BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

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| In the Matter of | DOCKET NO. 990649-TP |
| INVESTIGATION INTO PRICING OF UNBUNDLED NETWORK ELEMENTS. | |

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VOLUME 3

Pages 319 through 525

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| PROCEEDINGS: | HEARING |
| BEFORE: | CHAIRMAN J. TERRY DEASON<br>COMMISSIONER E. LEON JACOBS, JR.<br>COMMISSIONER LILA A. JABER |
| DATE: | Monday, July 17, 2000 |
| TIME: | Commenced at 9:30 a.m. |
| PLACE: | Betty Easley Conference Center<br>Room 148<br>4075 Esplanade Way<br>Tallahassee, Florida |
| REPORTED BY: | JANE FAUROT, RPR<br>FPSC Division of Records & Reporting<br>Chief, Bureau of Reporting<br>(850) 413-6732 |

APPEARANCES: (AS HERETOFORE NOTED.)

# I N D E X

## WITNESSES

INDEX CONTINUED:

EXHIBITS

P R O C E E D I N G S

MS. KEATING: Next is GTE-Florida's Witness Jacobson.

CHAIRMAN DEASON: Witness Jacobson's prefiled testimony without objection shall be inserted into the record.

MS. KEATING: And Witness Jacobson had Exhibits GDJ-1 through GDJ-6R.

CHAIRMAN DEASON: Those exhibits shall be identified as Composite Exhibit 43, and without objection shall be admitted into the record.

(Exhibit Number 43 marked for identification and entered into the record.)

# DIRECT TESTIMONY OF GREGORY D. JACOBSON

## I. INTRODUCTION

**Q. PLEASE STATE YOUR NAME, POSITION, AND BUSINESS ADDRESS.**

A. My name is Gregory D. Jacobson and I am Treasurer of GTE Florida Incorporated "GTE Florida"). My business address is 1255 Corporate Dr., Irving, Texas.

**Q. WOULD YOU PLEASE DESCRIBE YOUR PROFESSIONAL QUALIFICATIONS, INCLUDING YOUR EDUCATIONAL BACKGROUND?**

A. I graduated from the University of Washington with a Bachelor of Arts in Business Administration degree in 1974 and a Master of Business Administration degree in 1975. Subsequent to completing my studies at the University of Washington, I have been employed by GTE companies in a variety of management positions in accounting, financial management and marketing prior to being elected to my current position in 1994.

My responsibilities as Treasurer of GTE Florida include oversight of all Treasury functions, including administration of capital structure policy and dividend policy and evaluating various financing alternatives for GTE Florida. As Treasurer, I prepare and present

testimony related to cost of capital and capitalization issues in regulatory proceedings. I also have responsibility for managing company relations and contacts with external investors and debt rating agencies.

I am a Certified Public Accountant ("CPA") in the state of Washington and a Certified Management Accountant ("CMA"). I have also been awarded the professional designation of Certified Rate of Return Analyst ("CRRA") by the Society of Utility and Regulatory Financial Analysts ("SURFA"). I hold memberships in SURFA, the American Institute of Certified Public Accountants, the Washington State Society of Certified Public Accountants, and the Financial Executives Institute. I have taught classes in accounting and finance at City University in Seattle, Washington.

**Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE PUBLIC UTILITY REGULATORY COMMISSIONS?**

A. Yes. I have testified in proceedings related to capital structure and cost of capital in Alabama, California, Idaho, Indiana, Kentucky, Michigan, North Carolina, Oklahoma, Oregon, South Carolina, Texas, and Virginia.

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

A. The purpose of my testimony is to present and support the market-

based weighted average cost of capital ("WACC") used by GTE Florida as a cost study input to its Integrated Cost Model ("ICM") that was submitted in this proceeding. The WACC reflects market-based costs consistent with prevailing economic theory and market conditions and is based on a market-valued capital structure and prevailing interest and cost of equity rates. Specifically, I address issue 7(c) designated for resolution in this proceeding.

**Q. HOW IS YOUR TESTIMONY ORGANIZED?**

A. Part II describes the fundamental economic principles that must be applied when determining the WACC to be used in a forward-looking cost study. Part III describes the group of companies on which I have based my recommended WACC for GTE Florida. Parts IV, V and VI describe my determination of GTE Florida's cost of debt, cost of equity and capital structure, respectively. Part VII summarizes my conclusions.

**Q. HAVE YOU PROVIDED EXHIBITS TO SUPPORT YOUR TESTIMONY?**

A. Yes. I have provided the following exhibits:

Exhibit GDJ-1 develops GTE Florida's market-based WACC recommendation.

Exhibit GDJ-2 presents the Discounted Cash Flow ("DCF') model used to calculate GTE Florida's return on equity estimate.

Exhibit GDJ-3 develops the capital structure recommended by GTE Florida in developing its WACC recommendation.

Exhibit GDJ-4 shows the capitalization of various telecommunications companies.

Exhibit GDJ-5 explains the process in which GTE Florida's Standard & Poor's ("S&P") Industrials proxy group was selected.

Exhibit GDJ-6 is a paper by Dr. James H. Vander Weide, Research Professor of Finance and Economics at the Fuqua School of Business at Duke University, that explains the theory and technical aspects of the DCF model used in developing GTE Florida's return on equity estimate.

**Q. PLEASE SUMMARIZE THE MAIN POINTS OF YOUR TESTIMONY.**

A. Traditional methods of setting an authorized rate of return are inappropriate for determining GTE Florida's cost of capital for use in a forward-looking model to determine the costs of providing unbundled network elements. A forward-looking, market-based approach must be used for all facets of a cost of capital determination: cost of debt, cost of equity and capital structure. Using such a methodology produces an overall 12.74% WACC for GTE Florida, reflecting a 7.03% cost of debt and a 14.36% cost of equity, and based on a capital structure containing 22.17% debt and 77.83%

equity, as shown on Exhibit GDJ-1.

## II. FUNDAMENTAL ECONOMIC PRINCIPLES

**Q. WHAT IS ICM'S FUNDAMENTAL ASSUMPTION ABOUT THE COST OF PROVIDING SERVICE?**

A. As GTE Florida witness Tucek explains in his testimony, GTE's ICM reflects the costs of providing services in a competitive marketplace. The market-based WACC used by GTE Florida in the model was based on this fundamental assumption.

**Q. DOES USE OF THE MARKET-BASED COST OF CAPITAL HAVE ANY IMPLICATIONS FOR COMPETITIVE ENTRY AND FOR THE PROVISIONING OF INNOVATIVE TELECOMMUNICATION SERVICES?**

A. Yes. Facilities-based local exchange competition will be encouraged only if new entrants can build their own networks at a cost that is lower than facilities can be leased from incumbent local exchange companies. Consequently, the cost of capital input to GTE Florida's forward-looking cost studies must be based on forward-looking economic principles and must be at least as large as the return those potential facilities-based competitors can earn on other investments of similar risk. If this is not the case, it would make more economic sense for competitors to lease undervalued unbundled network elements from GTE Florida than to build their own facilities. To

provide correct incentives for entry into local exchange markets, the Commission must measure GTE Florida's cost of capital in the same way that potential competitors measure their own costs of capital.

The Commission must likewise use a forward-looking economic definition of the cost of capital if it wishes to promote investment and innovation in telecommunications services. In competitive markets, investment in new technologies, products, and services will occur only if the potential rate of return exceeds that which can be earned on investments of the same risk.

**Q. DOES THE MARKET-BASED ECONOMIC COST OF CAPITAL DIFFER FROM THE COST OF CAPITAL AS DEFINED IN TRADITIONAL REGULATORY PROCEEDINGS?**

A. Yes. The cost of capital used as an input to ICM is based on an economic definition of the cost of capital. This definition utilizes current costs of debt and equity, which reflect the expected future risk faced by investors in a company, and the market value percentages of debt and equity in a company's capital structure. This differs from the "traditional" –and now outmoded--regulatory view, which defines the cost of capital using the embedded cost of debt, the book values of debt and equity in a company's capital structure, and the historical risk faced by investors in a company. The economic cost of capital method is also consistent with how competitive firms calculate the cost of capital to determine the required rate of return on their

investments.

This market-based approach to determining the cost of capital was embraced by the FCC in its 1996 Interconnection Order. There, the FCC made clear that the market-based costs of capital (debt and equity) needed to support investments required to produce a given element shall be included in the market-based direct cost of that element. (Local Competition Provisions in the Telecomm. Act of 1996, CC Dkt. No. 96-98, at para. 691 (Aug. 8, 1996).)

**Q. WHAT HAS OCCURRED IN THE TELECOMMUNICATIONS INDUSTRY TO INCREASE THE RISKINESS OF INVESTMENTS AND CHANGE THE TRADITIONAL REGULATORY MODEL?**

A. Since 1994, investors have increased their expected return on equity for telecommunications companies. In addition, the amount of leverage utilized by telecommunications companies, as well as companies in other industries, has decreased sharply. (For example, GTE Corporation's common equity ratio was 67.6% at December 31, 1994, as compared with 76.3% at December 31, 1998.) The reduction in leverage utilization is also in line with investor expectations. These changes in expectations are due to significant increases in the business risk of telecommunications companies.

To this end, passage of the Telecommunications Act of 1996 ("Act") has transformed the "traditional" regulatory model. The removal of

entry barriers to the local exchange market, as well as rapid advances in telecommunications technologies, have promoted competition for local exchange services, particularly in lucrative business markets. The likelihood of stranded investment for incumbent local exchange companies has increased substantially due to facilities-based competition and innovations in providing telecommunications services. The resulting increase in business risk has caused investors to demand a higher risk premium for telecommunications investments, an effect recognized by the FCC:

> ... incumbent LECs face potential competition as a result of the Act that they did not face previously. This potential competition could increase the risks facing the incumbent LECs, and thus increase their cost of capital.
>
> (*In the Matter of Access Reform*, Third R&O and NOI, FCC 96-488, at para. 228 (Dec. 24, 1996).)

**Q. IS THERE DATA TO SUPPORT YOUR CONCLUSION ABOUT INCREASED COMPETITION IN LOCAL EXCHANGE MARKETS?**

A. Increased competition in the local exchange markets is well documented. The FCC Common Carrier Bureau's most recent report on local competition states that by year-end 1998:

(1) Local service revenues for Competitive Local Exchange

Companies ("CLECs") increased to $3.6 billion, from $2.2 billion in 1997, and $1.0 billion in 1996;

(2) For local services provided to other carriers for resale, CLECs generated 13.1% of all local private line and special access revenue, 35.4% of pay telephone compensation from toll carriers, and 30.4% of other local telecommunication service revenues;

(3) For local services provided to end users, CLECs generated 9.7% of all local private line and special access revenue, 37.9% of pay telephone coin revenue, and 8.6% of other local telecommunication service revenues;

(4) CLECs increased their amount of fiber in place about five-fold from the end of 1995 to the end of 1998, at which point they had obtained at least 16 percent of the total fiber optic capacity available to carry calls within local markets;

(5) Facilities-based CLECs were doing business in every state and in all but 18 of the nation's 193 local access and transport areas ("LATAs");

(6) CLECs were reselling about 2% of incumbent local exchange carrier lines ("ILECs"), which was up from 1% a year earlier

despite announcements that AT&T and MCI intended to reduce their use of resold lines;

(7) CLECs had signed collocation arrangements in ILEC switching centers serving approximately half of voice-grade customer lines in the country.

(FCC, Industry Analysis Div. of the Common Carrier Bureau, "Local Competition: *August 1999*" (Aug. 1999.))

The Association for Local Telecommunications Services ("ALTS"), likewise, offers "substantial evidence that the Act is working" in its 2000 annual report. The report finds that CLECs have doubled their revenues every year since 1996, for a total of $26.9 billion during 1999. CLEC local service revenues almost doubled from $3.5 billion in 1998 to $6.3 billion in 1999. Competitive access line growth also jumped from 5.5 million at year-end 1998 to 10.4 million at year-end 1999. CLECs have invested $30 billion in new networks since passage of the Act and are now investing over $1 billion every month in their networks. *In addition, the report shows that the* CLECs are no longer small "mom and pop" operations and have little trouble finding investors. Their total capitalization has increased from $3.1 billion in 1996 to $86.4 billion in 1999. This excludes the capitalization of companies such as AT&T,

MCI WorldCom, and Level 3 Communications that do not operate primarily as CLECs. ("The State of Competition in the U.S. Local Telecommunications Marketplace," Feb. 2000.)

**Q. IS THERE EVIDENCE THAT THIS COMPETITION EXISTS WITHIN THE STATE OF FLORIDA?**

A. Yes. With its expanding economy, Florida has been a particularly attractive target for competitive entry. The trend toward increased competition can be expected to accelerate as telecommunications markets further expand. As of April 7, 2000, there were 365 CLECs authorized to do business on a statewide basis. GTE Florida has 125 interconnection and/or resale agreements with these CLECs, including 74 with collocation provisions. An additional 160 collocation agreements are pending. Sixty percent of GTE's lines are served by offices where collocators (indicating facilities-based competitors) are present. Total in-service UNE loops in GTE's territory have multiplied 15 times during the last year, from 52 in January 1999 to 860 in January 2000. Resold switched access lines increased 158% over the same period (from 35,296 to 91,201).

CLECs started to be certificated in Florida as early as 1995, even before the January 1996 opening of the local exchange market under Florida law. Intermedia Communications Inc. (ICI), the largest facilities-based CLEC in the country, is headquartered in GTE's Tampa Bay area and began local exchange operations in 1996.

Today, CLECs own and operate at least 20 switches in GTE's service area. Facilities-based competitors to GTE include, among others, AT&T, MCI WorldCom, ICI, Winstar, Teligent, e.spire, Time Warner, and US LEC.

The Commission's own statistics show that CLECs have made substantial gains, particularly in the lucrative business market. The Commission's annual reports on local competition show that CLECs tripled their share of business lines from 1997 to 1998 (1998 Local Competition Report at 46), and then almost did so again from 1998 to 1999 (1999 Local Competition Report at 7.) In certain areas, CLECs have captured a substantial portion of the total business access lines—for example, 15-20% in Orlando and 20-25% in nearby West Kissimmee; 10-15% in Miami, Jacksonville, and Clearwater; 15-20% in Ft. Lauderdale; 25-30% in North Cape Coral and Montverde; 20-25% in Coral Springs; and 45-50% in North Key Largo. (1999 Local Competition Report at Table 3-4.) Moreover, these statistics are likely to be understated, as all CLECs did not respond to the Commission's data rquests asociated with the reports.

**Q. WHAT ARE THE EXPECTATIONS OF INVESTMENT ANALYSTS RELATIVE TO COMPETITION IN THE LOCAL EXCHANGE MARKETS?**

A. Analysts' reports confirm that the CLECs' penetration of the local exchange market is rapidly accelerating. According to Salomon Smith

Barney, CLEC penetration of the local exchange market reached a "watershed" in the first quarter of 1998: the CLECs added more new business lines than the Regional Bell Operating Companies ("RBOCs"). ("CLECs Surpass Bells in Net Business Line Additions for the First Time," Salomon Smith Barney, May 6, 1998.) During the second quarter 1998, CLECs had a 28% share of total access line net additions, up from their 22% share during the first quarter 1998. ("Competitive Local Exchange Review: Continued Strong Growth Momentum," JP Morgan, Aug. 14, 1998.) By the close of the third quarter 1998, CLECs provided service to more than 3.7 million business lines, which represent approximately 6.7 percent of the 55 million business lines in service. ("CLECs Third Quarter Review", Paine Webber, Nov. 13, 1998, at 2.) The CLECs' penetration rates in the local exchange business are substantially higher than the penetration rates of AT&T's competitors in the inter-exchange market during a comparable period following the removal of entry barriers.

These developments are not a passing phenomenon. Future competition in the local exchange market is expected to continue to grow rapidly. The Yankee Group projects that the market share of total U.S. telecommunications revenue for pure CLECs (i.e., excluding other local service competitors such as AT&T, MCI WorldCom, Sprint and resellers) will increase from 2% in 1998 to 6% in 2004, whereas the market share for Incumbent Local Exchange Companies ("ILECs") will decrease from 32% to 17%. ("CLECs Go Local in Tier 3 Markets,"

Executive Summary, The Yankee Group, Dec. 1999.) PaineWebber forecasts that CLECs will capture 40 to 50 percent of total business access lines by 2007. ("Telecommunications Services" at 7, Paine Webber, July 27 1998.)

**Q. WHAT ROLE DOES THE COST OF CAPITAL PLAY IN DETERMINING THE COSTS OF PROVIDING SERVICE?**

A. The economic cost of providing service includes both capital costs and expenses. The rate of return, or cost of capital, required by investors is a key element of consideration in a company's decision to invest in construction of facilities to provide future service.

**Q. HOW HAVE YOU DEFINED THE REQUIRED RATE OF RETURN, OR COST OF CAPITAL, ASSOCIATED WITH INVESTMENT DECISIONS?**

A. GTE Florida has adopted the economic definition of the required rate of return, which is the return investors forego as a result of their investment choice relative to other available investments of equal risk.

**Q. DOES THE REQUIRED RATE OF RETURN ON INVESTMENT AFFECT INVESTORS' WILLINGNESS TO INVEST IN A COMPANY?**

A. Yes. The expected return on an investment opportunity determines whether a rational investor is willing to make an investment. The cost of capital is a measure of the return that investors would expect on an

investment with certain risk characteristics.

**Q. HOW DOES THE RELATIVE RISK OF AN INVESTMENT AFFECT THE EXPECTED RATE OF RETURN?**

A. Investors, in general, are averse to risk. Therefore, they require a higher rate of return for investments that have greater risk relative to other investments in order to compensate for that increased risk.

**Q. WHAT ARE THE RELEVANT FACTORS THAT AN INVESTOR CONSIDERS WHEN EVALUATING THE RISK ASSOCIATED WITH AN INVESTMENT?**

A. Risk stems from a number of factors, the most prominent of which are financial leverage, operating leverage, and business risk.

Financial leverage reflects the capital structure of the firm and decisions related to the relative mix of debt and equity capital. Increased levels of debt relative to the assets pledged to secure that debt increases the risk that a company will not have sufficient assets to satisfy claims of debt holders in the event a company must be liquidated.

Operating leverage refers to the relative levels of fixed costs in relation to variable costs within a firm. A relatively high level of fixed costs causes a company's cash flows to be highly sensitive to changes in sales volume. This situation exists within GTE Florida due

to a large investment in central office, transport and loop assets to provide facilities based services.

Business risk is the uncertainty of projected revenue streams based upon external factors such as competitor actions, changes in technology, and in the case of the telecommunications industry, the regulatory environment.

**Q. HOW WOULD YOU CHARACTERIZE THE RISK FOR AN INVESTOR CONSIDERING AN INVESTMENT IN GTE FLORIDA?**

A. Investors base investment decisions primarily on expected future returns and the risk, or uncertainty, surrounding those returns. One of the key determinants of uncertainty of future returns is the expected level of competition facing a firm in the industry in which it operates. The clearly stated objective of legislative and regulatory bodies at both the state and federal level is to transition to full market competition in the telecommunications industry. This has significantly changed the risk profile for GTE Florida. Investors have reason to believe that this stated objective will be accomplished in the near future and that GTE Florida will soon operate in a fully competitive environment. Investors have incorporated this expectation into their expected risk-adjusted costs of capital for companies in the telecommunications industry.

GTE Florida's carrier of last resort status introduces additional

uncertainty as the industry migrates to a fully competitive local exchange market. As an incumbent LEC, GTE retains the obligation to furnish telecommunications services to all customers, even where the economic cost of providing such service is greater than the prices charged to customers. As GTE witness Trimble explains, the existing system of implicit supports for universal service does not allow for rational economic pricing. The Act recognizes this pricing anomaly and requires the development of specific, predictable, and sufficient alternative mechanisms to deal with the support of universal service. The Florida Legislature has, as yet, made no move in this direction. The failure to address this issue creates uncertainty and risk for GTE Florida.

Rapid technological changes also characterize the telecommunications industry, with breakthroughs in switch capabilities, fiber optic and wireless technologies, as well as the convergence of the video, computer and telecommunications markets and technologies. These changes may render GTE Florida's plant obsolete prior to economic recovery of the investment, and may also reduce the cost of entry for future competitors. GTE witness Sovereign provides additional insight into how the escalating competitive environment and rapid technological changes are increasing the risk to GTE Florida's debt and equity investors.

Given all of the factors I discuss above, an investor would consider

GTE Florida to face the same level of risk as any company operating in a competitive marketplace. Therefore, investors require a rate of return on investment that is commensurate with that for an investment in the stock of the average competitive firm, as can be represented by the S&P Industrials.

## III. PROXY GROUP

**Q. WHAT ARE THE GENERALLY ACCEPTED MODELS TO DETERMINE THE COST OF EQUITY FOR A COMPANY?**

A. The DCF model, Capital Asset Pricing Model ("CAPM"), and risk premium model are the most prevalent models used to determine a company's cost of equity. The DCF model is the most widely used of these models and is the one GTE Florida used to determine its recommended cost of equity in this proceeding.

**Q. CAN COMMONLY ACCEPTED COST OF EQUITY MODELS BE APPLIED DIRECTLY TO DATA FOR GTE FLORIDA?**

A. No. The DCF model requires market data, such as the stock price and forecasted growth rates, specific to the company being measured. These market variables are not available for GTE Florida, since its common stock is not publicly traded. Therefore, a group of companies comparable in terms of business and financial risk to GTE Florida, as perceived by the capital markets, is required as a proxy to

determine the cost of equity using the DCF model. The market-based cost of capital estimates used as an input to ICM should be based on the assumption of a competitive telecommunications market. If the competitive market assumption is used to value GTE Florida's investment in network facilities on a going-forward basis, then the same assumption must also be used to measure the market-based cost of capital associated with these facilities. Thus, the basic competitive market assumption of the ICM costing principles provides support for the use of competitive firms such as the S&P Industrials to measure the cost of capital component of the long-run incremental cost of providing service.

**Q. WHAT PROXY GROUP HAS GTE FLORIDA USED IN ITS DCF MODEL TO ESTIMATE ITS COST OF EQUITY?**

A. GTE Florida used the S&P Industrials in the DCF model as the proxy group to determine its cost of equity. The S&P Industrials is a widely published list of 376 large competitive firms excluding utilities, transportation firms, and financial firms. The S&P Industrials is a large enough group of companies so that issues affecting a single member of the group, or an industry within the group, will not significantly bias the DCF model results.

**Q. WOULD A GROUP OF TELECOMMUNICATIONS HOLDING COMPANIES REPRESENT AN APPROPRIATE RISK PROXY FOR GTE FLORIDA?**

A. No. At this time, there are two reasons why local exchange carrier holding companies ("LECHCs") are not an appropriate risk proxy for estimating the recommended return on equity for GTE Florida. First, the business risk of the LECHCs is not identical with that of GTE Florida. Second, and more importantly, market conditions are such that the DCF model currently does not provide accurate estimates of the cost of equity for the LECHCs.

