

ORIGINAL

BEFORE THE

FLORIDA PUBLIC SERVICE COMMISSION

REBUTTAL TESTIMONY OF

PROFESSOR BRADFORD CORNELL

ON BEHALF OF

AT&T COMMUNICATIONS OF THE SOUTHERN STATES, INC.

AND

MCI TELECOMMUNICATIONS CORPORATION

AND

MCI METRO ACCESS TRANSMISSION SERVICES, INC.

Docket Nos. 960833-TP/960846-TP/971140-TP/960757-TP/960916-TP

Filed: December 9, 1997

DOCUMENT NUMBER-DATE
12599 DEC-95
FPSC-RECORDS/REPORTING

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AT&T OF THE SOUTHERN STATES, INC., AND
MCI TELECOMMUNICATIONS CORPORATION, AND
MCI METRO ACCESS TRANSMISSION SERVICES, INC.
DOCKET NOS: 960833-TP/960846-TP/971140-TP/960757-TP/960916-TP

Q. PLEASE STATE YOUR FULL NAME AND OCCUPATION.

A. My name is Bradford Cornell. I am a professor of finance at the Anderson Graduate School of Management at the University of California at Los Angeles and the founder and President of FinEcon, a consulting firm that specializes in financial economics issues and the cost of capital.

Q. ARE YOU THE SAME BRADFORD CORNELL WHO PREVIOUSLY SUBMITTED PREPARED DIRECT TESTIMONY ON BEHALF OF AT&T COMMUNICATIONS OF THE SOUTHERN STATES, INC. AND MCI TELECOMMUNICATIONS CORPORATION IN THIS PROCEEDING?

A. Yes, I am.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. The purpose of my rebuttal testimony is to comment on BellSouth's proposal to adopt a 11.25% cost of capital. I will also comment on the analysis of Dr. Randall S. Billingsley, BellSouth Telecommunications' ("BST") cost of capital expert-

1 witness, which he has presented in rebuttal testimonies filed in several other states
2 and which I anticipate will be filed in this proceeding.

3
4 **Q. BELLSOUTH HAS PROPOSED A COST OF CAPITAL OF 11.25% FOR**
5 **THIS PROCEEDING. HAS BELLSOUTH PROVIDE ANY SUPPORT**
6 **FOR ITS COST OF CAPITAL ESTIMATE OF 11.25%?**

7 A. No. BellSouth has not filed any support for its 11.25% cost of capital for the
8 review of Florida Commission.

9
10 **Q. WHAT IS YOUR VIEW OF THE COST OF CAPITAL ESTIMATE**
11 **SUBMITTED IN THIS PROCEEDING ON BEHALF OF BELLSOUTH?**

12 A. I believe that the 11.25 percent cost of capital advocated by BellSouth is far in
13 excess of the forward-looking cost of capital for the provision of network
14 elements or universal service, and is inconsistent with publicly-available cost of
15 capital estimates by parties outside the context of this proceeding. In addition,
16 BellSouth has provided no underlying information or model assumptions in direct
17 testimony which support this cost of capital. This is not consistent with the
18 requirements of the FCC's August 8 Order¹, which states at paragraph 691 that
19 "[a]ny function necessary to produce a network element must have an associated
20 cost. The study must explain with specificity why and how specific functions are
21 necessary to provide network elements and how the associated costs were
22 developed." [emphasis added] In sharp contrast, my direct testimony provided a
23 very thorough explanation of the theories, models, assumptions and data which go
24 into a cost of capital calculation consistent with modern finance theory.

25

1 **Q. IS THE 11.25% RATE FORWARD-LOOKING?**

2 A. No. It was determined by the FCC in 1990. The FCC stated in Paragraph 250.(4)
3 of the its May 8, 1997 Universal Service Order that:

4 ... the cost of debt has decreased since we last set the
5 authorized rate of return. The reduction in the cost of
6 borrowing caused the Common Carrier Bureau to institute a
7 preliminary inquiry as to whether the currently authorized
8 federal rate of return is too high, given the current
9 marketplace cost of equity and debt. We will reevaluate the
10 cost of capital as needed to ensure that it accurately reflects
11 the market situation for carriers.

12
13 30-year Treasury bond rates have fallen from 9.03% as of September 1990 to
14 6.33% as of October 1997. This is a decline of 270 basis points since the 11.25%
15 rate was prescribed. Using this decline as a rough rule of thumb, this would imply
16 a current cost of capital of 8.55% before considering the question of whether the
17 risk has increased.

18

19 **Q. IN OTHER STATES DR. BILLINGSLEY TESTIFIED THAT HE HAD**
20 **PERFORMED "TESTS OF REASONABLENESS" IN SUPPORT OF THE**
21 **11.25% COST OF CAPITAL. DO YOU BELIEVE THAT DR.**
22 **BILLINGSLEY'S TWO "TESTS OF REASONABLENESS" ARE**
23 **PERSUASIVE?**

24 A. No. They are mathematically self-fulfilling: i.e., they assume the desired
25 conclusion. If you take the 11.25% cost of capital assumed by BST as being

1 correct (which there is no reason to do), and you assume Dr. Billingsley's cost of
2 debt estimate is correct, and you assume that historical or previously-allowed
3 capital structures are correct, then you have to get a high implied cost of equity.
4 However, this Commission does not have to assume that 11.25% is the correct
5 cost of capital *a priori*.

