months. Indeed, in July of 1998, the European Commission approved the
21 merger subject to the divestiture of MCI's Internet business while the U.S. Department
22 of Justice only approved the merger as MCI agreed to sell its Internet backbone
23 facilities and wholesale and retail Internet businesses to Cable & Wireless PLC. The
24 MCI / WorldCom combination, though widely expected, still awaits final approval by
25 the Federal Communications Commission. Such regulatory uncertainty enhances

1 investment risk in the industry.

2
3 Q. Is there any capital market evidence that LEC investors believe that the AT&T / TCI
4 deal has increased competition and investment risk in the telecommunications
5 industry?

6
7 A. Yes. The announcement of the deal was associated with a significant drop in the stock
8 prices of some key LECs. This adverse reaction to the deal is described in a report by
9 Bloomberg's business information site on the Internet (<http://www.bloomberg.com>),
10 "Baby Bell Shares Fall as AT&T Targets Local Market," June 24, 1998):

11
12 Shares of Bell Atlantic Corp., BellSouth Corp. and other local telephone
13 companies fell after AT&T Corp., the largest U.S. long-distance telephone
14 company, launched an assault on their market

15
16 The Standard & Poor's Telephone Index, which tracks the performance of the
17 local phone company stocks, dropped 23.60 points, or 3.8 percent, to 599.79, the
18 biggest one-day decline since Oct. 27 last year...

19
20 AT&T's move would give it direct access to TCI's 10 million customers in the
21 U.S. and break the Baby Bell's stranglehold on the \$100 billion-a-year local
22 phone market. "This basically puts AT&T on their door step," said Mitchell
23 Weisberg, an information technology consultant who, as an AT&T employee in
24 the early 1980s, helped put together the company's divestiture plan. "There's
25 significant revenue at risk" for the Baby Bells, Weisberg said.

1
2 The local phone companies stand to lose in two ways under the AT&T-TCI
3 combination. Customers in regions where TCI operates cable systems will have
4 the option of using AT&T for local calls, which means lost revenue for that
5 region's Baby Bell. ... What's more, AT&T now has to pay access charges to the
6 Baby Bells for using their network to complete long-distance calls. That won't be
7 the case for calls routed through the TCI network. "It's a certainty this will slow
8 down the earnings growth" of the Baby Bells, said Paul Wright, a
9 telecommunications analyst at Loomis, Sayles & Co., which owned shares of
10 Bell Atlantic and BellSouth as of the end of March. ... The [LEC's] stocks also
11 dropped after Merrill Lynch analyst Daniel Reingold cut his rating on Bell
12 Atlantic, SBC and Ameritech. AT&T's move "increases the perception that the
13 (Baby Bells) will face competitive risk from local entry on both the business and
14 consumer sides," Reingold wrote in a report.

15
16 The fact that LEC share prices fell in response to the announcement of the purchase
17 of TCI by AT&T is strong, concrete capital market evidence that investors believe
18 that LEC risk has increased significantly. The above Bloomberg report documents
19 the primary source of concern to be a significant loss in both local call and access
20 charge revenues. The investment community apparently views the deal as the advent
21 of significantly greater competition in the consumer and business segments of the
22 local telephone market.

23
24 **IV. DCF MODEL ESTIMATES OF EQUITY CAPITAL COSTS**
25 **FOR BST AND SPRINT-FL**

1 **A. FORM OF THE DCF MODEL USED IN THE ANALYSIS**

2
3 Q. What form of the DCF model do you use to estimate equity capital costs for BST and
4 Sprint-FL?

5
6 A. I use the constant growth form of the DCF model that assumes an indefinite or infinite
7 holding period. Since most U.S. firms pay dividends quarterly, I use the quarterly form
8 of the DCF model under the realistic assumption that such dividends are changed by
9 firms once a year, on average in the middle of the year. Specifically, the cost of equity
10 K is calculated as:

11
12
$$K = \left[D_0^q (1 + G) / P_{\text{mkt}} \right] + G = \left[D_1^q / P_{\text{mkt}} \right] + G,$$

13
14 where G is the most recent average five-year earnings per share growth rate projected
15 by analysts, as reported by either Zacks Investment Research Inc. (Zacks) or by the
16 IBES, and P_{mkt} is the average of the three most recent months (April to June 1998) of
17 high and low prices for the equity. D_0^q and D_1^q reflect the most recent annual and the
18 anticipated next year amount of quarterly dividends, respectively. D_1^q is calculated as:

19
20
$$D_1^q = d_1 (1 + K)^{25} + d_2 (1 + K)^5 + d_3 (1 + K)^{25} + d_4,$$

21
22 where d_1 and d_2 are the quarterly dividends paid prior to the assumed yearly change
23 in dividends and d_3 and d_4 are the two quarterly dividends paid after the given change
24 in the amount paid by a firm. Thus, dividend D_1^q captures the quarterly payment of
25 dividends that grow at rate G.

1
2 In order to reflect the significant effect of flotation costs on the cost of equity, I
3 directly reduce the market price P_{mkt} used in my analysis by a conservative 5 percent.
4 Billingsley Exhibit No. RSB-2 elaborates on the nature and applicability of the DCF
5 model in estimating the cost of capital in regulatory proceedings. It also discusses the
6 importance of adjusting for both the payment of quarterly dividends and for flotation
7 costs.

8
9 **B. SPECIFIC APPLICATION OF THE DCF MODEL TO ESTIMATE**
10 **EQUITY COSTS FOR BST AND SPRINT-FL**

- 11
12 Q. Specifically how do you apply the above DCF model to BST and Sprint-FL, since
13 neither company has equity trading in the marketplace?
14
- 15 A. Because BST is owned by its parent holding company, BellSouth Corporation, and
16 Sprint-FL is ultimately owned by its parent holding company, Sprint Corporation,
17 neither of the companies have equity trading in the market. It is consequently
18 necessary to infer the equity costs of BST and Sprint-FL by applying the DCF model
19 to each of the two groups of firms identified as comparable in risk to BST and Sprint-
20 FL, respectively.
21
- 22 Q. What method is used to identify firms of comparable risk to BST and firms of
23 comparable risk to Sprint-FL?
24
- 25 A. I use a cluster analysis model to identify firms that are comparable in risk to each firm.

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

5
6 Two dimensions of risk are used to compare firms. First, the financial risk of firms is
7 measured and used as a basis of comparison. Second, business or operating risk is
8 compared among firms. These dimensions are, in effect, averaged in a manner that
9 generates a comprehensive risk profile. Thus, firms are not just compared on a
10 characteristic-by-characteristic basis, they are compared in light of those chosen
11 characteristics and the relationship among those characteristics.

12
13 A summary measure expresses the distance between each firm and BST and each firm
14 and Sprint-FL. Two groups of the 20 firms that are closest to each target firm, BST or
15 Sprint-FL, in terms of this summary distance measure are chosen for analysis. A more
16 detailed discussion of this cluster analysis is contained in Billingsley Exhibit No. RSB-
17 5.

18
19 Q. How do the individual measures of riskiness relate to the comparability of the group
20 of firms in the clusters in terms of overall riskiness?

21
22 A. It may be tempting to single out one company in a cluster of comparable firms and
23 incorrectly compare its various risk measures individually to those of BST or
24 individually to those of Sprint-FL. However, none of the individual companies
25 identified in the BST-comparables portfolio are precisely like BST in every respect nor

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

5
6 In summary, none of the individual firms in a cluster are precisely like the given target
7 firm in terms of each individual measure of risk. A cluster should be viewed as a
8 portfolio of firms that, as a group, is comparable in risk to a given target firm, BST or
9 Sprint-FL.

10
11 **C. DCF MODEL COST OF EQUITY ESTIMATES FOR BST AND**
12 **SPRINT-FL**

13
14 Q. What cost of equity capital do you estimate for BST using the DCF model?

15
16 A. Billingsley Exhibit No. RSB-3 lists the portfolio of 20 firms that are comparable in
17 risk to BST and reports the average cost of equity for the portfolio using both IBES
18 and Zacks growth rate forecasts. The evidence indicates that the cost of equity for BST
19 is in the range of 15.26% to 15.28%.

20
21 Q. What cost of equity capital do you estimate for Sprint-FL using the DCF model?

22
23 A. Billingsley Exhibit No. RSB-4 lists the portfolio of 20 firms that are comparable in
24 risk to Sprint-FL and reports the average cost of equity for the portfolio using both
25 IBES and Zacks growth rate forecasts. The evidence indicates that the cost of equity

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

2
3 **V. CAPITAL ASSET PRICING MODEL ESTIMATES OF EQUITY**
4 **CAPITAL COSTS FOR BST AND SPRINT-FL**

5
6 Q. What form of the CAPM do you use to estimate equity capital costs for BST and
7 Sprint-FL?

8
9 A. I use the common form of the model, which calculates the risk-adjusted rate of return
10 K as:

11
12
$$K = R_f + B [R_m - R_f],$$

13
14 where R_f is the expected return on a risk-free security like a U.S. Treasury bond, B is
15 the expected beta or systematic risk of the equity security, and R_m is the expected
16 return on a broad index of equity market performance, the S&P 500.

17
18 Q. How and where do you obtain the beta coefficient data needed to estimate each
19 company's cost of equity capital using the CAPM?

20
21 A. Since BST is a subsidiary of BellSouth Corporation and Sprint-FL is a subsidiary of
22 Sprint Corporation, neither company has its own equity trading in the market and
23 therefore neither company has the beta coefficient required by the CAPM. Thus, as
24 discussed above in my DCF analysis, it is necessary to identify a group of firms that is
25 comparable in risk to each target firm that does have traded equity and therefore

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

7
8 The beta coefficients used in my CAPM analyses are the most recent prospective
9 measures supplied by BARRA, a widely recognized provider of data and decision
10 support systems for institutional investors. Billingsley Exhibit No. RSB-6 elaborates
11 on the nature and significance of using prospective rather than historical beta
12 estimates.

13
14 Q. How do you estimate the risk-free rate of return needed in the CAPM equation?

15
16 A. In order to be consistent with the expectational emphasis of the CAPM, I use the
17 6.13% average expected yield implied by the prices of the U.S. Treasury bond futures
18 contracts quoted during June of 1998. The prices of these contracts reflect the market's
19 consensus forecast for 20-year U.S. Treasury bonds, the longest maturity with futures
20 data available. Billingsley Exhibit No. RSB-7 describes the futures contracts used in
21 the analysis in more detail and shows the calculations necessary to derive the implied
22 expected future risk-free rate of return.

23
24 Q. How do you estimate the expected return on a broad index of equity market
25 performance for use in the CAPM?

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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

1 **A. NATURE OF THE APPROACH**

2

3 Q. What is the market risk premium approach?

4

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

11

12 **B. SPECIFIC TYPE OF RISK PREMIUM ANALYSIS USED**

13

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

15

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

24

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

1 to Aaa-rated public utility bonds from 1987 to mid-1998 is 6.74%. The average yield
2 on Aaa-rated public utility over the most recent three months (April to June of 1998) is
3 6.89%. Thus, the average risk premium of 6.74% is added to the recent average Aaa-
4 public utility bond return of 6.89% to yield an expected cost of equity return on the
5 S&P 500 of 13.63%.

6
7 Billingsley Exhibit No. RSB-10 shows that the average expected risk premium relative
8 to A-rated public utility bonds from 1987 to mid-1998 is 6.57%. The average yield on
9 A-rated public utility over the most recent three months (April to June of 1998) is
10 7.12%. Thus, the average risk premium of 6.57% is added to the recent average A-
11 public utility bond return of 7.12% to yield an expected cost of equity return on the
12 S&P 500 of 13.69%.

13
14 In summary, risk premium analyses using both Aaa- and A-rated public utility bond
15 return reference points indicate that the expected return on the broad equity market, as
16 measured by the S&P 500, is between 13.63% and 13.69%.

17
18 **C. ADJUSTMENT FOR POTENTIAL CHANGES IN THE RISK**
19 **PREMIUM OVER TIME**

20 **1. EVIDENCE OF CHANGES IN THE RISK PREMIUM**

21
22 Q. Can any changes in the risk premium be adjusted for so as to increase the confidence in
23 its representativeness?

24
25 A. Yes. As elaborated on in Billingsley Exhibit No. RSB-8, studies of the historical

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

6
7 Research on this phenomenon by professors R. S. Harris and F.C. Marston, published
8 in **Financial Management** in 1992, finds that the equity risk premium moves an
9 average of $-.651$ of contemporaneous changes in the return on a benchmark low-risk
10 security (index). In other words, if interest rates decline by 100 basis points, the equity
11 risk premium will increase by an average of about 65 basis points.

12
13 **2. SPECIFIC ADJUSTMENT FOR CHANGES IN THE**
14 **EQUITY RISK PREMIUM OVER TIME**
15

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

19
20 A. During the period of Harris and Marston's study, the average risk premium was 6.47%
21 and the average yield on long-term U.S. Treasury bonds was 9.84%. As noted above,
22 the equity market risk premium is expected to change an average of $-.651$ of changes in
23 the level of long-term Treasury bond yields. Given that the current average yield on
24 30-year Treasury bonds is 5.69% (June 1998), the appropriate current risk premium is
25 9.17%. This is calculated by multiplying the 4.15% decline in rates since the time

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

6
7 Q. What is your conclusion with regard to the equity capital costs of BST and Sprint-FL?

8
9 A. Based on my cost of equity analyses, I believe that BST's cost of equity is in the range
10 of 14.61% to 15.28% and Sprint-FL's cost of equity is in the range of 14.32% and
11 15.07% .

12 13 VII. DEBT CAPITAL COSTS OF BST AND SPRINT-FL

14
15 Q. How do you determine the current debt capital costs faced by BST and Sprint-FL?

16
17 A. The costs of debt capital are estimated using current forward-looking market data.

18
19 Q. How can a company's forward-looking cost of debt be empirically estimated?

20
21 A. A firm's forward-looking cost of debt can be estimated by adding the current yield to
22 maturity on 30-year U.S. Treasury bonds to the average spread (difference) between
23 the yields on such bonds and the yields on benchmark bonds issued by firms similar in
24 risk to the target firm. As discussed above in my broader risk premium analyses, two
25 benchmarks are used to capture the different debt market circumstances faced by BST

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

4
5 For the period from April to June of 1998, 30-year U.S. Treasury bonds yielded an
6 average of 5.83%. As shown in Billingsley Exhibit RSB-11, the spread between Aaa-
7 rated public utility bonds and 30-year Treasury bonds averaged 0.80% from October of
8 1987 through June of 1998. Adding the average spread of 0.80% to the above recent
9 average Treasury bond yield to maturity of 5.83% produces a yield of 6.63%, which
10 does not reflect the material effect of flotation costs.

11
12 As shown in Billingsley Exhibit RSB-12, the spread between A-rated public utility
13 bonds and 30-year Treasury bonds averaged 1.15% from October of 1987 through June
14 of 1998. Adding the average spread of 1.15% to the above-noted recent average
15 Treasury bond yield to maturity of 5.83% produces a yield of 6.98%, which does not
16 reflect the material effect of flotation costs.

17
18 Q. What are your estimates of the forward-looking costs of debt for BST and Sprint-FL?

19
20 A. Based on my analyses, I believe that BST's forward-looking cost of debt is 6.65% and
21 that Sprint-FL's forward-looking cost of debt is 7.00%.

22
23 **VIII. REASONABLENESS OF USING AN 11.25% COST OF CAPITAL**
24 **IN THE COST STUDIES OF BST AND SPRINT-FL**
25

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

3

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

14

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

17

18 A. As shown in Billingsley Exhibit RSB-13, as of March 31, 1998, BST's reported book
19 value capital structure was 58.50% equity and 41.50% debt and its embedded cost of
20 debt was 6.33%. An overall cost of capital of 11.25% implies a cost of equity of
21 14.74%. As shown in Billingsley Exhibit RSB-14, as of March 31, 1998, Sprint-FL's
22 reported book value capital structure was 60.89% equity and 39.11% debt and its
23 embedded cost of debt was 7.21%. An overall cost of capital of 11.25% implies a cost
24 of equity of 13.84%.

25

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

3

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

8

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

10

11 A. I use my estimated costs of equity and debt along with the average market value-based
12 capital structures for each of the two groups of 20 firms shown to be comparable in
13 risk to BST and Sprint-FL. The analysis uses a cost of debt of 6.65% and a cost of
14 equity of from 14.61% to 15.28% for BST. As shown in Billingsley Exhibit RSB-15,
15 the average market value-based capital structure is 90.24% equity and 9.76% debt.
16 These data indicate that BST's overall forward-looking cost of capital is in the range of
17 13.83% to 14.44%.

18

19 The analysis of Sprint-FL uses a cost of debt of 7.00% and a cost of equity of from
20 14.32% to 15.07%. As shown in Billingsley Exhibit RSB-16, the average market
21 value-based capital structure is 87.31% equity and 12.69% debt. These data indicate
22 that Sprint-FL's overall forward-looking cost of capital is in the range of 13.39% to
23 14.05%.

24

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

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

2
3 A. Based on the above tests, the use of an 11.25% overall cost of capital by BST is
4 reasonable and quite conservative. Specifically, the two indirect tests indicate that an
5 overall cost of capital of 11.25% implies a cost of equity between 14.32% and 14.74%.
6 These implied rates are below or within my estimated range for BST's cost of equity of
7 between 14.61% and 15.28%. My overall cost of capital estimate for BST is in the
8 range of 13.83% and 14.44%, which is between 258 and 319 basis points above the
9 11.25% rate used in the company's cost studies.

10
11 Similarly, the use of an 11.25% overall cost of capital by Sprint-FL is reasonable and
12 quite conservative. The two indirect tests indicate that an overall cost of capital of
13 11.25% implies a cost of equity between 13.84% and 14.12%. These implied rates are
14 below my estimated range for Sprint-FL's cost of equity of between 14.32% and
15 15.07%. My overall cost of capital estimate for Sprint-FL is in the range of 13.39%
16 and 14.05%, which is between 214 and 280 basis points above the rate used in the
17 firm's cost studies.

18
19 Q. Are you aware that the Commission has not previously recognized the need to adjust
20 cost of equity estimates for flotation costs or the quarterly payment of dividends?

21
22 A. Yes, I am aware of this. I have estimated the costs of equity for BST and Sprint-FL
23 with adjustments for both flotation costs and the quarterly payment of dividends
24 because I believe that these factors affect equity costs. The economic rationales for
25 these adjustments are elaborated in Billingsley Exhibit RSB-2.

1

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

4

5 A. An annual DCF model that ignores flotation costs produces a cost of equity for BST of
6 15.19% using IBES growth rate forecasts and 15.18% using Zacks growth forecasts.
7 The same revised DCF model produces a cost of equity for Sprint-FL of 14.79% using
8 IBES growth rate forecasts and 14.99% using Zacks growth forecasts. The revised
9 CAPM approach indicates that BST's cost of equity is in the range of 14.63% to
10 14.66% and that Sprint-FL's cost of equity is in the range of 14.34% and 14.37%.
11 Thus, under the assumption of annual compounding and no flotation costs the revised
12 estimate of BST's cost of equity is within the range of 14.63% to 15.19% and Sprint-
13 FL's cost of equity is within the range of 14.34% and 14.99%.