**Q. HOW IS THE BUSINESS RISK OF THE LECHCs DIFFERENT FROM THAT OF GTE FLORIDA?**

A. Although GTE Florida's parent company, GTE Corporation, has substantial overall market value, its subsidiaries, including GTE Florida, compete in markets still dominated by the Regional Bell Holding Companies (RBHCs). The market dominance and concentration of the RBHCs' local exchange businesses differentiate them from GTE Florida. GTE Corporation and the RBHCs also may provide wireless and internet services, while GTE Florida does not. Each of these businesses is different in risk from the local exchange business. Many of the LEC holding companies, including GTE Corporation, also have significant international businesses, which have much greater business risk than a local exchange company such as GTE Florida.

**Q. WHY DOES THE DCF MODEL FAIL TO PROVIDE ACCURATE ESTIMATES OF THE COST OF EQUITY FOR THE LECHCs?**

A. The DCF model relies on stock price and dividend growth forecasts

that must be in sync to produce accurate results. However, investor reactions to the radical restructuring that is occurring among the LECHCs has caused disproportionate movements in the stock prices relative to expected earnings.

The LECHCs are part of an industry that is experiencing radical restructuring fomented by profound regulatory and technological changes. For example, SBC Communications merged with Pacific Telesis in April 1997 and Ameritech in October 1999. US West spun off its cable TV business during June 1998 and in July 1999 announced its intention to merge with Qwest Communications. BellSouth had previously purchased a 10% stake in Quest Communications International Inc. in April 1999. GTE Corporation acquired BBN Corporation in August 1997. Bell Atlantic merged with NYNEX in August 1997, and will merge with GTE Corporation this year. Bell Atlantic has formed a partnership with Vodafone AirTouch PLC that combines the U.S. wireless businesses of both companies. After completion of the GTE Corporation and Bell Atlantic merger, GTE Corporation's U.S. wireless business will be added to the partnership.

Although the financial community expects these companies to achieve significant earnings growth as a result of their merger and restructuring activities, the projected earnings growth associated with prospective merger and restructuring activities has not yet been

reflected in the analysts' earnings growth forecasts. As a practice, these analysts do not update forecasts for mergers and restructuring activities until after they have been completed. However, the expected earnings growth associated with the prospective merger and restructuring activities is necessarily included in the companies' stock prices. Therefore, a DCF model that includes only LECHCs within the telecommunications industry will currently produce a downwardly-biased estimate of the cost of equity.

This is true for rumored, as well as actual, merger and restructuring activities. In general, if it is believed that two companies are merger candidates, investors will bid up the stock price for the company being acquired and bid down the stock price for the surviving company in anticipation of merger-related revenue and cost saving opportunities.

## IV. COST OF DEBT

**Q. HOW HAS THE MARKET-BASED COST OF DEBT BEEN DEFINED IN GTE FLORIDA'S STUDY?**

A. The market-based cost of debt has been defined as the current market interest rate that a firm would have to pay on newly issued debt obligations. This is consistent with the economic definition of the cost of debt, and thus is market-based. The 7.03% average for newly issued "A" rated Industrial Bond yields as reported in the April 1999 issue of Moody's Bond Record was used as the cost of debt in GTE

Florida's cost study. The rating of "A" was chosen because it is the most prevalent rating of the S&P Industrials. Yields on these bonds have increased substantially since this study was prepared, averaging 7.87% during February 2000 and 7.84% during March 2000.

## V. COST OF EQUITY

**Q. HOW WAS THE MARKET-BASED COST OF EQUITY DETERMINED IN GTE FLORIDA'S DCF MODEL?**

A. The market-based cost of equity was based on the average quarterly DCF model results applied to the S&P Industrials.

**Q. WHAT WERE THE RESULTS OF GTE FLORIDA'S DCF MODEL?**

A. GTE Florida's DCF model resulted in a 14.36% weighted cost of equity for GTE Florida, as shown on Exhibit GDJ-2.

## VI. CAPITAL STRUCTURE

**Q. HOW WERE THE PERCENTAGES OF DEBT AND EQUITY DEFINED IN GTE FLORIDA'S CAPITAL STRUCTURE?**

A. The percentages of debt and equity in the capital structure presented are aligned with those used by economists. (See, for example, Copeland & Weston, Financial Theory and Corporate Policy, 3d ed., *chap. 13 (1988)*; *Brealey & Myers, Principles of Corporate Finance*, 4th ed., chap. 9 at 190 (1991); Higgins, Analysis for Financial

Management, 4th ed., chap. 8 (1995).) The calculations were based on the market values of the debt and equity for the S&P Industrials.

**Q. WHY WAS THE CAPITAL STRUCTURE MEASURED IN TERMS OF THE MARKET VALUES OF ITS DEBT AND EQUITY?**

A. Economists measure a firm's capital structure in terms of the market values of its debt and equity because that is the best measure of the amounts of debt and equity that have been invested in a company on a going-forward basis. Measuring a firm's capital structure in terms of market value allows its managers to choose a financing strategy that maximizes the value of the firm, where the value of the firm is the sum of the market value of the firm's debt and equity.

**Q. HOW DOES THE MARKET-BASED COST OF DEBT DIFFER FROM A COMPANY'S EMBEDDED COST OF DEBT?**

A. The market-based cost of debt is the rate of interest a company would have to pay if it issued debt under today's market conditions. The embedded cost of debt is a company's total interest expense divided by the total book value of its debt. Thus, the embedded cost of debt is an average of the interest rates a company has paid in the past to issue debt securities. This calculation of the embedded cost of debt, however, provides no basis for measuring the market-based cost of debt.

**Q. HOW DOES THE MARKET VALUE DIFFER FROM THE BOOK**

**VALUE OF A COMPANY'S DEBT?**

A. The market value of a company's debt represents the current price in the capital markets of a company's debt obligations. The book value of a company's debt is the historical face value of its debt adjusted for the accounting amortization of premiums and discounts. The market value of a company's debt is approximately equal to the book value of its debt when current interest rates are approximately equal to the average interest rate of a company's previous debt issuances.

**Q. HOW DOES THE MARKET VALUE DIFFER FROM THE BOOK VALUE OF A COMPANY'S EQUITY?**

A. The market value of a company's equity reflects the market price of a company's stock times the number of shares outstanding. Market value measures the current market value of investors' equity position in a company. The book value of equity represents the sum of paid-in capital and retained earnings, where paid-in capital represents the amount of capital a firm has historically obtained from stock issuances, and retained earnings represent the cumulative earnings over the life of a company that have not been paid out as dividends. In addition, the book value of a company's equity is adjusted periodically for accounting events such as changes in accounting rules and regulations, write-offs, and extraordinary events.

**Q. WHAT RATIONALE DID REGULATORS USE IN THE PAST TO JUSTIFY THE USE OF THE BOOK VALUE OF A COMPANY'S**

**EQUITY IN THE DETERMINATION OF THE WEIGHTED AVERAGE COST OF CAPITAL?**

A. The utilization of a book-based capital structure by regulators is based on the assumption that the market value and book value of common equity are approximately the same. This assumption was developed on market conditions prevalent in the early to late 1980s that no longer hold true. The use of a book-based capital structure in determining a company's weighted average cost of capital thus has no basis in economic or financial theory.

**Q. WHY IS THIS ASSUMPTION UNDERLYING USE OF A BOOK-BASED CAPITAL STRUCTURE NO LONGER VALID?**

A. During 1984, when the RBHCs were spun off from AT&T, the market to book ratio of the LECHCs was 1.0. This means the market and the book value of common equity were virtually the same. At that time, the percentage of common equity in the capital structures of the LECs and the LECHCs was also approximately the same. For example, GTE Corporation's capital structure was comprised of 47.7% and 47.1% common equity on a market value and book value basis, respectively, as of December 31, 1984. (See GTE Corporation's 1984 Annual Report to Shareholders.) In the late 1980s and 1990s, however, this relationship changed dramatically. By the end of 1998 the market to book ratio was 7.0; the market value was seven times the book value of the LECHCs' common equity (based on 1986 to 1998 annual data in the Compustat and Bloomberg databases,

compiled from companies' 10K filings with the Securities and Exchange Commission). GTE Corporation's capital structure was comprised of 76.3% common equity on a market value basis and 35.5% common equity on a book value basis, respectively, as of December 31, 1998. Consequently, the weighted average cost of capital and returns anticipated by investors of the LECHCs is substantially understated when using a book-based capital structure in the calculation. Thus, it is now necessary to deviate from the prior regulatory paradigm by adopting a market-based approach in measuring the weighted average cost of capital. Only in this manner will LECs be provided a reasonable rate of return.

The average telecommunications company had an average market capital structure comprised of 81.1% equity for the 5-year period from 1994 to 1998 (*Ibid.*) This is slightly higher than the 77.8% average for the Standard & Poor's Industrials companies, which was utilized to calculate the market-based weighted average cost of capital shown on Exhibit GDJ-1.

**Q. HOW WAS THE COST OF CAPITAL CALCULATED BY THE COMPANY IN THIS PROCEEDING?**

A. GTE Florida's weighted average cost of capital was calculated using the market-based percentages of debt and equity in the capital structures of competitive firms, the current cost of debt, and the current required rate of return on competitive investments of

comparable risk.

**Q. WHAT METHODOLOGY WAS USED FOR MEASURING THE MARKET-BASED PERCENTAGES OF DEBT AND EQUITY IN THE CAPITAL STRUCTURE?**

A. The average capital structure of the S&P Industrials for the five years ended December 31, 1998 was used to calculate the average market-based percentages of debt and equity. The market value of the S&P Industrials' equity for each year was measured by multiplying the closing stock price for each company at the close of each year by the number of shares outstanding at the close of each year. The market value of the S&P Industrials' debt was measured based upon each company's book value of debt at the close of each year. Since the average embedded coupon interest rates for the debt of these companies are approximately equal to current market interest rates, the market value of the companies' debt will approximately equal the book value of the companies' debt.

**Q. WHAT IS THE RATIONALE FOR USING THE AVERAGE MARKET-BASED PERCENTAGES OF DEBT AND EQUITY IN THE CAPITAL STRUCTURES OF THE S&P INDUSTRIALS AS AN APPROXIMATION OF THE DEBT AND EQUITY PERCENTAGE OF GTE FLORIDA?**

A. As the Massachusetts Commission succinctly concluded, "it would be inconsistent to use forward-looking competitive assumptions in the

investment and expense components of a TELRIC study, but historical accounting-based capital structures in the cost of capital component" (Order in Docket Nos. DPU 96-73/74, 96-75, 96-80-81, 96-83, 96-94, at 53.) The average market-based capital structures of the S&P Industrials is a good proxy for the capital structure of competitive firms on a market-based economic basis.

**Q. WHAT IS THE AVERAGE MARKET-BASED CAPITAL STRUCTURE OF THE S&P INDUSTRIALS?**

A. As shown in Exhibit GDJ-3, the weighted average market-based capital structure of the S&P Industrials from 1994 to 1998 contains 22.17 percent debt and 77.83 percent equity.

**Q. IS THE MARKET-BASED CAPITAL STRUCTURE OF GTE FLORIDA AND OTHER TELECOMMUNICATIONS COMPANIES COMPARABLE TO THE AVERAGE MARKET-BASED CAPITAL STRUCTURE OF THESE COMPETITIVE FIRMS?**

A. Yes. As shown in Exhibit GDJ-4, the average market value capital structures of the incumbent local exchange companies, the S&P Industrials, and the inter-exchange carriers for the five-year period beginning December 31, 1994 through December 31, 1998 are comparable. These data show that each of these groups has on average approximately 80 percent equity in their capital structures.

**Q. WHAT IS YOUR RECOMMENDED TARGET MARKET VALUE**

**CAPITAL STRUCTURE FOR USE IN GTE FLORIDA'S FORWARD-LOOKING COST STUDIES?**

A. Based on my examination of these data, I recommend that the capital structure of the S&P Industrials, which contains 22.17 percent debt and 77.83 percent equity, be used in this proceeding.

## VII. CONCLUSION

**Q. WHAT ARE YOUR CONCLUSIONS REGARDING THE APPROPRIATE COST OF CAPITAL TO BE USED FOR GTE FLORIDA IN THIS PROCEEDING?**

A. The traditional methods of setting an authorized regulatory rate of return cannot be used to determine a forward-looking cost of capital. The appropriate forward-looking WACC to be used for GTE Florida in this proceeding is 12.74%, reflecting a 7.03% cost of debt and a 14.36% cost of equity, and based on a capital structure containing 22.17% debt and 77.83% equity.

**Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

A. Yes.

# REBUTTAL TESTIMONY OF GREGORY D. JACOBSON

## INTRODUCTION

**Q. PLEASE STATE YOUR NAME, POSITION, AND BUSINESS ADDRESS.**

A. My name is Gregory D. Jacobson, and I am Vice President and Treasurer of each of the GTE Telephone Operating Companies, including GTE Florida Incorporated ("GTE Florida" or "Company"). My business address is 1255 Corporate Dr., Irving, Texas.

**Q. ARE YOU THE SAME GREGORY D. JACOBSON WHO PREVIOUSLY FILED DIRECT TESTIMONY IN THIS PROCEEDING ON MAY 1, 2000?**

A. Yes, I am.

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

A. The purpose of my testimony is to discuss certain issues included in the direct testimony of John I. Hirshleifer, a witness on behalf of AT&T and MCI Worldcom. Mr. Hirshleifer has made certain arbitrary assumptions and modifications to the application of the Discounted Cash Flow Model (DCF), Capital Asset Pricing Model (CAPM), and capital structure that are inconsistent with prevailing economic theory and which individually and collectively bias his results and understate

the forward-looking cost of capital for GTE Florida.

**Q. WHAT SPECIFIC ASSUMPTIONS MADE BY MR. HIRSHLEIFER DO YOU FEEL ARE UNSUPPORTED OR INAPPROPRIATE?**

A. My testimony will address specifically Mr. Hirshleifer's inappropriate reliance on a group of seven Telephone Holding Companies ("THCs") as a proxy to determine the cost of capital for GTE Florida, the incorporation of book values into the capital structure rather than using the market capital structures appropriately used by investors, the use of an arbitrary three-stage DCF model, the use of an annual rather than quarterly DCF model, the failure to recognize flotation costs, and Mr. Hirshleifer's application of beta and risk premium in the CAPM.

My analysis and testimony will show that Mr. Hirshleifer's assumptions and application of the models invalidate his results and therefore his conclusions cannot be relied upon.

## PROXY GROUP

**Q. WHAT COMPANIES DID MR. HIRSHLEIFER CHOOSE AS HIS RISK PROXY FOR GTE FLORIDA?**

A. Mr. Hirshleifer selected a group of seven THCs as a proxy to determine the cost of capital for GTE Florida, including Bell Atlantic, BellSouth, SBC Communications, U.S. West, Alltel, CenturyTel, and GTE.

**Q. DOES MR. HIRSHLEIFER PROVIDE ANY ANALYTICAL OR OTHER SUPPORT FOR HIS CONCLUSION THAT THE SELECTED THCs ARE COMPARABLE IN RISK TO GTE FLORIDA?**

A. No. Mr. Hirshleifer simply observes that the THCs "were derived from the list of Telephone Operating Companies in Standard and Poor's Industry Survey". (Hirschleifer DT, p. 6)

**Q. DOES MR. HIRSHLEIFER'S GROUP OF THCs REPRESENT A REASONABLE PROXY FOR GTE FLORIDA?**

A. No. As was discussed in my direct testimony, the local exchange carrier holding companies ("LECHCs") are not an appropriate risk proxy for estimating the recommended return on equity for GTE Florida. The market size, dominance, and concentration of the Regional Bell Holding Companies ("RBHCs") local exchange businesses differentiate them from GTE Florida. Even after the GTE Corporation/Bell Atlantic merger is complete, GTE Florida's operational size will remain unchanged and will be dwarfed by Bell South in the state of Florida.

As a facilities-based provider, GTE Florida must invest very large sums of capital in rapidly changing technologies in order to provide wireline services in Florida. Although the THCs have a similar wireline investment risk, they can mitigate their overall risk by also investing in wireless telecommunications technologies. In addition, as compared to GTE Florida, the THCs can diversify geographically,

offer a wider variety of products and services, and can achieve economies of scale associated with greater size and financial strength. Thus, it is actually less risky to provide a bundle of national or international telecommunications services than to provide only local service in a limited geographical territory. GTE Corporation and the RBHCs also provide other services with different risks, such as wireless, internet, and international services, that GTE Florida does not. Even though the THCs share some industry risk characteristics with GTE Florida, the DCF Model currently does not provide accurate estimates of the cost of equity for the THCs.

**Q. WHAT ARE THE REASONS THE DCF MODEL FAILS TO PROVIDE ACCURATE ESTIMATES OF THE COST OF EQUITY FOR THE THCs?**

A. First, from a statistical standpoint I consider the size of Mr. Hirshleifer's seven THCs to be too small and homogeneous to represent a good proxy group for determining the cost of equity for GTE Florida. An aberration in the data for one of the companies or the industry as a whole can bias the DCF and CAPM results.

Second, the DCF model relies on stock price and dividend growth forecasts that must be in sync to produce accurate results. However, investor reaction to the radical restructuring that is occurring among the LECHCs has caused disproportionate movements in the stock prices relative to expected earnings. A detailed discussion of the

industry restructuring is included in my direct testimony filed on May 1, 2000. Although the financial community expects the restructured companies to achieve significant earnings growth as a result of their merger and restructuring activities, the projected earnings growth associated with prospective merger and restructuring activities has not yet been reflected in the analysts' earnings growth forecasts. As a practice, these analysts do not update forecasts for mergers and restructuring activities until after they have been completed. However, the expected earnings growth associated with the prospective merger and restructuring activities is necessarily included in the companies' stock prices. Therefore, a DCF model that includes only LECHCs will currently produce a downwardly-biased estimate of the cost of equity. This is true for rumored, as well as actual, merger and restructuring activities. In general, if it is believed that two companies are merger candidates, investors will bid up the stock price for the company being acquired and bid down the stock price for the surviving company in anticipation of merger-related revenue and cost saving opportunities.

**Q. WHAT EVIDENCE DO YOU HAVE THAT ANALYST GROWTH FORECASTS DO NOT REFLECT THE IMPACT OF ANTICIPATED MERGERS AND RESTRUCTURINGS?**

A. This can be seen by reviewing IBES earnings growth forecast data for the LECHCs involved in mergers that have already been completed. As shown on Rebuttal Exhibit GDJ-1, the IBES growth rate forecast

prior to the merger of SBC and Pacific Telesis were 9.50% and 3.54%, respectively. The market weighted average of these forecasts is 7.89%. The post-merger growth rate forecast for SBC after the merger was 10.31%, which is higher than the pre-merger rates of both companies. The same is true of the Bell Atlantic/NYNEX, SBC/SNET, and SBC/Ameritech mergers. The average increase in growth rates for these four deals is 1.65%. An increase in growth rate of this magnitude for any of the other pending or anticipated mergers of companies included in Mr. Hirshleifer's narrowly defined proxy group would substantially increase the cost of equity determined in his DCF analysis.

Aswath Damodaran, Associate Professor of Finance at New York University, states the following concerning the effect of takeover announcements on target-firm values:

> The stockholders of target firms are the clear winners in takeovers. They earn significant excess returns not only around the announcement of the acquisitions, but also in the weeks leading up to it. Jensen and Ruback (1983) reviewed 13 studies that look at abnormal returns around takeover announcements and reported an average excess return of 30% to target stockholders in successful tender offers and 20% to target stockholders in successful mergers. Jarrell, Brickly, and Netter (1988) reviewed the results of 663 tender offers covering the period from 1962 to 1985 and note that

> premiums averaged 19% in the 1960s, 35% in the 1970s, and 30% for the period from 1980 to 1985. Many of the studies report a run-up in the stock price prior to the takeover announcement, suggesting either a very perceptive financial market or leakage of information about perspective deals. (Aswarth Damodaran, Damodaran on Valuation, John Wiley & Sons, Inc., 1994, page 286.)

He goes on to state the following concerning the effect of takeover announcements on bidder-firm values:

> The effect of takeover announcements on bidder-firm stock prices is not as clear-cut. Jensen and Ruback (1983) reported abnormal returns of 4% for bidding-firm stockholders around tender offers and no abnormal returns around mergers. Jarrell, Brickley, and Netter (1988), in their examination of tender offers from 1962 to 1985, noted a decline in abnormal returns to bidding-firm stockholders from 4.4% in the 1960s to 2% in the 1970s to –1% in the 1980s. Other studies indicate that approximately half of all bidding firms earn negative abnormal returns around the announcement of takeovers, suggesting that shareholders are skeptical about the perceived value of the takeover in a significant number of cases. ( Ibid, pages 286-287.)

## COST OF EQUITY

**Q. HOW WAS THE COST OF EQUITY DETERMINED IN THE COMPANY'S COST STUDY?**

A. As discussed in my direct testimony, the cost of equity was based on the average quarterly DCF model results applied to the S&P Industrials.

## DISCOUNTED CASH FLOW MODEL

**Q. HOW DO THE RESULTS OF THE COMPANY'S DCF MODEL COMPARE TO THOSE FOR MR. HIRSHLEIFER?**

A. The Company's DCF model resulted in a 14.36% cost of equity for GTE Florida compared with Mr. Hirshleifer's 8.72% cost of equity estimate.

**Q. WHAT ASSUMPTIONS DID MR. HIRSHLEIFER MAKE IN THE APPLICATION OF THE DCF MODEL TO ESTIMATE GTE FLORIDA'S COST OF EQUITY CAPITAL THAT ACCOUNT FOR THE DIFFERENCE IN RESULTS?**

A. Mr. Hirshleifer used a three-stage annual DCF model to estimate GTE Florida's cost of equity capital, whereas the Company used a single-stage quarterly DCF model. Mr. Hirshleifer's three-stage Annual DCF Model is based on the assumptions that: 1) growth in dividends, earnings, and stock prices will occur in three stages; 2) dividends are paid annually at the end of each year; and 3) no flotation costs are incurred when new equity is issued.

**Q. ARE THE ASSUMPTIONS USED BY MR. HIRSHLEIFER CONSISTENT WITH THE GENERALLY ACCEPTED APPLICATION OF THE DCF MODEL?**

A. No. I will discuss each of these assumptions below.

## GROWTH RATE

**Q. HOW DOES MR. HIRSHLEIFER ESTIMATE THE THREE GROWTH COMPONENTS OF HIS THREE-STAGE ANNUAL DCF MODEL?**

A. Mr. Hirshleifer employs a three-stage DCF model in which his proxy companies' earnings are expected to grow in line with analysts' earnings growth expectations for only the first five. Mr. Hirshleifer then arbitrarily assumes that his proxy companies' earnings growth will linearly decline over a 15-year period to his current 5.14 percent expected growth in the GNP, and then grow at 5.14 percent forever. Mr. Hirshleifer, however, incorrectly omits applying any dividend growth during the first year of his DCF analysis. Mr. Hirshleifer's basic growth assumptions are not only arbitrary, but also inconsistent with evidence that a company's earnings can grow at analysts' expected growth rates for many years and causes him to significantly underestimate GTE Florida's cost of equity.