6
7 **Q. IN REGARD TO YOUR ANALYSIS, IN OTHER STATES DR.**
8 **BILLINGSLEY HAS TESTIFIED THAT TELEPHONE HOLDING**
9 **COMPANIES ARE NOT ACCURATE PROXIES FOR BST.**
10 **THEREFORE, HE CALCULATES A DCF COST OF EQUITY ON A**
11 **SAMPLE OF COMPANIES DERIVED BY A STATISTICAL CLUSTER**
12 **ANALYSIS. DO YOU AGREE WITH HIS PREMISE AND APPROACH?**

13 **A.** No. First, he has provided no convincing argument or evidence showing that the
14 telephone holding companies are not the closest available set of comparables for
15 the business of unbundled network element leasing. As I have discussed in my
16 direct testimony, the telephone holding companies are riskier than the network
17 element leasing business because of their many riskier business. Therefore, use of
18 telephone holding companies as proxies will yield a conservatively high cost of
19 capital estimate. Although Dr. Billingsley has performed an arcane statistical
20 analysis, his results do not, in my opinion, pass the tests of reason and common
21 sense. If one were to accept the results of his cluster analysis, then one would
22 have to believe that the risk of the network element leasing business was more
23 similar to the risks faced by Coca Cola, McDonalds and Wal-Mart stores, as
24 examples, than to the risks faced by BST's parent company, BellSouth (which
25 owns LEC's and the underlying network elements). It is clear on its face,

1 however, that the risk of the network element leasing business has virtually
2 nothing in common with the risks of a McDonalds or Wal-Mart.

3
4 I am further convinced of the inaccuracy of Dr. Billingsley's results by my
5 experience as a witness in several of Ameritech's state network element
6 arbitrations, in which Ameritech's own cost of capital expert used a set
7 comparable companies which was almost exactly the same as the set of telephone
8 holding companies that I have used. I note also that major brokerage firms and
9 investment banks which issue analyst reports for BellSouth and other telephone
10 holding companies see no need to resort to statistical cluster analysis when
11 choosing proxy companies for valuing these companies. They view other
12 telephone holding companies to be the best proxies for the subject telephone
13 holding company being valued. This is true even though the telephone holding
14 companies do not participate in exactly the same businesses or to the same
15 proportionate degree. Ameritech, for example, is one of the largest providers of
16 home security alarm services in the nation. BellSouth, in contrast, has no
17 involvement in this business whatsoever.

18
19 **Q. DR. BILLINGSLEY CLAIMS THAT HIS STATISTICAL MODEL GIVES**
20 **“OBJECTIVE” RESULTS, IMPLYING THAT YOUR CHOICE OF**
21 **COMPARABLES ARE INHERENTLY SUBJECTIVE. IS THIS**
22 **CORRECT?**

23 **A.** No. Dr. Billingsley has glossed over the fact that the formulation of his model
24 and the data he chooses to analyze are subjective. The factors he has chosen to
25 consider in the model are based on his subjective judgment, and there is no basis

1 to conclude the formulation of his model is necessarily correct or the best one for
2 the purposes it was intended. The results of his model— which fly in the face of
3 common sense— dramatically highlight this issue. Moreover, it is not clear how
4 many different model formulations Dr. Billingsley considered before selecting the
5 model used in his testimony. When all these issues are taken into consideration, I
6 do not believe that Dr. Billingsley has offered a plausible reason for abandoning
7 the basic notion that telephone holding companies are the best available
8 comparables to use as a starting point for estimating the cost of capital for the
9 network element leasing business.

10
11 **Q. FROM YOUR KNOWLEDGE AND EXPERIENCE, DO INVESTORS USE**
12 **CLUSTER ANALYSIS TO DETERMINE COMPARABLE COMPANIES**
13 **FOR COST OF CAPITAL ESTIMATION PURPOSES?**

14 A. No. And as previously stated, the sophisticated investments banks do not either.

15
16 **Q. DR. BILLINGSLEY HAS SUGGESTED THAT THE PERPETUAL**
17 **GROWTH ASSUMPTION IN THE DCF MODEL MOST ACCURATELY**
18 **REFLECT THE EXPECTATIONS OF INVESTORS, AND THAT THE**
19 **THREE-STAGE DCF MODEL REFLECTS SOLELY YOUR**
20 **SUBJECTIVE ASSUMPTIONS. IS THIS TRUE?**

21 A. No. Quite to the contrary. Dr. Billingsley's approach systematically guarantees
22 an inaccurately high cost of equity estimate inconsistent with investor
23 expectations. Prominent economists familiar with current cost of capital research
24 have recognized that the simple perpetual growth DCF model using short-run
25 forecasts is inappropriate to use if a company's short-run growth rate is expected

1 to exceed the long-run growth rate of the economy, or the cost of equity will be
2 overestimated.

3

4 As noted in my direct testimony, Stewart Myers and Lynda Borucki state that:

5 “[f]orecasted growth rates are obviously not constant
6 forever. Variable-growth DCF models, which
7 distinguish short- and long-term growth rates, should
8 give more accurate estimates of the cost of equity. Use
9 of such models guards against naïve projection of short-
10 run earnings changes into the indefinite future.”²

11

12 In addition, Ibbotson Associates state that:

13 “[t]he reason it is difficult to estimate the perpetual
14 growth rate of dividends, earnings, or cash flows is
15 that these quantities do not in fact grow at stable rates
16 forever. Typically it is easier to forecast a company-
17 specific or project-specific growth rate over the short
18 run than over the long run. To produce a better
19 estimate of the equity cost of capital, one can use a
20 two stage DCF model. ... For the resulting cost of
21 capital estimate to be useful, the growth rate over the
22 latter period should be sustainable indefinitely. An
23 example of an indefinitely sustainable growth rate is
24 the expected long-run growth rate of the economy.”³

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Sharpe⁴, Alexander and Bailey state that:

“Over the last 30 years, dividend discount models (DDMs) have achieved broad acceptance among professional common stock investors...

Valuing common stock with a DDM technically requires an estimate of future dividends over an infinite time horizon. Given that accurately forecasting dividends three years from today, let alone 20 years in the future, is a difficult proposition, how do investment firms actually go about implementing DDMs?

One approach is to use constant or two-stage dividend growth models, as described in the text. However, although such models are relatively easy to apply, institutional investors typically view the assumed dividend growth assumptions as overly simplistic. Instead, these investors generally prefer three-stage models, believing that they provide the best combination of realism and ease of application.

...[M]ost three-stage DDMs make standard assumptions that all companies in the maturity stage

1 have the same growth rates, payout ratios and return
2 on equity.”⁵

3

4 Damodaran states that:

5 “While the Gordon growth model is a simple and
6 powerful approach to valuing equity, its use is limited
7 to firms that are growing at a *stable growth rate*...