14

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

18

19 A. Yes. The revised cost of equity capital estimates for BST are in the range of 14.63% to
20 15.19% and are in the range of 14.34% and 14.99% for Sprint-FL. The same two
21 indirect tests of reasonableness used above imply costs of equity that are below or
22 within the range of these revised cost of equity estimates for both firms. Further,
23 calculation of the overall costs of capital for each firm in the same manner as described
24 above but using the above revised cost of equity ranges yields a range from 13.85% to
25 14.36% for BST and produces a range from 13.41% to 13.98% for Sprint-FL. Thus,

1 the use of an 11.25% cost of capital by BST or Sprint-FL in their cost studies is quite
2 conservative even in the absence of adjustments for flotation costs and the quarterly
3 payment of dividends.
4

5 Q. Does this conclude your direct testimony?

6
7 A. Yes, it does.
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1 **BELLSOUTH TELECOMMUNICATIONS INC. AND SPRINT -FLORIDA INC.**

2 **BEFORE THE**

3 **FLORIDA PUBLIC SERVICE COMMISSION**

4 **DOCKET NO. 980696-TP**

5 **REBUTTAL TESTIMONY OF**

6 **DR. RANDALL S. BILLINGSLEY**

7 **SEPTEMBER 2, 1998**

8
9 **I. INTRODUCTION**

10
11 Q. Please state your name, occupation, and business address.

12
13 A. My name is Randall S. Billingsley. I am a finance professor at Virginia Polytechnic Institute
14 and State University. I also act as a financial consultant in the areas of cost of capital analysis,
15 financial security analysis, and valuation. My business address is: Department of Finance,
16 Pamplin College of Business, Virginia Polytechnic Institute and State University, Blacksburg,
17 Virginia 24061-0221.

18
19 This rebuttal testimony presents my independent professional opinions and is not presented by
20 me as a representative of Virginia Polytechnic Institute and State University.

21
22 Q. Have you previously submitted testimony in this proceeding on behalf of BellSouth
23 Telecommunications Corporation (BST) and Sprint-Florida, Incorporated (Sprint-FL)?

24
25 A. Yes.

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Q. Have you prepared exhibit 'ts 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

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

6
7 I also update my direct testimony that was submitted to the Florida Public Service Commission
8 (Commission) on August 3, 1998 in this proceeding. Thus, I determine the reasonableness of
9 the use of an overall cost of capital of 11.25% in the cost studies of BST and Sprint-FL and
10 estimate the companies' forward-looking costs of capital in light of updated capital market and
11 company data. This provides evidence useful in preparing universal service fund cost studies in
12 the state of Florida.
13

14
15
16 ***B. SUMMARY OF REBUTTAL OF MR. JOHN I. HIRSHLEIFER'S***

17
18 **TESTIMONY ON BEHALF OF AT&T AND MCI**

19
20 Q. What issues does your rebuttal focus on in Mr. Hirshleifer's direct testimony concerning capital
21 costs of BST and Sprint-FL?

22
23 A. My rebuttal explains the errors and inconsistencies in Mr. Hirshleifer's discounted cash flow
24 (DCF) and capital asset pricing model (CAPM) analyses of BST and Sprint-FL's costs of
25

1 equity capital, his cost of debt estimation, his recommended capital structure, and his
2 misunderstanding of the nature and significance of the riskiness of investing in the
3 telecommunications industry. His errors in estimating the costs of equity for BST and Sprint-FL
4 using the DCF approach include: 1) use of a highly subjective three-stage model that is not
5 representative of the investor's perspective; 2) use of growth rate forecasts that do not reflect
6 consensus investment community expectations; 3) inappropriate and unsupported reliance on
7 BellSouth, the other regional Bell holding companies (RBHCs), and selected independent
8 telephone companies as comparable in risk to BST and Sprint-FL; 4) failure to adjust for
9 flotation costs, and 5) failure to use the appropriate form of the DCF model that recognizes the
10 quarterly payment of dividends.
11

12
13 Mr. Hirshleifer's CAPM errors in calculating the costs of equity for BST and Sprint-FL
14 include: 1) significant underestimation of the equity risk premium in part due to the use of his
15 flawed three-stage model, and 2) arbitrary exclusion of all members of the Standard and Poor's
16 Composite 500 Index (S&P 500) from capital cost analysis that do not have a dividend yield of
17 at least 2%. These errors explain why his CAPM estimates of the costs of equity for BST and
18 Sprint-FL are so seriously underestimated.
19

20
21 My rebuttal shows that Mr. Hirshleifer's cost of debt analyses are flawed by his reliance on
22 dated market information from December of 1997. He also incorrectly includes debt in his
23 analyses that was not issued to finance long-term telephone network assets and that was issued
24 by the parent holding companies of BST and Sprint-FL. Moreover, Mr. Hirshleifer places too
25

1 much reliance on book values in determining his recommended capital structure. Finally, I show
2 that Mr. Hirshleifer's views on the risks that are relevant to assessing capital costs in the
3 telecommunications industry are confused and inconsistent. In the same vein, I show that his
4 argument that the business of leasing network elements is of relatively low risk is unsupported.
5

6 **C. SUMMARY OF UPDATED BST AND SPRINT-FL COST OF CAPITAL**
7 **ANALYSES**
8
9

10 Q. Please describe the approaches that you use to update your estimates of the costs of equity
11 capital for BST and Sprint-FL and summarize your conclusions.
12

13 A. I use the same approaches that were used in my previously filed direct testimony in this
14 proceeding. The updated cost of equity for BST is in the range of 14.45% to 14.46% using the
15 comparable firm group DCF model approach. Under the same approach, the updated cost of
16 equity for Sprint-FL is in the range of 14.43% to 14.53%. The CAPM approach indicates that
17 BST's updated cost of equity capital is in the range of 14.20% to 14.40% and that Sprint-FL's
18 updated cost of equity is in the range of 14.30 to 14.50%. The risk premium approach indicates
19 that the expected return on the overall equity market, as measured by the S&P 500, is currently
20 between 13.79% and 14.86%. From these updated analyses, I conclude that the current cost of
21 equity capital for BST is within the range of 14.20% to 14.46% and that the current cost of
22 equity for Sprint-FL is within the range of 14.30% to 14.53%.
23
24
25

- 1 Q. Please describe how you evaluate the reasonableness of using an overall cost of capital of
2 11.25% in the cost studies of BST and Sprint-FL using updated data and summarize your
3 findings.
4
- 5 A. I use the same approach as that in my previously filed direct testimony in this proceeding. Two
6 indirect tests of the reasonableness of each company's use of an 11.25% overall cost of capital
7 are performed. A direct test of reasonableness is also used to evaluate this rate. The first indirect
8 test uses each company's reported book value capital structure and embedded cost of debt as of
9 June 30, 1998. BST's reported capital structure is 56.44% equity and 43.56% debt and its
10 embedded cost of debt is 6.39%. Sprint-FL's reported book value capital structure is 60.05%
11 equity and 39.95% debt and its embedded cost of debt is 7.13%. An overall cost of capital of
12 11.25% using these parameters implies a cost of equity of 15.00% for BST and 13.99% for
13 Sprint-FL. The second test uses an equity ratio for BST of 60%, an associated debt ratio of
14 40%, and a current forward-looking cost of debt of 6.60%. The second test for Sprint-FL uses
15 an equity ratio of 59.58%, a debt ratio of 40.42%, and uses Sprint-FL's forward-looking cost of
16 debt of 7.02%. An overall cost of capital of 11.25% implies a cost of equity of 14.35% for BST
17 and 14.12% for Sprint-FL. These two indirect tests logically imply costs of equity that are
18 within or only about 50 basis points higher than my estimated range for BST's cost of equity
19 capital of 14.20% to 14.46% and that are lower than my estimated range for Sprint-FL's cost of
20 equity of 14.30% to 14.53%.
- 21 As a direct test of reasonableness, I rely on my updated forward-looking equity and debt
22 costs along with the market value-based capital structures of each company to estimate an
23 overall cost of capital for BST in the range of 13.14% to 13.36% and an overall cost of capital
24 for Sprint-FL in the range of 13.10% to 13.29%. This indicates that the use of an 11.25% rate in
25

1 its cost studies understates BST's forward-looking overall cost of capital by 189 to 211 basis
2 points and underestimates Sprint-FL's forward-looking overall cost of capital by 185 to 204
3 basis points. Therefore, the use of an 11.25% cost of capital in the cost studies of BST and
4 Sprint-FL is reasonable and quite conservative in light of updated capital market data.
5
6

7 **III. REBUTTAL OF MR. HIRSHLEIFER'S DIRECT TESTIMONY ON**
8

9 ***BEHALF OF AT&T AND MCI***

10 **A. ERRORS IN DCF COST OF EQUITY ANALYSIS**

11 **1. FAILURE TO REFLECT INVESTORS' PERSPECTIVE**
12
13

14 Q. Is Mr. Hirshleifer's use of a three-stage DCF model representative of investors' valuation
15 perspective and is it a common approach in regulatory proceedings?
16

17 A. No, Mr. Hirshleifer's three-stage model is complex, subjective, and uses growth rate forecasts
18 that reflect his own opinions rather than those of the investment community. Due to these
19 limitations, three-stage approaches are not commonly used in regulatory proceedings. Mr.
20 Hirshleifer's results do not provide insight into the current or forward-looking equity capital
21 costs of BST or Sprint-FL.
22
23

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

1 (IBES), for only the first stage (five years) of his analysis. After this five-year period, he
2 assumes a second stage of 15 years during which the growth rate falls from the initial IBES
3 growth rate to a projected growth rate for the overall U.S. economy by the end of the 20th year.
4 After that time, Mr. Hirshleifer assumes that the growth rate remains at that projected rate for
5 the economy indefinitely (Direct Testimony, p. 24, line 7 - p. 28, line 19).
6

7 Mr. Hirshleifer's analysis misses the mark in the current proceeding. The goal here is to
8 estimate BST and Sprint-FL's costs of meeting their equity investors' return requirements in
9 market terms. Thus, the analysis should reflect the investment analysis process and expectations
10 of investors. Mr. Hirshleifer's analysis of the costs of equity for BST and Sprint-FL departs
11 from investors' perspective by substituting his expectations for those of investors for two out of
12 the three stages in his analysis.
13

14
15 Q. How relevant is Mr. Hirshleifer's criticism of the constant growth DCF model on the basis that
16 telecommunications firms' projected growth rates are not sustainable "into perpetuity?"
17

18
19 A. Mr. Hirshleifer's criticism of the constant growth version of the DCF model is practically
20 irrelevant and misguided in the current context. He observes that:

21 ... modern telephone companies are composed of a variety of businesses, some of which -
22 such as cellular - are expected to grow at rates of 30 percent or more in the short run. Such
23 high growth rates are clearly not sustainable into perpetuity, so that the simple constant
24 growth model cannot be applied ... (Direct Testimony, p. 20, lines 22 - p. 21, line 3).
25

1
2 Mr. Hirshleifer's unsupported apparent concern is that "telephone companies are composed of a
3 variety of businesses" that cannot be captured by a single growth rate. However, investors
4 routinely price securities for firms composed of numerous business units by evaluating the net
5 contribution of each unit to the overall growth of the firm.
6

7
8 Mr. Hirshleifer's rejection of the constant growth DCF model because he assumes that
9 telephone company growth rates are "not sustainable into perpetuity" does not adequately relate
10 valuation theory to practice in light of realistic investor concerns. While the constant growth
11 DCF model does theoretically assume a constant growth rate for perpetuity, there is no evidence
12 that investors practically consider perpetuity in their valuation decisions. Simply put, the
13 present value of the cash flows projected from an investment beyond the foreseeable future is so
14 small that it has little practical effect on investors' decisions. While it is very difficult to
15 forecast the distant future, it is also not practically relevant to attempt to do so in a present value
16 sense.
17

18
19 Mr. Hirshleifer's theoretical criticism of the constant growth DCF model is irrelevant. His
20 decision to replace it with a three-stage DCF model only introduces a more subjective,
21 complicated approach that substitutes his growth forecasts for those of the investors who are
22 actually putting money into stocks.
23
24
25

1 Q. What support does Mr. Hirshleifer offer for limiting the long-term growth of
2 telecommunications firms to the growth rate of the U.S. economy?
3

4 A. He offers only his opinion that "[a] perpetual growth rate that exceeded the growth rate of the
5 economy would illogically imply that eventually the whole economy would be comprised of
6 nothing but telephone companies" (Direct Testimony, p. 24, lines 13-15). Mr. Hirshleifer's
7 observation has no practical relevance in assessing the usefulness of the constant growth DCF
8 model in the current proceeding. Investors could easily believe that telecommunications firms'
9 consensus growth rate projections are sustainable beyond the next five years to the foreseeable
10 future but less than forever, which is not a realistic emphasis of investors in their valuation
11 efforts anyway.
12
13

14 Q. Would you provide an example that shows how unrealistic Mr. Hirshleifer's constraint on the
15 long-term growth rate is?
16
17

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

1 From a practical perspective, I believe that most investors would relate these projections to the
2 past performance of MCI and thereby use them to assess MCI's foreseeable future. It does not
3 seem reasonable that such investors would be tempted to conclude that "eventually the whole
4 economy would be comprised of nothing but telephone companies" or MCI in particular.
5 Further, Mr. Hirshleifer offers no evidence to support his use of a second stage that is 15 years
6 long. Why not 10, 25, or 30 years? His three-stage model is unnecessarily subjective,
7 unrepresentative of investors' growth rate expectations, contrary to investors' realistic concerns,
8 and particularly useless in the dynamic telecommunications industry. While Mr. Hirshleifer's
9 model is admittedly inventive, it is not informative concerning the realistic, market-based
10 capital costs of BST or Sprint-FL.
11
12
13

14 Q. In attempting to justify his use of a three-stage rather than a constant growth version of the DCF
15 model, Mr. Hirshleifer cites a book by Professor Aswath Damodaran as a key reference (see
16 pages 22-23 and footnotes 13 and 15 of his testimony). Is Mr. Hirshleifer's decision to use a
17 three-stage version of the model consistent with Damodaran's stated conditions under which the
18 model is appropriate?
19

20
21 A. No, Mr. Hirshleifer's use of the three-stage model is inconsistent with the circumstances
22 described for the best use of the model. Damodaran indicates that "... this may be the more
23 appropriate model to use for a firm whose earnings are growing at very high rates ..."
24
25

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

3
4 Attachment JH-4 shows that none of the companies to which Mr. Hirshleifer applies his three-
5 stage DCF model have growth rates over 25%. Thus, his decision to use this form of the model
6 is inconsistent with the conditions for its appropriate use described in the Damodaran reference
7 cited in his testimony.

8
9
10 Q. Does this reference cited by Mr. Hirshleifer discuss any limitations in using the three-stage
11 version of the DCF model?

12
13 A. Yes. In comparing the three-stage model to the other versions of the DCF model, Damodaran
14 observes that:

15 ... it requires a much larger number of inputs: year-specific payout ratios, growth rates,
16 and betas. For firms in which there is substantial noise in the estimation process, the
17 errors in these inputs can overwhelm any benefits that accrue from the additional
18 flexibility in the model (Damodaran on Valuation, John Wiley & Sons, 1994, pp. 118
19 -119).

20
21
22 Damodaran's concern over the effect of "substantial noise" is particularly relevant to Mr.
23 Hirshleifer's analysis. He applies a three-stage DCF model to the RBHCs, GTE, and selected
24 independent telephone holding companies. The dramatic effects of deregulation, increasing
25

1 competition, the implementation of the Telecommunications Act of 1996, and industry
2 consolidation certainly introduce much noise into the estimation of such firms' equity costs.
3 Thus, Mr. Hirshleifer's DCF model is particularly inappropriate for estimating the costs of
4 equity of BST and Sprint-FL. My methodological approach is more reliable because it uses a
5 group of firms that is demonstrably comparable in risk to BST and a group of firms that is
6 demonstrably comparable in risk to Sprint-FL. These two groups of firms, which capture
7 comparable firms across industry lines, are not seriously affected by such "noise." Further, my
8 approach does not require the highly subjective inputs that Mr. Hirshleifer's three-stage model
9 does.
10

11
12 Q. Mr. Hirshleifer alleges that his version of the three-stage DCF model is different from that
13 presented by Professor Damodaran but does not explain the nature of the difference or why it is
14 supposedly significant. Would you explain Mr. Hirshleifer's statement and how it relates to the
15 sections of Professor Damodaran's book concerning the three-stage model?
16

17
18 A. Yes. Mr. Hirshleifer's vague statement is:

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

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

23 The first stage lasts five years ... The second stage is assumed to last 15 years. During
24 this stage the growth rate falls from the high level of the first five years to the growth
25

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

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

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

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

11 The model is based on the assumption that the earnings growth rate starts at a high
12 initial rate (g_1) and declines linearly over the extraordinary-growth period (which is
13 assumed to last $2H$ periods) to a stable growth rate (g_2) (Damodaran on Valuation,
14 John Wiley & Sons, 1994, pp. 115).

15
16
17
18 Q. Does there appear to be any significant difference between the three-stage DCF model used by
19 Mr. Hirshleifer and the three-stage model discussed by Professor Damodaran?

20
21 A. No. Mr. Hirshleifer apparently does not realize that the three-stage model discussed by
22 Professor Damodaran closely fits his described model. It appears that Mr. Hirshleifer does not
23 understand that his model is essentially an extension of the multi-stage H model to which he
24 refers. Thus, Mr. Hirshleifer's statement that his model is "not comparable" to Professor
25

1 Damodaran's three-stage model is suspect and reflects a fundamental misunderstanding of the
2 methodology that he uses to estimate the costs of equity for BST and Sprint-FL. This draws into
3 question the overall reliability of his cost of capital analyses of BST and Sprint-FL.
4

5 **2. INCORRECT RELIANCE ON BELLSOUTH, THE OTHER RBHCS,**
6 **AND SELECTED INDEPENDENT TELEPHONE COMPANIES AS**
7 **COMPARABLE IN RISK TO BST AND SPRINT-FL**
8

9
10 Q. What justification does Mr. Hirshleifer give for applying the DCF and the CAPM approaches to
11 BellSouth, the other RBHCs, and selected independent telephone companies as firms
12 comparable in risk to BST and Sprint-FL?
13

14 A. Mr. Hirshleifer offers no justification for the use of the supposedly comparable firms listed in
15 Attachment JH-2. He only observes in passing that they are "selected as likely comparables"
16 (Direct Testimony, p. 26, lines 4-6) and that they "... were derived from the list of telephone
17 operating companies in Standard and Poor's Industry Survey" (Direct Testimony, p. 15, lines 3-
18 4). Thus, Mr. Hirshleifer assumes that BST is comparable in risk to BellSouth, the other
19 RBHCs, and selected independent telephone companies. He does not demonstrate
20 comparability. Similarly, for Sprint-FL (referred to as Centel and United) he "... assumes that
21 the cost of equity for the provision of universal service is approximated by the average cost of
22 equity for the whole set of the telephone holding companies" (Direct Testimony, p. 16, lines 17-
23
24
25

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

3
4 In contrast to Mr. Hirshleifer, I identify comparable firms by measuring risk and statistically
5 determining risk comparability. My analysis shows that neither the RBHCs, as a group, nor the
6 independent telephone companies are comparable in risk to BST or to Sprint-FL.
7

8 **3. FAILURE TO ADJUST FOR FLOTATION COSTS**

9

10
11 Q. Do you agree with Mr. Hirshleifer's opinion that it is appropriate to ignore the impact of
12 flotation costs in estimating the costs of equity capital for BST and Sprint-FL?