**Q. WHY DID MR. HIRSHLEIFER EMPLOY A THREE-STAGE, RATHER THAN A ONE-STAGE, DCF MODEL?**

A. Mr. Hirshleifer employs a three-stage DCF Model because he allegedly finds it unreasonable to assume that a company's earnings

can grow at a rate greater than the growth in GNP forever.

**Q. DO YOU AGREE THAT A COMPANY'S EARNINGS CANNOT GROW FOREVER AT A RATE GREATER THAN THAT FOR THE GNP?**

A. Yes. If a company were to grow at a rate greater than the growth in the GNP forever, **at some date far in the future**, it would represent most of the economy.

**Q. DOES THE FACT THAT COMPANIES MAY NOT BE ABLE TO SUSTAIN GROWTH RATES GREATER THAN THAT OF THE GNP FAR INTO THE FUTURE PRECLUDE THE USE OF A SINGLE-STAGE DCF MODEL?**

A. No. Mr. Hirshleifer fails to recognize that (1) companies do not have to grow at the same rate forever for the single-stage DCF Model to be a reasonable approximation of how prices are determined in capital markets; (2) it is common for companies to grow at rates significantly greater than the rate of growth in GNP for long periods of time; (3) the 10.53 percent average I/B/E/S growth rate for Mr. Hirshleifer's proxy group of THCs is easily achievable for a period longer than five years, especially in an industry such as telecommunications, which is growing significantly faster than the economy as a whole; and (4) evidence suggests that investors expect the THCs to grow at a rate significantly greater than 5.14 percent in the long run. Consequently, the Commission should

reject Mr. Hirshleifer's three-stage DCF Model to estimate GTE Florida's cost of equity.

**Q. WHY IS THE SINGLE-STAGE DCF MODEL A REASONABLE APPROXIMATION OF REALITY EVEN THOUGH FIRMS CANNOT GROW AT RATES IN EXCESS OF GNP GROWTH FOREVER?**

A. The DCF Model assumes that the price of a company's stock is equal to the discounted value of its future stream of dividends. Because future dividends are discounted in the DCF Model, dividends beyond a specific finite period, such as 40 or 50 years, have very little impact in determining a firm's stock price. Thus, the validity of the single-stage DCF Model depends only on whether firms can grow at a constant growth rate in excess of GNP for 40 or 50 years, not on whether firms can grow at a constant growth rate in excess of GNP forever. (Using Mr. Hirshleifer's DCF cost of equity for GTE Corporation, for example, and his 3-stage growth rates, the first 40 years of dividends account for 77 percent of the stock price.)

**Q. WHAT EVIDENCE DO YOU HAVE THAT A COMPANY CAN GROW AT A RATE GREATER THAN THE GNP OVER LONG TIME PERIODS?**

A. A review of companies, which comprise the S&P Industrials from 1979 to 1996, indicates that 135 companies had average growth rates greater than the GNP for the 17 years from 1979 to 1996. This represents 56% of the S&P Industrial companies for which data was

available during this period. It is also common for companies to grow at rates far greater than the average 5-year growth rate of 10.04% that Mr. Hirshleifer used in his DCF model. Eighty-six (86) or 36% of the S&P Industrial companies sustained growth rates equal to or greater than 150% of the average growth rate for the GNP during the 17 years from 1979 to 1996.

I also determined, that depending on the company, it would take anywhere from 1,266 to 13,018,530 years for these companies to become 100% of the economy if they were to maintain their historical revenue growth rate as compared to the GNP. The average and median number of years for the companies was 243,267 and 54,482, respectively. These time periods are clearly beyond any practical and relevant investment horizon. Therefore, an arbitrary assumption to reduce analysts' growth rates beginning with year six and replace them with Mr. Hirshleifer's own growth estimates is unreasonable.

**Q. DOES MR. HIRSHLEIFER PROVIDE EVIDENCE THAT HIS PROXY COMPANIES CAN GROW AT 10.53% FOR ONLY FIVE YEARS?**

A. Mr. Hirshleifer provides no evidence to support this arbitrary assumption.

**Q. DO YOU HAVE EVIDENCE THAT INVESTORS EXPECT THE THCs TO GROW AT A RATE HIGHER THAN 10.53% FOR A PERIOD**

**GREATER THAN FIVE YEARS?**

A. Yes. Value Line publishes an estimate of each company's long-run growth from internal sources beyond the period 2003-2005. Growth from internal sources is measured by the product of the company's forecasted rate of return on equity and its forecasted retention ratio and is an indicator of expected growth beyond the forecasted 5-year period. As shown on Rebuttal Schedule GDJ-2, Value Line's long-run internal growth rate for the THCs is 16.6%, indicating that Value Line expects the THCs to grow at rates higher than the average IBES 5-year growth rate of 10.53% for a period greater than five years.

**Q. MR. HIRSHLEIFER JUSTIFIES HIS USE OF THE THREE-STAGE GROWTH MODEL ON PAGE 12 OF HIS TESTIMONY WITH A QUOTE BY ASWATH DAMODARAN. WHAT ARE THE CONDITIONS UNDER WHICH MR. DAMODARAN INDICATES USE OF A MULTI-STAGE DCF MODEL MAY BE USEFUL?**

A. Mr. Damodaran indicates that a multi-stage DCF model "may be the more appropriate model to use for a firm whose earnings are growing at very high rates". He goes on to say that "growth rates over 25% would qualify as very high". None of the company's included in Mr. Hirshleifer's THC proxy group nor the Company's S&P Industrials group have growth rates greater than 25%. Mr. Damodaran points out a further weakness to the multi-stage model when he states:

> It requires a much larger number of inputs: year-specific payout ratios, growth rates, and betas. For firms in which

there is substantial noise in the estimation process, the errors in these inputs can overwhelm any benefits that accrue from the additional flexibility in the model. ( Damodaran, Aswath, *Damodaran on Valuation: Security Analysis for Investment and Corporate Finance*, John Wiley & Sons, New York, 1994, pp. 118-119.)

Such "noise" would include the previously discussed merger and restructuring activities that the THCs are currently undergoing.

## DIVIDEND FREQUENCY

**Q. DO YOU AGREE WITH MR. HIRSHLEIFER'S USE OF THE ANNUAL DCF MODEL TO ESTIMATE THE COST OF EQUITY FOR COMPANIES THAT PAY DIVIDENDS QUARTERLY?**

A. No. Financial theory suggests that the present value of a stream of dividends depends on both the magnitude and the timing of the dividend payments. Common sense would tell us the same. Since dividends are, in fact, paid quarterly, Mr. Hirshleifer should have used a DCF Model that assumes quarterly dividend payments. The Quarterly DCF Model provides the most accurate basis for valuing the dividend stream expected by the investor.

**Q. WOULD AN INVESTOR USE AN ANNUAL DCF MODEL TO VALUE BONDS WHEN INTEREST IS PAID SEMI-ANNUALLY?**

A. No. That would be irrational. Bond investors recognize that prices depend on both the timing and the magnitude of the cash flows related to their investments. Since bond cash flows (interest payments) occur semi-annually, bond investors use a semi-annual DCF Model to value bond investments.

**Q. WOULD A BANK OR MORTGAGE BROKER USE AN ANNUAL DCF MODEL WHEN VALUING MORTGAGE LOANS?**

A. No. Banks and mortgage brokers recognize that mortgage interest and principal payments are made monthly. Therefore, they use a monthly DCF model to evaluate investments in mortgage loans.

**Q. MR. HIRSHLEIFER, ON PAGE 44 OF HIS TESTIMONY, INDICATES THAT QUARTERLY COMPOUNDING IS UNNECESSARY BECAUSE THE THCs ARE ABLE TO REINVEST THEIR CASH FLOWS ON A MONTHLY BASIS. IS THIS POINT RELEVANT TO THE APPLICATION OF THE DCF MODEL?**

A. No. The DCF Model is designed to model the cash flows received by *investors*, not the cash flows received by the company. Most all companies have stable cash flows that they are able to reinvest on a monthly basis. This, however, is irrelevant to investors. Investors are only interested in the cash flows associated with their investments. By definition the DCF recognizes these cash flows to be the stock purchase price, dividends, and the stock selling price. As is the case with most publicly traded companies, dividends are paid quarterly.

Since investors receive quarterly dividends, the Quarterly DCF Model is the most accurate model for estimating the company's cost of equity.

**Q. DOES MR. HIRSHLEIFER'S COLLEAGUE, PROFESSOR CORNELL, SUPPORT THE USE OF A QUARTERLY DCF MODEL FOR A COMPANY THAT PAYS DIVIDENDS QUARTERLY?**

A. Yes. In his book (Bradford Cornell, Corporate Valuation, The McGraw-Hill Companies, Inc., 1993, page 198.) Professor Cornell presents a quarterly DCF analysis that incorporates the quarterly payment of dividends to estimate Apple Computer's cost of equity.

**Q. WHAT IS MR. HIRSHLEIFER'S RELATIONSHIP WITH PROFESSOR CORNELL?**

A. Mr. Hirshleifer and Professor Cornell currently work together at Charles River Associates, Inc. In addition, Mr. Hirshleifer was employed at FinEcon from 1990-1999, during which time Professor Cornell was President of FinEcon. Mr. Hirshleifer has also collaborated on at least one article with Professor Cornell entitled "Estimating the Cost of Equity Capital" for the *Contemporary Finance Digest* in September 1977. Mr. Hirshleifer first appeared as a witness in a GTE rate proceeding in Kentucky Administrative Case No. 360, where he adopted the direct testimony of Professor Cornell. Mr. Hirshleifer's testimony has mirrored Professor Cornell's Kentucky testimony during numerous GTE regulatory proceedings in which he

has appeared as a cost of capital witness on behalf of AT&T and/or MCI.

## FLOTATION COSTS

**Q. DOES MR. HIRSHLEIFER RECOGNIZE FLOTATION COSTS IN HIS DCF MODEL?**

A. Mr. Hirshleifer does not recognize flotation costs in his DCF model, even though all securities sold in the capital markets incur flotation costs, such as underwriters' commissions, registration fees, legal and audit fees, and printing expenses. These items typically cost from 3%-5% of the stock price [see Clifford W. Smith, "Alternative Methods for Raising Capital, *Journal of Financial Economics* 5 (1977) 273--307]. In addition, there is likely to be a decline in price associated with the issuance of new shares. This cost has been estimated to be 2%-3% of the stock price. [see Richard H. Pettway "The Effects of New Equity Sales Upon Utility Share Prices," *Public Utilities Fortnightly*, May 10, 1984, 35--39].

Based on these factors, total flotation costs, including both issuance expenses and market pressure, range between 5%-8% of the stock price. A conservative 5% was used in the Company's quarterly DCF model.

**Q. MR. HIRSHLEIFER STATES ON PAGE 45 OF HIS TESTIMONY THAT IT IS NOT NECESSARY TO INCLUDE FLOTATION COSTS**

**IN THE DCF MODEL "BECAUSE THE PRICE OF THE COMPANIES' STOCK HAS ACCOUNTED FOR FLOTATION COSTS ALREADY". DO YOU AGREE?**

A. No. Flotation costs are no different than any other forward-looking cost of doing business. They must be included in the cost model somewhere. It just happens that these costs are accounted for in the cost of capital rather than listed as a separate financing cost. If Mr. Hirshleifer's argument was true, there would be no requirement to include any other forward-looking expenses, such as the cost of services and sales or general and administrative costs in GTE's forward-looking cost study, because these expenses are also reflected in GTE's stock price. Mr. Hirshleifer has also lost sight of a key principle in the development of the cost model in this proceeding – the model is to assume that the network is to be built from scratch. Given this assumption, it follows that the capital utilized to fund its construction would be newly issued and would indeed incur flotation cost.

**Q. WHAT RETURN ON COMMON EQUITY IS PRODUCED FOR THE THCs AFTER CORRECTING FOR THE ARBITRARY ASSUMPTIONS IN MR. HIRSHLEIFER'S DCF MODELS?**

A After correcting for the deficiencies discussed above, the DCF model produces a 12.84% return on equity for the THCs as shown on Rebuttal Schedule GDJ-3. The remaining difference from the Company's proposed 14.36% return on equity is primarily due to the

use of an inappropriate proxy group.

## CAPITAL ASSET PRICING MODEL

**Q. WAS A CAPM USED BY THE COMPANY TO CALCULATE A RETURN ON EQUITY FOR GTE FLORIDA IN THIS PROCEEDING?**

A. No.

**Q. DO YOU AGREE WITH THE ASSUMPTIONS THAT MR. HIRSHLEIFER USED TO DEVELOP HIS CAPM?**

A. No. I disagree with the assumptions that Mr. Hirshleifer used for the beta and risk premium in his CAPM. I will discuss each of these assumptions below.

## BETA

**Q. HOW DID MR. HIRSHLEIFER ESTIMATE THE BETA COMPONENTS OF HIS CAPM?**

A. Mr. Hirshleifer estimates the beta component of his CAPM analysis in four steps. First, Mr. Hirshleifer estimates raw betas for each company by regressing the monthly return on each company's stock against the monthly return on the S&P 500 over the five-year period ending September 30, 1999. Second, Mr. Hirshleifer calculates an unlevered beta for each company using a theoretical equation relating the company's estimated beta to its debt to equity ratio. The unlevered beta is an estimate of the beta Mr. Hirshleifer believes the company would have if it had no debt in its capital structure. Third, Mr.

Hirshleifer calculates the average unlevered beta for all companies in his telecommunications sample. Fourth, Mr. Hirshleifer estimates the levered beta for GTE Corporation by re-levering the average unlevered beta for all companies using Corporation's market value debt-to-equity ratio.

**Q. DO YOU AGREE THAT USE OF THESE HISTORICAL BETAS WILL RESULT IN A FORWARD-LOOKING COST OF EQUITY FOR GTE FLORIDA?**

A. No. Mr. Hirshleifer's average historical beta of 0.67 significantly underestimates the future business risk of the THCs relative to the market. The Telecommunications Act of 1996 removed all barriers to entry to GTE's local exchange business. As a result of this legislation, the risk of investing in the THCs has increased significantly. Forward-looking betas for the THCs are undoubtedly greater than the five-year historical betas estimated by Mr. Hirshleifer.

**Q. DO YOU AGREE WITH MR. HIRSHLEIFER'S USE OF RAW BETAS BASED ON FIVE YEARS OF HISTORICAL DATA TO ESTIMATE THE FORWARD-LOOKING COST OF CAPITAL FOR USE IN FORWARD-LOOKING COST STUDIES?**

A. No. Mr. Hirshleifer fails to adjust his raw betas for the well-known tendency of raw betas to converge over time to the overall mean beta of 1.0. Consequently, the betas that Mr. Hirshleifer uses would not be considered forward-looking in nature.

**Q. WHAT EVIDENCE DO YOU HAVE THAT RAW BETAS TEND TO CONVERGE OVER TIME TO THE OVERALL MEAN BETA OF 1.0 FOR ALL COMPANIES?**

A. The evidence that raw betas tend to converge over time to the overall mean beta of 1.0 for all companies was first presented by Marshall Blume: (1971) "On the Assessment of Risk," *Journal of Finance* 26, 1-10; (1975) "Betas and Their Regression Tendencies," *Journal of Finance* 30, 785-795; and (1979) "Betas and Their Regression Tendencies: Some Further Evidence," *Journal of Finance* 34, 265-267.

**Q. DOES THE FINANCIAL COMMUNITY ADJUST THEIR BETA CALCULATIONS TO ACCOUNT FOR THE TENDENCY OF RAW BETAS TO CONVERGE OVER TIME TO THE MEAN BETA OF 1.0?**

A. Yes. Value Line and Merrill Lynch use adjustment procedures to account for the tendency of raw betas to converge over time to the mean beta of 1.0.

**Q. HOW DO THE VALUE LINE BETAS COMPARE TO MR. HIRSHLEIFER'S RAW BETAS FOR THE THCs?**

A. As shown on Rebuttal Exhibit GDJ-4, Value Line's average forward-looking beta is .82 as compared to Mr. Hirshleifer's average raw beta calculation of .67 for the THCs.

## RISK PREMIUM

**Q WHAT RISK PREMIUM DID MR. HIRSHLEIFER USE IN HIS CAPM?**

A. Mr. Hirshleifer's estimated risk premiums over one-month Treasury Bills and over 20-year Treasury Bonds to be 7.5% and 5.5%, respectively.

**Q. DO YOU AGREE WITH HIS ASSESSMENT?**

A. No. I believe a 7.47% risk premium, which is the arithmetic average of the difference between the total return of the S&P 500 and Long-term Government Bonds for the period 1926 to 1998 is a fairer proxy for the risk premium.

**Q. HOW DID MR. HIRSHLEIFER ESTIMATE THE RISK PREMIUM FOR HIS CAPM?**

A. Mr. Hirshleifer uses a wide array of methodologies to estimate the market risk premium, including a DCF methodology and both arithmetic and geometric average premiums over four different historical time periods, and using both the one-month Treasury Bills and 20-year Treasury Bonds as surrogates for the risk-free rate of return. This arbitrary selection of time periods and model assumptions again result in a significant downward bias in his estimation of the cost of equity for GTE Florida. Additional portions of this section address specific instances where Mr. Hirshleifer has used arbitrary or inconsistent methods or time frames in estimating the risk premium to be used in his CAPM.

**Q. DO YOU AGREE WITH MR. HIRSHLEIFER'S DCF METHOD OF ESTIMATING THE MARKET RISK PREMIUM?**

A. No. In his DCF method, Mr. Hirshleifer's determines the market return utilizing the same three-stage DCF Model that I previously discussed. As noted above, his DCF Model is based on the arbitrary and incorrect assumption that companies can not sustain IBES growth rates for more than five years. In addition, his DCF Model ignores the fact that companies pay dividends on a quarterly basis and ignores the existence of flotation costs.

**Q. HOW DID MR. HIRSHLEIFER DEVELOP HIS ESTIMATES OF HISTORICAL RISK PREMIUMS?**

A. As shown on his Attachment JH-8, Mr. Hirshleifer calculates both arithmetic mean and geometric mean risk premium results for four different periods: 1802-1998, 1926-1998, 1951-1998, and 1971-1998 using data compiled by Jeremy J. Siegel and Ibbotson Associates. The risk premium results based on the arithmetic mean are significantly higher than those based on the geometric mean in every time period utilized by Mr. Hirshleifer.

**Q. DOES IBBOTSON ASSOCIATES ADVOCATE USING THE ARITHMETIC OR GEOMETRIC MEAN IN ESTIMATING THE COST OF CAPITAL?**

A. Ibbotson Associates recommends that a risk premium based on the

arithmetic mean is the "correct rate for forecasting, discounting, and estimating the cost of capital" (See Ibbotson's *1997 Yearbook*). They further state:

> The geometric mean is backward-looking, measuring the change in wealth over more than one period. On the other hand, the arithmetic mean better represents a typical performance over single periods and serves as the correct rate for forecasting, discounting, and estimating the cost of capital.
>
> The arithmetic mean is correct because an investment with uncertain returns will have a higher expected ending wealth value than an investment that earns, with certainty, its compound or geometric rate of return every year. (SBBI 1997 Yearbook, p. 104 and 155.)

Q. **HAS MR. HIRSHLEIFER'S COLLEAGUE, PROFESSOR CORNELL, EXPRESSED AN OPINION ON WHETHER THE ARITHMETIC MEAN OR GEOMETRIC MEAN PROVIDES A BETTER ESTIMATE OF THE MARKET RISK PREMIUM?**

A. Yes. In his book (Bradford Cornell, Corporate Valuation, The McGraw-Hill Companies, Inc., 1993, page 217.), Mr. Cornell states, "As shown by Bodie, Kane, and Marcus, the best estimate of expected returns over a given future holding period is the arithmetic average of past returns over the same holding period." Mr. Cornell also stated in cross-examination in Pennsylvania in Docket No. A-310203F0002,

"Personally, I think the arithmetic average was a better choice." [Transcript at page 791.]

**Q. DOES IBBOTSON ASSOCIATES ADVOCATE USING ANY PARTICULAR TIME PERIOD FOR ESTIMATING THE MARKET RISK PREMIUM?**

A. Yes. They advocate using the 1926 to the present time period for estimating the market risk premium.

**Q. HAS MR. HIRSHLEIFER'S COLLEAGUE, PROFESSOR CORNELL, EVER EXPRESSED AN OPINION ON WHICH TIME PERIOD IS MOST APPROPRIATE TO USE IN A RISK PREMIUM STUDY?**

A. Yes. In his book, (Ibid, pages 212-213.)

Professor Cornell states:

> Before an average can be calculated, the sample period must be determined. The longest period for which reliable stock price data are readily available is January 1926 to the present. ...Given the significant variation in the risk premium, altering the sample period when calculating the average is hazardous because it can greatly affect the estimate. To avoid data mining, a reasonable solution is to use the entire period from 1926 to the present, or as a substitute, the postwar period from 1945 to the present. Finer partitioning of the sample data, even if done with the best intentions,

raises the specter of introducing bias.

**Q. HOW DO THE RISK PREMIUMS COMPUTED BY MR. HIRSHLEIFER FOR THE PERIOD 1926 TO THE PRESENT COMPARE TO THOSE USED IN HIS CAPM?**

A. As shown on Mr. Hirshleifer's Attachment JH-8, the arithmetic mean risk premium for the period 1926 to 1998 is 9.35% over one-month Treasury Bills and 7.48% over Long-term Treasury Bonds. These risk premiums are 185 and 198 basis points, respectively, higher than those used by Mr. Hirshleifer in his CAPM.

**Q. HOW DOES THE RISK PREMIUM FOR THE PERIOD 1802 TO THE PRESENT COMPARE TO THAT FOR THE PERIOD 1926 TO THE PRESENT?**

A. The arithmetic mean risk premium for the period 1802 to 1998 as computed by Mr. Hirshleifer is 5.58% over one-month Treasury Bills and 4.78% over Long-term Treasury Bonds. These risk premiums are 192 and 72 basis points, respectively, lower than those for the period 1926 to 1998.

**Q. IS THE PERIOD 1802 TO THE PRESENT A REPRESENTATIVE TIME PERIOD FOR ESTIMATING THE RISK PREMIUM IN THIS PROCEEDING?**

A. No. As Professor Cornell indicates, the period 1926 to the present is the longest period for which reliable data are available. During the

19th century, the stock market was comprised of very few stocks, mainly the stocks of banks, railroads, and a few insurance companies located in the Northeast. These stocks were narrowly traded. In addition, a rough estimate of dividends for these stocks was made because dividend data was not available. Furthermore, stock prices for the period generally were based on averages of high and low bids, not prices at which trades actually occurred. For these and many other reasons, the historical returns on these stocks are simply not indicative of returns investors expect to receive on stock investments today. (Siegel's study relies on data obtained from G. William Schwert, "Indexes of U.S. Stock Prices from 1802 to 1987," *Journal of Business*, 1990. Vol. 63, no. 3. Schwert discusses the many problems with stock return data prior to 1926.)