8

9 The second issue relates to what growth rate is
10 reasonable as a *stable growth rate*. Again, the
11 assumption in the model that this growth rate will last
12 forever establishes rigorous constraints on
13 *reasonableness*. A firm cannot in the long term grow
14 at a rate significantly greater than the growth rate in
15 the economy in which it operates. Thus, a firm that
16 grows at 12% forever in an economy growing at 6%
17 will eventually become larger than the economy. In
18 practical terms, the stable growth rate cannot be larger
19 than the nominal (real) growth rate in the economy in
20 which the firm operates, if the valuation is done in
21 nominal (real) terms...

22

23 ...If a firm is likely to maintain a few years of above-
24 stable growth rates, an approximate value for the firm
25 can be obtained by adding a premium to the stable

1 growth rate, to reflect the above-average growth in the
2 initial years. Even in this case, the flexibility that the
3 analyst has is limited. The sensitivity of the model to
4 growth implies that the stable growth rate cannot be
5 more than 1% or 2% above the growth rate in the
6 economy. If the deviation becomes larger, the analyst
7 will be better served by using a two-stage or a three-
8 stage model to capture the supernormal or above-
9 average growth and restricting the use of the Gordon
10 growth model to when the firm becomes truly
11 stable.”⁶

12

13 Copeland, Koller and Murrin echo these observations, stating that “[f]ew
14 companies can be expected to grow faster than the economy for long periods of
15 time.”⁷

16

17 In contrast, the only support that Dr. Billingsley cites for the naïve application of
18 the perpetual growth DCF model using short-run growth forecasts is the fact that
19 this method has often been used in traditional rate regulation hearings, when the
20 telephone business was highly regulated and stable.

21

22 **Q. DO YOU BELIEVE THAT THIS COMMISSION SHOULD**
23 **NECESSARILY USE THE PERPETUAL GROWTH DCF MODEL IF IT**
24 **HAS BEEN USED IN THE PAST?**

1 A. No. As highlighted by the excerpts above from academics and practitioners, one
2 must understand when the perpetual growth DCF model is— and is not—
3 suitable. In the case of a regulated utility in the traditional regulation setting,
4 growth has traditionally been limited and has not exceeded the growth rate of the
5 economy. If the growth rate does not exceed the economy-wide growth rate, and
6 the growth rate is expected to be very stable, the use of the perpetual growth
7 model is reasonable. In this case, however, I use a set of comparables comprised
8 of holding companies which are engaged in numerous businesses that are, in the
9 short-run, expected to grow at rates much greater than the aggregate economy.
10 The wireless business, as an example, has forecasted growth rates exceeding 30%
11 (see exhibit BC-1). It is absolutely clear that this business will not grow at such a
12 high rate indefinitely.

13

14 **Q. DR. BILLINGSLEY'S REBUTTAL TESTIMONY IN KENTUCKY⁸**
15 **IMPLIED THAT DR. DAMODARAN SAYS IN HIS BOOK THAT THE**
16 **BEST USE FOR THE THREE-STAGE DCF MODEL IS FOR COMPANIES**
17 **WITH GROWTH RATES IN EXCESS OF 25 PERCENT. WHAT ARE**
18 **YOUR COMMENTS?**

19 A. It is evident from Dr. Billingsley's statement that he has not read Dr. Damodaran's
20 book very carefully. Dr. Damodaran describes in his book numerous DCF models
21 with varying formulations and characteristics. Dr. Damodaran attempts to
22 distinguish the circumstances under which each type of model might be most
23 appropriate. It is obvious that the three-stage model described by Dr. Damodaran is
24 a complex model which is not the model I employ. Dr. Damodaran's three-stage
25 model requires year-specific payout ratios, growth rates and betas. In contrast, the

1 "H Model" described by Dr. Damodaran appears to be most analogous to the model
2 I have used.

3
4 Dr. Damodaran states that:

5
6 "The H model is a two-stage model for growth, but
7 unlike the classical two-stage model, the growth
8 rate in the initial growth phase is not constant but
9 declines linearly over time to reach the stable-
10 growth rate in steady stage."⁹

11
12 Dr. Damodaran indicates that the best use for this model is for firms that are
13 growing rapidly at the present, but for which the growth is expected to decline
14 gradually over time as their differential advantage over their competitors declines.

15
16 **Q. DOES DR. DAMODARAN SUGGEST ANY GROWTH RATE**
17 **LIMITATIONS FOR THE USE OF THE "H MODEL"?**

18 A. No. It appears from Dr. Damodaran's extensive analysis that the "H Model" is
19 intended for companies which will grow at rates lower than those for which his
20 formulation of a 3-stage model would be appropriate.

21
22 **Q. DOES DR. DAMODARAN ALSO DESCRIBE THE CLASSICAL TWO-**
23 **STAGE MODEL IN HIS BOOK?**

24 A. Yes.

25

1 Q. WHAT DOES DR. DAMODARAN SAY ABOUT COMPANIES WHICH
2 MIGHT BE APPROPRIATE FOR THE CLASSICAL TWO-STAGE DCF
3 MODEL?

4 A. Damodaran suggests that one type of company for which this would be a suitable
5 model is a company:

6 "...in an industry that is enjoying supernormal
7 growth because significant barriers to entry (either
8 legal or as a consequence of infrastructure
9 requirements) can be expected to keep out new
10 entrants for several years.

11
12 The assumption that the growth rate drops
13 precipitously from its level in the initial phase to a
14 stable rate also implies that this model is more
15 appropriate for firms with modest growth rates in
16 the initial phase. It is more reasonable, for instance,
17 to assume that a firm growing at 12% in the high-
18 growth period will see its growth rate drop to 6%
19 after that than it is for a firm growing at 40% in the
20 high-growth period."¹⁰

21
22 Q. IF YOU ASSUMED THAT THIS WAS THE MOST APPROPRIATE
23 MODEL TO USE, WHAT IMPACT WOULD IT HAVE HAD ON YOUR
24 DCF COST OF EQUITY ESTIMATE?

25

1 A. If I had instead utilized this model-- which certainly appears applicable in this
2 case based on Dr. Damodaran's analysis-- it would have resulted in a lower cost
3 of equity than what I actually calculated. This again provides evidence that my
4 cost of capital estimate is conservatively high.