13
14 A. No, I do not agree with his opinion. Mr. Hirshleifer attempts to justify ignoring flotation costs
15 because the prices of the companies' stock "... has accounted for flotation costs already"
16 (Direct Testimony, p. 54, lines 23-25). While his argument implicitly assumes that flotation
17 costs materially affect equity costs, he presents no evidence that the market has made such an
18 adjustment. Mr. Hirshleifer's failure to adjust for flotation costs biases his cost of equity
19 estimates downward.
20

21 **4. FAILURE TO ADJUST FOR QUARTERLY DIVIDEND** 22 **PAYMENTS** 23 24 25

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

3
4 A. No. Mr. Hirshleifer uses the annual form of the DCF model even though all of the members of
5 his sample of supposedly comparable firms pay dividends on a quarterly basis. The annual form
6 of the DCF model does not accurately portray the investor's perspective, and consequently,
7 significantly underestimates the costs of equity capital of BST and Sprint-FL.
8

9
10 Consider the example of how the returns on an Individual Retirement Account (IRA) differ
11 when compounded quarterly rather than annually. The opportunity to earn a return quarterly
12 rather than annually has a significant effect on the value of an IRA to an investor. The same
13 economic principle is at work when investors value the opportunity to receive dividends on a
14 stock quarterly rather than annually.
15

16
17 Suppose that you invest \$2,000 in an IRA account today and expect to earn 8% per year. If your
18 money earns the 8% compounded annually, you will have about \$13,697 before taxes in 25
19 years. Alternatively, if your money earns the 8% compounded quarterly, you will have about
20 \$14,489 before taxes in 25 years. Thus, your IRA will be worth about \$792 more if your returns
21 are compounded quarterly rather than annually. This \$792 difference is present because you
22 earn an effective rate of about 8.24% under quarterly compounding rather than just 8%
23 annually. Obviously, investors would prefer to have \$792 more in 25 years and would
24 consequently prefer that their 8% return be compounded quarterly rather than annually.
25

1
2 When Mr. Hirshleifer argues that it is unnecessary in cost of capital analysis to consider that
3 dividends are received by investors quarterly, he essentially argues that investors are indifferent
4 to whether dividends are paid annually or quarterly. Similarly, Mr. Hirshleifer essentially argues
5 that the IRA investor in the above example would not care whether he or she could earn an extra
6 \$792. Yet the common sense of the investor's perspective in both cases convincingly
7 demonstrates that if quarterly compounding is not considered in cost of capital analysis, the
8 implied rate of return is underestimated.
9

10
11 Q. Would you provide an everyday analogy that concretely shows how Mr. Hirshleifer's failure to
12 adjust his cost of equity estimates in light of the quarterly payment of dividends is misguided?
13

14 A. Yes. Consider whether Mr. Hirshleifer would likely prefer to be paid by AT&T and MCI for his
15 cost of capital consulting work just once a year or at the completion of each case. While it
16 would be inappropriate for me to speculate on his personal preferences, it is reasonable to
17 believe that Mr. Hirshleifer might price the services that he provides to AT&T and MCI
18 differently if he were paid only at the end of each year. This is because being paid only at the
19 end of the year would adversely affect his ability to invest or otherwise use his earnings. By
20 analogy, investors derive the market prices of stocks in light of their ability to reinvest
21 dividends quarterly rather than just annually. Investors' implied return requirements
22 consequently reflect the impact of quarterly rather than annual dividend payments in a manner
23
24
25

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

3
4 **B. ERRORS IN CAPM COST OF EQUITY ANALYSIS**

5
6 Q. Is Mr. Hirshleifer's estimate of the equity market risk premium using the three-stage DCF
7 model economically meaningful?

8
9
10 A. No, it is not economically meaningful. Mr. Hirshleifer uses his flawed three-stage DCF model
11 to estimate an expected return on the overall equity market, as measured using selected
12 members of the S&P 500 index, of only 9.82% (see Attachment JH-6).

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

17
18
19 A. Mr. Hirshleifer's arbitrary screening criterion biases downward his estimated expected return on
20 the market and thereby causes all of his CAPM calculations to underestimate equity capital
21 costs. This partially explains why his analysis underestimates the overall capital costs of BST
22 and Sprint-FL as well.
23
24
25

1 Consider the type of firms that pay a dividend yield of less than 2%. Such firms typically pay
2 lower dividend yields because they reinvest above-average amounts in their businesses. Thus,
3 lower dividend yields are associated with higher growth companies that have higher equity
4 capital costs. Mr. Hirshleifer's screening criterion consequently excludes those members of the
5 S&P 500 likely to have the highest capital costs and thereby underestimates the expected
6 returns composing the market proxy. His CAPM-based equity costs that use this biased measure
7 of equity market expectations clearly produce unrealistically low capital cost estimates.
8

9 10 C. ERRORS IN COST OF DEBT ESTIMATION

11
12 Q. What mistakes does Mr. Hirshleifer make in estimating the costs of debt of BST and Sprint-FL?
13

14 A. Mr. Hirshleifer fails to measure the cost of debt that is relevant to determining the forward-
15 looking costs of BST and of Sprint-FL providing universal service in Florida. First, he
16 inappropriately relies on the costs of debt issued by the parent holding companies of BST and
17 Sprint-FL as well as the costs of debt issued by subsidiaries of those holding companies in cases
18 where the proceeds have not been used to finance telephone network assets. Specifically, in
19 Attachment JH-3a Mr. Hirshleifer inappropriately uses the costs of debt issued by BellSouth
20 Corporation and BellSouth Capital Funding as proxies for BST's debt costs. Similarly, in
21 Attachment JH-3c he inappropriately uses the costs of debt issued by Sprint Corporation and
22 Centel Capital as proxies for Sprint-FL's debt costs. Second, Mr. Hirshleifer's cost of debt
23 estimates for both BST and Sprint-FL rely on dated debt market information from December of
24
25

1 1997. Thus, Mr. Hirshleifer's cost of debt analysis is unreliable because it relies on
2 inappropriate debt securities and uses historical debt market data that produces backward-
3 looking estimates.

4 5 **ERRORS IN RECOMMENDED CAPITAL STRUCTURE** 6

7 Q. Do you agree with Mr. Hirshleifer's heavy reliance on book value capital structures?
8

9
10 A. No, I do not. Mr. Hirshleifer gives equal weight to book values and market values in
11 producing his capital structure recommendations for BST and Sprint-FL. He relies on book
12 value capital structures to determine the low end of his recommended cost of capital ranges,
13 while market value capital structures produce the high end of his ranges. The use of market
14 values is theoretically appropriate and consistent with establishing a forward-looking cost of
15 capital for use in a universal service fund proceeding such as this one.
16

17
18 Market values deserve higher weight because they are dynamically determined in the
19 marketplace by investors, while book values are the result of historical accounting practices.
20 One-time accounting events that do not change market values can significantly alter book
21 values. Examples of one-time events include restructuring charges, the adoption of SFAS 106
22 for Other Post-Employment Benefits, and the discontinuance of regulatory accounting under
23 SFAS 71. Additionally, the point in time at which a company issued stock in the past can
24 influence backward-looking book values, while forward-looking market values are not
25

1 affected.

2
3 Over time, market values vary from book values as investors change the stock price in
4 reaction to new information. If a new event or announcement significantly enhances or
5 detracts from shareholder value, that change is immediately translated into a market value
6 change, while there is likely to be no immediate change in book value. Mr. Hirshleifer's over-
7 reliance on book values is unrepresentative of the investor's perspective and introduces yet
8 another downward bias to his cost of capital estimates.
9

10
11 Mr. Hirshleifer's recommended capital structures for BST and Sprint-FL are also flawed by his
12 inappropriate reliance on dated capital market information from December of 1997. Thus, as is
13 the case in his cost of debt estimates for BST and Sprint-FL, Mr. Hirshleifer recommends
14 backward- rather than forward-looking capital structures.
15

16
17 **E. MISUNDERSTANDING OF THE NATURE AND SIGNIFICANCE**
18 **OF THE RISKINESS OF INVESTING IN THE**
19 **TELECOMMUNICATIONS INDUSTRY**
20

21 Q. Do you agree with Mr. Hirshleifer's observations about the supposedly low relative risk of
22 "leasing" local exchange telephone network elements to retail providers and providing universal
23 service?
24
25

1 A. No. Mr. Hirshleifer only offers his unsupported opinion that "[t]hese businesses should have
2 relatively low risk compared to many of the risky business endeavors being pursued by the
3 telephone holding companies" (Direct Testimony, p. 49, lines 17-19). However, he also
4 acknowledges that "... there remains some risk that consumers, particularly business users, will
5 bypass the network as other alternatives become available" (Direct Testimony, p. 51, lines 22-
6 24). Mr. Hirshleifer consequently recognizes the significant risk of consumers and businesses
7 bypassing the networks of BST or Sprint-FL but only offers his unsubstantiated opinion that
8 this is a "low risk" endeavor. Once again Mr. Hirshleifer substitutes his opinion for that of
9 investors in appraising capital costs.
10

11
12 Q. Why is leasing long-term telephone network assets particularly risky?
13

14 A. The leasing of long-term assets can be quite risky, especially when leasing rates are regulated.
15 In order for BST or Sprint-FL to earn reasonable returns on their network assets, they must
16 obtain revenues over the leasing period that cover their costs and appropriate risk-adjusted
17 profits. However, BST and Sprint-FL are partially dependent on regulators rather than solely on
18 the market to obtain such returns. Mr. Hirshleifer obviously recognizes that regulators'
19 decisions may well not be appealing to shareholders' when he notes:
20

21 There is still the risk of regulation itself. The rate of return a network is allowed to earn
22 depends on the outcome of proceedings such as this and remains somewhat uncertain
23 (Direct Testimony, p. 51, lines 17-19).
24
25

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

12
13 Q. How does technological change affect the risk of investing in long-term telephone network
14 assets?

15
16
17 A. Network facilities reflect a given technology that often becomes obsolete quickly. BST and
18 Sprint-FL must consistently invest to keep their network elements up to date and should have
19 the flexibility to establish leasing rates accordingly. However, as noted above, they do not have
20 this ability under current regulations. This risk of technological obsolescence makes leasing
21 network elements risky. Thus, such obsolescence imposes costs and therefore risks. The leasing
22 of BST's and Sprint-FL's network assets poses significant risks to their investors that put
23 upward pressure on their costs of equity.
24
25

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

2
3 A. No. Mr. Hirshleifer is incorrect and inconsistent in his testimony concerning the risks that affect
4 capital costs. For example, he emphasizes that:

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

9
10 Yet, as noted above, in discussing what he presumably considers to be the relevant risks
11 associated with the business of leasing unbundled network elements he notes that "... there
12 remains some risk that consumers, particularly business users, will bypass the network as other
13 alternatives become available" (Direct Testimony, p. 51, lines 22-24).

14
15 On the one hand Mr. Hirshleifer argues that the risk of losing customers to competition should not
16 affect capital costs and, on the other hand, he inconsistently asserts that the risk of bypass, which
17 is just one way of losing customers, is relevant and thus affects capital costs.

18
19
20 Mr. Hirshleifer also inconsistently argues that:

21 In this case, each of the companies in question is not a diversified telephone holding
22 company, but a company in the more specialized (and less risky) business of providing
23 network elements and universal service (Direct Testimony, p. 56, line 14-16).
24
25

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

6
7 Mr. Hirshleifer's view that greater risk of competition is not compensated in the cost of capital
8 is not practically relevant. While this is strictly true in the pristine theoretical world of the
9 CAPM, the practical realities of investing suggest otherwise. Indeed, as noted above, the FCC
10 has stated that "... potential competition could increase the risks facing the incumbent LECs,
11 and thus increase their cost of capital" (Notice of Proposed Rulemaking, Third Report and
12 Order, and Notice of Inquiry, FCC 96-488, December 24, 1996, page 101, paragraph 228).
13 Consequently, in contrast to Mr. Hirshleifer, the FCC views the enhanced risk posed by
14 competition as a practical, significant influence on capital costs. While the CAPM provides
15 useful insights into capital costs, it must be supplemented with other methods that recognize the
16 full array of practical risks facing investors. Mr. Hirshleifer's expressed views on risk are
17 incomplete and logically inconsistent.
18
19
20

21 **F. SUMMARY OF REBUTTAL OF MR. HIRSHLEIFER'S COST OF**
22 **CAPITAL ESTIMATES FOR BST AND SPRINT-FL**
23
24
25

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

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

14
15
16
17 Q. Please summarize your assessment of Mr. Hirshleifer's cost of debt and capital structure
18 estimates for BST and Sprint-FL.

19
20 A. Mr. Hirshleifer incorrectly estimates BST's cost of debt as 6.65% and Sprint-FL's cost as
21 6.63% using dated market information from December of 1997. He misestimated each firms'
22 cost of debt at that time because he incorrectly relies on the costs of debt issued by the parent
23 holding companies of BST and Sprint-FL. Further, he incorrectly includes debt issues in his
24 analyses that were not issued to fund telephone network assets. My updated testimony shows
25

1 that under current capital market conditions BST's forward-looking cost of debt is 6.60% and
2 Sprint-FL's cost of debt is 6.95%. Mr. Hirshleifer's use of capital market data from December
3 of 1997 makes his cost of debt estimates backward-looking.
4

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

13
14 **IV. UPDATED DCF MODEL ESTIMATES OF EQUITY CAPITAL COSTS**
15 **FOR BST AND SPRINT-FL**
16

17
18 Q. How have you updated your analysis since you filed direct testimony in this proceeding on
19 August 3, 1998?
20

21 A. Two major elements are present in my updated analysis. First, I use more recent stock, interest
22 rate, growth rate, and beta coefficient data in my statistical analyses. This assures that my
23 capital cost estimates for BST and Sprint-FL are as timely and forward-looking as possible.
24
25 Second, since filing my direct testimony, 1997 year-end financial data have become available

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

4
5 Q. What updated cost of equity capital do you estimate for BST using the DCF model presented in
6 your previously filed direct testimony?

7
8 A. Billingsley Exhibit No. RSB-1 lists the updated portfolio of 20 firms that are comparable in risk
9 to BST and reports the average cost of equity for the portfolio using both IBES and Zacks
10 growth rate forecasts. The evidence indicates that the cost of equity for BST is in the range of
11 14.45% to 14.46%.

12
13 Q. What updated cost of equity capital do you estimate for Sprint-FL using the DCF model
14 presented in your previously filed direct testimony?

15
16 A. Billingsley Exhibit No. RSB-2 lists the portfolio of 20 firms that are comparable in risk to
17 Sprint-FL and reports the average cost of equity for the portfolio using both IBES and Zacks
18 growth rate forecasts. The evidence indicates that the cost of equity for Sprint-FL is in the range
19 of 14.43% to 14.53%.

20
21
22 ***V. UPDATED CAPITAL ASSET PRICING MODEL ESTIMATES OF EQUITY***

23 ***CAPITAL COSTS FOR BST AND SPRINT-FL***
24
25

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

2

3 A. Using July, 1998 data, I estimate an updated risk-free rate of return of 6.14%, an average beta of
4 0.83 for firms comparable in risk to BST, and IBES and Zacks growth rate estimates that imply
5 an expected return on the S&P 500 of 15.85% and 16.09%, respectively. These objective,
6 market-determined data indicate that BST's cost of equity capital is 14.20% using the IBES
7 growth rate and 14.40% using the Zacks growth rate forecast.

8

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

10

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

15

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

18

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

21

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

25

1 average risk premium of 6.94% is added to the recent average Aaa-public utility bond return of
2 6.85% to yield an expected cost of equity return on the S&P 500 of 13.79%.

3
4 Billingsley Exhibit No. RSB-6 shows that the average expected risk premium relative to A-
5 rated public utility bonds from 1987 to July of 1998 is 6.76%. The average yield on A-rated
6 public utility over the most recent three months (May to July of 1998) is 7.07%. Thus, the
7 average risk premium of 6.76% is added to the recent average A-public utility bond return of
8 7.07% to yield an expected cost of equity return on the S&P 500 of 13.83%.

9
10 In summary, risk premium analyses using both Aaa- and A-rated public utility bond return
11 reference points indicate that the expected return on the broad equity market, as measured by
12 the S&P 500, is currently between 13.79% and 13.83%.

13
14 **B. ADJUSTMENT FOR POTENTIAL CHANGES IN THE RISK**
15 **PREMIUM OVER TIME**

16
17 Q. What specific adjustment do you make to update your risk premium analysis in light of the
18 evidence cited in your previously filed direct testimony on the inverse relationship between the
19 risk premium and the level of interest rates?

20
21 A. As noted in my direct testimony, during the period of the Harris and Marston study (R. S.
22 Harris and F.C. Marston, "Estimating Shareholder Risk Premium Using Analysts' Growth
23 Forecasts," *Financial Management*, Vol. 21, No. 2, 1992, pp. 63-70), the average risk
24 premium was 6.47% and the average yield on long-term U.S. Treasury bonds was 9.84%. The
25 study finds evidence that the equity market risk premium is expected to change an average of -

1 .651 of changes in the level of long-term Treasury bond yields. Given that the current average
2 yield on 30-year Treasury bonds is 5.68% (July of 1998), the appropriate current risk premium
3 is 9.18%. This is calculated by multiplying the 4.16% decline in rates since the time period of
4 Harris and Marston's study by -.651 and adding back the average risk premium of 6.47% to the
5 indicated change of 2.71%. This alternative approach consequently provides an expected return
6 on the S&P 500 of 14.86%, which is the current average level of 30-year Treasury yields of
7 5.68% added to the adjusted risk premium of 9.18%.

8
9 Q. What is your conclusion with regard to the equity capital costs of BST and Sprint-FL in light of
10 the most recent capital market data?

11
12 A. Based on my updated cost of equity analyses, I believe that BST's cost of equity is in the range
13 of 14.20% to 14.46% and Sprint-FL's cost of equity is in the range of 14.30% and 14.53%.

14
15 **VII. UPDATED DEBT CAPITAL COSTS OF BST AND SPRINT-FL**

16
17 Q. What are your updated estimates of the forward-looking costs of debt for BST and Sprint-FL?