**Q. DO YOU HAVE ANY OTHER COMMENTS REGARDING MR. HIRSHLEIFER'S APPLICATION OF THE CAPM?**

A Yes. The development of Mr. Hirshleifer's CAPM is based on a wide array of inconsistent variables that conflict with conventional practice and with positions taken in the book written by his firm's principal, Bradford Cornell. Considering this, it would appear that the CAPM he used in this proceeding was constructed in a manner solely for the purpose of minimizing the return on equity. After correcting for the deficiencies discussed above (i.e. beta and risk premium development), Mr. Hirshleifer's CAPM produces a 12.85% return on equity for the THCs as shown on Rebuttal Schedule GDJ-4 as

compared to his 10.17% CAPM estimate for GTE.

## CAPITAL STRUCTURE

**Q. HOW WERE THE PERCENTAGES OF DEBT AND EQUITY DEFINED IN YOUR DIRECT TESTIMONY FOR DETERMING GTE FLORIDA'S WEIGHTED AVERAGE COST OF CAPITAL?**

A. My calculations were based on the market values of the debt and equity for the S&P Industrials. The use of a market value capital structure in determining a company's weighted average cost of capital is aligned with that used by economists and investors. (See, for example, Copeland/Weston, Chapter 13, *Financial Theory and Corporate Policy*, Third Edition, 1988, Addison-Wesley, Reading, MA.; Brealey/Myers, Chapter 9, page 190, *Principles of Corporate Finance*, Fourth Edition, 1991, McGraw-Hill; and Robert C. Higgins, Chapter 8, *Analysis for Financial Management, Fourth Edition,* 1995, Fourth Edition, Irwin.)

**Q. WHY WAS THE CAPITAL STRUCTURE MEASURED IN TERMS OF THE MARKET VALUES OF ITS DEBT AND EQUITY?**

A. Economists measure a firm's capital structure in terms of the market values of its debt and equity because that is the best measure of the amounts of debt and equity that investors have invested in the company on a going-forward basis. Measuring a firm's capital structure in terms of market value allows its managers to choose a financing strategy that maximizes the value of the firm, where the

value of the firm is the sum of the market value of the firm's debt and equity.

**Q. WHAT METHODOLOGY WAS USED IN GTE FLORIDA'S COST STUDY FOR MEASURING THE MARKET-BASED PERCENTAGES OF DEBT AND EQUITY IN THE CAPITAL STRUCTURE?**

A. As discussed in my direct testimony, the market capital structure of the S&P Industrials, a composite of large competitive companies in the United States, was used to calculate the average market-based percentages of debt and equity. The average market-based capital structure of the S&P Industrials at December 31, 1998 contained 22.17 percent debt and 77.83 percent equity.

**Q. HOW DOES THE AVERAGE MARKET-BASED CAPITAL STRUCTURE OF THESE COMPETITIVE FIRMS COMPARE TO THE AVERAGE MARKET-BASED CAPITAL STRUCTURE OF THE RBHCs AND GTE?**

A. As shown in Rebuttal Schedule GDJ-5, the weighted average market-based capital structure of Mr. Hirshleifer's THCs contains 20.63% debt and 79.37% equity, which is comparable to the average market-based capital structure of the S&P Industrials. As also can be determined from the schedule, the equity percentages of the RBHCs and GTE are lower than GTE's potential competitors for local services (i.e. AT&T, Frontier, MCI WorldCom, and Sprint).

**Q. WHAT CAPITAL STRUCTURE DID MR. HIRSHLEIFER USE IN COMPUTING THE WEIGHTED AVERAGE COST OF CAPITAL FOR GTE FLORIDA?**

A. Although Mr. Hirshleifer recognizes the appropriateness of a market capital structure in his analysis, the 8.66% midpoint of Mr. Hirshleifer's cost of capital range is based on a 50%/50% average of GTE Corporations' book and market capital structures. Again, it appears that Mr. Hirshleifer arbitrarily made an adjustment to produce an artificially low weighted average cost of capital estimate. The use of a historical accounting-based (book) capital structure is inconsistent with the forward-looking competitive assumptions in the investment and expense components of GTE Florida's cost studies. Contrary to Mr. Hirshleifer's assertion on page 33 of his testimony, there is no "debate among academics, practitioners, and forensic experts regarding the choice between book and market weights" in determining a companies weighted average cost of capital. Mr. Hirshleifer cites no academic evidence for his assertion that investors measure returns on their investments relative to the booked capital structure of a company. Indeed, they are only concerned with the risk and returns they receive on the money they have invested in their investment portfolios using market value weights because they purchase a company's stocks and bonds at market price, not at book value.

**Q. DO YOU AGREE WITH MR. HIRSHLEIFER'S STATEMENT ON PAGE 33 OF HIS DIRECT TESTIMONY THAT "IN TRADITIONAL RATE OF RETURN HEARINGS, CAPITAL STRUCTURE IS TYPICALLY PRESENTED IN TERMS OF BOOK VALUE WEIGHTS"?**

A. Yes, I do. However, as I explain on pages 25-30 of my Direct Testimony, the utilization of a book-based capital structure by regulators is based on the assumption that the market value and book value of common equity are approximately the same. This assumption was developed on market conditions prevalent in the early to late 1980s that no longer hold true. Consequently, the current use of a book-based capital structure in determining a company's weighted average cost of capital thus has no basis in economic or financial theory. Additionally, the cost of service in this proceeding will be measured on the basis of forward-looking economic costs not historical accounting costs. Therefore, Mr. Hirshleifer's book value capital structures are also not consistent with the use of forward-looking economic costs.

**Q. WHY HAVE THE BOOK-VALUE AND MARKET-VALUE CAPITAL STRUCTURES OF THE THCS BECOME SO DRAMATICALLY DIFFERENT IN RECENT YEARS?**

A. For two reasons. First, there has been a tremendous surge in equity prices in the market place during the last 10 to 15 years. This surge has impacted the capital markets generally across all business

segments. Also, because the THCs have taken very large extraordinary accounting write-offs in recent years as they prepared for a fully competitive telecommunications market-place. As shown on Rebuttal Exhibit GDJ-6, the equity in the book value capital structure of Mr. Hirshleifer's THCs has been reduced by at least $28.8 billion as a result of the discontinuation of regulatory accounting principles established in Financial Accounting Standard 71 ("FAS 71") and for write-offs for Other Post Employment Benefits ("OPEB"). These write-offs represent more than 52 percent of the total equity in Mr. Hirshleifer's THCs' book-based capital structures. Since extraordinary write-offs, by definition, are infrequent and unusual, capital structures that include these write-offs cannot be representative of his firms' long-run target capital structures. Thus, Mr. Hirshleifer has clearly erred in using his THCs' book value capital structures for the purpose of estimating GTE Florida's forward-looking economic cost of capital. The THCs' book value capital structures are neither forward looking nor economic.

**Q. DOES MR. HIRSHLEIFER'S COLLEAGUE, PROFESSOR CORNELL, MAKE ANY RECOMMENDATIONS IN HIS BOOK REGARDING THE CORRECT CAPITAL STRUCTURE FOR USE IN MEASURING A COMPANY'S WEIGHTED AVERAGE COST OF CAPITAL?**

A. Yes. Professor Cornell clearly recommends the use of a firm's target market value capital structure, not its book value capital structure. On

page 224 of his book (Bradford Cornell, Corporate Valuation, The McGraw-Hill Companies, Inc., 1993.) he states, "The appropriate weights to use are the firm's *long-run target weights stated in terms of market value* [original emphasis]." On page 225, Professor Cornell writes,

> It is also possible to avoid the circularity by estimating the long-run target weights directly. For example, the appraiser may assume that all the comparable firms have the same target capital structures. Given this assumption, the best estimate of the target capital structure is the average capital structure across the comparable firms. If the comparable firms are publicly traded, their ***market value weights can be calculated directly and averaged*** [emphasis added]. (Ibid.)

Finally, on pages 228-229 of his book, he provides an example of the correct way to calculate the weighted average cost of capital:

> Table 7-8 puts all the pieces together and calculates FERC's weighted average cost of capital using the target financing weights chosen by management. ***Notice that the target weight of equity is significantly greater than the book value weight. This reflects management's realization that the market value of equity is much greater than the book value***" [emphasis added]. (Ibid.)

**Q. ON PAGE 13 OF HIS DIRECT TESTIMONY, MR. HIRSHLEIFER**

**ALSO CITES A BOOK BY COPELAND, KOLLER, AND MURRIN, ENTITLED, *VALUATION: MEASURING AND MANAGING THE VALUE OF COMPANIES*, AND BY DAMODARAN, ENTITLED, *DAMODARAN ON VALUATION: SECURITY ANALYSIS FOR INVESTMENT AND CORPORATE FINANCE*. DO COPELAND, KOLLER, AND MURRIN AND DAMODARAN MAKE ANY RECOMMENDATIONS IN THEIR BOOKS REGARDING THE CORRECT CAPITAL STRUCTURE TO USE IN MEASURING A COMPANY'S WEIGHTED AVERAGE COST OF CAPITAL?**

A. Yes. Copeland, Koller, and Murrin clearly recommend the use of market value capital structure weights to calculate the weighted average cost of capital. Specifically, they state at page 240 that one must "employ market value weights for each financing element, because market values reflect the true economic claim of each type of financing outstanding, whereas book values usually do not." Damodaran, at page 41 in the section titled, "Calculating the Weights of Debt and Equity Components, Market-Value versus Book-Value Weights," states:

> The weights assigned to equity and debt in calculating the weighted average cost of capital have to be based upon market value, not book value. The rationale rests on the fact that the cost of capital measures the cost of issuing securities, stocks as well as bonds, to finance projects and that these securities are issued at market value, not at book value.

**Q. DOES MR. HIRSHLEIFER EXPLAIN WHY HE USED BOTH BOOK AND MARKET VALUE CAPITAL STRUCTURE WEIGHTS TO CALCULATE GTE FLORIDA'S WEIGHTED AVERAGE COST OF CAPITAL, WHEN ACADEMIC EXPERTS UNANIMOUSLY RECOMMEND THE USE OF MARKET VALUE CAPITAL STRUCTURE WEIGHTS ALONE?**

A. Yes. On pages 40-41 of his direct testimony, Mr. Hirshleifer argues that: (1) the network element leasing business is less risky than the THCs' other businesses; and (2) the network element leasing business should thus have more leverage than the THCs' other businesses. He then speculates that the "higher debt weight [in the THCs' average book value capital structure] may be more representative of the target capital structure for the low-risk network element leasing business."

**Q. DO YOU AGREE WITH MR. HIRSHLEIFER'S OPINION THAT HIS TELEPHONE HOLDING COMPANIES ARE MORE RISKY THAN GTE FLORIDA'S NETWORK ELEMENT LEASING BUSINESS?**

A. No. Even if GTE Florida's network element leasing business were less risky than each of Mr. Hirshleifer's THCs' other businesses, it does not follow that the network element leasing business is less risky than the THCs as a whole. As was discussed earlier, GTE Florida must invest very large sums of capital in rapidly changing technologies in order to provide wireline services in Florida. Although the THCs have a similar wireline investment risk, they can mitigate their overall risk

by also investing in wireless telecommunications technologies. In addition, as compared to GTE Florida, the THCs can diversify geographically, offer a wider variety of products and services, and can achieve economies of scale associated with greater size and financial strength. Thus, it is actually less risky to provide a bundle of national or international telecommunications services than to provide only local service in a limited geographical territory.

**Q. DO YOU AGREE WITH MR. HIRSHLEIFER THAT THE NETWORK ELEMENT LEASING BUSINESS SHOULD HAVE A MORE HIGHLY LEVERAGED MARKET VALUE CAPITAL STRUCTURE THAN THE THCs?**

A. No. Since the network element leasing business is at least as risky as Mr. Hirshleifer's THCs, it should have a market value capital structure that contains at least as much equity as the THCs' average market value capital structure.

**Q. DO YOU AGREE WITH MR. HIRSHLEIFER'S STATEMENT ON PAGE 40 THAT THE "HIGHER DEBT WEIGHT [IN THE BOOK VALUE CAPITAL STRUCTURE] MAY BE MORE REPRESENTATIVE OF THE TARGET CAPITAL STRUCTURE" OF GTE FLORIDA'S NETWORK ELEMENT LEASING BUSINESS?**

A. No. Since book value capital structures are inherently backward looking, they can provide no useful information on the target market value capital structure of GTE Florida's network element leasing

business.

Second, Mr. Hirshleifer simply asserts that the reported book value capital structures of his THCs ***"may be"*** representative of the target market value capital structure of GTE Florida's network leasing business. He provides no evidence or studies to support his conjecture. If the book value capital structures are not representative of the target market value capital structure of GTE Florida's network element leasing business, they should not be used in cost studies that estimate the forward-looking cost of unbundled network elements.

**Q. WHAT IS THE IMPACT OF MR. HIRSHLEIFER'S USE OF BOOK VALUE CAPITAL STRUCTURE WEIGHTS ON HIS COST OF CAPITAL RECOMMENDATION?**

A. Mr. Hirshleifer obtained a 9.09 percent estimate of GTE Florida's weighted average cost of capital using market value capital structure weights and an 8.24 percent estimate of GTE Florida's cost of capital using book value capital structure weights. Mr. Hirshleifer's final recommended 8.66 percent cost of capital gives equal weight to book and market value capital structures. Thus, Mr. Hirshleifer's use of book value capital structure weights by itself reduced his estimate of GTE Florida's overall cost of capital by 42 basis points.

## CONCLUSION

**Q. WHAT ARE YOUR CONCLUSIONS REGARDING THE**

**APPROPRIATE COST OF CAPITAL TO BE USED FOR GTE FLORIDA IN THIS PROCEEDING?**

A. I believe the appropriate cost of capital to be used for GTE Florida in this proceeding is 12.74%, reflecting a 7.03% cost of debt and a 14.36% cost of equity, and based on a capital structure containing 22.17% debt and 77.83% equity.

**Q. WHAT ARE YOUR OVERALL CONCLUSIONS CONCERNING MR. HIRSHLEIFER'S WEIGHTED AVERAGE COST OF CAPITAL RECOMMENDATIONS IN THIS PROCEEDING?**

A Mr. Hirshleifer's selection of THCs as comparable proxies for GTE Florida combined with the arbitrary assumptions and application of the DCF model and CAPM have systematically resulted in a selective downward bias of his cost of capital estimates for GTE Florida. Since there is no basis of support for these assumptions, the Commission should not accept Mr. Hirshleifer's recommendations in this proceeding.

**Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?**

A. Yes.

MS. KEATING: And next is GTE's Witness Norris.

CHAIRMAN DEASON: Witness Norris' prefiled testimony shall be inserted without objection.

MS. KEATING: And Witness Norris had one Exhibit MRN-1.

CHAIRMAN DEASON: That exhibit shall be identified as Exhibit 44, and without objection shall be admitted.

(Exhibit Number 44 marked for identification and entered into the record.)

# DIRECT TESTIMONY

# OF

# MICHAEL R. NORRIS

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

A. My name is Michael R. Norris. My business address is 600 Hidden Ridge Drive, Irving, Texas, 75038.

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

A. I am employed by GTE Service Corporation as a Manager - Cost Models and Methods Development. In this capacity, I am responsible for developing cost models, methodology and analysis.

**Q. BRIEFLY DESCRIBE YOUR EDUCATIONAL BACKGROUND AND WORK EXPERIENCE.**

A. I received a Master of Business Administration degree from Southern Illinois University - Edwardsville in 1988 and a Bachelor of Science degree in Business Administration from Lindenwood College. I began my telecommunications career as a Staff Engineer with Contel in 1969. I became a GTE employee in 1991, when the companies merged. During my career, I have held various positions dealing with capital recovery, rate design, tariff development, toll settlements and cost studies, rate case preparation, regulatory accounting, and strategic planning. I accepted my current position in May 1997.

**Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE ANY STATE OR FEDERAL REGULATORY COMMISSIONS?**

A. I have sponsored testimony before the state utility commissions of Arkansas, California, Florida, Hawaii, Indiana, Michigan, New Mexico, Oklahoma, South Carolina, Texas and Washington.

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

A. The purpose of my testimony is to describe and sponsor ICM's Expense Module. My testimony also addresses issues 7(d), 7(t) and 7(u) of the Florida Staff issue list. The expense module calculates (1) the capital cost factors and operating expenses used to calculate the TELRICs of UNEs, and (2) the common costs used by GTE witness Dennis Trimble to calculate UNE prices. The Expense Module is described more fully in Exhibit DGT-3, Book VI.

**Q. WHAT FUNCTIONS DOES THE EXPENSE MODULE PERFORM?**

A. The Expense Module performs three basic functions:

First, it develops *capital cost factors* that convert the investments calculated in the Loop, Switch, Transport, and SS7 Modules into annual charges. These factors are a function of depreciation rates and rate of return. The module develops separate capital cost factors for income and property taxes.

Second, it calculates the *operating expenses* associated with the

network components that are used to construct a network element. For example, the cost of maintaining and repairing outside distribution plant such as a utility pole is an operating expense associated with an unbundled loop. The Expense Module calculates this expense, which becomes part of the TELRIC of the loop.

Finally, the Expense Module calculates the forward-looking *common costs* incurred for all elements (or services) that are not attributable to any particular element or related group of elements.

## I. CAPITAL COST FACTORS

**Q. HOW DOES THE EXPENSE MODULE CALCULATE CAPITAL COST FACTORS?**

A. First, the Expense Module calculates a "Depreciation and Return" factor that reflects the annual capital cost of a particular investment. For example, suppose the ICM's Loop Module calculates the total long-run cost of purchasing and installing a two-wire loop in a given area to be $1,531.23. (This is the same example used by Mr. Tucek in his direct testimony.) This loop may have a useful life of 20 years, and therefore the total investment cost of the loop ($1,531.23) should be recovered over this 20-year period. The Depreciation and Return factor calculates the annual charge needed to recover the total investment based on (1) how quickly the loop depreciates, which in our example is 20 years, and (2) the rate of return associated with the loop. In this way, the Depreciation and Return factor includes both a

return *of* the total investment (the annual depreciation cost) and a return *on* the total investment (the rate of return). Inputs to the rate of return calculation are provided for in GTE witness Gregory Jacobson's testimony. The formula for this factor is set forth in Exhibit DGT-3, Book VII, at page 7-40.

In Mr. Tucek's example, the Depreciation and Return charge associated with the $1,531.23 two-wire loop investment is $204.11. In other words, if the owner of the network receives $204.11 each year over the estimated life of the loop, it will recover the total long-run investment cost of the loop ($1,531.23) plus a reasonable return. Again, the Depreciation and Return charge will vary depending on the depreciation lives and cost of capital that are put into the model. GTE witness Allen Sovereign discusses GTE's forward-looking depreciation lives, and GTE witness Gregory Jacobson discusses GTE's forward-looking rate of return.

Finally, the Expense Module calculates separate composite income tax and property tax factors associated with each investment. The Expense Module's "Composite Income Tax Factor" reflects statutory state and federal income tax rates, and the formula used to create this factor is shown in Exhibit DGT-3, Book VII, at page 7-41. The "Property Tax" factor reflects the ratio of GTE's current annual property tax expense to the current gross taxable plant balances.

**Q. ARE THESE CAPITAL COST CALCULATIONS REFLECTED IN ICM'S OUTPUT REPORTS?**

A. Yes. ICM captures these capital costs (and all operating expenses, which are discussed later in my testimony) and reports them in seven categories. Following is an example of ICM's UNE Report for a two-wire loop, which is the same example used by Mr. Tucek:

| Network Element | Investment | Deprec. & Return | Composite Inc. Tax | Property Tax | Maint. & Support | Marketing | B/C and Directory | TELRIC |
|---|---|---|---|---|---|---|---|---|
| 2-wire loop | 1531.23 | 204.11 | 33.26 | 14.08 | 62.33 | 5.74 | 0.00 | 26.63 |

The Investment column shows the total investment cost associated with the two-wire loop ($1,531.23). The Depreciation and Return column shows the annual capital charge necessary to recover the total loop investment, which, as discussed above, includes both a return *of* and a return *on* the total investment ($204.11). The Composite Income Tax and Property Tax columns reflect the annual state and federal income taxes and property taxes associated with the loop.

In addition to these capital costs, ICM also reports the *operating expenses* associated with the two-wire loop and other UNEs. These expenses are calculated and reported based on three general categories: "Maintenance and Support," "Marketing," and "Billing, Collection and Directory." The following section of my testimony explains how these expenses are calculated.

## II. OPERATING EXPENSES

**Q. WHAT ARE OPERATING EXPENSES?**

A. Operating expenses are, in large part, the recurring expenses associated with maintaining, repairing, and supporting the local network. For example, when GTE buys a utility pole, it incurs the cost of purchasing and installing the pole. This is a *capital cost*, and the capital carrying cost is reflected in the Depreciation and Return factor discussed above. But once the pole is installed, it must be maintained and repaired. The costs of maintaining or repairing the pole are called *operating expenses*, and these expenses are calculated by ICM's Expense Module. The operating expenses associated with a particular UNE are captured in the TELRIC of that UNE, as shown in the illustration above.

**Q. HOW DOES THE EXPENSE MODULE CALCULATE FORWARD-LOOKING OPERATING EXPENSES?**

A. Operating expenses are calculated using two separate but interrelated costing methodologies: the cost pool methodology and the Activity-Based Cost (ABC) methodology. The total annual operating expenses calculated by these methodologies are reported in the "Maintenance and Support," "Marketing," and "B/C and Directory" columns of ICM's UNE Report.

**Q. PLEASE DESCRIBE THE COST POOL METHODOLOGY.**

A. The *cost pool methodology* develops a ratio of expenses to

investment (the "maintenance and support" factor) for each of the network cost pools, which reflect different network functions or network components. These maintenance and support factors are applied to the appropriate forward-looking investment costs calculated by the Loop, Switch, Transport, and SS7 Modules to produce the annual operating expenses associated with these investments.

For example, suppose we want to calculate the annual operating expenses associated with a utility pole. To do this, we would apply the maintenance and support factor of the appropriate cost pool – in this example, the "Pole" cost pool – to the investment cost of the pole as calculated by the Loop Module. The operating expenses for a given UNE (e.g., a two-wire loop) are simply the sum of the operating expenses of each network component needed for that UNE.

**Q. HOW DOES ICM DEVELOP COST POOLS AND CALCULATE THE MAINTENANCE AND SUPPORT FACTOR FOR EACH POOL?**

A. ICM develops cost pools and calculates the maintenance and support factors through a thirteen-step process, which is illustrated in Exhibit MRN-1, "The Cost Pool Methodology Roadmap," and explained in Exhibit DGT-3, Book VI.

In general, however, the cost pool methodology can be distilled to three principal steps: First, GTE creates twenty-one separate cost pools based on existing ARMIS classifications and GTE's internal

work center classifications. Second, GTE assigns forward-looking operating expenses and forward-looking investments to each cost pool (e.g., the "Pole" cost pool reflects the annual expenses and total investment associated with utility poles). These forward-looking expenses and costs are based, in part, on adjusted 1998 ARMIS cost data. Third, GTE calculates the maintenance and support factor for each pool by dividing the annual expenses by the total investment cost.