5

6 **Q. DR. BILLINGSLEY HAS CLAIMED THAT IT IS SUBJECTIVE OF YOU**
7 **TO ASSUME THAT THE 5-YEAR I/B/E/S GROWTH RATES FOR YOUR**
8 **GROUP OF COMPARABLE COMPANIES WILL NOT PERSIST**
9 **INDEFINITELY IN THE FUTURE. HE IMPLIES THAT INVESTORS**
10 **WOULD ASSUME PERPETUAL GROWTH AT THESE RATES. HOW**
11 **DO YOU RESPOND TO THIS ASSERTION?**

12 A. I believe that it is quite the opposite. Dr. Billingsley argues that investors take 5-
13 year forecasts, which in the case of the telephone holding companies include
14 subsidiaries with growth rates exceeding 30%, and assume uncritically that such
15 growth rates will last forever. However, there is no reason to believe that
16 investors are so unsophisticated. Investors recognize that five-year forecasts mean
17 that they are intended for five years. They appreciate the fact that even five-year
18 forecasts become less accurate in the later years of the forecast period, and they
19 understand that high growth businesses by necessity will slow down as their
20 markets saturate. The comments by academics and practitioners cited previously
21 support this view. Dr. Billingsley has himself stated in his testimony that U.S.
22 financial markets are "highly efficient" (Billingsley Georgia Rebuttal
23 Testimony¹¹, p. 41), which also supports my belief that investors are sophisticated
24 in evaluating information available in the marketplace.

25

1 Q. IS DR. BILLINGSLEY'S PERPETUAL GROWTH ASSUMPTION BASED
2 ON FIVE-YEAR ANALYST FORECASTS SUBJECTIVE?

3 A. Absolutely, and as I have shown above, it is in this instance an incorrect
4 assumption which would not be made by investors.

5

6 Q. DOES DR. BILLINGSLEY'S ARGUMENT THAT SOME COMPANIES,
7 SUCH AS MCI, HAVE GROWN AT HIGH RATES FOR LONGER THAN
8 FIVE YEARS INVALIDATE YOUR APPROACH AND MAKE THE
9 PERPETUAL GROWTH MODEL MORE SUITABLE?

10 A. Not at all. In the real world, individual companies participating in a particular
11 line of business will have differing growth rates which will occur over different
12 time periods. Clearly, a few companies will do extraordinarily well, and may
13 grow at high rates for many years. In fact, I assume above average growth for
14 most telephone companies over the next twenty years. Other companies will
15 perform very poorly, and may experience low or negative growth (or go out of
16 business entirely). The greatest proportion of industry participants will
17 experience growth somewhere between the highest-growth stars and the weak
18 underperformers. Investors today cannot definitively predict which companies in
19 an industry will be the winners and which will be the losers. On average, no
20 reasonable analyst would expect high-growth in excess of the economy's growth
21 for all of the industrys' companies forever.

22

23 What is interesting about Dr. Billingsley's example is that he points out that
24 MCI's current 5-year growth forecasts are in the 12% range, even though he states
25 that average earnings growth over the past 10 years has been 28% according to

1 Value Line (Billingsley Georgia Rebuttal Testimony¹², p. 50). Dr. Billingsley
2 also does not mention that the same Value Line report indicates that MCI's
3 growth rate over the past 5 years was only 5%. Clearly then, a tapering off of the
4 high growth rate is occurring, consistent with the use of multiple stage DCF
5 models and inconsistent with the perpetual DCF model. The use of a perpetual
6 growth DCF model when MCI was growing at rates exceeding 28% would have
7 dramatically overestimated MCI's true cost of equity at that time. Given that
8 MCI's forecast growth rate of around 12% is significantly in excess of the growth
9 rate of the economy, the same error arises by using a perpetual growth rate DCF
10 model today.

11
12 **Q. DR. BILLINGSLEY'S APPEARS TO ARGUE THAT INVESTORS**
13 **SUBSUME ALL OF THE INFORMATION REGARDING THE**
14 **DIFFERENTIAL GROWTH RATES OF SUBSIDIARY COMPANIES**
15 **INTO THE PERPETUAL GROWTH MODEL. DOES THAT MAKE**
16 **SENSE?**

17 **A.** No. It is clear that it would be an extraordinarily difficult analysis to arrive at a
18 single, perpetual growth rate estimate that accurately reflects the average growth
19 of various businesses, some of which are relatively low-growth, such as the local
20 exchange business, and other businesses which will grow astronomically for some
21 period and then taper off to lower growth rates. Furthermore, there would not be
22 the overwhelming support for multiple-stage DCF models as cited above if Dr.
23 Billingsley's assertion were true.

24
25

1 Q. DR. BILLINGSLEY ALSO ARGUES THAT THE PERPETUAL GROWTH
2 ASSUMPTION IS SOMEHOW INCONSEQUENTIAL BECAUSE LATER
3 CASH FLOWS HAVE LITTLE IMPACT ON PRESENT VALUE. IS THIS
4 CORRECT?

5 A. This is plainly wrong, as evidenced by the enormous difference between Dr.
6 Billingsley's and my cost of equity estimates using the DCF model. Dr.
7 Billingsley's argument overlooks the tremendous impact of compounding over
8 time. By assuming perpetual dividend growth compounding at unrealistically
9 high rates, but at the same time holding the price of the subject company's stock
10 constant in the DCF model, the discount rate— or cost of equity— must get much
11 higher by mathematical necessity in order to equate the enormous assumed
12 dividends over time to the current price. In contrast, a more logical alternative
13 assumption would be that— if the market genuinely believed that high growth
14 would be realized forever— the price of the subject company would rise.

15
16 Q. DR. BILLINGSLEY DISCUSSES THE RISKS OF THE
17 TELECOMMUNICATIONS BUSINESS. IS THE
18 TELECOMMUNICATIONS BUSINESS THE SUBJECT OF THIS
19 PROCEEDING?