18
19 A. As in my direct testimony, I use the yields on Aaa-rated bonds as one benchmark in my analysis
20 because this is the bond rating on BST's debt and the yields on A-rated bonds are used as
21 another benchmark because this is the bond rating on Sprint-FL's debt. For the period from
22 May to July of 1998, 30-year U.S. Treasury bonds yielded an average of 5.77%. As shown in
23 Billingsley Exhibit RSB-7, the spread between Aaa-rated public utility bonds and 30-year
24 Treasury bonds averaged 0.80% from October of 1987 through July of 1998. Adding the
25

1 average spread of 0.80% to the above recent average Treasury bond yield to maturity of 5.77%
2 produces a yield of 6.57%, which does not reflect the material effect of flotation costs.
3

4 As shown in Billingsley Exhibit RSB-8, the spread between A-rated public utility bonds and
5 30-year Treasury bonds averaged 1.15% from October of 1987 through July of 1998. Adding
6 the average spread of 1.15% to the above-noted recent average Treasury bond yield to maturity
7 of 5.77% produces a yield of 6.92%, which does not reflect the material effect of flotation costs.
8

9 Based on my updated analyses, I believe that BST's forward-looking cost of debt is 6.60% and
10 that Sprint-FL's forward-looking cost of debt is 6.95%.
11

12 **VIII. REASONABLENESS OF USING AN 11.25% COST OF CAPITAL**
13 **IN THE COST STUDIES OF BST AND SPRINT-FL**
14

15 Q. What are the results of your updated first test of the reasonableness of each firm's use of an
16 11.25% overall cost of capital?
17

18 A. As shown in Billingsley Exhibit RSB-9, as of June 30, 1998, BST's reported book value
19 capital structure was 56.44% equity and 43.56% debt and its embedded cost of debt was 6.39%.
20 An overall cost of capital of 11.25% implies a cost of equity of 15.00%. As shown in
21 Billingsley Exhibit RSB-10, as of June 30, 1998, Sprint-FL's reported book value capital
22 structure was 60.05% equity and 39.95% debt and its embedded cost of debt was 7.13%. An
23 overall cost of capital of 11.25% implies a cost of equity of 13.99%.
24
25

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

3

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

7

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

9

10 A. As in my previously filed direct testimony, I use my estimated costs of equity and debt along
11 with the average market value-based capital structures for each of the two groups of 20 firms
12 shown to be comparable in risk to BST and Sprint-FL. The analysis uses a cost of debt of 6.60%
13 and a cost of equity of from 14.20% to 14.46% for BST. As shown in Billingsley Exhibit RSB-
14 11, the updated average market value-based capital structure is 86.06% equity and 13.94% debt.
15 These data indicate that BST's overall forward-looking cost of capital is in the range of 13.14%
16 to 13.36%.

17

18 The updated analysis of Sprint-FL uses a cost of debt of 6.95% and a cost of equity of from
19 14.30% to 14.53%. As shown in Billingsley Exhibit RSB-12, the average market value-based
20 capital structure is 83.72% equity and 16.28% debt. These data indicate that Sprint-FL's overall
21 forward-looking cost of capital is in the range of 13.10% to 13.29%.

22

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

25

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

8

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

15

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

18

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

25

1 flotation costs the revised estimate of BST's cost of equity is within the range of 14.21% to
2 14.42% and Sprint-FL's cost of equity is within the range of 14.30% and 14.51%.

3
4 Q. Do you believe that it would be reasonable for BST and Sprint-FL to use an overall cost of
5 capital of 11.25% in their cost studies if flotation costs and quarterly compounding adjustments
6 are omitted from your estimates?

7
8 A. Yes. The revised cost of equity capital estimates for BST are in the range of 14.21% to 14.42%
9 and are in the range of 14.30% and 14.51% for Sprint-FL. The same two indirect tests of
10 reasonableness used above imply costs of equity that are within or close to the range of these
11 revised cost of equity estimates for both firms. Further, calculation of the overall costs of capital
12 for each firm in the same manner as described above but using the above revised cost of equity
13 ranges yields a range from 13.15% to 13.32% for BST and produces a range from 13.10% to
14 13.28% for Sprint-FL. Thus, the use of an 11.25% cost of capital by BST or Sprint-FL in their
15 cost studies is quite conservative even in the absence of adjustments for flotation costs and the
16 quarterly payment of dividends.

17
18 Q. Does this conclude your rebuttal testimony?

19
20 A. Yes, it does.

1 MR. COX: The next group is the small LEC
2 proposal witnesses. All of these have been stipulated
3 with the exception of Dennis Curry, who will testify
4 at the hearing for ALLTEL.

5 I think the easiest thing to do on these
6 would be to allow -- there are only two attorneys that
7 represent these parties, and if they could present
8 their various parties at this time. Jeffrey Wahlen, if
9 he could present his clients first.

10 CHAIRMAN JOHNSON: Mr. Wahlen.

11 MR. WAHLEN: Yes, ma'am. Northeast Witness
12 Lynne Brewer had direct testimony. We would request
13 that her direct testimony be inserted into the record
14 as though read.

15 CHAIRMAN JOHNSON: It will be so inserted.

16 MR. WAHLEN: She also had a composite
17 exhibit labeled LGB-1. We would like to have that
18 identified, please.

19 CHAIRMAN JOHNSON: We will identify it as
20 Composite Exhibit 8.

21 MR. WAHLEN: And inserted into the record.

22 CHAIRMAN JOHNSON: And admitted without
23 objection.

24 (Exhibit 8 marked for identification and
25 received in evidence.)

NORTHEAST
DOCKET NO. 980696-TP
FILED: 08/03/98

1 BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

2 DIRECT TESTIMONY

3 OF

4 LYNNE G. BREWER

5

6 Q. Please state your name, address and position with Northeast
7 Florida Telephone Company, Inc. ("Northeast" or "The
8 Company").

9

10 A. My name is Lynne G. Brewer. I am employed by Northeast as
11 Director-Revenue Requirements and Regulatory Affairs. My
12 business address is 130 North 4th Street, Macclenny,
13 Florida.

14

15 Q. Please give a brief description of your educational
16 background and experience.

17

18 A. I was graduated from Rollins College with a B.S. degree in
19 Accounting and Business Administration. I have been with
20 Northeast for three years, and have over eighteen years of
21 experience in the telecommunications industry. My most
22 recent assignment, prior to joining Northeast, was as a Cost
23 Analysis Manager with the National Exchange Carrier
24 Association (NECA) in the Atlanta regional office. I spent
25 eleven years with NECA in various management assignments.

DOCUMENT NUMBER-DATE

08191 AUG-38

FPSC-RECORDS/REPORTING

1 Prior to joining NECA, I was a Telecommunications Consultant
2 with a consulting firm owned by TDS, Inc. I began my career
3 in 1978 with United Telephone Company of Florida (now called
4 "Sprint") as an Accounting Clerk. While at United, I moved
5 rapidly through this company to levels of increased
6 responsibility during my employment.
7

8 Q. Please describe Northeast.
9

10 A. Northeast is a small local exchange company that serves
11 approximately 8,400 access lines in Baker County, Florida.
12 Northeast has not elected price regulation and is regulated
13 under the Commission's traditional form of rate base, rate
14 of return regulation. Northeast has two exchanges.
15

16 Q. What is the purpose of your testimony?
17

18 A. The purpose of my testimony is to attest to the cost
19 information used as inputs in Northeast's embedded cost
20 study, describe the cost study and present the results of
21 that study.
22

23 Q. Have you prepared an exhibit to accompany this testimony?
24

25 A. Yes. Exhibit ____ (LGB-1) is a composite exhibit consisting

1 of two documents, both of which were prepared under my
2 direction and supervision for this proceeding. The first
3 document is the embedded cost study described in this
4 testimony. The second is a document showing the detailed
5 assumptions used to perform the cost study.

6

7 Q. Please describe the data used in your embedded cost study.

8

9 A. For the embedded cost study, I used 1997 financial
10 information for the regulated operations of Northeast
11 Florida Telephone Company. Thirteen-month averages for the
12 period from December 31, 1996 through December 31, 1997 are
13 reflected for investments, reserves, and deferred income
14 taxes. For expenses and other taxes, I utilized 1997
15 calendar year data. Depreciation reserve and the associated
16 expense balances are stated in accordance with the last
17 approved depreciation rates prescribed by the Florida Public
18 Service Commission ("Florida PSC") in Docket #950640-TL.
19 The data that supports the embedded cost study is the same
20 as that reflected in the Annual Report (PSC/AFA 18) and the
21 Telephone Earnings Surveillance Report (PSC/AFA 15), which
22 are filed with the Florida PSC, and the underlying data used
23 to calculate the National Exchange Carrier Association
24 (NECA) Part 36 cost study.

25

1 Q. Are the rate base items and expense data utilized in your
2 costs in the embedded study the same that you utilized in
3 determining your company's access costs for interstate
4 services you provide?

5
6 A. No. For this embedded study, an adjustment was made to
7 exclude all paystation-related costs, since these costs were
8 included in the 1997 interstate cost study submitted to
9 NECA. On April 15, 1997, these costs were reclassified as
10 non-regulated consistent with the FCC's Paystation Order in
11 CC Docket 96-128.

12
13 Q. Have you made adjustments to your study for non-regulated or
14 deregulated service you provide to your customers?

15
16 A. Yes. Our company adheres to the FCC mandated rules as
17 codified in the Code of Federal Regulations (CFRs) for Parts
18 32, 36, 64 and 69. Non-regulated activities have been
19 removed from the regulated accounts through the application
20 of FCC Part 64 rules. This is consistent with the
21 procedures Northeast follows in the development of its
22 interstate cost study that is submitted to NECA.

23
24 Q. What depreciation rates did you use in the study?

25

1 A. We used the depreciation rates last approved by the FPSC for
2 Northeast in Docket No. 950640-TL.

3

4 Q. Did you modify your study to comply with the small LEC
5 company methodology in its embedded cost study approach as
6 discussed in the testimony of Mr. Curry?

7

8 A. Yes. Northeast followed the embedded cost study approach
9 adopted by the small LECs in this docket.

10

11 Q. What is Northeast's cost of basic local telecommunications
12 service based on the study you performed? :

13

14 A. Based on Northeast's embedded cost study, which is included
15 in Exhibit ___ (LGB-1), the Company's total embedded costs
16 are \$6,332,511 or \$65.87 per access line.

17

18 Q. How did you arrive at your access line counts?

19

20 A. The average number of access lines was computed by taking
21 the average loop count information provided to NECA in the
22 annual Universal Service Fund (USF) data submissions for the
23 1997 and 1998 filings. The LECs are required to report this
24 information to NECA by July 31 of each year. I believe that
25 this approach to determining the company's cost on an access

1 line basis is both reasonable and consistent with industry
2 practice for this type of study.

3

4 Q. Does this complete your testimony at this time?

5

6 A. Yes, it does.

7

8

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1 **MR. WAHLEN:** The next witness for
2 Vista-United Telecommunications is William
3 Huttenhower. He did not have an exhibit. We would
4 request that his testimony, direct testimony, be
5 inserted into the record as though read.

6 **CHAIRMAN JOHNSON:** It will be so inserted.
7
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VISTA-UNITED
DOCKET NO. 980696-TP
FILED: 08/03/98

1 BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

2 DIRECT TESTIMONY

3 OF

4 WILLIAM D. HUTTENHOWER

5

6 Q. Please state your name and business address.

7

8 A. My name is William D. Huttenhower. My business address is
9 3100 Bonnet Creek Road, Lake Buena Vista, Florida, 32830-
10 0180.

11

12 Q. By whom are you employed and in what capacity?

13

14 A. I am employed by Vista-United Telecommunications ("Vista" or
15 the "Company") as Regulatory Affairs Manager. My
16 responsibilities include liaison and point of contact with
17 various regulatory agencies and entities relating to Vista's
18 local exchange operations. Other responsibilities include
19 message processing and toll rating, access revenue budgeting
20 and forecasting and local number portability.

21

22 Q. Please describe your educational background and work
23 experience.

24

25 A. I was graduated from the University of Central Florida in

1 1978 with a Bachelor of Science degree in Business
2 Administration. From 1973 to 1975, I worked for General
3 Telephone Company of Florida in installation and repair. I
4 began working at Vista in 1975 in the customer service area,
5 and have held various positions in finance and carrier
6 billing areas over the past 23 years.

7
8 In addition to my education at the University of Central
9 Florida, I have obtained specialized training and education
10 in the areas of carrier access billing and cost separations.

11
12 Q. What are the purposes of your testimony?

13
14 A. The purposes of my testimony are to describe Vista and to
15 describe the inputs Vista provided to John Staurulakis,
16 Incorporated (JSI*) for use in the embedded cost study they
17 prepared on behalf of Vista for this proceeding. That
18 embedded cost study is explained in the prepared direct
19 testimony of Daniel C. Weaver.

20
21 **About Vista**

22
23 Q. Please describe Vista.

24
25 A. Vista is a small local exchange telecommunications carrier

1 within the meaning of Chapter 364, Florida Statutes. It has
2 been providing local exchange telecommunications services in
3 its FPSC-certificated territory since it was created in
4 1971. Vista's territory is in the Orlando area and includes
5 a significant portion of the Orlando/I-4 resort and
6 entertainment corridor. As of June 30, 1997, Vista served
7 approximately 14,000 access lines, most of which were
8 business access lines.

9
10 Q. Has Vista elected price regulation as provided in Chapter
11 364, Florida Statutes?

12
13 A. Yes. Vista is no longer regulated by the FPSC on a rate of
14 return basis. However, Vista continues to maintain its
15 accounting records in accordance with Part 32 of the Federal
16 Communications Commission's rules, and submits an annual
17 cost study to the National Exchange Carriers Association
18 ("NECA").

19
20 **Cost Study Inputs**

21
22 Q. Please describe the inputs provided by Vista to JSI for use
23 in the preparation of Vista's embedded cost study.

24
25 A. The information and data provided by Vista to JSI is 1997

1 historical accounting information contained in the
2 "regulated" accounting books and records of the Company. By
3 this I mean that we gave JSI historical data that excludes
4 the effect of our activities that have been traditionally
5 considered non-regulated by the FCC and the FPSC.

6
7 More specifically, for investment related accounts, such as
8 outside plant and central office, we provided JSI with
9 average-of-average balances for 1997. For expenses and
10 taxes, Vista gave JSI "regulated" expenses incurred during
11 the 12 months in 1997. The information we gave to JSI for
12 use preparing the cost study is the same information used in
13 our Part 36 cost study submitted to NECA for 1997.

14
15 Q. Did the information Vista gave to JSI include the
16 investments and expenses associated with paystations?

17
18 A. Yes. The information provided to JSI included all
19 paystation-related costs. These costs were included in the
20 1997 study submitted to NECA. However, as of April 15,
21 1997, paystation costs were classified as non-regulated or
22 de-regulated, so JSI excluded paystation-related costs and
23 investments from the embedded cost study performed by JSI.

24
25 Q. Do the inputs provided to JSI include investments and

1 expenses attributable to non-regulated or de-regulated
2 services?

3

4 ... No. The underlying accounting information provided to JSI
5 was prepared in a manner consistent with the Federal
6 Communication Commission (FCC) requirements outlined in the
7 Code of Federal Regulations (CFR), Parts 32 and 64. This
8 means that Vista has accounted for non-regulated activities
9 and those activities are not reflected in the data used to
10 prepare the embedded cost study for Vista.

11

12 Q. What depreciation rates were used to compute the
13 depreciation expense and reserve balances supplied by Vista
14 for use in the cost study?

15

16 A. Vista used the depreciation rates last approved by the FPSC
17 and used when Vista last filed a surveillance report with
18 the FPSC.

19

20 Q. Does this complete your direct testimony?

21

22 A. Yes.

23

24

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1 **MR. WAHLEN:** The next witness for
2 Vista-United is Dan Weaver, direct testimony only.
3 We'd request that his testimony be inserted into the
4 record as though read.

5 **CHAIRMAN JOHNSON:** It will be so inserted.

6 **MR. WAHLEN:** Mr. Weaver had a composite
7 exhibit labeled DW-1 for Vista-United. We request
8 that that be identified and inserted into the record.

9 **CHAIRMAN JOHNSON:** It will be identified as
10 Composite 9 and admitted without objection.

11 (Exhibit 9 marked for identification and
12 received in evidence.)

13

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VISTA-UNITED
DOCKET NO. 980696-TP
FILED: 08/03/98

1 BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

2 DIRECT TESTIMONY

3 OF

4 DANIEL C. WEAVER

5

6 Q. Please state your name, title and business address.

7

8 A. My name is Daniel C. Weaver. I am Staff Director of Revenue
9 Requirements for John Staurulakis, Incorporated (JSI). My
10 business address is 6315 Seabrook Road, Seabrook, Maryland
11 20706.

12

13 Q. Please describe JSI.

14

15 A. JSI is a consulting firm specializing in financial,
16 management and regulatory services. JSI assists in the
17 preparation and submission of jurisdictional cost studies
18 and universal service fund data by telecommunications
19 companies to the National Exchange Carrier Association
20 (NECA), and routinely prepares and files tariffs on behalf
21 of many telecommunications company clients.

22

23 Q. Please describe your educational and professional
24 background.

25

1 A. After receiving a Bachelor of Science degree in Business
2 Administration from Salisbury State University in 1977, I
3 have had many responsibilities at JSI which include
4 separations studies, continuing property record development
5 and maintenance and my current responsibility as staff
6 director for revenue requirements. In my current position,
7 I am responsible for the coordination and completion of
8 quarterly and annual toll separations studies for clients
9 served from JSI headquarters. In coordinating these
10 studies, I interact with JSI's Traffic and Continuing
11 Property Records departments and oversee all aspects of
12 these studies, including detailed reviews of the study work
13 papers, traffic developments, categorization of central
14 office and cable and wire facilities, Part 36/69 study
15 models, and revenue requirement developments. I have been
16 employed by JSI for over twenty years.

17

18 Q. On whose behalf are you testifying?

19

20 A. I am testifying on behalf of Vista-United Telecommunications
21 (Vista), which is a small local exchange company
22 headquartered at Lake Buena Vista, Florida.

23

24 Q. What are the purposes of your testimony?

25

1 A. The purposes of my testimony are to explain the cost study
2 JSI performed on behalf of Vista for this proceeding and to
3 present the results of that study.

4
5 Q. Have you prepared an exhibit to accompany this testimony?

6
7 A. Yes. Exhibit ___ (DCW-1) is a composite exhibit containing
8 the cost study and supporting documents prepared by JSI for
9 Vista in this proceeding. The documents in my exhibit were
10 prepared by me or under my direction and supervision for
11 filing in this proceeding, are based on input data provided
12 to me by Vista, and are true and correct to the best of my
13 information and belief. The input data provided to me for
14 use in the cost study is addressed in the testimony of
15 William D. Huttenhower.