**Q. PLEASE EXPLAIN HOW GTE DEVELOPED ITS COST POOLS.**

A. GTE developed cost pools by grouping network functions and network components into logical categories that reflect the actual operation of a local network. GTE began this process by examining its annual ARMIS Joint Cost Report (43-03), which reflects the real-world costs needed to maintain and support a local network. These costs are segregated into individual FCC Part 32 accounts in the ARMIS Report. Part 32 utilizes separate accounts for investments and expenses. For example, there are separate investment and expense accounts for "Poles," "Digital Electronic Switching" and "Underground Cable ."

GTE also examines its operating expenses at the internal work center level of detail, which tracks and reports expenses in much greater detail than that available at the ARMIS expense account level. In fact, GTE has about 1,300 operating expense work centers, as compared

to about 50 ARMIS Part 32 expense accounts.

After reviewing all this data, GTE created 21 cost pools, which are listed in Exhibit DGT-3, Book VI, at pages 7-36 to 7-38. These pools group network functions and network components into logical categories that reflect the actual operation of a local network. For example, there are separate cost pools for Cable, Poles, Conduit, Aerial Non-Metallic Facilities, Aerial Metallic Facilities, Transmission, Switching, and Access. There are also separate cost pools for common costs, which I discuss in Part III of my testimony.

**Q. HOW DID GTE CALCULATE AND ASSIGN FORWARD-LOOKING OPERATING EXPENSES TO EACH COST POOL?**

A. Forward-looking expenses were calculated and assigned as follows: First, GTE reviewed the annual expenses reported in its ARMIS Joint Cost Report (43-03), which reflects the real-world expenses needed to maintain and support a local network. GTE made several accounting normalization adjustments to this data for each Part 32 account to develop its "baseline" ARMIS data.

Second, GTE mapped this adjusted ARMIS expense data to its cost pools using the more granular work center data as a guide. The annual expenses captured in a given pool serve as the *numerator* for that cost pool's maintenance and support factor.

Third, GTE made three categories of adjustments to the baseline ARMIS data: (1) GTE removed all the costs that are captured in other GTE cost studies (e.g., GTE's NRC Study); (2) GTE removed all the costs captured by GTE's ABC methodology; and (3) GTE removed all costs reported in ARMIS that are not related to forward-looking investment (e.g., analog switch expenses).

**Q. HOW DID GTE CALCULATE AND ASSIGN FORWARD-LOOKING INVESTMENT COSTS TO EACH COST POOL?**

A. GTE used the forward-looking investment costs produced by ICM's *Loop, Switch, Transport,* and SS7 Modules, and assigned these costs to the 21 cost pools in the same manner it assigned operating expenses. For example, if the Loop Module's total forward-looking investment cost of pole facilities is $100x, then the investment cost in the Pole cost pool – which serves as the *denominator* of that pool's maintenance and support factor – also is $100x.

GTE calculates and assigns these forward-looking investment costs through a three-step process: First, GTE reviewed the gross investment costs reported in its ARMIS Part 32 asset accounts and adjusted these costs to remove non-forward-looking investments (e.g., analog switch investment). Second, GTE applied a C.A. Turner index to each Part 32 account to adjust the average plant balance, *which is based on historical cost, to current reproduction cost* (C.A. Turner indicies are available to the industry and are designed to allow

a company to restate current book investment amounts to current replacement values). Third, GTE applied a calibration factor that converts the C.A. Turner amount to the forward-looking investment cost produced by ICM's Loop, Switch, Transport, and SS7 Modules.

**Q. DID GTE APPLY THIS PROCESS TO ALL INVESTMENT COSTS?**

A. Yes, with one exception: the *investment costs* associated with "General Support Facilities" are captured and treated as an annual *expense*.

General Support Facilities are facilities that support several different network functions or components, such as motor vehicles, general purpose computers, and furniture. The investment costs of these facilities are reported in FCC Part 32 accounts 2111-2124, and the operating expenses associated with these facilities are reported in FCC Part 32 accounts 6112-6124. ICM assigns General Support Facility expenses to each cost pool, and includes in these expenses a "capital carrying cost" that reflects the *investment cost* of each General Support asset. In this way, the total annual expenses include the capital costs – expressed as an annual carrying charge – of all General Support assets.

An example will help illustrate this calculation. Motor vehicle assets are General Support assets that support many different network functions or components. The investment costs associated with

motor vehicles are reported in ARMIS asset account 2112, and the expenses are reported in ARMIS expense account 6112. These investment costs (expressed as an annual capital carrying cost) and associated expenses are assigned to cost pools based on relative use, e.g., if $100x in motor vehicle costs are attributable to central office zone technicians, then $100x in cost is assigned to the Switching cost pool. Again, GTE uses its more detailed work center data to help assign these costs to the appropriate pools. The principal point here, however, is that the investment costs of General Support Facilities are captured as an annual expense. GTE treats these investment costs as expenses to more accurately match the costs of General Support Facilities to the network functions or components they support.

**Q. ARE THE COSTS OF THESE GENERAL SUPPORT FACILITIES FORWARD-LOOKING?**

A. Yes. In developing these costs, GTE started with the gross investment costs reported in its ARMIS Part 32 asset accounts. GTE then applied a C.A. Turner index to each Part 32 General Support Asset account to adjust the gross book cost to a forward-looking reproduction cost.

Again, neither ICM nor any other cost model calculates the forward-looking costs of General Support Facilities such as motor vehicles, furniture, and computers, and therefore GTE develops these costs

and assigns them to cost pools using the methodology described above.

**Q. HOW DID GTE CALCULATE THE MAINTENANCE AND SUPPORT FACTOR FOR EACH COST POOL?**

A. As I discussed earlier, the factor itself is simply the forward-looking expenses in each cost pool divided by the forward-looking investment cost. This factor is applied to the investment costs produced by ICM to arrive at the annual expenses. These annual expenses are reported in the "Maintenance and Support" column of ICM's UNE Report.

**Q. PLEASE DESCRIBE THE ACTIVITY-BASED COSTING (ABC) METHODOLOGY.**

A. The *ABC methodology* is based on special studies that (a) examine certain activities performed by people and systems in each work center, and (b) determine more precisely the network elements (or services) supported by these activities. This activity-based approach allowed the costs of certain activities to be assigned with even greater precision to the elements (or services) the activities support. The costs captured by these ABC studies were excluded from the ARMIS reports used in the cost pool methodology to ensure costs were not double-counted. Here again, GTE developed its forward-looking expenses based on real-world activities and costs, and mapped these expenses to the appropriate network components.

**Q. WHAT CATEGORIES OF EXPENSES DO THE ABC STUDIES CAPTURE?**

A. The ABC studies capture three categories of expenses: (1) billing, collection, and directory expenses, which are reported in a separate column of ICM's UNE Report; (2) sales, marketing, and advertising expenses, which also are reported in a separate column of the UNE Report; and (3) service assurance expenses (e.g., expenses related to monitoring, maintaining and repairing network operations), which are reported in the "Maintenance and Support" column of the UNE Report. (In other words, the annual expense charge reported in the Maintenance and Support column reflects two sets of expenses: the maintenance and support expenses calculated by the cost pool methodology, and the service assurance expenses calculated by the ABC methodology.)

**Q. PLEASE SUMMARIZE HOW THE EXPENSE MODULE CALCULATES AND REPORTS THE ANNUAL OPERATING EXPENSES ASSOCIATED WITH EACH UNE.**

A. Each UNE includes several components. For example, the two-wire loop UNE may consist of utility poles, conduit, aerial copper distribution facilities, and buried fiber feeder facilities. The Expense Module calculates the annual expenses for each component through two separate but interdependent methodologies: the cost pool methodology, which calculates expenses based on the ratio of forward-looking expenses to forward-looking investment; and the ABC

methodology, which relies on several studies that track expenses associated with certain activities. The sum of the annual expenses of each component equals the total annual expenses for the UNE being studied. These expenses are reported by ICM in three separate categories: "Maintenance and Support," "Marketing," and "B/C and Directory."

## III. COMMON COSTS

**Q. WHAT ARE COMMON COSTS?**

A. As Mr. Trimble explains, common costs are costs that cannot be directly assigned to a particular network function or component. For this reason, common costs are not reflected in the TELRIC of UNEs. Mr. Trimble's testimony also details the recovery of common costs.

**Q. HOW DOES GTE CALCULATE ITS FORWARD-LOOKING COMMON COSTS?**

A. GTE calculates common costs as part of its cost pool process. There are three categories of cost pools that reflect common costs: (1) the billing and collection cost pool; (2) the lines of business cost pools (consumer, business, and carrier); and (3) the common cost pool. The sum of the costs in each of these pools equals GTE's total forward-looking common costs.

Again, the cost pool process begins with the costs captured in GTE's ARMIS Report. These costs are adjusted to eliminate costs that are not

forward-looking and to include costs that are. GTE's calculations are shown in detail in Binder12, Tab 23; Binder 13, Tab 24; and Binder 14, Tabs 25 through Tabs 29.

**Q. WHAT ARE GTE'S TOTAL FORWARD-LOOKING COMMON COSTS?**

A. GTE's total common costs are $192.3 million per year, as shown on page 29 010 in Binder 14. Mr. Trimble allocates these common costs to specific UNEs to arrive at the total monthly recurring charge for each UNE.

**Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

A. Yes.

MS. KEATING: Next is Sprint's Witness Dickerson.

CHAIRMAN DEASON: Witness Dickerson's prefiled testimony without objection shall be inserted into the record.

MS. KEATING: And Witness Dickerson has two exhibits for this phase, KWD-1 and KWD-2.

CHAIRMAN DEASON: Those exhibits shall be identified as Composite Exhibit 45 and without objection shall be admitted.

(Exhibit Number 45 marked for identification and entered into the record.)

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DIRECT TESTIMONY

OF

KENT W. DICKERSON

Q. Please state your name, business address, employer and current position.

A. My name is Kent W. Dickerson. My business address is 901 E. 104th Street, Kansas City, Missouri 64131. I am employed as Director - Cost Support for Sprint/United Management Company.

Q. Could you please summarize your qualifications and work experience?

A. My qualifications and work experience are summarized in Exhibit KWD-1.

Q. What is the purpose of your Testimony?

A. My testimony sponsors the TELRIC cost studies for the following list of unbundled network elements (UNEs):

Loop (all types)

Loop Sub-elements

Dark Fiber (Loop and Interoffice)

Loop, Switch and Transport Combinations

Enhanced Extended Links

Network Interface Devices

Inside Wire

Annual Charge Factors

Expense Studies

My testimony, in concert, with Sprint's filing Volumes I, II and III will describe how Sprint's UNE cost studies for the items listed above are developed to be forward-looking, deaveraged and specific to the markets served by Sprint in Florida.

Q. Please describe the responsibility assignments of Sprint's witnesses in this docket.

A. My testimony addresses the deaveraged cost studies listed above. In addition, I will provide a description of Sprint's TELRIC study process.

Mr. James Sichter provides testimony on the appropriate prices for all UNEs. His testimony provides Sprint's positions on the price deaveraging issues in this docket.

Mr. James Dunbar's testimony sponsors the Benchmark Cost Proxy Model (BCPM) and the Sprint Loop Cost Model (SLCM)

and their associated network design assumptions, customer locations and internal calculations.

Mr. Talmage Cox's testimony addresses unbundled dedicated and common transport.

Mr. McMahon's testimony addresses the non-recurring charges for all UNEs.

Mr. John Holmes provides testimony on unbundled Circuit Switching, Signaling, and Call Related Databases.

Mr. John Quakenbush presents testimony on the appropriate cost of capital inputs utilized in Sprint's TELRIC studies.

Q. Could you identify which witnesses support Volumes I, II and III of Sprint's cost study filing?

A. I have included Exhibit KWD-2 as an attachment to my testimony that identifies the sections of Sprint's cost study filings and the Sprint witness that supports that section.

Q. Please describe Sprint's position on an appropriately developed TELRIC cost of service study.

A. Sprint believes that the major characteristics of an appropriately developed TELRIC cost of service study are as follows:

1. The ILEC's prices for interconnection and unbundled network elements will recover the forward-looking costs directly attributable to the specified element, as well as a reasonable allocation of forward-looking common costs. (FCC Order, para. 682.)

2. Per-unit costs will be derived from total costs using reasonably accurate "fill factors" (estimates of the proportion of a facility that will be "filled" with network usage); that is, the per unit costs associated with a particular element must be derived by dividing the total cost associated with the element by a reasonable projection of the actual total usage of the element. (FCC Order, para. 682.)

3. Directly attributable forward-looking costs will include the incremental costs of shared facilities and operations. Those costs will be attributed to specific elements to the greatest extent possible.

Certain shared costs that have conventionally been treated as common costs (or overheads) will be attributed to the individual elements to the greatest extent possible. (FCC Order, para. 682.)

4. The forward-looking pricing methodology for interconnection and unbundled network elements should be based on costs that assume that wire centers will be placed at the ILEC's current wire center locations, but that the reconstructed local network will employ the most efficient technology for reasonably foreseeable capacity requirements. (FCC Order, para. 685.)

5. Only forward-looking, incremental costs are included in a TELRIC study. (FCC Order, para 690.)

6. Retailing costs, such as marketing or customer billing costs associated with retail services, are not attributable to the production of network elements that are offered to interconnecting carriers and are not included in the forward-looking direct cost of an element. (FCC Order, para. 691.)

Q. Please describe the generic approach used by Sprint in performing TELRIC studies.

A. Sprint uses a consistent approach in performing TELRIC studies for the unbundled network elements. The TELRIC study methodology can be generally described by the following steps:

A. Determine Network Design. The study begins with a determination of the forward-looking most efficient network architecture. The network design is based on existing wire center locations as directed in the FCC Order, and reflects currently available technology which is appropriate and efficient for current and reasonably foreseeable demand levels.

B. Determine Forward-Looking Installed Cost. Using Sprint's current vendor material costs and labor rates specific to Sprint's serving area, the incremental installed costs for all investment required to build a functioning unbundled network element are determined. The investments considered are those meeting the incremental cost causative standard laid out in the FCC Order. Determination of the incremental investments is based on the long run

as defined in FCC Order, Paragraph 692 and total element demand quantities.

C. Develop Capital and Expense Costs. Capital and Expense Costs reflect the total cost of owning and operating a specific type of asset. They are developed at the FCC account level and include the annual cost of depreciation, a return on investment, income taxes, maintenance expenses, network operations expense (testing, monitoring), and other taxes.

Related to the depreciation and return on investment components of these factors, the FCC provided clear direction in paragraph 703 of the First Report and Order in Docket No. 96-98 as follows:

> "We conclude that an appropriate calculation of TELRIC will include a depreciation rate that reflects the true changes in economic value of an asset and a cost of capital that appropriately reflects the risks incurred by an investor."

Accordingly, as addressed in the testimony of Mr. John Quakenbush, Sprint's cost of capital complies with the FCC's directives and reflects a "risk-adjusted cost of capital."

The forward-looking, efficient levels of direct maintenance, network operations expense and other taxes were developed using Sprint's actual experience with owning and operating the associated forward-looking technologies in Florida. Costs associated with obsolete technologies were excluded from the forward-looking TELRIC results.

D. Determine Reasonable Contribution to Common Costs.

The FCC Order provides clear direction that the price of unbundled elements should include a reasonable allocation of common costs. In accordance with this direction, Sprint includes a contribution to common costs in its TELRIC study results. This is accomplished by calculating a percentage-loading factor which is applied uniformly to all unbundled element TELRIC results.

**Issue 3**

**What are xDSL capable loops?**

Q. Will you please address issue 3?

A. At the current time, xDSL capable loops are copper loops that are 18,000 feet in length or shorter. To be xDSL capable a loop must not contain any devices that impede the xDSL frequency signaling such as repeaters, load coils or excess bridged tap. Copper loops which contain any of these three will require loop conditioning to remove the repeaters, load coils or excess bridged tap. The associated non-recurring charges for this loop conditioning work is explained in the testimony of Sprint witness Mr. Steve McMahon.

Q. Do some CLECs request xDSL capable loops in excess of 18,000 feet in length?

A. Yes. In those cases Sprint will provide any available copper loop in excess of 18,000 feet at the CLEC's request. Sprint will perform any loop conditioning requested by the CLEC and the CLEC will be charged for that loop conditioning work. As a loop length in excess of 18,000 feet is beyond the generally accepted industry standard limit for xDSL, Sprint will accept no

responsibility for the xDSL capabilities of conditioned copper loops longer than 18,000 feet.

Q. Should a cost study for xDSL capable loops make distinctions based on loop length and/or the particular DSL technology to be deployed?

A. Other than the 18,000 feet distinction described above, No. As described above, copper loops 18,000 feet and shorter that contain no repeaters, load coils or excess bridged tap require no further cost study distinctions. As described more fully in the testimony of Mr. Steve McMahon, Sprint does make logical distinctions in the NRCs for loop conditioning depending on whether the loop is longer or shorter than 18,000 feet. Sprint's recurring charges, however, require no distinction in the underlying loop cost other than for standard issues of loop length, terrain, customer density, plant mix, etc. that are already reflected in Sprint's unbundled loop cost studies.

**Issue 7 - Appropriate Assumptions**

**What are the appropriate assumptions and inputs for the following items to be used in the forward-looking recurring UNE cost studies?**

**Depreciation**

Q. Please describe the Depreciation inputs used to develop Sprint's forward-looking cost of UNEs.

A. The FCC's TELRIC pricing requirement for unbundled network elements requires the depreciation component of TELRIC be based on forward-looking economic lives of the underlying UNE asset categories (Paragraph 703 of FCC First Report and Order 96-98). Accordingly, Sprint has developed forward-looking economic lives for all UNE asset categories and normally utilizes these lives in its UNE cost studies. In this filing, however, Sprint has made what it hopes the Commission will find to be an appropriate and practical concession, and has used the depreciation lives ordered by this Florida Commission in the Universal Service Fund Docket No. 990696-TP. The Commission ordered depreciation lives are generally in line with Sprint's UNE economic lives. Sprint has adopted these Commission ordered depreciation lives in the hope that the parties to this proceeding can avoid the traditional debates over depreciation lives and rather focus more productively towards the substantial volume of technical and policy issues contained in this docket.

**Tax Rates**

Q. What tax rates were utilized in Sprint's UNE cost studies?

A. Sprint's filing utilizes the federal and state income tax and state ad valorem tax rates currently in effect in Florida. The specific inputs utilized in Sprint's annual charge factor development are contained in Sprint Filing Volume 1 behind tab ACF.

**Structure Sharing**

Q. Would you please describe the structure sharing input?

A. Structure sharing refers to the portion of aerial structure (poles), and buried cable and conduit excavation costs, that are shared with other companies. The structure sharing inputs are expressed in terms of the percent of costs assigned to telephone, which equates to the percentage of the structure cost that is borne by the ILEC. The reciprocal of this input factor represents the portion of the structure cost that is borne by companies other than the ILEC, such as power and/or cable companies. The model inputs are segregated between feeder and distribution sub-loop components, by aerial, buried and underground plant mix and by each of the nine customer density zones. Sprint's inputs are

located in filing Volume I, behind the tab labeled "Loop", on pages 15 through 35. The structure sharing inputs are also discussed in the section 2.6 of Sprint's Costing Input Documentation. (See Sprint filing Volume II, tab labeled "SCID" starting on page 16.)

The structure sharing inputs for underground and buried feeder and distribution cables were set at 85% and 80%, respectively, for the majority of the customers served by Sprint. This level of cost sharing of 15% and 20% exceeds the degree of structure cost sharing currently experienced by Sprint in Florida and thus allows for some forward-looking increase in structure sharing opportunities. The structure sharing inputs for the plowing construction technique used for placing buried feeder and distribution cables were set at 100% to reflect the reality that when plowing, the trench is closed over during the placement of the cable, thus eliminating the possibility of other entities placing cables in the same trench.

The structure sharing input for poles was set at 27% for all density zones. This input is based on an analysis of Sprint's experience specific to Florida, with both

renting pole space from other entities and with allowing other entities to rent space on Sprint owned poles. Workpaper 7, page 2 of 6 details the Florida-specific analysis supporting this model input (Sprint filing Volume II, tab Workpapers.)

Q. Why are the opportunities to share below-ground construction costs with power and cable companies limited?

A. In addition to the considerable difficulty in scheduling simultaneous cable placements among diverse utilities, there are work coordination, safety, and available space considerations which make significant sharing of buried and underground construction costs unlikely.

For example, the National Electric Safety Code requires a minimum of 12 inches of well-tamped earth fill separating power and telephone cables placed in the same trench. This is necessary to protect persons working on telephone cables that are not equipped or qualified to work with the voltage levels of power company cables. This critical precaution, requiring that any trenches shared with power companies be dug at least 12 inches deeper or wider, significantly increases the cost of

creating the trench and reduces the savings opportunities for sharing trenches with power companies. Further, the locations for telephone company central offices, power company sub-stations and cable company head-ends often do not correspond. Therefore it is not possible to share a common trench because the feeder routes for each company's facilities do not originate from the same geographic locations.

The structure sharing opportunity for buried cable is limited to the single point in time when the trench is initially opened. Trenches must be backfilled prior to cable being placed into service. Therefore, in order to share the cost of the trench, companies must be willing to place cable at a specific location, at the same point in time. This limits the sharing with other companies to those instances where the timing of each companies' need for facility construction is perfectly aligned. This reality further limits structure-sharing opportunities.

**Structure Costs**

Q. Please describe the structure cost input.

A. Structure costs are the costs for structures (conduit systems, trenches, poles) supporting copper and fiber feeder and distribution cable. The structure cost inputs fall into two basic categories, the type of construction activity, e.g. trench and backfill, cut and restore sod, plowing, bore cable etc., and the percent of construction done using the various construction activities, e.g. buried distribution cable construction done using plowing 45% of the time and boring 40% of the time. Sprint's inputs are filed in Volume II, tab Loop, pages 15 - 35 and described in Sprint's Costing Input Documentation in Volume II, tab SCID, starting at page 16.

Sprint's Florida-specific structure cost inputs were developed based on an analysis of the entire 1998 and 1999 contractor construction costs and activities as tracked in Sprint's Network Construction Activity Program (NETCAP). As such it provides the most current, verifiable and pertinent data available for predicting the forward-looking costs of construction in the same markets from which the data was drawn. The workpapers

supporting the structure cost inputs are located in Volume II, tab Workpapers, section 7.

**Fill Factors**

Q. Could you please describe the term fill factor?

A. Yes. Fill factors are the percentage of available network capacity utilized. Utilization is due to the following three factors:

Anticipation of future needs: When engineering and building telecommunications facilities, local exchange companies ("LECs"), both ILECs and competitive LECs ("CLECs"), attempt to anticipate future needs. For example, it is more cost-effective to dig a trench once and install facilities necessary to meet additional forecasted demand, than to dig up the trench and install new facilities every time a new loop is required.

Capacity Acquired in "Blocks": Telecommunications plant capacity is acquired in large blocks. For example, towards the high end, copper cable is only available in step increments that increase by 600 pairs for the next larger size (2400, 3000, 3600, 4200).

Therefore, unused capacity will exist while demand grows into the available capacity.

Construction Time: An engineering interval (the period of time necessary to plan and construct facilities) is required when replacing or expanding capacity.