20 A. No. The telecommunications business is a very broad category which includes
21 such businesses as BellSouth's wireless communications endeavors. It therefore
22 appears that Dr. Billingsley has incorrectly blurred the risks of various other risky
23 businesses with that of the low-risk network element leasing business in his
24 analysis.

25

1 Q. ARE THE RISKS OF COMPETITION, TECHNOLOGICAL AND
2 REGULATORY CHANGE DISCUSSED BY DR. BILLINGSLEY,
3 SOMETHING THAT THE FINANCIAL MARKETS ACCOUNT FOR IN
4 VALUING THE COMMON STOCKS OF COMPANIES?

5 A. Yes. The financial markets have been continuously absorbing and incorporating
6 information about competition, technological and regulatory change. This is
7 evident from financial analyst reports and the public disclosures of the telephone
8 holding companies themselves over the past several years. As Dr. Billingsley has
9 stated, the U.S. financial markets are highly efficient. If investors are aware of
10 new risks which impact a company's value, they incorporate it into the cost of
11 equity immediately. Consequently, Dr. Billingsley's arguments that BST is
12 facing dramatic new risks resulting from the passage of the 1996 Act for which a
13 greater cost of capital is required rings hollow. One would have to assume—
14 contrary to his own statement—that the investing public is totally naive and
15 would not account for the risks of deregulation prior to the passage of the 1996
16 Act itself.

17

18 Q. ASSUMING THAT MORE COMPETITION ARISES AT THE RETAIL
19 TELEPHONE BUSINESS LEVEL, IS THERE EVIDENCE THAT
20 INCREASED RETAIL COMPETITION WOULD MAKE THE
21 WHOLESALE BUSINESS OF LEASING UNBUNDLED NETWORK
22 ELEMENTS LESS RISKY?

23 A. Yes. Bell Atlantic is a large regional Bell holding company comparable to
24 BellSouth. Bell Atlantic has indicated in a Strategic Overview published on its
25 Internet web site (attached as Appendix 1 to my direct testimony) that the

1 business of leasing network elements, in and of itself, represents an opportunity
2 for the company, since retail competition will increase utilization of its network at
3 the wholesale level without the need to make any additional investment.
4

5 **Q. IS THE PROSPECT OF INCREASED COMPETITION IN THE RETAIL**
6 **PHONE SERVICE RELEVANT FOR PURPOSES OF DETERMINING**
7 **THE COST OF CAPITAL IN THIS PROCEEDING?**

8 A. No. The FCC in its August 8 Order explicitly defined the relevant risk as the risk
9 incurred in the business of leasing unbundled network elements at wholesale
10 [August 8 Order at ¶702]. (That the FCC has indicated that "the risk adjusted cost
11 of capital need not be uniform for all elements," further indicates that the relevant
12 risks are those inherent in the business of leasing elements itself, not the risks
13 entailed with retail phone service. [Id. at ¶702.]
14

15 **Q. DR. BILLINGSLEY BELIEVES THAT YOUR MENTION OF THE RISK**
16 **OF PHYSICAL BYPASS, PARTICULARLY FOR BUSINESS**
17 **CUSTOMERS, IS INCONSISTENT WITH YOUR DISCUSSION OF**
18 **CAPITAL MARKET THEORY, WHICH SHOWS THAT COMPETITIVE**
19 **RISKS CAN BE DIVERSIFIED AWAY AND WOULD NOT BE**
20 **COMPENSATED BY THE MARKET WITH A RISK PREMIUM.**
21 **WOULD YOU PLEASE EXPLAIN THE IMPLICATIONS OF CAPITAL**
22 **MARKET THEORY WITH RESPECT TO YOUR TESTIMONY**
23 **REGARDING RISK?**

24 A. I discuss many potential risks of the network element leasing business in my
25 testimony so that the Commission can get an accurate picture of the risks this

1 business faces, particularly in relation to other businesses engaged in by telephone
2 holding companies. Some of these risks could be viewed as systematic, meaning
3 that they could not be diversified away, and others nonsystematic, such as the risk
4 of competition. According to capital market theory, an investor will not require
5 extra compensation in the form of a higher cost of equity for risks that he or she
6 can diversify away simply by acquiring a portfolio of companies in that business.
7 Dr. Billingsley's inference is that because I describe both types of risks, I am
8 assuming that BST must be compensated for both in its cost of equity. I do not
9 make that statement. Instead, my goal is to elucidate capital market theory
10 regarding diversifiable risks. Ironically, Dr. Billingsley is criticizing me for fully
11 discussing the issues of risk in my testimony (which he has not done), both from
12 the point of view of those who consider competitive risks to be significant and
13 from the viewpoint of capital market theory.

14
15 The question for this Commission to decide is whether it accepts the premise of
16 capital market theory with regard to competitive risks. If it does not, then the risk
17 of physical bypass should be considered. If it is considered, the current reality is
18 that there are only small in-roads in facility bypass and the likelihood of it
19 developing significantly over the near term is low. The August 8 Order describes
20 the current competitive position of the incumbent LEC's network element
21 business as being natural or bottleneck monopolies which do not now face
22 significant competition (August 8 Order at ¶'s 11, 702). BST's own trade
23 association agrees with this view. In a brochure which the United States
24 Telephone Association distributes to public consumers, it states:

1 “Be a smart consumer and arm yourself with
2 information, especially about what long-distance
3 companies don’t want you to know— such as the fact
4 that they don’t own, invest in or repair the local
5 networks they’ll use to carry your local calls. Those
6 networks have been built and are maintained by your
7 local telephone companies.”¹³ [emphasis added]
8

9 On the other hand, if the Commission concludes that capital market theory is
10 correct, then competitive risks simply are not relevant.
11

12 While I see room for debate on this subject, my sense is that capital market theory
13 is correct on this issue. The following hypothetical helps to analyze this question.