16
17 Q. What is the purpose of the cost study you performed for
18 Vista for filing in this proceeding?

19
20 A. The cost study JSI prepared for Vista for this proceeding
21 was done to comply with new Section 364.025(c), Florida
22 Statutes. That section is part of the new legislation that
23 was enacted as part of HB 4785. Under the new law, in order
24 to assist the Legislature in "establishing a permanent
25 universal service mechanism," the Florida Public Service

1 Commission has the responsibility to determine and report
2 the results of its findings related to total service cost.

3

4 Q. Please describe the study JSI performed for Vista and
5 included in your exhibit.

6

7 A. The study we prepared was done in a manner consistent with
8 my understanding of the specific provisions in Section
9 364.025(c) for small local exchange telecommunications
10 companies. The study we prepared was based on a fully
11 distributed allocation of embedded costs.

12

13 Q. Is the methodology JSI used to determine the cost of
14 providing basic local telecommunications services for Vista
15 consistent with the small local exchange companies
16 methodology described in the Direct Testimony of Mr. Dennis
17 Curry?

18

19 A. Yes.

20

21 Q. What data did you use in the study JSI performed for Vista?

22

23 A. I used the financial information provided to me by Vista for
24 use preparing the study. That data is discussed in the
25 testimony of William D. Huttenhower. In summary, we used

1 year-end 1997 "regulated" accounting information for Vista.
2 For investment related accounts, we used an average-of-
3 average balance for 1997. For expenses and taxes, we used
4 the regulated expenses incurred during 1997.

5

6 Q. Did you utilize the same basis for rate base and expense
7 items in your study that were utilized in determining
8 interstate access service costs?

9

10 A. No. For the purposes of this study, I excluded all
11 paystation-related costs. These costs were included in the
12 1997 study submitted to NECA. As of April 15, 1997,
13 paystation costs were classified as non-regulated or de-
14 regulated, so they were excluded from the study.

15

16 Q. Did you make adjustments for other non-regulated or de-
17 regulated services?

18

19 A. Yes. Consistent with Federal Communication Commission (FCC)
20 requirements listed in the Code of Federal Regulations
21 (CFR), Parts 32 and 64, VUT has accounted for non-regulated
22 activities and I have excluded them from the current study.

23 Q. How did you calculate the average number of access lines?

24

25 A. I used the VUT average loop count that was provided to NECA

1 in its annual universal service fund filing for 1997 and
2 1998. Each local exchange carrier is required to provide
3 this information to NECA each July. This is the most
4 consistent and uniform approach to determine the average
5 number of universal service access lines.

6
7 Q. What is the cost of providing basic local telecommunications
8 services for VUT?

9
10 A. VUT's cost of providing basic local telecommunications
11 services, based on a fully distributed allocation of
12 embedded costs, is \$11,735,943 annually, or \$65.65 per
13 access line per month. I have attached a summary of these
14 costs, with the associated input values and Part 36
15 computations in exhibit ____ (DCW-1).

16
17 Q. Does this complete your direct testimony?

18
19 A. Yes.

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1 MR. COX: The next attorney representing the
2 small LECs is David Erwin.

3 MR. ERWIN: Yes. I represent four small
4 LECs, and I'll go through each of the witnesses for
5 each of those companies. First, there's a witness,
6 Kelly Goodnight, for Frontier Communications of the
7 South. I would request that her testimony be inserted
8 into the record as though read, and she has one
9 exhibit, which has been identified in the prehearing
10 order as KG-1.

11 CHAIRMAN JOHNSON: We will insert her direct
12 testimony into the record as though read, and identify
13 exhibit -- as Exhibit 10, I guess it was KG-1, and
14 admit it without objection.

15 (Exhibit 10 marked for identification and
16 received in evidence.)
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1 Q. Please state your name, title and business address.

2 A. My name is Kelly M. Goodnight and my business address is Frontier
3 Communications, 180 S. Clinton Avenue, Rochester, New York 14646.
4 My position is Senior Analyst - Regulatory Matters for the Frontier
5 Telephone Group.

6

7 Q. Please describe your educational and professional background.

8 A. I am a 1987 graduate of the State University of New York, College at
9 Brockport, where I received a Bachelor of Arts degree in Accounting.
10 From December 1987 to October 1989, I was employed by Mark IV
11 Construction Company as a Staff Accountant. From October 1989 to
12 February 1995, I was employed by Comstock Michigan Fruit as a Senior
13 Accountant. I joined Frontier Communications in my present position of
14 Senior Analyst in February 1995. My current responsibilities include
15 preparation and analysis of tariff filings, development of rate proposals,
16 and preparation of annual financial and statistical reports for the Frontier
17 Telephone Group.

18

19 Q. Have you previously testified before this Commission?

20 A. No, I have not.

21

22 Q. On whose behalf are you testifying?

1 A. I am testifying on behalf of Frontier Communications of the South, Inc.
2 ("Frontier").

3

4 Q. What is the purpose of your testimony?

5 A. To present Frontier Communications of the South, Inc.'s embedded cost
6 study in this proceeding.

7

8 Q. Does Frontier's embedded cost study comply with the small company
9 LECs' methodology for embedded cost studies as testified to by Mr.
10 Dennis Curry?

11 A. Yes, it does.

12

13 Q. What data was used in the embedded cost study?

14 A. The embedded cost study is based on the 1997 regulated costs of
15 Frontier Communications of the South, Inc. The balances for the rate
16 base accounts are calculated using a 12 month average. The balances
17 for expenses and taxes are based on the year-to-date December 31,
18 1997 ending balances.

19

20 Q. Did you utilize the same basis for rate base and expense items in the
21 embedded cost study as are utilized in determining interstate access
22 service costs?

1 A. No. For the purposes of the embedded cost study in this proceeding, all
2 paystation related costs were excluded. These costs were included in the
3 1997 study submitted to the National Exchange Carrier Association
4 ("NECA"), but as of April 15, 1997, these costs are now considered to be
5 non-regulated consistent with the rules adopted by the FCC in its
6 paystation order.

7

8 Q. How was depreciation calculated for the embedded cost study?

9 A. Depreciation was calculated using the rates last approved by the
10 Commission.

11

12 Q. Were any adjustments made to the embedded study for non-regulated or
13 deregulated services?

14 A. Yes. Frontier Communications of the South, Inc. utilizes the accounting
15 principles under the FCC sections CFR Part 32. Frontier has accounted
16 for non-regulated or deregulated services through the use of the Part 64
17 manual which removes non-regulated or deregulated revenues and
18 expenses from the embedded cost study.

19

20 Q. What are Frontier's embedded costs from the embedded cost study?

21 A. Frontier Communications of the South, Inc.'s total embedded costs are
22 \$2,678,967 per year or \$56.13 per access line per month.

1 Q. How was the average number of access lines calculated?

2 A. The average access line count was calculated by using the average of the
3 1997 and 1998 "Category 1.3" loops provided to NECA for it's annual
4 Universal Service Fund filings. The information can be found on line 070
5 of each year's filing. This information is provided to NECA annually in
6 July and is a reasonable and consistent approach to determine the
7 average access line counts.

8

9 Q. Does that conclude your testimony?

10 A. Yes. Thank you.

1 **MR. ERWIN:** Next for GTC, Inc. is the
2 witness Mark Ellmer, and I would request that his
3 testimony be inserted in the record as though read,
4 and he has --

5 **CHAIRMAN JOHNSON:** It will be so inserted.

6 **MR. ERWIN:** He has one exhibit, RME-1, which
7 we would request be admitted in evidence.

8 **CHAIRMAN JOHNSON:** Say that again.

9 **MR. ERWIN:** It's RME-1.

10 **CHAIRMAN JOHNSON:** RME-1 will be identified
11 as Exhibit 11 and admitted without objection.

12 (Exhibit 11 marked for identification and
13 received in evidence.)
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Florida Public Service Commission

Docket No. 980696-TP

**Determination of the Cost of Basic Local
Telecommunications Service, Pursuant
To Section 364.025, Florida Statutes**

**GTC, Inc.
Port St. Joe, Florida**

**Direct Testimony
of
R. Mark Ellmer**

August 3, 1998

1 Q. Please state your name, title and business address.

2 A. My name is R. Mark Ellmer and my business address is GT Com, 502 Fifth
3 Street, Port St. Joe, Florida 32456. My position is Director of
4 Accounting/Revenue Requirements.

5 Q. Please describe your educational and professional background.

6 A. I am a graduate of both the University of Mississippi (1979) where I received a
7 Bachelor of Business Administration degree in Banking and Finance, and the
8 University of West Florida (1982) where I received a Bachelor of Arts degree in
9 Accounting. In May of 1982 I joined Southland Telephone Company as Auditor,
10 and remained until 1984 when I joined Indiantown Telephone System as Revenue
11 Requirements Manager. In 1986 I was employed by GT Com f/k/a St. Joseph
12 Telephone & Telegraph Company as an analyst in the Revenue Requirements
13 Department. In 1990 I became Accounting Manager, and in September of 1996 I
14 assumed my current position. My current duties include the supervision of all
15 accounting and revenue requirement functions, including monthly financial
16 statements, CABS bills, and cost studies.

17 Q. Have you previously testified before this Commission?

18 A. Yes.

19 Q. On whose behalf are you testifying?

20 A. I am testifying on behalf of GTC, Inc., d/b/a GT Com.

21 Q. What is the purpose of your testimony?

22 A. To present GT Com's embedded cost studies in this proceeding.

- 1 Q. Does GTC, Inc.'s embedded cost study comply with the small company
2 LECs' methodology for embedded cost studies as testified to by Mr. Dennis
3 Curry for ALLTEL Corporation?
- 4 A. Yes.
- 5 Q. What data was used in the embedded cost study?
- 6 A. The costs of the three divisions of GT Com were used. The balances for
7 investment related accounts are calculated using a 13 month average. The
8 balances for expenses and taxes are based on year to date December 31, 1997
9 ending balances.
- 10 Q. Did you utilize the same basis for rate base and expense items in the
11 embedded cost study as are utilized in determining interstate access service
12 costs?
- 13 A. No, for the purposes of the embedded cost study in this proceeding all pay station
14 related costs were excluded.
- 15 Q. Were any adjustments made to the embedded study for non-regulated or
16 deregulated services?
- 17 A. Yes. GT Com utilizes the accounting principles under the FCC sections CFR Part
18 32. The Company has accounted for the non regulated or deregulated services
19 through the use of the Part 64 manual.
- 20 Q. What are GTC, Inc.'s embedded costs from the embedded cost study?
- 21 A. GT Com's embedded costs are as follows:

	Total Embedded	Monthly Cost
	<u>Annual Cost</u>	<u>Per Line/Month</u>
1 St. Joe Division	\$ 15,755,625	\$ 44.16
2 Perry Division	\$ 4,130,720	\$ 38.07
3 Florala Division (Fla. Only)	\$ 1,170,587	\$ 49.81

4 I have attached to my testimony a summary of these costs, with the associated
5 input values and Part 36 computations for each division of the company, as Exhibits 1
6 (St. Joe), 2 (Perry) and 3 (Florala).

7 **Q. How was the average number of access lines calculated?**

8 **A.** The average number of access lines was calculated using the 1997 and 1998
9 category 1.3 loop (line 070 of the data submission) provided to NECA for its
10 annual Universal Service Fund filings.

11 **Q. Does that conclude your testimony?**

12 **A.** Yes.

1 **MR. ERWIN:** Next is Dan Weaver for ITS
2 Telecommunications Systems, Inc. I would request that
3 his testimony be inserted in the record as though
4 read.

5 **CHAIRMAN JOHNSON:** It will be so inserted.

6 **MR. ERWIN:** Now, I heard Mr. Wahlen indicate
7 that the exhibit for Mr. Weaver, who is also
8 testifying for Vista, was identified as DW-1. That's
9 the same designation given for the exhibit for ITS,
10 and perhaps there should be a different designation.
11 I'm not certain. I don't think they should both be
12 DW-1.

13 **CHAIRMAN JOHNSON:** We'll identify this one
14 as D. Weaver, and the number is 12, and it will be
15 admitted without objection.

16 (Exhibit 12 marked for identification and
17 received in evidence.)
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Florida Public Service Commission

Docket No. 980696-TP

**Determination of the Cost of Basic Local
Telecommunications Service, Pursuant
To Section 364.025, Florida Statutes**

**ITS Telecommunications Systems, Inc.
Indiantown, Florida**

**Direct Testimony
of
Daniel C. Weaver**

August 3, 1998

1 **Q1: Please state your name, title and business address.**

2

3 A1: My name is Daniel C. Weaver; I am Staff Director of Revenue Requirements for
4 John Staurulakis, Incorporated (JSI). My business address is 6315 Seabrook
5 Road, Seabrook, Maryland 20706.

6

7 JSI is a consulting firm specializing in financial, management and regulatory
8 services. JSI assists in the preparation and submission of jurisdictional cost
9 studies and universal service fund data to the National Exchange Carrier
10 Association (NECA), and routinely prepares and files tariffs on behalf of many
11 clients.

12

13 **Q2: Please describe your educational and professional background.**

14

15 A2: After receiving a B. S. in Business Administration from Salisbury State
16 University in 1977, I have had many responsibilities at JSI which include
17 separations studies, continuing property record development and maintenance,
18 and my current responsibility as staff director for revenue requirements. In my
19 current capacity, I am responsible for the coordination and completion of
20 quarterly and annual toll separations studies for clients served from JSI
21 headquarters. In coordinating these studies, I interact with JSI's Traffic and
22 Continuing Property Records departments and oversee all aspects of these studies,

1 including detailed reviews of the study work papers, traffic developments,
2 categorization of central office and cable and wire facilities, Part 36/69 study
3 models, and revenue requirement developments. I have been employed by JSI for
4 over twenty years.

5
6 **Q3: On whose behalf are you testifying?**

7
8 **A3:** I am testifying on behalf of ITS Telecommunications Systems, Inc. (ITS)
9 operating in Indiantown, Florida.

10
11 **Q4: What is the purpose of your testimony?**

12
13 **A4:** The purpose of my testimony is to present the results of ITS Telecommunications
14 Systems cost study that is required by HB 4785, passed by the Florida
15 Legislature. In order to assist the Legislature in "establishing a permanent
16 universal service mechanism," the Public Service Commission has the
17 responsibility to determine and report the results of its findings related to total
18 service cost.

19
20 In accordance with the specific provisions for small local exchange
21 telecommunications companies, I have prepared a study identifying the cost of

1 providing basic local telecommunications services based on a fully distributed
2 allocation of embedded costs.

3

4 **Q5: Is the methodology you used to determine the cost of providing basic local**
5 **telecommunications services for ITS consistent with the small local exchange**
6 **carriers methodology described in the Direct Testimony of Mr. Dennis**
7 **Curry?**

8

9 A5: Yes.

10

11 **Q6: What data did you use in your study?**

12

13 A6: I used financial information based on year-end 1997 "regulated" cost of ITS. For
14 investment related accounts, I used an average balance for 1997. For expenses
15 and taxes, I used the regulated expenses incurred during 1997.

16

17 **Q7: Did you utilize the same basis for rate base and expense items in your study**
18 **that were utilized in determining interstate access service costs?**

19

20 A7: No. For the purposes of this study, I excluded all paystation-related costs. These
21 costs were included in the 1997 study submitted to NECA. As of April 15, 1997,
22 paystation costs are now classified as non-regulated or de-regulated.

1

2

3 **Q8: How did you calculate the average number of access lines?**

4

5 A8: I used the ITS average loop count that was provided to NECA in its annual
6 universal service fund filing for 1997 and 1998. Each local exchange carrier is
7 required to provide this information to NECA each July. This is the most
8 consistent and uniform approach to determine the average number of universal
9 service access lines.

10

11 **Q9: What is the cost of providing basic local telecommunications services for
12 ITS?**

13

14 A9: ITS's cost of providing basic local telecommunications services, based on a fully
15 distributed allocation of embedded costs, is \$2,946,919 annually, or \$73.07 per
16 access line per month. I have attached a summary of these costs, with the
17 associated input values and Part 36 computations as Exhibit I of my testimony.

18

19 **Q10: Does this complete your direct testimony?**

20

21 A10: Yes.

1 MR. ERWIN: The last witness is
2 Jeffrey L. Jung. We'd request that his testimony be
3 inserted in the record as though read.

4 CHAIRMAN JOHNSON: It will be so inserted.

5 MR. ERWIN: And Mr. Jung has two exhibits.
6 One has been identified as JLJ-1, and the second is
7 JLJ-2.

8 CHAIRMAN JOHNSON: It will be marked as
9 Composite Exhibit 13 and admitted without objection.

10 MR. ERWIN: Thank you very much.

11 (Exhibit 13 marked for identification and
12 received in evidence.)
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1 **DIRECT TESTIMONY OF MR. JEFF JUNG**
2 **ON BEHALF OF TDS TELECOM/QUINCY TELEPHONE**
3 **BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**
4 **DOCKET NO. 980696-TP**
5 **AUGUST 3, 1998**

6
7 **INTRODUCTION**

8
9 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

10
11 A. My name is Jeffrey L. Jung. My business address is 301 Westfield Road, Madison,
12 WI.

13
14 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

15
16 A. I am employed with TDS TELECOM, the Parent Company of TDS
17 Telecom/Quincy Telephone, as a Cost Analysis Manager. I am responsible for
18 overseeing the preparation of all company cost studies and for ensuring compliance
19 with Federal Communications Commission (FCC) and State Rules and
20 Regulations.

21
22 **Q. PLEASE PROVIDE A DESCRIPTION OF YOUR EDUCATIONAL AND**
23 **EMPLOYMENT HISTORY.**

24
25 A. I received a B.S. Degree in Accounting from Lakeland College. I have attended

1 numerous industry and financial courses over the course of my career.

2 I began my career in the telecommunications industry with Universal Telephone
3 Company in 1979. My primary responsibility was to assemble cost separations
4 studies. During the early 1980's I was given additional responsibility in
5 compiling Traffic Studies used in cost studies as well as engineering and PSC
6 reports, and was instrumental in deploying Universal's 1st CABS Billing system in
7 1984. I joined the TDS TELECOM team as a cost consultant for their consulting
8 arm in 1986.

9
10 I have held various positions in TDS TELECOM Government and Regulatory
11 Affairs Department ranging from compiling cost study information to managing a
12 team of cost analysts. I have also assisted the Company's Regulatory Managers in
13 issues relating to cost shifts due to rule changes, EAS proceedings as well as
14 access issues in the states we serve. I have also had experience in managing TDS
15 TELECOM's Access Billing System during my career at TDS TELECOM

16
17 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY ?**

18
19 **A.** The purpose of my testimony is to provide TDS TELECOM's position on Issues
20 1, 5(a), 6(a) and 6(c). Additionally, I will attest to the validity of the cost
21 information provided in TDS Telecom/Quincy Telephone's embedded study.