Efficient deployment of cable balances the cost-benefit relationship of unused capacity and the cost of installation. Inadequate capacity results in the Company's inability to meet its customers' expectations for new service installation intervals. The current levels of cable fill in Sprint's Florida network today allows our customers to generally enjoy a service level of 3 days or less for new service installation. The same cable fill is needed to meet CLECs' expectations for parity in the provisioning of new service installations for unbundled local loops.

Q. Please describe Sprint's cable fill factors used in this filing.

A. Sprint's cable fill factor inputs are located in Volume I, tab Loop, page 38, in the Density Cable Sizing Factor

Table. A full description of these model input development is contained in Volume II, tab SCID, pages 22-23. The associated workpapers are in Volume II, tab Workpapers, section 9. Sprint's feeder cable fill factors were developed based on Florida wire-center specific data for feeder cable fills. The feeder cable fill inputs were adjusted to reflect the reality that the cost model must select the ultimate cable size from the available cable sizes which results in some additional unutilized cable pairs. The distribution cable fill inputs were set at 100% in concert with a model input of two distribution pairs per household. The assumption of two distribution pairs per household reflects the actual and forward-looking, least-cost practice of placing two distribution cable pairs at each house at the point of initial construction. This practice is the least cost method of meeting customer demand for multiple lines to a household and avoids costly inefficient construction to place second lines at a later date.

**Manholes**

Q. How were Sprint's cost model inputs for Manholes/Handholes developed?

A. Sprint's cost model inputs for manholes are located in Volume I, tab Loop, page 33 and described in Volume II, tab SCID, page 19. The associated workpaper is located in Volume II, tab Workpapers, section 7 page 6. Sprint's Florida-specific material and labor costs and manhole/handhole spacing was used to develop these inputs. The structure sharing inputs for manholes were set at a conservative level in excess of Sprint's actual experience to allow for some possible increase in structure sharing for manholes and handholes on a forward-looking basis. The sharing input for conduit is set at 100% consistent with the fact the model places no conduits in excess of those necessary for underground telephone cables and thus there is no spare conduit (or associated cost) to sell to an outside party.

**Fiber and Copper Cable**

Q. Please describe Sprint's inputs for Fiber and Copper cable.

A. Sprint's cost model inputs for fiber and copper cable are filed in Volume I, tab Loop, Loop inputs section

pages 1-14. A full description of the process used to develop these inputs is contained in filing Volume II, tab SCID, pages 4-7. The associated workpapers and analyses are located in Volume II, tab workpapers, sections 1 and 2. A summary description of the cable cost input development is provided below.

The material cost portion of Sprint's inputs for fiber and copper cable were developed using Sprint's current vendor cost for purchasing cable and adding Florida-specific sales tax due on those purchases. The cost of exempt materials such as splice enclosures and cable mounting hardware were added to the cable material costs to account for those necessary costs. An analysis of Sprint's entire 1998 cable installations in Florida was done to develop the exempt material cost loadings to ensure they were accurate, Florida-specific and current.

The cable placement, splicing and engineering costs were also developed based on an analysis of cable placement, splicing and engineering costs experienced in Florida for its entire 1998 cable placement construction. The data analyzed for this Florida-specific cost input was

obtained from Sprint's Project Administration and Costing System (PACS).

**Drops**

Q. Please describe Sprint's cost model inputs related to Drop wires and terminals.

A. Sprint's cost model inputs for drop wire and terminals is filed in Volume I, tab Loop, section Loop Inputs, pages 1 and 5. The process used to develop these inputs is described in filing Volume II, tab SCID, pages 9-12. The associated workpapers are filed in Volume II, tab Workpapers, sections 4 and 5. A summary description of these inputs is provided below.

The drop wire and terminal inputs reflect Sprint's current vendor material costs and applicable Florida-specific sales tax and exempt material loadings. The placement cost portion of the inputs for aerial drops and both aerial and buried terminals are based on Florida-specific labor hour costs and labor hour estimates provided by Sprint outside plant experts working in Florida. The placement costs for buried drops is based on Sprint's Florida-specific contractor cost for buried drop placement.

**Network Interface Devices (NIDs)**

Q. Please describe Sprint's cost study process and associated inputs for NIDs.

A. The cost study, narrative description and results for NIDs is contained in filing Volume I, tab NID. Sprint has provided the cost for 1-line and 2-line NIDs suitable for POTS applications and the cost for a Smartjack NIDs for DS1 applications. The material cost portion of these UNEs reflect Sprint's current vendor purchase cost for the three respective NID types. The installation labor hour cost is the current labor hour cost for Florida Outside Plant Installation and Repair employees and the installation labor hours were provided by outside plant experts working in Florida.

**Digital Loop Carrier (DLC)**

Q. Please describe the DLC cost inputs.

A. The DLC cost inputs are filed in Volume I, tab Loop, section Loop Inputs, page 40. A complete description of the DLC cost model inputs is filed in Volume II, tab SCID, pages 12-16. The associated workpapers are filed in Volume II, tab Workpapers, section 6. A summary description of the DLC inputs is provided below.

The DLC inputs reflect the combined material cost and engineering, outside plant and central office installation labor costs for an installed DLC. The inputs include the cost of DLC site preparation including obtaining permits and concrete pad site engineering and installation. The material costs reflect Sprint's current vendor purchase prices, and all labor rates for engineering and installation are Florida-specific. The labor hours for engineering and installation were provided by Sprint employees responsible for DLC engineering and installation. As explained and illustrated on page 13 of the SCID filing Volume II, Sprint's DLC inputs for stand-alone unbundled loops reflect the additional equipment requirements necessary to deliver dedicated unbundled loops to CLEC customers collocated at the central office. This additional equipment is the Central Office Terminal and DSO level line cards shown in Picture 2.4 on page 13. As further explained in the UNE-P (combined loop and local switching) documentation filed in Volume I, tab UNE-P, the DLC inputs are appropriately modified to reflect a lower cost GR-303 Integrated DLC (IDLC) configuration. This IDLC configuration can be utilized in UNE-P applications because the link between the DLC

and the switch can be combined with other customers served by the DLC and integrated straight into the switch on a common path. This reduces the cost of the DLC inputs by removing the central office terminal and DSO level line card costs necessary in stand-alone UNE loop applications.

**Expenses**

Q. Please explain how expenses are considered in Sprint's UNE cost study process.

A. The incorporation of forward-looking expense estimates in Sprint's UNE cost study process falls into four basic categories and/or processes: 1. The direct maintenance associated with capital investments underlying the various UNEs, e.g. buried copper cable maintenance, digital circuit equipment maintenance etc.; 2. Other Direct Expenses associated with capital investments underlying UNEs, e.g. circuit engineering, cable pair record maintenance, trunk engineering, etc.; 3. Forward-looking common cost loadings; and 4. Expenses avoided when selling wholesale level UNEs vs. retail sales costs, e.g. billing and postage costs. I will address each of these expense categories and processes.

**Direct Maintenance**

The direct maintenance expenses associated with UNE capital investments are applied in the UNE cost study process by including a direct maintenance expense component in the Annual Charge Factors. The Annual Charge Factor (ACF) development is explained in detail in Volume I, tab ACF. Using the relationship of Florida-specific 1999 direct maintenance to the associated gross capital investment, the direct maintenance expense loadings shown on page 1 of the Annual Charge Factor Module Input Worksheet were developed. By applying these Florida-specific direct maintenance loadings to the corresponding forward-looking capital investment, an estimate of forward-looking direct maintenance is included in the UNE cost study.

**Other Direct and Common Expenses**

In the UNE cost study process it is necessary to consider forward-looking direct expenses beyond the direct maintenance expenses describe above. Sprint has developed the Other Direct and Common (ODC) cost study model and process. This model and process is described in detail in Volume I, tab ODC. This study identifies the additional forward-looking direct expenses such as

traffic engineering or assignment functions and develops loading relationships to the applicable UNE. The loading relationships for each Other Direct Expense account is based on four basic approaches explained on page 5 of the ODC cost study narrative provided in Volume I. Starting on page 9 of the ODC cost study, the column titled Assignment Driver provides the basis for each other direct expense assignment to the various UNEs. The forward-looking TELRIC UNE investments are used to develop the other direct expense loading percentages thus assuring a forward-looking level of expense estimate.

Common costs such as furniture, office equipment, general purpose computers and corporate operations are also developed in the ODC study process. This portion of the ODC study process is also explained in detail in the narrative and study workpapers filed in Volume I, tab ODC. The common cost portion of this study results in common costs on a forward-looking basis that are 28% lower than the 1999 levels experienced in Florida.

**Avoided Cost Study**

An integral part of the Other Direct and Common Cost study process is the consideration of expenses that can be avoided when selling UNEs on a wholesale basis versus sales of services on a retail basis. Sprint's expense study processes identify these "avoided costs" using its Avoided Cost model and study process (ACS) which is explained in detail in Volume I, tab ACS. The result of the ACS is fed into the ODC cost study described above. The ACS is an activity-based cost study process which identifies the avoided expense by expense category (subaccount) and assigns these expenses to service groups, based on an activity driver. The use of the ASC study process assures that Sprint's UNE cost study results properly exclude retail expenses that can be avoided when selling UNEs on a wholesale basis.

**Issue 9**

**What are the appropriate recurring rates (averaged or deaveraged as the case may be) and non-recurring charges for each of the following UNEs?**

Q. How does the FCC define an unbundled loop?

A. FCC Rule 51.319 (a) defines Unbundled Local Loop as "… as a transmission facility between a distribution frame (or its equivalent) in an incumbent LEC central office and an end user customer premise."

**2-Wire Voice Grade Loop**

Q. Please describe the UNE Loop TELRIC study process.

A. Sprint's forward-looking wire-center specific costs of unbundled 2 wire loops are filed in Volume I, tab Loop. Contained in this documentation is a narrative description of the UNE loop cost study process, the UNE Loop cost results for every Sprint Wire Center in Florida, and the cost model inputs used to generate those forward-looking cost estimates. Mr. Sichter's testimony addresses the prices for UNE loops resulting from the wire center UNE loop costs filed in Volume I and sponsored by this testimony. Mr. Dunbar's testimony explains the BCPM calculations and associated network design assumptions.

The UNE loop cost study process follows the UNE cost study process outlined in the introduction of my testimony. As explained in the narrative filed in Volume I, tab loop and Mr. Dunbar's testimony, Sprint utilized

the BCPM to develop the forward-looking capital investments for unbundled loops. The individual inputs used in BCPM are provided in Volume I and explained elsewhere in this testimony, the SCID narrative and associated workpapers in Volume II. The forward-looking capital investments generated by BCPM were fed into Sprint TELRIC UNE model which combines the results of forward-looking investment and expense studies and generates wire center level monthly costs. The associated expense studies utilized within the Sprint TELRIC UNE model are also explained in detail in the filing Volume I and elsewhere in this testimony. Sprint's UNE loop cost studies are based on inputs developed using current, Florida-specific data wherever possible so as to best predict the cost of serving specific wire centers within Florida. The BCPM utilizes very granular customer density information in conjunction with the Sprint Florida-specific inputs so as to produce the best possible deaveraged UNE Loop cost estimates upon which to base pricing decisions.

Q. What factors affecting deaveraged UNE loop costs were considered in Sprint's UNE Loop TELRIC study?

A. The cost of unbundled local loops varies more on a geographic basis than any other UNE defined by the FCC's 96-325 Order. Under the broad category of physical geography, numerous factors affect the cost of providing loops to a specific customer location.

1. Customer Density - Customer density is the single largest factor impacting the cost of local loops. Customer density is commonly expressed in terms of customers or access lines per square mile. The density of customers impacts loop cost in an inverse manner: the higher the customer density, the lower the cost of the local loop. This relationship is linked to a few fundamental issues, the first being a trench, conduit or aerial pole route is required regardless of whether a 25 pair or 2400 pair cable is placed. From this it is obvious the greater the customer density the more customers that can be served along a feeder or distribution cable route. Therefore, customer density ultimately determines how many customers or loops there are over which to

spread the cost of digging the trench, and or placing conduit or placing aerial pole line.

Customer density also drives the unit cost of other equipment components associated with loops. Loop components such as Serving Area Interfaces (SAIs) (the point of interconnection between feeder and distribution cables), Digital Loop Carrier (DLC) devices, Drop Terminals for example, are all similarly impacted by customer density and exhibit lower per unit costs as customer density increases.

2. Distance - The distance of a given customer location from the central office directly increases loop costs as the distance increases. This relationship results from the obvious need to place more cable, trenches, conduit and or aerial pole lines as the distance or length of the loop increases. As distance increases it generally increases the need for, and overall cost of, maintenance. Assuming constant customer density, longer cables have more splice points and resulting exposure to risk. Greater number of splice points means there are more areas for possible failure due

to lightning, water, rodents, vandalism, and accidents.

3. Terrain - The type of terrain in which cable is placed impacts both the cost of the initial cable placement and the maintenance of the cable. The cost of below-ground cable construction increases as the presence and hardness of rock increases. Terrain factors such as the water table, trees, mountains, all affect both the initial construction cost of loops and subsequent maintenance expense.

4. Weather - The extremes of weather affect the cost of maintaining cable and therefore figures significantly into the type of cable placed (buried, aerial or underground). The cost of maintaining aerial plant in geographic areas which frequently experience ice storms or tropical hurricanes is certainly greater than those areas that seldom encounter these conditions.

5. Local Market Conditions - Issues such as local zoning laws requiring below-ground plant, screening and landscaping around SAI and DLC sites, construction

permits and restrictions, heavy presence of concrete and asphalt, traffic flows, and local labor costs, all impact the construction and maintenance costs of loop plant and will vary between locations.

Sprint's use of the BCPM in conjunction with Sprint-Florida-specific inputs allows the wire-center specific cost estimates to reflect the geographic specific impacts of all of the issues discussed above.

**4-Wire Analog Loop**

Q. How were the cost of 4-Wire Analog loops developed?

A. The wire-center specific monthly recurring costs for unbundled 4-wire analog loops is contained in filing Volume I, tab Loop along with associated narrative description and inputs. As explained in the narrative provided, the 4-Wire loop cost is developed using the 2-Wire loop cost study results explained above. To account for the increased cost of two copper pairs for those 4-Wire loops served on copper, the 2-Wire copper investment was doubled. No other adjustments were necessary. The 4-Wire analog loop cost study results, descriptive narrative and workpapers are filed in Volume I, tab Loop.

**2-Wire ISDN/IDSL Loop**

Q. Does the cost of unbundled 2-Wire ISDN/IDSL loops vary from 2-Wire voice grade loops?

A. Yes. The cost of line cards needed for 2-Wire ISDN/IDSL loops is greater than those required for 2-Wire voice grade loops. Additionally, for those loops served on fiber fed DLCs there is increased bandwidth requirements for the 2-Wire ISDN/IDSL loops over that required for 2-Wire voice grade loops. Sprint has acknowledged these two necessary cost impacts through the development of a BRI ISDN/IDSL cost additive. This cost additive is filed in Volume I, tab ISDN/IDSL Loop, including narrative description and calculations. The calculated cost additive is then added to the applicable wire-center specific cost of unbundled 2-Wire voice grade loops to arrive at the monthly recurring cost for 2-Wire ISDN/IDSL loops. The 2-Wire ISDN/IDSL loop additive cost study results, descriptive narrative and workpapers are filed in Volume I, tab ISDN/IDSL Loop and Exhibit KWD-3 attached.

**2-Wire xDSL-Capable Loop**

Q. Does the cost of 2-Wire xDSL-Capable loops differ from the cost of 2-Wire voice grade loops?

A. No. The forward-looking network design used within BCPM to develop the 2-Wire voice grade loop is also capable of supporting xDSL service for those loops served on copper. The forward-looking network design is free from any load coils, repeaters or excess bridged taps that would otherwise inhibit xDSL technology on those copper loops. The 2-Wire xDSL capable loop monthly recurring costs are identical to the 2-Wire voice grade costs. However, as explained in Mr. McMahon's testimony, the FCC has allowed ILECs to charge for the conditioning of copper loops in the embedded network so as to enable their use for xDSL technology. In accordance with the FCC Order's directive, Mr. McMahon's testimony sponsors the loop conditioning non-recurring charges that may apply on 2-Wire xDSL-Capable loops.

**4-Wire xDSL-Capable Loops, 4-Wire 56 kbps Loops, 4-Wire 64 kbps Loops**

Q. How were the costs for these 4-Wire loop types developed?

A. As explained for 2-Wire xDSL capable loops above, the forward-looking network design used for 4-Wire analog loops requires no further adjustment for these additional 4-Wire loop types (4-Wire xDSL assumed to be

provisioned on copper only). The monthly recurring costs for these 4-Wire loop types is the same as the cost of the 4-Wire analog loops and therefore no separate cost study is necessary. As with 2-Wire xDSL loops some loop conditioning NRCs may apply as explained in Mr. McMahon's testimony.

**DS-1 Loops**

Q. How were the costs for DS-1 loops developed?

A. The cost for DS-1 loops was developed in a similar fashion as described for the 2-Wire ISDN/IDSL loop above. The underlying loop costs for the unbundled DS-1 loops is the same as the 4-Wire unbundled loops. However, a cost additive is necessary to account for the additional line card costs at the central office and customer premise. The calculation of this DS-1 cost additive is explained and shown in filing Volume I, tab Loop documentation. The calculated cost additive is then added to the applicable wire-center specific cost of unbundled 4-Wire voice grade loops to arrive at the monthly recurring cost for DS-1 loops.

**High Capacity Loops (DS3, OC3, OC12, OC48)**

Q. Please describe the cost study process for High Capacity DS-3 unbundled loops.

A. The cost study results, narrative and workpapers for DS-3 unbundled loops is filed in Volume III, tab High Capacity Loops. A full description is contained in that documentation and I will summarize here. In order to model the cost of fiber facilities associated with DS3 loops, the existing DS3 customers in Florida were geo-coded into Sprint's Loop Cost Model (SLCM). This allowed SLCM to model the fiber cable in the feeder and distribution cable plant associated with DS3 customer locations. All of the necessary SLCM inputs related to installed fiber cable costs are the same as previously discussed for other loops types. The deaveraged fiber costs by wire center is shown in Volume III, tab High Capacity Loops. Mr. Dunbar's testimony describes the SLCM network design and model calculations created for this purpose.

The fiber optic terminal costs necessary to provide DS3 unbundled loops was computed on a deaveraged bandwidth basis so as to recognize the effect of varying demand at specific customer locations. The quantity of DS3 demand

requested at specific customer locations drives the correct economic decision as to what fiber optic terminal size to place e.g. OC3, OC12 or OC48 terminals. In general, as demand increases it makes economic "least cost" sense to place larger terminals. Based on an analysis of the economic breakpoints of terminal costs, the DS3 terminal costs were modeled using an OC3 terminal for DS3 demand of 2 or less, OC12 terminal for DS3 demand of 3-9 (one terminal) and 10-18 (two terminals) , and OC48 terminals for demand of 19 or greater. The DS3 cards are costed on a stand-alone basis so they can be logically matched with order quantities.

Q. Please describe the cost study process for High Capacity OC3, OC12 and OC48 unbundled loops.

A. The cost study results, narrative and workpapers for DS-3 unbundled loops is filed in Volume III, tab High Capacity Loops. A full description is contained in that documentation and I will summarize here. The cost of fiber cable facilities for unbundled OC3, OC12 and OC48 loops is the same as used for the unbundled DS3 loop study described above. The corresponding OC level terminal costs for each OC level unbundled loop are broken out between common terminal costs and plug-in DS3

level card costs. This will allow the CLEC customers to manage their card costs to best match their bandwidth needs.

**Dark Fiber - Loop and Transport**

Q. How was the dark fiber - loop cost study performed?

A. The dark fiber - loop cost study results, narrative and workpapers are filed in Volume III, tab Dark Fiber. A full description is contained in that documentation and I will summarize here. The cost of fiber cable was developed in SLCM using the same inputs as described for all previous unbundled loop types. Mr. Dunbar's testimony describes the SLCM network design and model calculations created for this purpose. The dark fiber - loop costs are calculated in two distinct components being, feeder and distribution. This is logical in that the availability of dark fiber will be much greater in the feeder portion of the network and cost of feeder would generally be lower.

The dark fiber - loop feeder result by wire center is calculated based on the per fiber cost of feeder routes created in SLCM to service existing DS3 customer locations and forward-looking DLC sites. The dark fiber

- loop distribution cost is the same as calculated by wire center for DS3 unbundled loops and described above.

Q. Please describe the dark fiber - interoffice facilities.

A. The dark fiber - interoffice facilities cost study results, narrative and workpapers are filed in Volume III, tab Dark Fiber. A full description is contained in that documentation and I will summarize here. The cost of fiber cable was developed in SLCM using the same inputs as described for all previously described unbundled loop types. Mr. Dunbar's testimony describes the SLCM network design and model calculations created for this purpose.

The first step in the dark fiber - interoffice facilities cost study was to analyze Sprint's Florida-specific interoffice transport routes to determine the number of fiber strands required to the bandwidth requirements on any given route. Based on this analysis it was determined that three differing levels of DS3 demand yielded three breakpoint levels of fiber cable strand needs e.g. 1-23 - DS3 quantities = 6 fiber strands, 24-99 - DS3 quantities = 10 fiber strands and 100 or more DS3 quantities = 26 fibers. A minimum fiber

cable size of 36 fibers is assumed based on Sprint's network planning practices.

Using the actual DS3 demand for each interoffice route the SLCM is input for the number of lit fiber strands necessary to meet that route's bandwidth requirements in accordance with the 6, 10 and 26 breakpoints just described. At this point, the fiber cable strands for interexchange bandwidth requirements is added in SLCM. The IX fiber routes follow existing DLC fiber feeder and DS3 fiber distribution to the full extent possible so as to result in maximum degree of cable structure sharing between loop and interoffice facilities. These calculations are performed for each wire center to produce deaveraged dark fiber - interoffice facilities costs.

**Sub-Loop Elements**

Q. How was the sub-loop cost study performed?

A. The sub-loop cost study results, narrative and workpapers are filed in Volume II, tab Sub-Loops. A full description is contained in that documentation and I will summarize here. Given the infancy and uncertainty of sub-loop unbundling, Sprint proposes the sub-loop

elements of feeder and distribution as the appropriate level of initial sub-loop unbundling. Should significant demand materialize for further unbundling it may be appropriate to establish even smaller sub-loop elements in the future. Due to a complete lack of industry standards, practices and experience with sub-loop unbundling, it is not possible to predict the forward-looking costs of establishing CLEC interconnection to these sub-loop elements with any certainty. Therefore, the interconnection costs to access sub-loop elements should be handled on an individual case basis until such time as standard network arrangements, ordering and provisioning practices have developed.

The cost of sub-loops' feeder and distribution is taken straight from the same BCPM runs used to generate the cost for all other unbundled loop types. The associated models, process and model inputs are the same as previously described.