14 Assume first that there are only two companies in the network element leasing
15 business, BellSouth and GTE. In addition, assume that GTE becomes a much
16 better competitor, that this is known to the market, and that GTE wins significant
17 business away from BellSouth.¹⁴ Under such circumstances, BellSouth’s market
18 has become more competitive and its market share will drop. In valuing the two
19 companies, investors will forecast future cash flows for each company.
20 BellSouth’s forecasted cash flows will be reduced, while GTE’s will be increased.
21 BellSouth’s stock price will fall and GTE’s will rise. If competitive risk also
22 affects cost of equity, investors will additionally increase BellSouth’s cost of
23 equity, which will cause its stock price to fall further. GTE’s market in turn has
24 become relatively less competitive, so investors will reduce GTE’s cost of capital
25 and the price will go up even further. Looked at in this light, it is questionable

1 that investors would require the second reduction in BellSouth's price by
2 additionally increasing its cost of equity, particularly since the operating risks of
3 the two companies are the same.

4
5 Finally assume that an investor buys both GTE and BellSouth. This investor now
6 owns 100% of the profits from the network element leasing business, and bears no
7 risk of competition whatsoever, even though BellSouth and GTE continue to
8 compete with one another. If competition affects the cost of equity, this creates a
9 puzzle for the investor who has just bought all of the competitors. Before he
10 acquired both companies, he assigned a higher cost of equity to BellSouth. What
11 cost of equity does he use after the acquisition to value his interest in BellSouth?
12 BellSouth's competitive risks have not changed at all, but the investor does not
13 bear any of that risk. His industry-wide profits remain constant regardless of
14 which individual company wins the competitive war. Similarly, the investor
15 receives no added benefit from the fact that GTE is the better competitor, even
16 though he paid an added premium for this company by reducing the cost of
17 equity. The most plausible answer to this puzzle is that competitive risk does not
18 change the cost of equity to begin with, precisely because an investor does not
19 consider unsystematic risks which can be diversified away easily. This is why
20 capital market theory states that when determining the cost of equity, investors are
21 concerned with the fundamental operating risks of a business, not the
22 idiosyncracies affecting the individual competitors.

23

1 Q. DOES THE FACT THAT THE NETWORK ELEMENT BUSINESS
2 LEASING BUSINESS FACES SOME RISKS TURN IT INTO A HIGH-
3 RISK BUSINESS AS DR. BILLINGSLEY SUGGESTS?

4 R. No. All businesses face some risks, including low-risk businesses. As discussed
5 above, both the FCC and Bell Atlantic view it as a low-risk business in their
6 public pronouncements.

7

8 Q. IS DR. BILLINGSLEY INCONSISTENT IN HIS USE OF THE CAPITAL
9 ASSET PRICING MODEL?

10 A. Yes. On the one hand, Dr. Billingsley uses the capital asset pricing model in his
11 analysis. Yet on the other, he attacks its "pristine theory" (Billingsley Georgia
12 Rebuttal Testimony¹⁵, pg. 60) as being impractical because it inconveniently
13 negates his argument that competitive risks are highly significant to BST.¹⁶
14 However, the foundation of the model is that diversifiable risks do not increase
15 the cost of capital. As Ibbotson Associates states:

16

17 "…unsystematic risk is that portion of total risk that
18 can be avoided by diversifying; the CAPM concludes
19 that unsystematic risk is not rewarded with a risk
20 premium. For example, the possibility that a firm will
21 lose market share to a competitor is a source of
22 unsystematic risk for the stock of a particular
23 company."¹⁷ [emphasis added]

24

1 Q. DR. BILLINGSLEY ASSERTS THAT THE FCC CONSIDERS
2 COMPETITIVE RISKS IMPORTANT TO THE COST OF CAPITAL.
3 HAS THE FCC SPECIFICALLY ADDRESSED THE CAPITAL MARKET
4 THEORY QUESTION?

5 A. Not to my knowledge. Looking at Dr. Billingsley's specific citation to the FCC's
6 Third Report and Order (FCC-96-488), which is not directed to the issue of
7 unbundled network elements, the FCC stated that "potential competition could
8 increase the risk facing the incumbent LECs, and thus increase their cost of
9 capital, thus mitigating, to some extent, the factors suggesting that incumbent
10 LECs cost of capital has decreased since 1990. [emphasis added] (Billingsley
11 Georgia Rebuttal Testimony¹⁸, p. 13) It does not appear that the FCC has
12 definitively concluded that these risks will increase the LECs' cost of capital, but
13 that they are leaving them open for consideration.

14
15 Q. DOES THIS FCC STATEMENT ALSO INDICATE THAT, EVEN IF
16 COMPETITIVE RISKS DO INCREASE LEC COST OF CAPITAL, THAT
17 ON NET THE COST OF CAPITAL HAS DECLINED SINCE THE TIME
18 THAT THE FCC DETERMINED THE 11.25% ACCESS CHARGE RATE?

19 A. Yes. While I believe that the FCC is leaving the final decision to state
20 Commissions, it is clearly its position that, if all of the factors are considered
21 including competitive risks, the net cost of capital has declined from the time the
22 11.25% was adopted. One clear indication of this is the significant decline in
23 interest rates since the FCC's Rate Represcription Order adopted in September of
24 1990. In its August 8 Order, the FCC stated that "earlier this year, we instituted a
25 preliminary inquiry as to whether the currently authorized federal 11.25 percent

1 rate of return is too high given the current marketplace cost of equity and debt.”
2 (August 8 Order at ¶702)

3
4 **Q. DR. BILLINGSLEY STATES THAT YOU HAVE INCORRECTLY**
5 **ESTIMATED THE COST OF DEBT BECAUSE YOU USE ONLY**
6 **SHORTER TERM DEBT. IS THIS CORRECT?**

7 A. Not at all. Remember that my starting point is the forward-looking cost of debt
8 for all securities of BellSouth listed in Standard & Poor's Bond Guide BellSouth,
9 like most holding companies, has outstanding securities with a variety of
10 maturities. Therefore, considering only long-term securities produces a
11 misleading estimate of the cost of debt. Contrary to Dr. Billingsley's statement,
12 the Bond Guide includes all of BellSouth's long-term debt, but may in fact
13 exclude some of BellSouth's shortest term securities. Thus my calculations may
14 slightly overstate the holding company's cost of debt.