22
23 **Q. WHAT IS THE DEFINITION OF THE BASIC LOCAL**
24 **TELECOMMUNICATIONS SERVICE REFERRED TO IN SECTION**
25 **364.025(4)(b)? (Issue 1)**

1 A. Basic local telecommunications service is defined in Florida Statute 364.02 (2)
2 as:

3
4 "Basic local telecommunications service" means voice-grade, flat-rate residential, and
5 flat-rate single-line business local exchange services which provide dial tone, local
6 usage necessary to place unlimited calls within a local exchange area, dual tone
7 multifrequency dialing, and access to the following: emergency services such as
8 "911," all locally available interexchange companies, directory assistance, operator
9 services, relay services, and an alphabetical directory listing. For a local exchange
10 telecommunications company, such term shall include any extended area service
11 routes, and extended calling service in existence or ordered by the commission on or
12 before July 1, 1995.

13
14 Q. FOR THE PURPOSES OF DETERMINING THE COST OF BASIC LOCAL
15 TELECOMMUNICATIONS SERVICE APPROPRIATE FOR ESTABLISHING A
16 PERMANENT UNIVERSAL SERVICE MECHANISM, FOR WHICH FLORIDA
17 LOCAL EXCHANGE COMPANIES MUST THE COST OF BASIC LOCAL
18 TELECOMMUNICATIONS SERVICE BE DETERMINED USING THE COST
19 PROXY MODEL IDENTIFIED AS ISSUE 2? (ISSUE 5(a))

20
21 A. The use of the cost proxy model identified in Issue 2 should be limited to the large
22 LECs, BellSouth, GTE, and Sprint.

23
24 Q. DOES SECTION 364.025, FLORIDA STATUTES, REQUIRE THE
25 COMMISSION TO USE THE SAME PROXY MODEL FOR BOTH LARGE

AND SMALL LECs?

1
2 A. No. Section 3(1.025)(c), clearly states that:

3
4 "In determining the cost of providing basic local telecommunications service
5 for small local exchange telecommunications companies, which serve less than
6 100,000 access lines, the commission shall not be required to use the cost
7 proxy model selected pursuant to paragraph (b) until a mechanism is
8 implemented by the Federal Government for small companies, but no sooner
9 than January 1, 2001. The commission shall calculate a small local exchange
10 telecommunications company's cost of providing basic local
11 telecommunications services based on one of the following options:

- 12
13 1. A different proxy model; or
14 2. A fully distributed allocation of embedded costs,

15
16 **Q. IS THE FLORIDA STATUTE CONSISTENT WITH THE ACTION**
17 **TAKEN BY THE FCC FOR DETERMINING THE LEVEL OF**
18 **UNIVERSAL SERVICE SUPPORT FOR RURAL OR SMALL LECs?**

19
20 A. Yes. In the FCC's Report and Order in Docket No. 96-45, issued May 8, 1997,
21 the FCC stated that rural carriers will begin receiving support based on proxy
22 models only when the FCC has sufficiently validated that proxy models for rural
23 carriers produce results that are sufficient and predictable, but no earlier than
24 January 1, 2001. Further, the FCC adopted the Joint Board's recommendation to
25 establish a task force to specifically study the development and impact of support

1 mechanisms incorporating forward-looking economic principles for rural carriers

2 **Q. WHAT IS THE STATUS OF THE FEDERAL RURAL TASK FORCE?**

3

4 **A.** On July 1, 1998, the FCC issued its Public Notice announcing the seventeen
5 members assigned to the Rural Task Force. The seventeen-member task force is
6 responsible for studying the establishment of a forward-looking economic cost
7 mechanism for rural telephone carriers. The primary purpose of the task force is
8 to consider whether a forward-looking economic cost mechanism for rural carriers
9 should have a platform design feature or input values that are different from those
10 that are appropriate for non-rural carriers. The task force will also consider the
11 appropriate timing of the transition to the forward-looking mechanism. The task
12 force will present its recommendations to the Joint Board within nine months after
13 the date on which the FCC implements a forward-looking mechanism for non-rural
14 carriers.

15

16 **Q. IS TDS TELECOM/QUINCY CLASSIFIED AS RURAL CARRIER?**

17

18 **A.** Yes. In fact all the small LEC's operating in Florida are classified as rural carriers
19 under the definition of the Telecommunications Act of 1996.

20

21 **Q. FOR PURPOSES OF DETERMINING THE COST OF BASIC LOCAL**
22 **TELECOMMUNICATIONS SERVICE APPROPRIATE FOR**
23 **ESTABLISHING A PERMANENT UNIVERSAL SERVICE MECHANISM,**
24 **SHOULD THE COST OF BASIC LOCAL TELECOMMUNICATIONS**
25 **SERVICE FOR EACH OF THE LECs THAT SERVE FEWER THAN**

1 **100,000 ACCESS LINES BE COMPUTED USING THE COST PROXY**
2 **MODEL IDENTIFIED IN ISSUE 2 WITH THE INPUT VALUES**
3 **IDENTIFIED IN ISSUE 4? (ISSUES 6(a) and 6(c))**

4
5 A. No. The cost of basic local telecommunications service for each LEC that serves
6 fewer than 100,000 access lines should be determined based on the embedded cost
7 model presented in the testimony of Mr. Dennis Curry.

8
9 Q. **HAS TDS TELECOM/QUINCY TELEPHONE PREPARED AN**
10 **EMBEDDED COST STUDY FOR THIS PROCEEDING?**

11
12 A. Yes.

13 Q. **PLEASE DESCRIBE THE DATA USED IN YOUR EMBEDDED COST**
14 **STUDY.**

15
16 A. For our cost study, I utilized the financial information based on the 1997 costs we
17 incurred in the regulated operations of TDS Telecom/Quincy Telephone. For
18 Investment related accounts I used a December 31, 1996 and December 31, 1997
19 Average Balance. For expenses and taxes I utilized the calendar year regulated
20 expenses incurred during 1997. The data used in the study is very consistent with
21 the approach that is utilized for Rate of Return companies with this commission in
22 local rate cases as well as the FCC in determining our Interstate Access Rates.

23
24 Q. **ARE THE RATE BASE ITEMS AND EXPENSE DATA UTILIZED IN**
25 **YOUR COSTS IN THE EMBEDDED STUDY THE SAME THAT YOU**

1 **UTILIZED IN DETERMINING YOUR COMPANY'S ACCESS COSTS**
2 **FOR INTERSTATE SERVICES YOU PROVIDE?**

3
4 A. No. In our embedded cost study for this proceeding, I made an adjustment to
5 exclude all paystation related costs from this study, since these costs were included
6 in the 1997 study submitted to the National Exchange Carrier Association
7 (NECA). After April 15, 1997 these costs would now be considered as non-
8 regulated activity consistent with the rules adopted in the FCC paystation order.
9 This is consistent with the earnings surveillance reports we have provided to the
10 commission during 1997.

11
12 **Q. WHAT DEPRECIATION RATES WERE USED IN THE EMBEDDED**
13 **MODEL?**

14
15 A. The model utilizes the latest depreciation rates which were approved by the
16 Commission in July of 1996.

17
18 **Q. HAVE YOU MADE ADJUSTMENTS TO YOUR STUDY FOR NON-**
19 **REGULATED OR DEREGULATED SERVICE YOU PROVIDE TO YOUR**
20 **CUSTOMERS?**

21
22 A. Yes I have. Our company utilizes accounting principles under the FCC sections
23 CFR Part 32, and have accounted for non-regulated activities through the use of
24 our Part 64 manual which removes non-regulated activity from the embedded
25 study

1 Q. DID YOU MODIFY YOUR STUDY TO COMPLY WITH THE SMALL
2 LEC COMPANY METHODOLOGY IN ITS EMBEDDED COST STUDY
3 APPROACH AS MR. CURRY TESTIFIED?
4

5 A. Yes.
6

7 Q. WHAT ARE YOUR EMBEDDED COSTS AT QUINCY BASED ON YOUR
8 EMBEDDED COSTS METHODOLOGY THAT YOU HAVE UTILIZED?
9

10 A. Our annual embedded costs at TDS Telecom/Quincy Telephone are \$6,975,500 or
11 \$44.39 per Access Line per month. I have attached Exhibits 1 and 2 which
12 summarize and detail the embedded costs of TDS Telecom/Quincy Telephone.
13

14 Q. HOW DID YOU ARRIVE AT YOUR ACCESS LINE COUNTS?
15

16 A. In order to determine the average number of lines, I utilized the loop count
17 information that was provided to NECA in its annual Universal Service Fund
18 (USF) for its 1997 and 1998 filings. The loops utilized are Category 1.3 Loops
19 and can be found on line 70 of the annual USF submission to NECA. The industry
20 provides this information to NECA each July. I believe that this is a reasonable
21 and consistent approach in determining the company's cost on an access line basis.
22
23
24

25 Q. DOES THIS COMPLETE YOUR TESTIMONY AT THIS TIME?
26

1 A Yes it does.

2

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1 MR. COX: Staff has one preliminary matter
2 regarding stipulation of the official recognition list
3 and some exhibits. But before that, it might be
4 appropriate for the parties to bring up any
5 preliminary matters that they might have to raise.

6 CHAIRMAN JOHNSON: Any other preliminary
7 matters from the parties? Mr. Hatch?

8 MR. HATCH: Yes, ma'am, there's one. On
9 Friday AT&T filed some supplemental rebuttal of
10 Ms. Catherine Petzinger. In addition to that, we also
11 filed, accompanying that, a copy of the motion to
12 accept the supplemental rebuttal testimony.

13 The basis of the supplemental testimony, as
14 explained in the motion -- and I have some copies that
15 I could pass out to you if you'd like -- the real
16 short answer if you read through it is that this
17 proceeding has been conducted on a very expedited time
18 frame. Everybody is aware of that, and everybody
19 shares that burden.

20 When direct testimony was filed in this
21 proceeding, Cathy Petzinger, who is our SCIS switching
22 cost expert, immediately began reviewing the
23 information of all the parties and propounded some
24 discovery that was served upon BellSouth,
25 hand-delivered on August the 5th.

1 BellSouth responded on August the 28th, and
2 in their response is -- because this is dealing with
3 SCIS and switch vendor contract information, this is
4 sort of generally considered in a different class of
5 confidential information. This is information you can
6 see only if you go to BellSouth's premises, in this
7 case in Atlanta, to view those contracts.

8 I worked with Mr. Carver through various
9 means and machinations to figure out a way to get this
10 information to Ms. Petzinger, but basically the only
11 way that she could get it was to come to Atlanta and
12 view the documents. And in addition to that, of
13 course, it also requires a second proprietary
14 agreement that is specific to the SCIS vendor and the
15 switch vendor contract information dealing with
16 competitive information and so forth.

17 Ms. Petzinger was finally able to view those
18 documents last Monday and discovered some information
19 there that is highly relevant to this proceeding. The
20 information is confidential, so I cannot disclose it
21 on the record. She obtained certain extracts of pages
22 from their most current switch vendor contracts, and
23 that is essentially what her testimony is regarding,
24 along with the exhibits, from the switch vendor
25 contracts that she has supplied on Friday.

1 Essentially, the bottom line, Commissioners,
2 is that there was just no possible way that she could
3 visit BellSouth's premises, get all that information
4 combined, and file rebuttal on September the 2nd.
5 It's just physically impossible to do.

6 **CHAIRMAN JOHNSON:** Thank you. Any response
7 to the motion to accept supplemental rebuttal?

8 **MR. CARVER:** In general we don't have an
9 objection. However, there is one concern I want to
10 raise. Because Ms. Petzinger's testimony relies
11 heavily on confidential information, there were many,
12 many blanks in it. So what we have tried to do is go
13 through and sort of look at the underlying documents
14 that she reviewed and match it up so that we could
15 respond.

16 I think we will be able to deal with it
17 without prejudice, but it's taking some time to go
18 through everything she's filed. So I would just like
19 to reserve the option of objecting if, as we go
20 further into it, it looks like there's some prejudice,
21 because we don't have time to respond to something.
22 But generally speaking, I don't anticipate that that
23 will be the case.

24 **CHAIRMAN JOHNSON:** Okay. Mr. Hatch?

25 **MR. HATCH:** That's fine.

1 **CHAIRMAN JOHNSON:** We will -- I guess at the
2 point that the witness comes forward, is that when
3 we'll do all of the necessary --

4 **MR. HATCH:** I would assume that's correct,
5 or at some point if BellSouth comes to the point where
6 they need to raise it, they can.

7 **CHAIRMAN JOHNSON:** Okay. Very well. Show a
8 preliminary acceptance.

9 Anything else from the parties? (No
10 response.)

11 **MR. COX:** Seeing nothing from the parties,
12 Staff has several things, basically regarding
13 stipulations that we've -- at least our understanding
14 we've come to agreement with the parties on.

15 The first is with regard to the official
16 recognition list, that Staff asked that the Commission
17 take official recognition of various other state
18 commission utility -- state utility commission orders,
19 FCC orders, FCC public notice, comments to the FCC, as
20 well as an FCC news release. And rather than eat up
21 valuable time at the hearing reading that list, I
22 would suggest maybe that we mark this as an exhibit
23 and move it into the record at this time.

24 **CHAIRMAN JOHNSON:** We'll mark it as
25 Exhibit 14, short title, "Official recognition list,"

1 and show it admitted without objection.

2 (Exhibit 14 marked for identification and
3 received in evidence.)

4 MR. COX: Staff has also reached
5 stipulations, we believe, on various discovery
6 responses and the deposition transcripts of witnesses
7 that are a part of this proceeding that have been
8 deposed, and at this time we'd like to go through
9 those stipulated exhibits.

10 Now some of -- let me clarify that. As I
11 understand it, we've stipulated all the deposition
12 transcripts, but we thought it might be more
13 appropriate to raise the deposition transcripts as
14 exhibits when the actual witnesses came forward.

15 At this time we would only enter in the
16 exhibits for the transcripts for those witnesses that
17 are not appearing today.

18 CHAIRMAN JOHNSON: Okay.

19 MR. COX: I'll start with the deposition
20 transcripts. The first exhibit is the deposition
21 transcript of Michael Majoros, Jr. for AT&T, and it's
22 identified as MJM-13, and it includes the Late-filed
23 Deposition Exhibits No. 1 through 72, so I guess it
24 should be considered a composite exhibit.

25 CHAIRMAN JOHNSON: We'll identify it as 15.

1 (Exhibit 15 marked for identification.)

2 MR. COX: The next exhibit is the deposition
3 transcript for AT&T/MCI Witness John Hirschleifer. It
4 includes the deposition transcript as well as
5 Late-filed Deposition Exhibits 1 through 5. It would
6 also be a composite exhibit. It's identified as
7 JH-14.

8 CHAIRMAN JOHNSON: We'll identify it as
9 Composite Exhibit 16.

10 (Exhibit 16 marked for identification.)

11 MR. COX: The next is David Cunningham for
12 BellSouth. It's deposition transcript and Late-filed
13 Deposition Exhibit No. 1. It's identified as GDC-5.

14 CHAIRMAN JOHNSON: We will identify that one
15 as 17.

16 (Exhibit 17 marked for identification.)

17 MR. COX: The next exhibit is for Kelly
18 Goodnight, Frontier. It's her deposition transcript
19 and late-filed deposition exhibits. Those have not
20 yet been filed, but would be included; and the
21 identification is KG-2.

22 CHAIRMAN JOHNSON: So do we need to identify
23 this as a late-filed?

24 MR. COX: Well, part of it's late-filed and
25 part of it is not. There will be several of the

1 depositions where we have not received all of the
2 late-fileds as of yet. We do have the transcripts,
3 but not all of the late-filed exhibits.

4 CHAIRMAN JOHNSON: The document that I have
5 says that the October deposition transcript is not yet
6 available and the late-filed deposition --

7 MR. COX: Okay. That's correct on this one.
8 I'm sorry. Yes, that's correct.

9 CHAIRMAN JOHNSON: So I'll just mark it as a
10 late-filed.

11 MR. COX: That would be fine. Yes, that
12 would be appropriate.

13 CHAIRMAN JOHNSON: Late-filed 18, and the
14 short title is KG-2.

15 (Late-Filed Exhibit 18 identified.)

16 MR. COX: The next would also be a
17 late-filed exhibit, and that's the deposition
18 transcript for Mark Ellmer of GTC, and it also
19 includes his late-filed deposition transcript which
20 also has not yet been filed.

21 CHAIRMAN JOHNSON: We'll identify it as
22 RME-2.

23 MR. COX: Yes.

24 CHAIRMAN JOHNSON: Late-filed 19.

25 (Late-Filed Exhibit 19 identified.)

1 MR. COX: The next is GTE witness Allen
2 Sovereign, identified as AES-8. That was his
3 deposition transcript and Late-filed Deposition
4 Exhibits Nos. 1 through 5. It will be a composite
5 exhibit.

6 CHAIRMAN JOHNSON: We'll identify this as
7 20, Composite Exhibit AES-8.

8 MR. COX: Yes.

9 (Exhibit 20 marked for identification.)

10 MR. COX: The next is the witness is James
11 Vander Weide, GTE, identified as JVW-6, and it is also
12 the deposition transcript as well as the Late-filed
13 Deposition Exhibit No. 1, which was not filed at the
14 time of copying, though, but I believe has been filed
15 since. So it is not a late-filed exhibit. I think we
16 have everything.

17 CHAIRMAN JOHNSON: Okay. We have the entire
18 exhibit for JVW-6?

19 MR. COX: We do have a copy. It's not in
20 the packet, but we can make that available if someone
21 needs it. It's JVW-6.

22 CHAIRMAN JOHNSON: We'll mark that 21.
23 (Exhibit 21 marked for identification.)

24 MR. COX: The next is witness Lynn Brewer
25 for Northeast. It's identified as LGB-2, deposition

1 transcript and late-filed deposition exhibits.
2 Neither have been filed, so it would be a late-filed
3 exhibit.

4 CHAIRMAN JOHNSON: Okay. We'll mark that
5 LGB-2, Late-filed 22.

6 (Late-Filed Exhibit 22 identified.)

7 MR. COX: The next is Jeffrey Jung for TDS,
8 identified as JLJ-3. It's his deposition transcript
9 which is not yet been filed, as well as his late-filed
10 deposition exhibits, which has not yet been filed. So
11 this would be a late-filed exhibit.

12 CHAIRMAN JOHNSON: We'll identify it
13 Late-filed 23.

14 (Late-Filed Exhibit 23 identified.)

15 MR. COX: The next is Randall Billingsley,
16 Sprint. Sprint and BellSouth, actually. The
17 identification is RSB-25, and it is the deposition
18 transcript as well as the Late-filed Deposition
19 Exhibit 1, which is not included with the packet
20 because it was quite voluminous, but we do have
21 copies.

22 CHAIRMAN JOHNSON: We'll identify it as
23 Composite 24.

24 (Exhibit 24 marked for identification.)

25 MR. COX: The next exhibit is Bill

1 Huttenhower for Vista, identified as BH-1, and this is
2 the deposition transcript and late-filed exhibits,
3 neither of which were available at the time of
4 copying, so this would be a late-filed exhibit.