**Packet Switching**

**Q. Does Sprint's filing contain a cost study for unbundled packet switching?**

A. No. Sprint's filing in this proceeding does not include a cost study or proposed rate for the packet switching unbundled element. Section 51.319(c)(3)(B) requires an incumbent LEC to provide unbundled packet switching only if the following conditions are satisfied:

"(i) The incumbent LEC has deployed digital loop carrier systems, including but not limited to, integrated digital loop carrier or universal digital loop carrier systems; or has deployed any other system in which fiber optic facilities replace copper facilities in the distribution section (e.g., end office to remote terminal, pedestal or environmentally controlled vault);

(ii) There are no space copper loops capable of supporting the xDSL services the requesting carrier seeks to offer;

(iii) The incumbent LEC has not permitted a requesting carrier to deploy a Digital Subscriber Line Access Multiplexer in the remote terminal, pedestal or environmentally controlled vault or other interconnection point, nor has the requesting carrier obtained a virtual collocation arrangement at these subloop interconnection points as defined by 51.319(b); and

(iv) The incumbent LEC has deployed packet switching capability for its own use."

Sprint does not, and has no current plans, to deploy DSLAMs in its DLCs. Therefore, it cannot, and has no obligation under the FCC's rules, to provide packet switching as a UNE. When and if deployment of DSLAMs in a DLC becomes economically feasible, and Sprint actually deploys that functionality, it will develop and make available to requesting carriers the packet switching unbundled network element.

**Issue 12 - UNE Combinations**

**Without deciding the situations in which such combinations are required, what are the appropriate recurring and non-recurring rates for the following UNE combinations:**

**"UNE platform" consisting of: loop (all), local (including packet, where required) switching (with signaling), and dedicated and shared transport (through and including local termination);**

**UNE-P**

Q. Please describe Sprint's cost study for combined loop, switch and transport (UNE-P).

A. Sprint's cost study, detailed narrative and workpapers for UNE-P 2-Wire loops and switch ports is filed in Volume I, tab UNE-P. Sprint's UNE-P cost study reflects the network economies available through use of integrated DLC (IDLC) that is possible when loop and switch UNEs are sold on a combined basis. Sprint's UNE-P cost study adjustments reflecting the cost reducing effects of IDLC are explained in detail in the cost study narrative. The BCPM inputs are the same as for UNE 2-Wire loop with the exception of the DLC inputs as mentioned above. Sprint witness, Mr. Holmes addresses in his testimony the switch port cost reductions possible under a UNE-P arrangement. Mr. Holmes also addresses the non-recurring charge for switch translations work necessary to meet CLEC specific trunk routing requests. The dedicated or common transport component of UNE-P is not reflected in Sprint's cost study output because it is not possible to predict where the CLEC will request its traffic to be routed (Sprint's dedicated transport cost study has approximately 500 point-to-point routes). However, both the dedicated transport and common

transport UNE options are available as part of UNE-P and the cost of the transport ordered by the CLEC would simply be added to the cost of UNE-P in Sprint's filing Volume I. The testimony of Mr. McMahon addresses the non-recurring charges associated UNE-P.

**UNE-P 2-Wire ISDN/ISDL**

Q. Are there similar adjustments need to reflect the cost of combined 2-Wire ISDN/IDSL loops and switch ports?

A. No. The integrated GR303 switch and DLC network configuration that yields cost savings for combined POTS loop and switch ports is not available for ISDN/ISDL. Therefore, the 2-Wire ISDN/ISDL combined loop and switch port combination cost is simply the sum of the parts.

**Enhanced Extended Link (EEL)**

Q. Please describe Sprint's cost study for Enhanced Extended Link (EEL).

A. Sprint's cost study, detailed narrative and associated workpapers for EEL are filed in Volume I, tab EEL. Depending on the transport routes requested by the CLEC there are hundreds of possible combinations of loop and transport routes possible. Sprint has not attempted to list all of these possible combinations, but has simply shown the additional costs for multiplexing equipment

that are needed for DSO to DS1 and DS1 to DS3 EEL combinations in the EEL Monthly Recurring Charges table in Volume I. The development of these simple multiplexing cost additives is provided in filing Volume I along with illustrative drawings and descriptions. Mr. McMahon's testimony addresses any applicable non-recurring charges associated with EELs.

Q. Does this conclude your testimony?

A. Yes.

**BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

**SUPPLEMENTAL DIRECT TESTIMONY**

**OF**

**Kent W. Dickerson**

**Q. Please state your name and business address.**

A. My name is Kent W. Dickerson. My business address is 6360 Sprint Parkway, Overland Park, KS 66251. I am employed as Director - Cost Support for Sprint/United Management Company.

**Q. Are you the same Kent W. Dickerson that presented prior direct testimony in this case?**

A. Yes, I am.

**Q. What is the purpose of your supplemental testimony?**

A. The purpose of my supplemental testimony is to introduce and support Exhibit KWD-4.

Exhibit KWD-4 is a new cost study that reflects the incremental costs associated with providing a fully functional 56/64Kbps DS-0 loop. The proprietary copy

contains Sprint Restricted material costs. The cost study accounts for the equipment necessary for Sprint to provision a 56/64Kpbs DS-0 circuit. The resulting cost from the study has been added to the 4-wire loop rate found in Sprint's Price List that is included with the Additional Supplemental Direct Testimony of J. Sichter as Exhibit JWS-11.

**Q. What is the result of this cost study?**

A. The new study increases the DS-0 recurring rates by $75.37 per month.

**Q. Briefly summarize the cost study methodology.**

A. To determine the TELRIC of DS-0 loops, the investment was identified for providing DS-0 on copper and on loops served through DLCs. Cards designed to provide 56/64 Kbps of bandwidth are required in the CO, while equipment at the customer site is required to decode the digital signal and pass it to the customer. The cost of the CO and customer premise location equipment is added to the cost of installation and engineering to derive investment. When a DLC is used to serve the customer, an offset equal to a voice grade card is

applied as BCPM assumes that a voice grade card is used in the DLC. Various factors are then applied to the investment to account for utilization, maintenance, and power. For copper loops and loops served through DLCs, annual cost is calculated by multiplying the Utilized Investment with Power per DS-0 by the appropriate Annual Charge Factor (as described in the Other Direct and Common Cost Study). Monthly cost is the annual cost divided by twelve. From BCPM, the percentages of loops served on copper and those served through DLCs are obtained. The monthly cost for each type of loop served is then weighted by percent of lines served by copper, large DLC, or small DLC. A weighted average cost additive is then derived from summing the three costs. When the additive is applied to the 4-wire loop rate, the result is the monthly cost for a DS-0 56/64Kpbs loop.

**Q. Does this conclude your supplemental testimony?**

A. Yes.

**BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

**ADDITIONAL SUPPLEMENTAL DIRECT TESTIMONY**

**OF**

**Kent W. Dickerson**

**Q. Please state your name and business address.**

A. My name is Kent W. Dickerson. My business address is 6360 Sprint Parkway, Overland Park, KS 66251. I am employed as Director - Cost Support for Sprint/United Management Company.

**Q. Are you the same Kent W. Dickerson that presented prior direct testimony in this case?**

A. Yes, I am.

**Q. What is the purpose of your additional supplemental testimony?**

A. The purpose of my additional supplemental testimony is to introduce and support Exhibit KWD-5, which pertains to cost study changes associated with High Capacity loops.

**Q. What changes have been made to the high capacity loop costs provided in Sprint's previous filing?**

A. Minimal changes have been made to Sprint's investment calculations for DS3 level loops; however, several changes have been made to the DS3 unit cost calculation which results in lower costs. The following details the changes made from Sprint's previous filing:

- Removed inadvertent double application of common cost factor.
- Modified cost summary schedule to reflect monthly rates.
- Simplified terminal cost calculations were used which reflect a standard DS3 terminal cost. A composite DS3 cost was derived using costs for OC3, OC12, and OC48 configurations. The frequency of occurrence and utilization for each configuration were used in developing a standard cost.
- Added a spare card to the OC12 and OC48 terminal configurations, and removed an unnecessary OC48 common card.
- Established a per DS3 cost for fiber that reflects sharing of DS3s for each terminal configuration. The cost for fiber was calculated using actual high

capacity loop customer locations and calculating the costs to serve each location as discussed in the Direct Testimony of Jim Dunbar. The results were sorted by terminal size, summed, and a composite fiber cost per DS3 developed using a methodology similar to the DS3 terminal cost calculations described above. This would only apply to DS3 circuit purchases, not to terminal capacities of OC3 and higher which require dedicated fiber.

- Costs for High Capacity circuits OC3 and above were added, and reflect a cost for one end of the circuit. Note: Costs for both ends will simply be twice the single-ended rate. Facility costs using the Dark Fiber UNE rates must be added to these costs.

KWD-5 also includes a fiber cost allocation for DS3 level high capacity circuits to simplify the cost summary schedule, and to ensure that DS3 costs reflect appropriate levels of fiber sharing when single circuits are purchased. Sprint's previous methodology resulted in unique costs for each additional DS3, which would have resulted in an unworkable billing and tracking arrangement. The revised methodology provides more reasonable and consistent cost results.

KWD-5 includes cost study development and associated documentation for all high capacity loops; it replaces all documentation associated with High Capacity loops from Sprint's May 1st filing.

**Q. What new additional high capacity loop costs is Sprint proposing?**

A. In addition to the DS3 circuit cost changes described previously, my supplemental testimony also proposes new high capacity loop cost options for OC3 and higher level optical interfaces that were previously not considered. A complete revised list of UNE Pricing including these new items will be provided in the supplemental testimony of Sprint's witness, Mr. James W. Sichter. The unique card and optical termination configurations required for OC3, OC12, and OC48 high capacity loops are shown in the worksheets of exhibit KWD-5. At a minimum, CLECs must purchase one terminal end of each high capacity circuit with a bandwidth of OC3 and higher. Terminal sizing will be based on total circuit requirements. Since these are optical level interfaces, CLECs will be required to purchase

dark fiber in addition to the terminal as shown in Sprint's pricing schedule.

Q. **Are there constraints that would apply to CLECs who wish to provision one end of a high capacity circuit using their own equipment?**

A. Yes. To ensure proper operation of the total circuit, CLECs who elect to provision one end of the circuit using their own terminal must purchase Sprint-approved equipment that is compatible with the corresponding Sprint-provided terminal. Sprint will coordinate with CLECs who choose this option to ensure compatibility.

Q. **Does this conclude your supplemental testimony?**

A. Yes.

MS. KEATING: Next is Sprint's Witness Sichter.

CHAIRMAN DEASON: Witness Sichter's prefiled testimony shall be inserted without objection.

MS. KEATING: And Witness Sichter has one exhibit for this phase, which is JWS-12.

CHAIRMAN DEASON: That exhibit shall be identified as Exhibit 46, and without objection shall be admitted.

(Exhibit Number 46 marked for identification and entered into the record.)

**BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

**DIRECT TESTIMONY**

**OF**

**JAMES W. SICHTER**

**Q. Please state your name and business address.**

A. My name is James W. Sichter. I am Vice President-Regulatory Policy, for Sprint Corporation. My business address is 901 E. 104th Street, Kansas City, Missouri.

**Q. Please describe your educational background and work experience.**

A. I hold a B.A. in Economics from the University of Kentucky (1968), a Masters in Economics from Wright State University (1972), and a Masters in Public Administration from the University of Missouri-Kansas City (1979). I have worked for Sprint since 1973. Prior to my current position, I have held several positions with Sprint in the areas of costing and regulatory policy, including cost analyst, revenue analyst, corporate strategic planning analyst, staff economist, manager-policy research, director-

regulatory and industry planning, director-service costs, director-access planning, and assistant vice president-regulatory and industry planning.

In my current position I have responsibility for developing state and federal regulatory and legislative policy for Sprint's Local Telecommunications Division. I also serve on the Executive and the Advisory Committees of the Michigan State University Institute of Public Utilities. In addition, I have been a member of the faculty of the Michigan State University -- NARUC Annual Studies Program since 1985, where I have taught course segments on a variety of areas, including access charges, jurisdictional separations, competition, the Telecom Act of 1996, and most recently, Universal Service and Access Charge Reform. In the past, I served on a number of United States Telephone Association committees, including chairing the USTA Policy Analysis Committee (1986-1989), Price Cap Team (1987-1989), and Part 69 Concepts Committee (1989-1991).

**Q. Have you previously testified before state Public Service Commissions?**

A. Yes. I have previously testified before the Florida, Iowa, Kansas, Missouri, and Nevada state commissions.

**Q. What is the purpose of your testimony?**

A. The purpose of my testimony is to address on behalf of Sprint Issues 1, 2, 4, 6, 9, 12, and 13 of the Tentative List of Issues.

**Q. In addition to your testimony, which portions of Sprint's cost study filings are you supporting?**

A. Exhibit KWD-2 in the testimony of Sprint witness Kent Kicerson identifies the portions of Sprint's cost study filings that I support.

**Issue 1: What factors should the Commission consider in establishing rates and charges for UNEs (including deaveraged UNEs and UNE combinations)?**

**Q. What is the appropriate basis for the pricing of unbundled network elements?**

A. Unbundled network element (UNE) rates should be based on forward-looking economic costs. This is not only the economically appropriate basis for the pricing of UNEs, it is required by Section 252 (d)(1) of the Telecom Act of 1996 and the FCC rules implementing that section of the Act. Where economic costs vary significantly, prices should be deaveraged.

**Q. What are the requirements of Section 252(d)(1) of the Telecom Act of 1996?**

A. Section 252(d)(1) sets forth the pricing standards for Interconnection and Unbundled Network Elements. Specifically, it requires that rates for these elements

(A) shall be-

(i) based on the cost (determined without reference to a rate-of-return or other rate-based proceeding) of providing the interconnection or network element (whichever is applicable), and

(ii) nondiscriminatory, and

(B) may include a reasonable profit

**Q. What rules did the FCC adopt implementing that section of the Act?**

A. In its August 8, 1996 First Report and Order in Docket 96-98, the FCC concluded that the Act requires that prices for UNEs be set at forward-looking economic costs. Specifically, the FCC adopted a version of total service long run incremental costs (TSLRIC) as the methodology to be used in determining the costs of UNEs. The FCC refers to its methodology as Total Element Long Run Incremental Costs (TELRIC), nomenclature that reflects that the methodology is applied to the costing of discrete network elements or facilities, rather than the cost of a service or services provided over that facility.

The FCC's TELRIC methodology is set forth in Part 51.505(b) of its Rules:

"Total element long-run incremental cost. The total element long-run incremental cost of an element is the forward-looking cost over the long run of the total quantity of the facilities and functions that are directly attributable to, or reasonably identifiable

as incremental to, such element, calculated taking as given the incumbent LEC's provision of other elements.

(1) Efficient network configuration. The total element long-run incremental cost of an element should be measured based on the use of the most efficient telecommunications technology currently available and the lowest cost network configuration, given the existing location of the incumbent LEC's wire centers.

(2) Forward-looking cost of capital. The forward-looking cost of capital shall be used in calculating the total element long-run incremental cost of an element.

(3) Depreciation rates. The depreciation rates used in calculating forward-looking economic costs of elements shall be economic depreciation rates."

**Q. Are there costs, other than the TELRIC costs described above, that should be included in the forward-looking economic costs of unbundled network elements?**

A. Yes. The FCC's currently effective Rules (Part 51.505 (a)) define the forward-looking economic cost of an unbundled network element to be the sum of TELRIC costs and "...a reasonable allocation of forward-looking common costs..."

**Q. Why are forward-looking economic costs the economically appropriate basis for pricing unbundled network elements?**

A. A fundamental objective of the Telecom Act of 1996 is to open all telecommunications markets to competition. Congress recognized that there are substantial barriers to entry into the local exchange market. In particular, the local exchange network is highly capital intensive. Facility-based entrants are confronted by the formidable hurdle of having to devote substantial capital resources, over an extended period of time, to construct a local network prior to winning any customers or generating any revenues.

Section 251 of the Act provides new entrants alternative avenues for entering the local exchange market. First, new entrants can simply resell the services of the incumbent. In other words, they can win customers and gain market share without having to construct any of their own network facilities. Second, new entrants can obtain unbundled network elements from the incumbent. This not only provides new entrants more flexibility in creating services (e.g.,

the ability to provide expanded local calling areas), but also provides a critical pricing signal for a new entrant's "make or buy" decision in acquiring network facilities. Simply put, new entrants will be incented to build facilities where they can do so at lower costs than they would pay the incumbent for the equivalent network element or elements, and to buy unbundled elements where the incumbent's prices for those elements are lower than the new entrant's cost of constructing those facilities.

The forward-looking cost standard for unbundled network elements provides a measure of the costs that would be incurred by an efficient supplier to provide a particular network element. Correspondingly, it will provide the appropriate marketplace signals to competitors, creating an incentive for them to construct their own facilities when they can do it more efficiently than the incumbent LEC, and discouraging uneconomic investment where they cannot provide the facilities at a lower cost than the incumbent.

Conversely, to the extent that unbundled network element prices deviate from economically efficient

levels, they will distort infrastructure investment decisions of the new entrants. If network elements are priced above economic costs, it will provide an incentive for competitors to deploy their own facilities, even though in actuality the incumbent can provide those facilities at lower costs. On the other hand, if network elements are priced below economic costs, it will discourage competitors from deploying facilities even though they could do so at a cost that is lower than the incumbent's economic costs.

**Q. What is the appropriate basis for pricing non-recurring charges for unbundled network elements?**

A. Non-recurring charges should also be based on forward-looking costs. In the first instance, the Act requires unbundled network elements to be based on costs. Logically, the same cost standard that applies to the recurring costs of those elements should also apply to the non-recurring costs associated with provisioning those elements. Moreover, non-recurring costs, as well as recurring costs, enter into competitors' decisions to construct their own facilities or to buy unbundled elements from the incumbent LEC. As discussed above, the incumbent LEC's prices should be based on economic

costs in order to provide the appropriate pricing signals for competitors in their "make or buy" decisions. The benefits of setting the recurring charge for unbundled network elements at forward-looking economic costs would be diminished or lost if non-recurring charges associated with those elements were not similarly based on forward-looking economic costs.

**Q. How should the forward-looking economic costs for non-recurring charges be determined?**

A. The forward-looking costs for non-recurring charges should reflect the costs that would be incurred in performing those functions in relation to the forward-looking network that is the basis for calculating the recurring costs and rates for the unbundled network element. Just like the recurring costs for an efficiently designed network based on current technology can differ from the embedded costs of the existing network, so can the non-recurring costs associated with provisioning elements in that forward-looking network differ from the non-recurring costs associated with provisioning elements in the existing network.

**Q. What is the relationship between the pricing requirements of the Telecom Act and rate deaveraging for unbundled network elements?**

A. As discussed above, the Telecom Act requires that the prices for unbundled network elements be cost-based, and the FCC Rules define cost-based to mean forward-looking economic costs (TELRIC plus a reasonable share of forward-looking common costs). However, the forward-looking costs of providing an element are not necessarily uniform throughout an incumbent LEC's service territory. For example, Sprint Witness Dickerson provides TELRIC costs for providing unbundled loops in each of Sprint-Florida's wire centers. Those costs, including an allocation of common costs, range from a low of $8.59 a month to a high of $149.06 a month, while the average in Sprint-Florida's serving area is $25.38. Although that average cost does, indeed, reflect TELRIC costs, it does not follow that pricing all unbundled loops in Sprint-Florida's serving area at the company-wide average forward-looking cost therefore meets the requirements of the Act. To do so would result in unbundled loops in the lowest cost areas being priced

almost three times their actual forward-looking costs, while unbundled loops in the highest cost areas would be priced at one-sixth of their forward-looking costs. Clearly, prices that deviate from costs by that magnitude do not meet the Act's requirement for cost-based rates nor do they provide the correct marketplace signals to competitors in their decision to build their own facilities or buy unbundled network elements from the incumbent. Thus, deaveraging of unbundled network elements is necessary to avoid the pricing distortions inherent in rate averaging.

**Q. What do the FCC's rules require in terms of rate deaveraging?**

A. In Section 51.507(f) of its Rules, the FCC requires that unbundled network elements be geographically deaveraged into at least three cost-related zones. These can be either the zones established for the deaveraging of interstate transport rates, or zones determined by the state commission.

**Q. What factors should the Commission consider in establishing rates for UNE combinations?**

A. As discussed above, the governing FCC rules require UNE rates to be based on forward-looking economic costs. That same criteria is applicable to combinations of unbundled network elements. As a general principle, the rate for a UNE combination should be the sum of the rates for those UNE elements that comprise that combination. However, there are occasions where simply summing those individual UNE costs is inappropriate. For example, the local switching UNE includes the cost of a line card. In the case of unbundled loops provided using a Digital Loop Concentrator (DLC), two line cards are included in the cost of the unbundled loop-one at the DLC and one at the central office terminal. When loop and switching are provided in combination, only one line card is required. If the UNE combination of loop and switching were priced at the sum of the individual UNEs, CLECs would be effectively paying for three line cards, although only one line card would be used in provisioning that combination. Therefore, the appropriate price for that UNE combination would be the sum of the loop and switching UNE rates, less the costs of two line cards. The purpose of this adjustment, and any deviations from the general principle that UNE combinations be priced at the sum

of the individual UNEs included in that combination, is to accurately reflect the actual forward-looking costs of that UNE combination.

**Q. Are there other factors the Commission should take into consideration in establishing rates for UNEs (including deaveraged UNEs and UNE combinations)? For example, incumbent LECs' retail rates are not typically cost-based, nor are they deaveraged to any great degree. Should that be factored into a determination of the rates for unbundled network elements, including deaveraged rates and rates for UNE combinations?**

A. No. Although Sprint fully appreciates the differences between existing retail rate structures and levels and the rate levels and structures it is proposing for unbundled network elements, how these differences should be resolved is equally clear to Sprint. Consistent with the mandate of the Telecom Act of 1996, unbundled network elements should be priced at forward-looking economic costs. To the extent that retail rate levels or rate structures are inconsistent with unbundled network element prices, those retail rates should be restructured to bring them into

consistency with unbundled network prices. Alternatively stated, the answer lies in moving retail rates toward economic cost levels, and not in introducing distortions in the pricing of unbundled network elements to bring them into conformance with the uneconomic pricing of incumbent LEC retail services.

**Issue 2(a): What is the appropriate methodology to deaverage UNEs and what is the appropriate rate structure for deaveraged UNEs?**

**Q. What general principles should the Commission apply in determining the degree to which rates for unbundled elements be deaveraged?**

A. As a general principle, rates should be deaveraged to the degree necessary to achieve a result wherein the averaged rate does not deviate significantly from the actual forward-looking cost of providing that element anywhere within the defined zone. While it is impossible to quantify with absolute precision what "significant" deviations of rates from costs are, Sprint believes that differences between rates and costs in excess of 20% would be of sufficient

magnitude to potentially distort competitors' investment decisions. Using that criteria, each incumbent LEC should be required to construct a deaveraged rate schedule such that the average rate in each zone is no more than 20% higher or 20% less than the forward-looking cost of providing that element.