15
16 **Q. IS DR. BILLINGSLEY CORRECT THAT NETWORK ELEMENTS**
17 **WOULD ONLY BE FINANCED WITH LONG-TERM DEBT?**

18 A. No. The network elements have varied expected economic lives, not all of which
19 are necessarily long-term. In addition, the network element leasing business, like
20 any other business, would be financed using a variety of sources and maturities.
21 Dr. Billingsley would be hard-pressed to name any companies which are financed
22 with 100% long-term debt.

1 Q. DR. BILLINGSLEY BELIEVES THAT YOUR DISCUSSION
2 REGARDING THE QUARTERLY DCF MODEL IN YOUR VALUATION
3 BOOK SHOWS THAT YOU ARE BEING INCONSISTENT IN YOUR
4 ARGUMENTS IN THIS CASE WHERE YOU INSTEAD USE THE
5 ANNUAL DCF MODEL. IS THIS TRUE?

6 A. No. Dr. Billingsley misunderstands my reasoning on this point. When calculating
7 the cost of equity applicable to an investor, the investor assumes that he or she will
8 get quarterly dividends. As investors normally receive dividends quarterly, they
9 will reinvest them and get the benefit of quarterly compounding. In other words,
10 investors earn their cost of equity as calculated by the quarterly DCF model by
11 reinvesting their cash flows quarterly. The purpose of this proceeding, however, is
12 to determine the cost of capital which the telephone operating companies should be
13 allowed. In contrast to investors, telephone operating companies are able to
14 reinvest their cash flows on an approximate monthly basis. Consequently, if the
15 Commission allows a rate which is estimated using an annual DCF model, then
16 BST gets an effective rate higher than the allowed rate because of monthly
17 compounding. This effective rate will in fact exceed the rate calculated using a
18 quarterly DCF basis. Thus, it would be entirely inappropriate to calculate the DCF
19 cost of equity on a quarterly compounding basis for purposes of this proceeding,
20 because this would give BST the benefit of both quarterly and monthly
21 compounding. If the Commission were to decide that it preferred the quarterly
22 DCF model, then a decomposing adjustment would have to be made to remove
23 the benefit of monthly compounding.

24

25

1 **Q. DR. BILLINGSLEY BELIEVES THAT YOU HAVE MADE**
2 **INCONSISTENT ARGUMENTS REGARDING DIVERSIFICATION IN**
3 **RELATION TO TELEPHONE HOLDING COMPANIES. IS THAT THE**
4 **CASE?**

5 A. No. In the case of telephone holding companies, engaging in businesses which
6 are systematically riskier than the network element leasing business will always
7 make the risk of the telephone holding company greater than of the network
8 leasing business. Overall risk can never fall because of the acquisition of
9 systematically riskier businesses. This can be illustrated with a simple example.
10 If you hold a one-asset portfolio comprised of a productive local oil well with
11 enormous proven reserves, you will not make that oil well less risky by
12 undertaking wildcat oil drilling in Iraq. Your overall holdings become more risky
13 by making a fundamentally riskier investment. In the context of the telephone
14 holding companies, the FCC and the major rating agencies have recognized that
15 investments in businesses outside of local exchange have made them riskier.

16

17 **Q. DR. BILLINGSLEY'S RISK PREMIUM ANALYSIS DIFFERS FROM**
18 **YOURS, AND LEADS TO A SIGNIFICANTLY HIGHER COST OF**
19 **EQUITY ESTIMATE. HOW DO YOU VIEW HIS APPROACH?**

20 A. The equity risk premium is a subject of great research and debate in finance, and
21 no definitive consensus been reached. In my analysis, I attempted to consider all
22 of the prevailing research by leading academics which I thoroughly discuss in my
23 direct testimony. It is clear that Dr. Billingsley has not addressed recent research,
24 particularly that of Blanchard, Siegel and Ross et al. which indicates that the
25 forward-looking market premium over U.S. Treasury bonds is in the 2 to 5%

1 range, far lower than what Dr. Billingsley estimates. As I mentioned in my direct
2 testimony, a nonacademic source which also appears to subscribe to this view is a
3 correspondent for Fortune magazine, who indicated that “[t]o venture into the
4 volatile stock market instead of cozying up to bonds, investors rightfully expect a
5 superior return from stocks. In fact, they expect to beat the bond return by four
6 full percentage points— something called the risk premium on stocks...”¹⁹
7 Similarly, *The Economist* stated in its October 25, 1997 issue that “recent studies
8 [regarding risk premium] suggest a current figure of one to four percentage
9 points.”²⁰ In its 1990 Rate Represcription Order, the FCC agreed with the position
10 of the Consumer Coalition that the risk premiums used by the LEC’s experts were
11 unrealistically high, particularly when compared to those used by financial
12 analysts. They cite the Consumer Coalition expert’s testimony that “...the Wall
13 Street analyst reports, relied upon by the RHCs to support their positions on other
14 issues, use much smaller risk premiums, ranging from 2.0% to 5.4%.”²¹

15
16 **Q. HOW DOES DR. BILLINGSLEY ARRIVE AT SUCH A HIGH RISK**
17 **PREMIUM?**

18 **A.** Dr. Billingsley arrives at a large risk premium by making the same mistake with
19 the market that he made for individual companies. That is, he assumes growth for
20 an infinite period at a rate exceeding the growth rate of the aggregate economy.
21 Had he properly taken account of the fact that growth must eventually slow, as I
22 do in my direct testimony, he would have arrived at a market risk premium more
23 consistent with that which I recommend.

24
25

1 Q. AFTER CONSIDERING DR. BILLINGSLEY'S ANALYSIS AND
2 ARGUMENTS, ARE YOU PERSUADED THAT YOUR COST OF
3 CAPITAL ESTIMATE IS TOO LOW?