5 CHAIRMAN JOHNSON: Marked as Late-filed 25.
6 (Late-Filed Exhibit 25 identified.)

7 MR. COX: And the last of the deposition
8 transcripts will be Daniel Weaver, Vista/ITS. It's
9 identified as DW-2, and it's the deposition transcript
10 and late-filed deposition exhibits, none of which have
11 been available, so this would be a late-filed exhibit.

12 CHAIRMAN JOHNSON: We'll mark it
13 Late-filed 26, DW-2.

14 (Late-Filed Exhibit 26 identified.)

15 MR. WAHLEN: Excuse me. Did we decide on
16 one transcript or two for Weaver, deposition?

17 MR. COX: It will be one exhibit. I think
18 we did them as two at the actual deposition, but it
19 will be one exhibit.

20 MR. WAHLEN: Okay. As long as the record is
21 clear that both transcripts are --

22 MR. COX: Mr. Weaver is representing Vista
23 and ITS.

24 CHAIRMAN JOHNSON: Okay. Thank you for that
25 clarification.

1 MR. COX: Staff would ask just to keep
2 everything in line if we could go ahead and move those
3 exhibits in at this time, and that would be, I guess,
4 starting with --

5 CHAIRMAN JOHNSON: Show 15, 16 and 17
6 admitted without objection.

7 (Exhibits 15, 16, and 17 received in
8 evidence.)

9 CHAIRMAN JOHNSON: 18 and 19 are late-filed.
10 Show 20 admitted without objection, 21 admitted
11 without objection.

12 (Exhibits 20 and 21 received in evidence.)

13 CHAIRMAN JOHNSON: 22 and 23 are late-filed.
14 Show 24 admitted without objection.

15 (Exhibit 24 received in evidence.)

16 CHAIRMAN JOHNSON: 25 and 26 are late-filed.

17 MR. COX: The last preliminary matter we
18 have is regarding stipulations on various discovery
19 that was filed, discovery responses that were filed.
20 And the first is identified as Stip-1 and the party is
21 ALLTEL; includes responses to Staff's first set of
22 interrogatories, Staff's second set of
23 interrogatories, Staff's third set of interrogatories,
24 and also the response to Staff's data requests in the
25 special project, and it's identified as Stip-1.

1 **CHAIRMAN JOHNSON:** Short titled Stip-1, and
2 it will be Composite Exhibit 27.

3 (Exhibit 27 marked for identification.)

4 **MR. COX:** Just for clarification, at this
5 point some of these exhibits do contain confidential
6 material, and the copies that have been provided which
7 are out now are redacted copies. We do have the
8 confidential information available for the
9 Commissioners, if necessary.

10 **CHAIRMAN JOHNSON:** Okay.

11 **MR. WAHLEN:** Does this one have confidential
12 stuff in it?

13 **MR. COX:** We don't believe there were any on
14 this particular exhibit.

15 **MR. WAHLEN:** Okay.

16 **MR. COX:** The next exhibit is Stip-2. The
17 party is AT&T, and it contains 10 responses to
18 interrogatories and POD requests that AT&T responded
19 to.

20 **CHAIRMAN JOHNSON:** We'll identify this as
21 Stip-2, and it's Composite 28.

22 (Exhibit 28 marked for identification.)

23 **MR. COX:** The next exhibit is Stip-3, The
24 party is AT&T and MCI, and their responses to Staff's
25 first request for PODs as well as responses to Staff's

1 first set of interrogatories; and that was Stip-3.

2 CHAIRMAN JOHNSON: Identified as
3 Composite 29, Stip-3.

4 (Exhibit 29 marked for identification.)

5 MR. COX: The next is Stip-4. The party is
6 BellSouth, and it includes 12 different items in this
7 composite exhibit; responses to Staff interrogatories
8 and POD requests, as well as responses to
9 interrogatory and POD requests from AT&T, and also
10 responses to Staff's data request in the special
11 project. And that was Stip-4.

12 CHAIRMAN JOHNSON: Show it identified as
13 Composite Exhibit 30, Stip-4.

14 (Exhibit 30 marked for identification.)

15 MR. COX: The fifth exhibit here in this
16 line of stipulations is Stip-5, and the party is FCCA.
17 It includes responses to Staff's first and second set
18 of interrogatories as well as responses to Staff's
19 first request for PODs. Stip-5.

20 CHAIRMAN JOHNSON: It will be Composite 31,
21 Stip-5.

22 (Exhibit 31 marked for identification.)

23 MR. COX: Next exhibit is Stip-6. The party
24 is the FCTA, and it's responses to Staff's first set
25 of interrogatories.

1 **CHAIRMAN JOHNSON:** It will be identified as
2 Exhibit 32.

3 (Exhibit 32 marked for identification.)

4 **MR. COX:** The next is Stip-7. The party is
5 Frontier. It includes responses to Staff's first set
6 of interrogatories, Staff's second set of
7 interrogatories, and the response to Staff's data
8 requests in the special project.

9 **CHAIRMAN JOHNSON:** It will be identified as
10 33, and it's composite Stip-7.

11 (Exhibit 33 marked for identification.)

12 **MR. COX:** The next exhibit is Stip-8. The
13 party is GTC, and it includes responses to Staff's
14 first and second and third set of interrogatories, as
15 well as Staff's first request for PODs, and the
16 responses also to Staff's data requests in the special
17 project. Stip-8.

18 **CHAIRMAN JOHNSON:** It will be identified
19 as 34.

20 (Exhibit 34 marked for identification.)

21 **MR. COX:** The next is Stip-9. The party is
22 GTE, and there are various responses to
23 interrogatories and PODs submitted to GTE by the Staff
24 as well as by AT&T.

25 **CHAIRMAN JOHNSON:** Composite 35.

1 (Exhibit 35 marked for identification.)

2 MR. COX: Just to note, there were also some
3 on the back of the cover, just to indicate that it
4 also did include the responses to the data request in
5 the special project.

6 The next is Stip-10. The party is ITS. It
7 includes responses to Staff's first set of
8 interrogatories, second set of interrogatories, as
9 well as Staff's first request for PODs and responses
10 to the data request in the special project.

11 CHAIRMAN JOHNSON: Composite Stip-10 will be
12 identified as 36.

13 (Exhibit 36 marked for identification.)

14 MR. COX: The next is Stip-11. The party is
15 MCI. It includes responses to Staff's first, second,
16 and third set of interrogatories and Staff's first and
17 second set of POD requests.

18 CHAIRMAN JOHNSON: It will be identified as
19 37, and it's -- that was Stip-11.

20 (Exhibit 37 marked for identification.)

21 MR. COX: The next is Stip-12. The party is
22 Northeast. It includes Staff's -- responses to
23 Staff's first and -- set of Interrogatories as well as
24 responses to the data request in the special project;
25 and that was Stip-12.

1 **CHAIRMAN JOHNSON:** We'll mark it 38, and
2 that was composite Stip-12.

3 (Exhibit 38 marked for identification.)

4 **MR. COX:** The next is Stip-13. The Party is
5 Sprint. It includes responses to Staff's
6 interrogatories and POD requests. It also includes
7 responses to the FCTA's interrogatories and POD
8 requests, and it includes responses to the data
9 requests in the special project.

10 **CHAIRMAN JOHNSON:** Composite Stip-13 will be
11 Exhibit 39.

12 (Exhibit 39 marked for identification.)

13 **MR. COX:** The next is Stip-14. The party is
14 TDS. It includes Staff's -- responses to Staff's
15 first and second set of interrogatories and the
16 response to the Staff data request in the special
17 project. Stip-14.

18 **CHAIRMAN JOHNSON:** Short titled composite
19 Stip-14 is identified as Exhibit 40.

20 (Exhibit 40 marked for identification.)

21 **MR. COX:** And the last one is Stip-15. The
22 party is Vista-United. It includes responses to
23 Staff's first set of interrogatories and second set of
24 interrogatories and responses to Staff's data request
25 in the special project.

1 **CHAIRMAN JOHNSON:** That will be 41, and it's
2 Composite Stip-15.

3 (Exhibit 41 marked for identification.)

4 **MR. COX:** Staff would ask that we move
5 Stip-1 through 15 into the record at this time.

6 **CHAIRMAN JOHNSON:** Okay. Exhibits 27
7 through 41 will be admitted without objection.

8 (Exhibits 27-41 received in evidence.)

9 **MR. COX:** That concludes Staff's preliminary
10 matters. Hearing nothing more from the parties, I
11 believe we're ready for opening presentations.

12 At this time if we could ask that the
13 attorneys at the table could take a seat at the
14 audience so that the Commissioners might be able to
15 sit in the front row to view the presentation.

16 The presentations will start with the side
17 representing the BCPM model. That will be an hour
18 presentation followed by a opportunity for questioning
19 by the Commission and the Staff, and following that
20 will be the presentation on the Hatfield model, also
21 with an hour time limit, followed by questioning by
22 the Commission and the Staff.

23 **DR. STAIHR:** Good morning. My name is
24 Brian, Brian Staihr. I'm an economist. I work for
25 Sprint. I'm glad you all are sitting there, because

1 I've got a lot to show you up here.

2 The reason I'm here this morning is on
3 behalf of Sprint and BellSouth and GTE, and I'm going
4 to talk a little bit about the model that those three
5 companies are putting forth as the proper methodology
6 to use for estimating costs for purposes of explicit
7 universal service support calculation in Florida.

8 Now, I understand we've got a few ground
9 rules with regard to these presentations. We
10 presenters were supposed to talk about our model.
11 We're not supposed to talk about the other guy's
12 model, and we're not supposed to compare our model to
13 their model, so that's not what I'm going to do.

14 I'm going to take a kind of a three-step
15 approach here. First I'm going to talk a little bit
16 about what the model does; then spend a little bit of
17 time talking about how it does what it does; and,
18 finally, I'm going to point out a few key features
19 that we believe help the model do what it does really
20 well.

21 As we go through -- I don't think the whole
22 thing is going to take an hour. If you all have
23 questions as we go, yell out and say, hey, Brian, back
24 up, slow down, try this again, whatever. It's better
25 to get the information than for me to just pass over

1 something.

2 So jumping right in, what does the model do?
3 It does estimate costs, the costs that would be
4 incurred by an efficient provider, any efficient
5 provider offering basic local telephone service to a
6 market.

7 Okay. Instantly two questions. I have up
8 there cost. What do I mean costs? I mean
9 forward-looking, economic costs. Okay. What's an
10 economic cost? An economic cost is nothing more than
11 the cost that would be incurred if you did something
12 the most efficient way. That's all it is.

13 What's a forward-looking, economic cost? If
14 this were my econ class, I'd say, okay, it disregards
15 sunk costs. Sunk costs are just investments you can't
16 recover. But for purposes of the model here today, a
17 forward-looking, economic cost uses forward-looking,
18 currently available technology to provide basic
19 service in the most efficient way possible.

20 Now, the way the model does this, the way it
21 estimates cost, is two steps. It figures out what it
22 costs to build the telephone network, and then what it
23 costs to operate the network. Build it, operate it;
24 okay. And in doing that first one, it does assume
25 state-of-the-art technology; in a lot of cases, more

1 advanced than what's really out there.

2 Why does it do this? Number one, the FCC
3 said do it this way. Number two, if you were to build
4 the network in the most efficient way today, it might
5 be done differently than the way the phone company did
6 it five years ago, 10 years ago.

7 Third, it does meet all the FCC's
8 guidelines, mandates; and there are a lot of them.
9 We've been working with the FCC for a long time to
10 make sure that the BCPM meets everything that they've
11 put out in terms of criteria.

12 Okay. Given what it does, what does it not
13 do? It doesn't reproduce --

14 **CHAIRMAN JOHNSON:** Could you go back to what
15 it does.

16 **DR. STAIHR:** Oh, sorry.

17 **CHAIRMAN JOHNSON:** Your first bullet point
18 was serving the entire market. How is market defined?

19 **DR. STAIHR:** I like that question. Okay.
20 Market; economist's favorite word, market. A market
21 could be the entire state of the Florida. A market
22 could be the area just served by GTE. A market could
23 be a single wire center, De Funiak Springs. A market
24 could be one census block group.

25 The model can estimate the cost for any and

1 all of those areas, and we'll talk about how it does
2 that. Okay. I can go more now or we can get to it.

3 CHAIRMAN JOHNSON: Well, I guess at that
4 point you're going to talk about which market you
5 believe that we should --

6 DR. STAIHR: We can get into that, yeah.

7 CHAIRMAN JOHNSON: Okay. We can do that
8 later.

9 DR. STAIHR: What it doesn't do, it doesn't
10 crank out embedded costs. It doesn't mean to. It
11 doesn't do that.

12 Second: It doesn't necessarily build the
13 network exactly as it exists today. Again, why?
14 Because if you were doing it today, it might come out
15 looking different.

16 Third: It doesn't necessarily use the same
17 materials, meaning we could actually have copper going
18 outside to somebody's house, but the model would put
19 fiber there. We could actually have an analog switch,
20 but the model would put a digital switch there.
21 Again, why? Because that's the most efficient way to
22 do it if you were doing it today.

23 And last on this page, although the BCPM can
24 be used, has been used to develop investments for
25 unbundled element costs, it doesn't explicitly cost

1 out UNEs. We didn't intend for it to.

2 Now, as I go through and I talk about the
3 network, building the network, operating the network,
4 what is it I'm talking about? This is just kind of
5 like a visualization of the network. The blue squares
6 up there, those are houses; your house, my house,
7 Charles Rehwinkel's house at 490 Teenie Court. Okay.
8 And coming out of your house, the copper cable goes up
9 to the telephone pole, is the drop, where you see the
10 drop.

11 Up there it meets other drops, and it goes
12 into what's called distribution cable. Those are just
13 the copper cables that go through your network.
14 Through your network -- through your neighborhood.
15 Once it goes through your neighborhood, it's going to
16 meet up with other distribution, and up there where
17 it's "feeder distribution interface," it's going to
18 meet up with bigger cable, which we called feeder.
19 Feeder could be copper, it could be fiber.

20 And finally the network is going to end up
21 at the telephone company's central office. That's
22 what houses the switch. The switch is nothing more
23 than a big computer. What it's used for is to route
24 the call.

25 So when we talk about the network, and as I

1 go through this, we're talking about the area from the
2 central office through the feeder, through the
3 distribution, over here to Charles' house. That
4 actual physical connection is referred to as the loop,
5 the local loop. That's what we really care about.

6 Why? For universal service, for basic local
7 phone service, most of the cost is the cost of the
8 loop. You've got to get the cost of the loop right.

9 So what it does, what it doesn't do, how it
10 does what it does, do not look at this and go, oh, no.
11 All right? What the model is is nothing more, nothing
12 more than a bunch of spreadsheets that work together.
13 Okay?

14 Information gets passed between the
15 spreadsheets. Calculations are performed and passed
16 on. What passes the information from one to another
17 is something called visual basic. Again, I say visual
18 basic. Sometimes people go, ah, no, don't tell me,
19 don't want to know. Okay. Visual basic is nothing
20 more than cut and paste, copy and paste.

21 So up here and on the next few slides where
22 you see a white oval, think spreadsheet. Where you
23 see a black arrow, think cut and paste. We're going
24 to take information, pass it from one spreadsheet to
25 another, do some calculations, pass it on.

1 The first thing the model starts out with
2 are two sets of information, data. The first one we
3 call external data. What's that? It's information
4 about the area that you're going to build the network.
5 What kind of information? Like what kind of soil is
6 there. Is it flat or is it hilly; how many people
7 live there; how many businesses are there.

8 You've got this information, and you've got
9 another set of information. This other set of
10 information called user adjustable data has to do with
11 building the network. How much does cable cost a
12 foot? How much does fiber cost? If you have to dig a
13 trench, how much does it cost you to dig that trench,
14 and once you've dug it, how much does it cost you to
15 fill it back in. Things like that.

16 Those are inputs that any user can change.
17 This first set you're not supposed to change. They're
18 about the area. These two pieces of information are
19 going to come together in what's called the model
20 logic, another spreadsheet, and in that spreadsheet
21 the network gets built.

22 Now, what do I mean the network gets built?
23 It's nothing more than a whole bunch of "if, then"
24 statements. If I have to cover this much area, how
25 much cable do I need? If I have to serve this many

1 people, what size cable do I need? If I have to dig a
2 trench, what kind of soil am I digging it in? And the
3 mathematical calculations that are in there are very
4 straightforward.

5 I have a trench that's this long. I have a
6 cost per foot of digging that trench. The length
7 times the cost gives you the investment. This
8 spreadsheet produces investment dollars, the
9 investment associated with building the network. But
10 the model doesn't produce investment, it produces
11 costs. So what we have to do is turn that investment
12 into cost, and then we can't forget the cost of
13 operating the network.

14 That's done in one other spreadsheet with
15 another set of user adjustable data. In this we've
16 got some stuff like financial information that's going
17 to be used to create factors, percentages that turn
18 that investment into a cost; things like depreciation
19 lives, things like future net salvage percents, all of
20 which are going to be applied to that investment to
21 create a monthly cost.

22 Also in that spreadsheet, you've got
23 operating expense information; the basic cost the
24 phone companies incur with operating the network;
25 things like maintenance; things like general and

1 administrative; things like executive and planning.
2 We take expenses, we take the monthly costs as a
3 result of building the network. We put them together.
4 It all comes together in one big report, and it cranks
5 out a monthly cost for an area; a wire center, a CBG,
6 something like that.

7 That's the whole model. All it is is
8 information moving in between spreadsheets,
9 calculations going on. Now, you all sitting over
10 there --

11 COMMISSIONER DEASON: Excuse me. Are you
12 going to go over how you determine G&A?

13 DR. STAIHR: How we determine it? We can do
14 that. I can do that now, or I can do that later.

15 COMMISSIONER DEASON: Is it part of your
16 presentation later on?

17 DR. STAIHR: No, it's not set up to be part
18 of it.

19 COMMISSIONER DEASON: Could you briefly
20 describe how do you that?

21 DR. STAIHR: Okay. The general and
22 administrative expenses, all the operating expenses,
23 are user adjustable inputs. You can input a dollar
24 amount per line or you can input a percent based on
25 investment.

1 Wit\ something like G&A, generally I think
2 that type of expense is more applicable on a per-line
3 basis. How much you spend depends on how big your
4 company is. How big your company is depends on how
5 many lines you've got.

6 What we do at Sprint, because this is an
7 input, we take our actual ARMIS expenses, calculate
8 them as a factor of investment. If there's an
9 adjustment needed, we'll make that adjustment, and
10 we'll input that on a per-line basis. I understand
11 BellSouth and GTE may do it a little differently.
12 Because it is an input, people can calculate it
13 differently. That's how Sprint does it.

14 So you take those types of expenses, add
15 them to your monthly costs. You get a monthly --

16 **COMMISSIONER DEASON:** Just one second. But
17 your initial determination is investment, and then you
18 allocate it on investment, and then it's on a per-line
19 basis?