4 A. No. None of Dr. Billingsley's arguments are persuasive and— contrary to his
5 assertions— they are fundamentally inconsistent with investor expectations. In
6 particular, Dr. Billingsley did not attempt to address the real-world, investor-
7 oriented evidence described in my direct testimony which provides independent
8 assurance that my estimate is in the correct range. For example, in the Bell
9 Atlantic/NYNEX merger proxy statement dated September 9, 1996, Merrill
10 Lynch as part of its fairness opinion performed a DCF analysis of the companies
11 using an 8 to 10% discount rate for their telephone company operations. It is
12 notable that this was disclosed in a securities filing seeking investor approval of a
13 multi-billion dollar merger which subjected both Merrill Lynch and the officers of
14 both companies to federal and state securities laws with onerous disclosure
15 requirements. I also note in my direct testimony that a Salomon Brothers analyst
16 report dated January 1996 estimated the cost of capital for the regional Bell
17 holding companies to be 8.6%. Consequently, I see no evidence whatsoever that a
18 hypothetical cost of capital posited to be hundreds of basis points higher by Dr.
19 Billingsley is anything close to BST's true cost of capital.

20

21 Q. DOES THAT CONCLUDE YOUR PRESENT TESTIMONY?

22 A. Yes, it does.

23

24

25

1 Endnotes:

- ¹ Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, CC Dkt. No. 96-98, First Report & Order, FCC 96-325 (rel. August 8, 1996)
- ² Stewart C. Myers and Lynda S. Borucki, "Discounted Cash Flow Estimates of the Cost of Equity Capital—A Case Study", *Financial Markets, Institutions & Instruments*, vol. 3, no. 3, New York University Salomon Center, 1994.
- ³ Ibbotson Associates, *Stock, Bonds, Bills and Inflation, 1996 Yearbook*, Chicago, pp. 158-159
- ⁴ As noted by Dr. Billingsley, Dr. Sharpe is a Nobel-prize winning financial economist.
- ⁵ Sharpe, William F., Gordon J. Alexander and Jeffery V. Bailey, *Investments*, Fifth Edition, Prentice Hall, Englewood Cliffs, New Jersey, 1995, pp. 590-591
- ⁶ Damodaran, Aswath, *Damodaran on Valuation Security Analysis for Investment and Corporate Finance*, John Wiley & Sons, New York, 1994, pp. 99-101
- ⁷ Copeland, Tom, Tim Koller, and Jack Murrin, *Valuation Measuring and Managing the Value of Companies*, John Wiley & Sons, New York, 1994, p. 295
- ⁸ Before the Kentucky Public Service Commission, Administrative Case No. 360, Rebuttal Testimony of Dr. Randall S. Billingsley, November 4, 1997, p. 36, at 6-12.
- ⁹ Damodaran, *Id.*, p. 115.
- ¹⁰ Damodaran, *Id.*, pp. 108-109.
- ¹¹ In Re Review of Cost Studies, Methodologies, and Cost-Based Rates for Interconnection and Unbundling of BellSouth Telecommunications Services, Before The Georgia Public Commission, Docket No. 7061-U, Rebuttal Testimony of Dr. Randall S. Billingsley, August 29, 1997, p. 41, at 16.
- ¹² In Re Review of Cost Studies, Methodologies, and Cost-Based Rates for Interconnection and Unbundling of BellSouth Telecommunications Services, Before The Georgia Public Commission, Docket No. 7061-U, Rebuttal Testimony of Dr. Randall S. Billingsley, August 29, 1997, p. 50, at 17-20.
- ¹³ "Call Them On It! 4 Questions the Long-Distance Companies Don't Want You To Ask", United States Telephone Association.
- ¹⁴ The conclusions of this hypothetical would continue to hold if one alternatively assumed that BellSouth and GTE were equally efficient and competitive, and that the market became much more competitive due to the entry of several new competitors.
- ¹⁵ In Re Review of Cost Studies, Methodologies, and Cost-Based Rates for Interconnection and Unbundling of BellSouth Telecommunications Services, Before The Georgia Public Commission, Docket No. 7061-U, Rebuttal Testimony of Dr. Randall S. Billingsley, August 29, 1997, p. 60, at 13.
- ¹⁶ Dr. Billingsley fails to mention that Professor Sharpe won the Nobel prize for his work in developing this "pristine theory".
- ¹⁷ Ibbotson Associates, *Stock, Bonds, Bills and Inflation, 1996 Yearbook*, Chicago, pg. 148.

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- ¹⁸ In Re Review of Cost Studies, Methodologies, and Cost-Based Rates for Interconnection and Unbundling of BellSouth Telecommunications Services, Before The Georgia Public Commission, Docket No. 7061-U, Rebuttal Testimony of Dr. Randall S. Billingsley, August 29, 1997, p. 13, at 15-21.
- ¹⁹ Kuhn, Susan E. "Personal Fortune: Why Bonds May Beat Stocks", *Fortune*, October 28, 1996.
- ²⁰ "Will Investors Run for Cover? When the Rain Comes", *The Economist*, vol. 345, October 25, 1997.
- ²¹ In the Matter of Represcribing the Authorized Rate of Return for Interstate Services of Local Exchange Carriers. FCC 90-315, Adopted September 19, 1990; Released December 7, 1990. ¶'s 136 & 139, p. 7523

**Comparison of Earnings Growth Forecasts
for Telephone Holding Companies⁽¹⁾ and Wireless Companies**

| Ticker | Company | IBES 5-yr earnings growth forecast Jan-97 |
|---|-----------------------|--|
| <u>Telephone Holding Companies</u> | | |
| AIT | Ameritech | 8.86% |
| BEL | Bell Atlantic | 7.98% |
| BLS | BellSouth | 8.41% |
| NYN | NYNEX | 6.60% |
| PAC | Pacific Telesis | 3.88% |
| SBC | SBC Comm. | 10.03% |
| USW | US West | 4.88% |
| AT | ALLTEL | 10.43% |
| CSN | Cincinnati Bell | 19.50% |
| GTE | GTE | 9.17% |
| SNG | So. New England | 6.25% |
| Mkt-Wtd Average: | | 8.31% |
| <u>Wireless Companies</u> | | |
| ATI | Airtouch | 33.93% |
| MTEL | Mobile Telecom | 28.75% |
| NXTL | Nextel Communications | 40.00% |
| USM | U S Cellular | 36.75% |
| Mkt-Wtd Average: | | 35.13% |

(1) Telephone holding companies generally own cellular, paging and other businesses riskier than local telephone operations.