20 **DR. STAIHR:** Again, it's going to depend on
21 the type of expense. If we're talking a maintenance
22 expense --

23 **COMMISSIONER DEASON:** We're talking G&A.

24 **DR. STAIHR:** G&A we'd put just per line.
25 But the initial that we get from ARMIS is going to be

1 as a function of the investment overall, and it can be
2 adjusted depending on what we think is appropriate for
3 Florida or specifically.

4 As I said, these monthly costs that get
5 produced by the model can be done for the whole state,
6 for a single company, for a single wire center, for a
7 single census block group, but they're actually done
8 at a very, very minute level, and then those are
9 aggregated up to a bigger level. And that minute
10 level is a grid.

11 Question of the day: What the heck is a
12 grid? A grid in the BCPM is just an area of land.
13 It's an area of land that represents a carrier serving
14 area. When telephone engineers build plant, they
15 decide certain groups of people are going to be served
16 together.

17 Sometimes those areas supporting those
18 people are small. Some of the grids are small.
19 Sometimes they're large. Some of the grids are large.
20 What determines the size is how many lines, how many
21 customers you've got, and how spread out or close
22 together they are. We get one cost for every grid,
23 and for the state of Florida there are about 23,000
24 grids.

25 This probably shows it better. The next

1 sheet you all have should be color in there, and if
2 you look at the orange areas, those represent
3 extremely high cost areas in Florida. If you look at
4 the dark green, which isn't showing up too well here,
5 those are relatively high cost areas. If you look at
6 the light green, those are relatively low cost, and
7 the yellow are very low cost. This is just a
8 visualization, an example of the grids that the model
9 produces costs, for which can then be aggregated up to
10 a whole wire center, a whole company's area.

11 If you flip to the next sheet in there,
12 these are actual grids.

13 COMMISSIONER DEASON: What are the white
14 areas?

15 DR. STAIHR: I'm sorry?

16 COMMISSIONER DEASON: What are the white
17 areas?

18 DR. STAIHR: The white one you've got down
19 there at the south is the lake.

20 COMMISSIONER DEASON: Oh, I know that, but
21 I'm talking about in North Florida there's no lake
22 that size. Is that the middle of the Apalachicola
23 National Forest?

24 DR. STAIHR: That's exactly what it is.
25 There are a couple of other little ones. Some of them

1 are bays that didn't come out quite right because
2 you've got squares that you're dealing with there.

3 And what we've got up here are the grids
4 actually that the model builds for part of
5 Tallahassee. And if you see here where you've got
6 220, 751, and 180 -- you've got very small grids.
7 Then you've got a little bit bigger grids. You've
8 also got some very big grids. But you notice that one
9 up there where it says 1,170? It's not even a grid.
10 It's not a square.

11 The reason is, all of these grids have to
12 fit within a wire center boundary, because the network
13 is going to be built based on the wire center. You
14 can't have the grid extend over into another wire
15 center. And to give you a feel for that, go back to
16 that network picture. This area, the blue houses, the
17 commercial property served out of one central office,
18 that constitutes one wire center.

19 **COMMISSIONER GARCIA:** Wire centers generally
20 aren't that perfectly square.

21 **DR. STAIER:** Good segue. Wire center: The
22 blue boundary here is an actual wire center boundary.
23 Now, if you look at the kind of lime green color,
24 those are census block groups, areas defined by the
25 cen. s bureau. Sometimes -- you see down here you've

1 got a long skinny one at the bottom -- they're
2 completely within a single wire center. Sometimes --
3 you see this one over here on the left that's split up
4 into kind of a pale green color -- they will straddle
5 wire center boundaries.

6 So what we have to do in the model is go
7 below the census block group level to actual census
8 blocks. Those are the little green lines inside the
9 census block group here. The census block level is
10 the finest level of detail that the census bureau has
11 information for.

12 We use the information at this level to
13 figure out the grids; to determine who goes in a grid;
14 to determine how many grids, how many carrier serving
15 areas, and how big the grids are; and I'm going to
16 show you how we do that right now.

17 If you take a look at the bottom on the left
18 side you've got kind of a round looking census block.
19 We're going to take that one and we're going to use it
20 here. This is a visualization of that one census
21 block. Now, what this census bureau tells us, it
22 tells us there are 200 people in there. We don't know
23 where. The census bureau doesn't tell us where they
24 are in there. It just tells us we've got 200 people
25 in there.

1 The first thing the model is going to do,
2 the preprocessing looks at where the roads are in that
3 census block. That's going to be very important as we
4 continue on to create and build and determine the
5 grids that go into the model.

6 We look at where the roads are, and then
7 we're going to take and overlay the whole census block
8 with little bitty grids, micro-grids. Each of these
9 is about 1500 feet on a side. And what we're going to
10 do is we're going to look at how much of each road
11 falls in each micro-grid.

12 You can see here you've got two grids in the
13 center. One's got 25% of the roads in this whole CB.
14 The other has 30% of the roads in this whole CB. Over
15 here on the left side where we've got 3%, little bit
16 of the road, 3% of the road is in this CB.

17 Why are we determining what percentages?
18 Because we're going to allocate the customers, those
19 200 people, to the micro-grids where those roads are.
20 Right here where we've got 50 customers, put that a
21 fourth of the roads, it gets one fourth of that 200
22 customers.

23 Now, why do we do this? Statistically it's
24 been proven everywhere and in Florida by me, okay,
25 there's a huge correlation between road distribution

1 and population distribution. There's over 90%
2 correlation. This is not to say everywhere you've got
3 a road, you've got a person. I wouldn't say that.
4 Okay.

5 This is to say where you have more roads,
6 you have more people; where you have less roads, you
7 have less people. And up here in the northwest part
8 where you've got no roads, you don't have anybody.

9 Now, you might look at this and say, okay,
10 Brian, look this is a picture, a nice, little visual
11 representation. This is an actual census block in
12 Florida. It's in BellSouth's territory. It's to the
13 west of Jacksonville, but I'm not sure how far.

14 These are the actual roads. You can look at
15 this guy right here and you can tell me where the
16 people are in that census block. They're there.
17 They're not over here. That's why we place the
18 customers where the roads are just like this.

19 From that point on we're going to aggregate
20 up these grids, maybe small, maybe medium, maybe
21 large; again, depending on how many lines there are
22 and how closely packed together the people are, those
23 carrier serving area criteria that I talked about.

24 And just using this as an example, once
25 we've determined that all these people are going to be

1 served in this grid, what do we do next? We target
2 where we're going to build the network inside this
3 grid.

4 How do we do that? First thing, we look at
5 where the road centroid is of the grid. You're going
6 to notice first off, it's not in the middle of the
7 grid. Why? Because the roads aren't spread all over
8 the grid. They're all in the southern part. The road
9 centroid is farther south.

10 From there we can split this grid into
11 quadrants like this. The first thing you're going to
12 notice up here, there is nobody up there in that
13 northwest quadrant. That's right. We're not going to
14 build any plant there. There will be plant built in
15 the northeast quadrant, in the southwest, a little bit
16 of plant built in the southeast because there's a
17 little bit of road mileage there.

18 We can target where we build the plant
19 inside that basic unit of analysis, the grid. And
20 what's more, we're going to center the plant over the
21 road centroids of each quadrant, and from there that
22 feeder cable is going to come in and meet up with the
23 distribution cable that gets built in there.

24 **CHAIRMAN JOHNSON:** Let me ask you a
25 question. I've lost track, so I've lost perspective.

1 You started off with census block, and
2 that's 200 --

3 DR. STAIHR: Households.

4 CHAIRMAN JOHNSON: And then you drew a block
5 around those and start laying micro-grids?

6 DR. STAIHR: Right.

7 CHAIRMAN JOHNSON: In how large increments?

8 DR. STAIHR: 1500 feet on a side, about.
9 They're actually 1/200th of a degree. So in Florida
10 they're a little bit different size than in Maine, but
11 they're about 1500 feet on a side.

12 CHAIRMAN JOHNSON: But you're always acting
13 within the census block.

14 DR. STAIHR: What we're doing is taking the
15 information that exists for the census block, and
16 we're applying it to the micro-grids that overlay
17 there, and it may be -- if I can show you -- let me --
18 I don't know how going back works on this. Sometimes
19 it works well, and sometimes it doesn't work well.

20 It may be that there are so many customers
21 in that little area, that that ends up being our
22 carrier serving area, and we'd stop there. We know
23 the customers are there because the census block
24 information tells us that's where the roads are. The
25 correlation tells us that's where the people are.

1 It may be that the grids we end up with are
2 bigger because they can hold more people; they're more
3 spread out. The carrier serving area should be
4 larger. You want the carrier serving area to have as
5 many lines as possible, but not go too far to where
6 you can't serve everybody together.

7 So if you go and you end up with a grid this
8 size, you can have the fiber feeder or copper feeder
9 come in, connect to the distribution, and in the model
10 this distribution is going to be built where we've
11 determined the people are. The important thing to
12 remember from this whole thing is that we have a grid
13 which is our basic area. We don't just assume people
14 are spread all through the grid. We have a way of
15 locating them inside of it.

16 Now, just as important is how we get there
17 in the first place. The fiber, the feeder, the copper
18 feeder, the feeder layout -- you remember the feeder
19 is the big cable that comes right out of the central
20 office. The feeder layout in the BCPM is pretty
21 unique, because what we do, we look at doing it one
22 way, we look at doing it another way; we pick the most
23 efficient way. And when I say most efficient, I mean
24 the shortest route.

25 When I say the shortest route, let me show

1 you what I mean. This is an actual wire center in
2 Tallahassee. I don't remember which wire center it
3 is. We figured it out, and I forgot it. But if you
4 look up there, there's a block in the middle that says
5 789, and there's a little red line under that.

6 That's where the central office is in this
7 wire center. That is from where the feeder is going
8 to be built. Now, we could build the feeder out
9 rectilinearly, north, south, east and west. You could
10 do it that way, but that's not necessarily the most
11 efficient way.

12 It might be more efficient to tilt it or
13 steer it toward where the people are. This is the
14 feeder that the BCPM will build. You see it doesn't
15 go straight out to the east and then up. It tilts up
16 toward where that part of the wire center is. It's
17 shorter by doing that. It's more efficient when it
18 does that.

19 Coming from the west of that center part, it
20 makes sense for it to go straight west and then tilt
21 down. The model's preprocessing will look at one
22 route, will look at another route, will determine
23 which one is more efficient, and it will pick that
24 one.

25 Here is another example. On the left we

1 have feeder that has --

2 COMMISSIONER GARCIA: Irregardless -- is
3 this irregardless of what exists there, what may block
4 that from happening or --

5 DR. STAIHR: Right.

6 COMMISSIONER GARCIA: Major interstate,
7 lake, river, whatever?

8 DR. STAIHR: Okay. Hopefully we have built
9 the grids in such a way that they have avoided the
10 lake. When you saw that wire center boundary on Lake
11 Okeechobee, the grids had stopped. They're not
12 square, so they're not going to go into it. We're
13 going to look at the land area of grid. We're going
14 to build right to there, not go in.

15 In this case here, what makes a big
16 difference is that the feeder doesn't run outside of
17 the wire center boundary. Why? Because it doesn't in
18 real life. It shouldn't. If the feeder went into in
19 another wire center, it would be part of that wire
20 center.

21 On the left, right here -- your right -- we
22 build rectilinearly because it makes sense; right? So
23 we either tilt the feeder toward where the people are.
24 We can build it out north, south, east and west,
25 depending on which ends up being more efficient.

1 Just to give you one little addition here,
2 what I've done here is taken the roads -- I hope you
3 can see it better on your sheet -- and laid it over
4 how the feeder is built. You can see if we went
5 straight up north and then over, that's not where the
6 people are. The people are over to the northwest. We
7 need to angle the feeder there.

8 This is important, because the FCC said and
9 forward-looking economic costing demands that things
10 be done how? In the most efficient way. This is the
11 most efficient way to lay out the feeder. This is
12 what the BCPM does.

13 So we talked about inside the grid, the
14 distribution. We talked about getting to the grid,
15 the feeder.

16 One more part; that telephone company's
17 central office, the switch, the computer. What the
18 BCPM does with regard to switching is it gives the
19 user a whole bunch of choices. Switching overall is a
20 relatively minor part of the cost of basic service.
21 It's important, but it's not the most important part;
22 and I'm talking percentages. But there are certain
23 things that matter a lot.

24 We need to be able to determine if a switch
25 works by itself, is a stand-alone, or is part of a

1 group, a host and a remote. If it's a host and a
2 remote, there's different investment involved. There
3 are different costs that will be associated than if
4 it's a stand-alone switch.

5 Our model can estimate the investment and
6 the cost for hosts, remotes, stand-alones and small.
7 Or instead of estimating the investment, you can take
8 investment that comes from other sources, models that
9 the LECs use to calculate investment, put it in our
10 model, and use that to calculate the cost.

11 Why would you want to do that? Because when
12 you estimate, okay, you look at the characteristics of
13 the switch, of the central office, and you say, okay,
14 I've got a switch; it's 10,000 lines; it's got a
15 certain amount of traffic. This is the cost, given
16 this number of lines, this amount of traffic.

17 But there may be reasons those costs are
18 really different, reasons that aren't captured in the
19 way the model estimates it. So we give the user the
20 option of putting in the actual varying investment,
21 and we'll figure out the costs from there, offering
22 flexibility to do it so that it will produce the most
23 accurate switching costs. That's the key feature of
24 the switching model.

25 Jumping back over the three key features and

1 adding one, I said that we have an actual algorithm
2 for determining where somebody is in a grid in a basic
3 unit of analysis. This is a big deal? Why? Because
4 way back when, the FCC rejected the predecessor of
5 this model. It also rejected the predecessor of the
6 other model in this proceeding for the specific
7 reasons that it said, guys, you do not have a specific
8 algorithm for locating customers within your basic
9 unit of analysis; that's why we reject you.

10 Back then that basic unit was a CBG. Now
11 the basic unit for us is a grid. We have a way of
12 locating customers within a grid now.

13 Also, the dynamic feeder layout guarantees
14 that the feeder is going to be produced in the most
15 efficient way consistent with that forward-looking,
16 economic cost definition. The switch module offers
17 users the option of making use of known information or
18 having the model calculate the investment and the
19 costs. And, finally, the capital costs and expense
20 modules offer user options of using survival curves or
21 not, using different placement conventions or not, and
22 putting expenses on a per-line basis, per-investment
23 basis, whatever works.

24 COMMISSIONER JACOBE: Do you have any
25 indicators of density within a grid?

1 DR. STAIHR: Within the grid?

2 COMMISSIONER JACOBS: Yes.

3 DR. STAIHR: Hopefully, we have -- every
4 grid, every of the 23,000 grids has a specific
5 density, and because universal service, generally the
6 support is going to go into low density rural areas,
7 it's easy. The model separates the results by density
8 zone.

9 COMMISSIONER JACOBS: How do you do that?

10 DR. STAIHR: Well, because each grid has its
11 own density, okay, we can look at the area served by
12 BellSouth, and we can see, okay, BellSouth has X
13 number of lines fall in this lowest density zone, and
14 this is the average cost for those lines, which
15 clearly is going to be hugely different than the urban
16 areas, the high density zones.

17 COMMISSIONER JACOBS: And that would come
18 from the original census data?

19 DR. STAIHR: It starts out with that. Now,
20 here's the trick. We use the line counts from the
21 actual phone companies. The model can do two things.
22 It can estimate how many lines are being built, or you
23 can input how many lines you've got there, and it will
24 build that many lines.

25 So if we estimate, we start out with census

1 stuff. If we use the actual lines, we're using the
2 real lines that are there to make sure we've got
3 everybody in our building to everybody. Okay. Now,
4 this wouldn't be complete without a little bit of
5 controversy.

6 BCPM and controversy: Controversy number
7 one; households versus housing units. Our model
8 builds plant to all housing units. What's a housing
9 unit? Well, if you have a vacation home down in
10 Carabelle and you weren't there when the census showed
11 up there, it's a housing unit. If you were there and
12 the census showed up there and you filled it out and
13 sent it in, it's a household.

14 If you have an apartment complex and it has
15 10 units, and six of them are filled and four are not,
16 there are six households and 10 housing units.

17 We build to the vacation house. We build to
18 all 10 units. Why? Because we think that's the right
19 thing to do, because we're talking about universal
20 service. Given that, we don't have to. If you all
21 sit here and if the Staff sits here and says, BCPM, we
22 like your model, but we don't like this housing unit
23 thing, we can build to households. Households are
24 simply defined differently by the census. All it is
25 is a matter of changing one column in the input file.

1 Our model will build to households.

2 We think we do it the right way. We think
3 that's what the Act intended, but we're flexible.

4 Controversy number two: The local exchange
5 routing guide, the LERG. What the LERG is is a way of
6 identifying which switch is a host, which switch is a
7 remote, which switch is a stand-alone. As we said,
8 it's important to be able to get different costs for
9 all of those.

10 It has been suggested that the LERG is not
11 forward-looking. Okay. This is a gross
12 misinterpretation of what forward-looking economic
13 cost means. Forward-looking does not mean you ignore
14 all the information you have. Forward-looking means
15 you use all the information you have, and you adjust
16 it if necessary if it's different than the way you do
17 it tomorrow or next week.

18 But the LERG represents a whole lot of
19 engineering expertise and a whole lot of human capital
20 that went into deciding this switch is a host and this
21 switch is a remote. We use that identification. We
22 think it's the right way.

23 Third, the most important controversy, the
24 infamous geocoding controversy. As we were talking
25 about, a key part to these models is how you figure

1 out where the people are. Geocoding is one way. It's
2 simply assigning a latitude and longitude to an
3 address.

4 That building over there is 2540 Shumard Oak
5 Boulevard; right? There is a computer program that
6 will say that building is of this latitude, that
7 longitude. Okay. You could use those to build a
8 network to. The problem is this: Have you ever seen
9 anything that looks like this driving through the
10 rural parts of this state? I guarantee you you drive
11 south on 319 and where it splits off from 98, you'll
12 see something that looks just like this; 13 mailboxes
13 on the side of the road, no houses anywhere near;
14 rural route X, P.O. Box whatever.

15 In rural areas there is no geocoded
16 information. We thought about using it. We decided
17 not to use it. We specifically decided not to use it.
18 You say, Brian, why? Okay. Say, it's not the best.
19 Say, you've only got some. Why don't you use the
20 some? This is a little tricky.

21 Remember that statistical correlation we
22 talked about between roads and population? The
23 strength of that relationship lies when you take the
24 whole road distribution and you slap it on the whole
25 population distribution. If you take little pieces

1 out and distribute the rest, it's not as good as if
2 you do the whole thing. We do the whole thing.

3 Now, that said, our model can use geocoded
4 information. We have. We've done it for Florida.
5 Guess what? It didn't change the costs. It changed
6 them by less than 1.5%

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8 (Transcript continues in sequence in

9 Volume 4.)

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