**Q. What specific criteria should underlay this Commission's requirements for incumbent LECs to deaverage their unbundled network elements?**

A. Sprint would advocate the following criteria:

First, as discussed above, prices for unbundled network elements should be deaveraged to the degree necessary to avoid significant deviations between the rate that is charged for an unbundled network element and the actual forward-looking costs of providing that element in a specific geographic area. This means that the degree of deaveraging can vary both across elements and among incumbent LECs. For example, the costs of providing some unbundled network elements in different geographic areas simply do not vary significantly. There is little or no economic benefit, therefore, in deaveraging the rates for those

elements. On the other hand, the forward-looking economic costs of other elements can vary significantly, as evidenced by the example for unbundled loops cited above. Clearly, those rates should be deaveraged into a sufficient number of zones such that the rate for each zone does not significantly deviate from the actual forward-looking costs of providing that element for any area included in that zone. As such, the number of zones appropriate for the deaveraging of one element is not necessarily the appropriate number of zones for some other element, where the disparity in costs across geographic areas might be substantially more or less.

Moreover, the number of zones appropriate for an unbundled element of one incumbent LEC is not necessarily the appropriate number of zones for that same element provided by another incumbent LEC, where, again, the disparity in costs of providing that element could be substantially more or less.

Second, the degree of rate deaveraging should be based on both administrative considerations and a realistic assessment of the extent to which limited rate averaging would not materially adversely impact

competition and investment decisions. At the extreme, for example, unbundled loop costs differ almost on a customer by customer basis. Customer, or location, specific unbundled loop rates may meet the theoretical ideal of cost-based rates, but they would equally be an administrative nightmare, for both the incumbent LEC as well as competitors ordering unbundled loops. Nor is that degree of deaveraging necessary to provide economically correct pricing signals to new entrants. Typically, a competitor enters the local market with the intention of serving all or a substantial segment of that market, and not just one or two customers.

Some degree of averaging of unbundled element rates does not necessarily distort competitors' investment decisions for several reasons. First, the deviations, both positive and negative, between the averaged rate and the actual forward-looking costs will to some extent be offsetting. Second, and most important, if rates are deaveraged such that there are not significant differences between the average rate and the actual forward-looking costs, the impact of that rate averaging will by definition be minimal and is unlikely to have a material impact on a competitor's investment decisions.

Third, Sprint proposes that each incumbent develop forward-looking costs, for each UNE to be deaveraged, on a wire center basis. Using the wire center as the unit of cost analysis is reasonable for a number of reasons. The wire center generally conforms to the market definitions and plans of new entrants, and therefore, as previously discussed, averaging costs at this level is not likely to distort their entry or marketing decisions. Moreover, deaveraging costs below the wire center entails not only more complex cost modeling, but would impose significant additional costs on both incumbent LECs and competitors in administering that rate structure.

Fourth, incumbent LECs should be required to group wire centers into zones, and develop rates based on the weighted average cost of the UNE for all wire centers within each zone, subject to the constraint that the average rate for a UNE zone should not deviate by more than 20% from the wire center forward-looking cost of that UNE for any wire center included in that zone. However, it would not be unreasonable to permit a wider range of deviation in the highest cost zone, recognizing the larger cost variances in the

highest cost areas and the undesirability of creating an excessive number of zones.

Sprint's proposed deaveraging methodology is intended to provide a balance between cost-based rates and administrative ease – both for incumbent LECs and new entrants

**Issue 2(b): For which of the following UNEs should the Commission set deaveraged rates?**

**(1) loops (all)**

**(2) local switching**

**(3) Interoffice transport (dedicated and shared)**

**(4) other (including combinations)**

**Q. What unbundled network elements should be deaveraged?**

A. Based on the cost analysis provided by Sprint witnesses, the forward-looking economic costs for unbundled loops, subloops, local switch ports and local switching usage, tandem switching, common and dedicated transport, and dark fiber all vary significantly by geographic area. Therefore, Sprint believes that the rates for these elements should be deaveraged.

Sprint has not found significant geographic cost differences in providing any other unbundled network element, at least for its service area. Moreover, Sprint does not believe there are such cost differences in the nonrecurring elements. Therefore, Sprint does not recommend that either non-recurring charges or the recurring rates for network elements delineated above be deaveraged.

**Q. What unbundled network element combinations should be deaveraged?**

A. The "UNE platform" (UNE-P) and enhanced extended link (EEL) combinations include unbundled elements, such as loops and transport, that exhibit significant geographic cost variances and, therefore, should be geographically deaveraged. Correspondingly, those UNE combinations should also be deaveraged.

**Issue 4: (a) Which subloop elements, if any, should be unbundled in this proceeding, and how should prices be set?**

**(b) How should access to such subloop elements be provided, and how should prices be set?**

**Q. How does the FCC define the subloop unbundled network element?**

A. In Section 51.319(a)(2) of its rules the FCC defines the subloop network element "…as any portion of the loop that is technically feasible to access at terminals in the incumbent LEC's outside plant, including inside wire. An accessible terminal is any point on the loop where technicians can access the wire of fiber within the cable without removing a splice case to reach the wire or fiber within. Such points may include, but are not limited to, the pole or pedestal, the network interface device, the minimum point of entry, the single point of interconnection, the main distribution frame, the remote terminal, and the feeder/distribution interface".

Because subloops are a newly defined network element, it is impossible to determine precisely what subloop elements CLECs will seek to obtain. It would, therefore, be an impossible task to identify and develop prices for every conceivable subloop element, nor is it a useful exercise to do so in the absence of demonstrated demand for those elements.

Sprint believes that the preponderance of demand for subloop elements will be for feeder or distribution plant. Therefore, Sprint has developed costs and proposed rates for these two components of the loop. To the extent that a CLEC requires different subloop elements, and it is technically feasible to provision such elements, Sprint will determine the rates for those subloop elements on an individual case basis, utilizing the TELRIC costing standard. If actual experience demonstrates widespread demand for subloop elements in addition to feeder and distribution, Sprint will develop (and incumbent LECs generally should be required to develop) generic rates for such subloop elements.

Rates for subloop elements should be based on the same principles as all other UNEs: that is, subloop elements should be based on TELRIC, and should be deaveraged to the extent they exhibit significant geographical differences.

**Q. How should access to such subloops be provided, and how should they be priced?**

A. As discussed in Mr. Dickerson's testimony, the lack of experience and standardized practices for interconnection with subloops renders it impossible for Sprint to develop a generic forward-looking cost for subloop interconnection. Therefore, Sprint proposes to price this interconnection on an individual case basis. As Sprint gains experience and when industry standards and practices are developed, Sprint anticipates it will be feasible to establish generic rates for subloop interconnection.

**Issue 6: Under what circumstances, if any, is it appropriate to recover non-recurring costs through recurring rates?**

**Q. Do the FCC rules allow for the recovery of non-recurring costs through recurring rates?**

A. Yes. Although the general principle is that recurring costs should be recovered by recurring rates, Section 51.507(e) of the FCC Rules permits deviations from that general principle:

"(e) State commissions may, where reasonable, require incumbent LECs to recover nonrecurring costs through recurring charges over a reasonable period of time.

Nonrecurring charges shall be allocated efficiently among requesting telecommunications carriers, and shall not permit an incumbent LEC to recover more than the total forward-looking economic cost of providing the applicable element."

**Q. Does Sprint propose in this filing to recover any non-recurring costs through recurring rates?**

A. No.

**Q. Under what circumstances would it be appropriate to recover non-recurring costs through recurring rates?**

A. To the extent that high non-recurring charges are a significant barrier to competitive entry, it may be appropriate to require at least a portion of those non-recurring charges through recurring rates. However, Sprint doesn't believe that the non-recurring charges it is proposing in this proceeding warrant such treatment.

Absent compelling circumstances, Sprint believes that non-recurring costs should be recovered through non-recurring rates. Requiring non-recurring costs to be

recovered through recurring charges raises a number of difficult policy and administrative issues. On the one hand, the incumbent LEC is financially exposed if the CLEC discontinues service before the non-recurring costs are fully recovered. On the other hand, the incumbent LEC could over-recover its non-recurring costs unless it tracked each service installation and reduced its recurring rate at the point where the non-recurring costs built into that recurring rate were fully recovered.

**ISSUE 9(a): What are the appropriate recurring rates (averaged or deaveraged as the case may be) and non-recurring charges for each of the following UNEs?**

**(1) 2-wire voice grade loop;**

**(2) 4-wire voice grade loop;**

**(3) 2-wire ISDN / IDSL loop;**

**(4) 2-wire xDSL-capable loop;**

**(5) 4-wire xDSL-capable loop;**

**(6) 4-wire 56 kbps loop;**

**(7) 4-wire 64 kbps loop;**

**(8) DS-1 loop;**

**(9) high capacity loops (DS3 and above);**

**(10) dark fiber loop;**

**(11) subloop elements (to the extent required by the Commission In Issue 4);**

**(12) network interface devices;**

**(13) circuit switching (where required);**

**(14) packet switching (where required);**

**(15) shared interofffice transmission;**

**(16) dedicated interoffice transmision;**

**(17) dark fiber interoffice facilities;**

**(18) signaling networks and call-related databases;**

**(19) OS/DA (where required).**

**Q. What are Sprint's proposed UNE rates?**

A. Sprint's proposed UNE rates are summarized in JWS Exhibit 1, "Network Element Price List-Sprint Florida". The proposed UNE rates were derived from the cost studies presented by the Sprint cost witnesses in this proceeding. The proposed rates are calculated as the sum of TELRIC costs plus allocated common costs.

**Q. Please describe how you developed the deaveraged rate bands in JWS Exhibit 1.**

A. The deaveraged rate bands were developed pursuant to Sprint's proposed criteria for deaveraging, as

discussed previously. First, wire center specific costs were developed for each element to be deaveraged. Second, the wire centers were then grouped or banded such that the actual cost of each wire center in the band does not deviate from the proposed rate in the band by more than 20%. In the case of a few elements, the several higher cost bands were combined; as explained below, combining these bands affected a small number of access lines and did not materially impact rates.

The derivation of the proposed bands are provided in JWS Exhibits 2-9. In each of those exhibits I have provided a summary of the number and percentage of access lines in each band, as well as the proposed rate for each band. These exhibits also list separately every wire center in each of the bands as well as the percent deviation between the wire center specific costs and the proposed rate for the band into which that wire center falls.

**Q. What is Sprint's proposed deaveraged rate structure for unbundled loops?**

A. Sprint's proposed deaveraged rate structure for unbundled loops is provided in JWS Exhibit 2. The proposed rate bands were developed consistent with the deaveraging criteria described above. Applying this methodology produced 9 rate bands for unbundled loops. Band 9 consisted of one wire center (Kenansville) with 771 lines. I grouped that wire center with band 8. The result was to increase the band 8 rate by less than 2%. With the rebanding, only the one wire center (Keanasville) does not meet the 20% deviation criteria.

JWS Exhibit 2 contains the proposed rates for analog 2-wire loops. The same bands were also used for analog 2-wire, 2-wire ISDN, 4-wire digital data, and DS1 loops. The rates for each of these four categories of loops were calculated by adding to the analog 2-wire rate for each band a uniform amount equal to the additional costs associated with provisioning each of these types of loops. The banded rates for these loops are provided in JWS Exhibit 1.

Sprint does not propose in this filing to deaverage the rates for high-capacity (DS3) loops. As explained by Sprint witness Dickerson, Sprint studied the costs

of fiber distribution plant. However, he was able to identify only a small number of instances where Sprint has deployed fiber in the distribution plant. Given the very small number of data points, it is not possible to develop a statistically valid study of the costs of fiber distribution by wire center. Sprint therefore proposes to use a simple average cost per loop as the rate for high capacity loops.

**Q. What is Sprint's proposed deaveraged rate structure for subloops?**

A. As discussed in my answer to Issue 4, Sprint proposes to develop generic rates for the feeder and distribution subloop elements. Sprint's proposed deaveraged rate structure for feeder and distribution is provided, respectively, in JWS Exhibits 3(a) and 3(b).

Strictly applying the 20% deviation criteria produced 9 rate bands for the feeder subelement. However, band 9 consisted of only one wire center (Kenansville), which has only 771 access line. Rather than maintaining a rate band with only one small wire center, I included Kenansville in rate band 8. The

result is to increase the proposed rate in band 8 by less than 5%. With the exception of Kenansville itself, all wire centers in the new band 8 still meet the 20% deviation criteria.

Similarly, the initial banding, based on the 20% criteria, for unbundled distribution produced 9 rate bands. In this instance, band 9 consisted of 3 wire centers with a total of 2835 access lines. I included those wire centers in rate band 8. The result is to increase the proposed rate in band 8 by less than 5%. With the exception of the three wire centers in the original band 9, all wire centers in the new rate band 8 still meet the 20% deviation criteria.

JWS Exhibits 3(a) and 3(b) provide the proposed banded rates for analog 2-wire feeder and distribution. The same bands were used for the 4-wire feeder and distribution subloop elements. The rates for these two elements were calculated by adding to the respective 2-wire rate a uniform amount equal to the additional costs of provisioning these types of loops. The banded rates for the 4-wire feeder and distribution subloop elements are provided in JWS Exhibit 1.

**Q. What is Sprint's proposed deaveraged rate structure for local switching?**

A. Local switching is comprised of two distinct elements-usage and ports. The switch ports includes the fixed or per line cost associated with the provision of local switching, and therefore Sprint proposes that the port charge be assessed on a per line basis. The usage component includes that costs that are usage sensitive, and therefore Sprint proposes that these costs be recovered through a per minute of use charge.

The cost of a switch port for a PBX trunk is significantly more than the cost of a switch port for a basic line interconnection. Therefore, separate switch port rates were developed for each of these service types.

The proposed banded rates for line switch ports, PBX switch ports, and local switching usage are provided, respectively, in JWS Exhibit 4(a), 4(b) and 4(c). Applying Sprint's proposed deaveraging methodology results in 3 rate bands for both types of switch ports and 8 rate bands for local switching usage.

Band 3 for the line switch port element would have consisted of 3 wire centers that serve a total of 3077 access lines. These wire centers were consolidated into band 2. The new proposed rate for line switch ports in band 2 is approximately 7% higher than the initial banded rate, with only one wire center falling outside the 20% deviation criteria.

Similarly, band 3 for the PBX trunk port would have consisted of 2 wire centers that serve a total of 1881 access lines. These wire centers were consolidated into rate band 2. The impact is to increase the rate in that band by 3% and only the two high cost exchanges moved into band 2 don't fall within the 20% deviation criteria.

**Q. What is Sprint's proposed deaveraged rate structure for dedicated transport?**

A. As explained in the testimony of Sprint witness Cox, transport costs are developed on a route by route (i.e., wire center to wire center) basis. Dedicated transport costs were developed for DS1, DS3, OC3, and OC12. However, OC3 and OC12 service is not available

on all routes. For each of the four dedicated transport services, the route specific costs were banded consistent with the 20% deviation criteria.

Applying that methodology resulted in 13 rate bands for OC3s, 14 rate bands for both DS1s and OC12s, and 15 rate bands for DS3s. In the case of DS3s, only one route (Ponce de Leon to Reynolds Hill) was in rate band 15. Regrouping that route with rate band 14 increased the rate in that band by a little more than 1%. Only the rebanded route does not meet the 20% deviation rule. The proposed bands for DS1, DS3, OC3, and OC12 dedicated transport are provided, respectively, in JWS Exhibits 5(a), 5(b), 5(c), and 5(d).

**Q. What is Sprint's proposed deaveraged rate structure for common transport?**

A. Sprint witness Cox developed the weighted average DS1 cost for transport within each local and EAS calling area for each exchange. This weighted average DS1 rate was then divided by 216,000, which is the assumed average usage per DS1, to determine the average common transport cost for local and EAS calls for that

exchange. The resulting common transport costs for each exchange were then banded using Sprint's proposed deaveraging methodology.

The result produced 9 bands for common transport. The two highest cost bands contain one exchange each. Band 8 consisted of Reynolds Hill, an exchange with 3370 access lines. Reynolds Hill was shifted into band 7, which had cost characteristics more similar to those of Reynolds Hill than did band 9. The result was to increase the rate for band 7 by a little over 2%. Only Reynolds Hill deviates from the banded rate by more than 20%. The proposed rate bands for common transport are provided in JWS Exhibit 6.

**Q. What is Sprint's proposed deaveraged rate structure for tandem switching?**

A. The tandem switching rate was developed following the same approach that was used for common transport. Sprint witness Holmes first developed the tandem switching costs for each local exchange and EAS calling area. The results were then banded. Applying Sprint's proposed deaveraging methodology produces 4

bands for tandem switching. The proposed rate bands for tandem switching are provided in JWS Exhibit 7.

There are three exchanges where the tandem switching function is provided through another ILEC. Therefore, not tandem switching UNE rate is proposed for those three exchanges.

**Q. What is Sprint's proposed deaveraged rate structure for dark fiber?**

A. Dark fiber costs were developed for interoffice, feeder, and distribution plant dark fiber.

Sprint witness Dickerson calculated interoffice fiber costs for each wire center. The costs were developed on a per foot per fiber basis. Those costs were then banded using the 20% deviation criteria, producing 5 rate bands. The proposed rate bands and wire center specific interoffice costs are shown in JWS Exhibit 8(a).

Sprint witness Dickerson also calculated the fiber feeder costs by wire center. Applying Sprint's

proposed deaveraging methodology produces 7 rate bands, as shown in JWS Exhibit 8(b).

As previously discussed in respect to high capacity (DS3) loops, Sprint has limited fiber distribution plant, and therefore lacks sufficient data to develop a deaveraged dark fiber cost for fiber distributionn plant. Sprint therefore proposes to use a simple average cost as the rate for distribution fiber. The proposed rate is provided in JWS Exhibit 1.

The rate for a fiber loop would be the sum of the banded feeder rate for the wire center plus the averaged distribution fiber rate.

**Issue 9(b): Subject to the standards of the FCC's Third Report and Order, should the Commission require ILECs to unbundle any other elements or combinations of elements? If so, what are they and how should they be priced?**

**Q. Will this proceeding result in the establishment of rates for all UNEs identified in the FCC's rules?**

A. No. In its Third Report and Order in CC Docket 98-147 and Fourth Report and Order in CC Docket 96-98, released December 9, 1999, the FCC added to its list of UNEs the requirement for incumbent LECs to unbundle the high frequency portion of the loop spectrum, an arrangement commonly referred to as "line sharing". This UNE was not included in the stipulated list of UNEs for which rates would be determined in this proceeding. It is Sprint's understanding that the Commission will initiate a separate proceeding to determine rates for this UNE.

Also, the FCC has defined Operational Support Systems (OSS) as an unbundled network element. The rates for OSS are being addressed in a separate proceeding, and are not included in this filing.

**Q. Are there any other UNEs or UNE combinations that the Commission should require ILECs to unbundle in this proceeding?**

A. No.

**Issue 12: Without deciding the situations in which such combinations are required, what are the appropriate**

**recurring and non-recurring rates for the following UNE combinations:**

**(a) "UNE platform" consisting of: loop (all), local (including packet, where required) switching (with signaling), and dedicated and shared transport (through and including local termination);**

**(b) "extended links," consisting of:**

**(1) loop, DSO/1 multiplexing, DS1 interoffice transport;**

**(2) DS1 loop, DS1 interoffice transport;**

**(3) DS1 loop, DS1/3 multiplexing, DS3 interoffice transport.**

**Q. What is Sprint's proposed rate structure for the UNE-platform?**

A. The UNE platform consists of the loop, switch port, usage sensitive switching, and transport. With the exception of loop and port, the rate for the UNE platform would be the sum of the banded rates for each individual element.

In the case of loop and switch port, costs (such as line card costs associated with loops provisioned through a DLC) that are included in each element when bought on a standalone basis can be eliminated when they are provided in combination. Therefore, it was necessary to develop a combined loop and port cost fore each wire center. The combined costs were then banded using the 20% deviation rule. The result of doing so produces 8 rate bands, as shown in JWS Exhibit 9.

**Q. What is Sprint's proposed rate structure for enhanced extended loops (EELs)?**

A. Since EELs consist of unbundled elements that are already banded, Sprint proposes that the rate for an EEL will be calculated as the sum of the (banded) rate for each element in the combination.

**Q. What are the current FCC rules pertaining to an incumbent LECs obligation to combine elements?**

A. Section 51.315(b) of the FCC's Rules states that "Except upon request, an incumbent LEC shall not separate requested network elements that the incumbent

LEC currently combines." Sections 51.315(c)-(f) of the Commission's Rules would require incumbent LECs to combine, if technically feasible, network elements even though those network elements are not "ordinarily combined" in the incumbent LEC's network. However, the Eighth Circuit Court of Appeals vacated Sections 51.315(c)-(f). The Eighth Circuit is currently re-evaluating the issue in the wake of the Supreme Court's January, 1999 decision.

**Q. How does the FCC define "currently combined"?**

A. There is no question that under Section 51.315(b) an incumbent LEC is required to provide, on a combined basis, elements that are in fact already combined. Because the issue is pending before the Eighth Circuit, the FCC declined to address arguments relating to the definition of "currently combined".

However, the FCC, in its Third Report and Order, Docket 96-98, released November 5,1999, para. 481, left no doubt as to its belief that the obligation of the incumbent LECs to recombine elements is not limited to the narrow instance of when those elements are already actually combined:

"As a general matter, however, we believe that the reasoning of the Supreme Court's decision to reinstate rule 51.315(b) based on the nondiscrimination language of section 251(c)(3) applies equally to rules 51.315(c)-(f)".

**Q. How would Sprint recommend this Commission define currently combined?**

A. Sprint's position is that "currently combined" should be defined as "ordinarily combined". That is, a requesting carrier should be able to obtain any UNE combination if the incumbent LEC offers, through its wholesale or retail tariffs, any service that includes that UNE combination. The fact that the incumbent LEC combines those elements in providing services to its customers is certainly evidence that the LEC is currently combining those elements.

To limit the combinations available to a requesting carrier to something less than the combinations that the incumbent LEC routinely offers to its own end users is patently anti-competitive. To do so would arbitrarily deny customers the ability to purchase from a competitive local exchange carrier a service

depending on a particular combination of elements, even though the incumbent LEC offers to provide that same customer that same service using those same elements.

Moreover, it should be recognized that a CLEC can obtain, albeit through a tortuous route, combinations of elements that are not actually currently combined. What the CLEC would have to do is first have the customer order the service directly from the incumbent LEC. The incumbent would then "combine" the elements to provide the retail service. At that point, the elements would be actually currently combined, and the CLEC could obtain the UNE combination from the incumbent LEC in order to serve that customer.

Restricting the availability of UNE combinations to those combinations actually currently combined, then, does not preclude a CLEC from obtaining UNE combinations ordinarily combined by an incumbent LEC to provide tariffed services. All that it accomplishes is to increase the incumbent LEC's competitors' costs and impose unnecessary delays and inconvenience on both their competitors and their competitor's customers.

**Issue 13: When should the recurring and non-recurring rates and charges take effect?**

**Q. When should the UNE rates that will be determined in this proceeding take effect?**

A. Sprint recommends that the ILECs in this proceeding be required to file UNE rates that conform to the Commission's Order in this proceeding 60 days after the release of that Order. Those rates would become effective on the date they are filed.

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

A. Yes.

SPRINT
DOCKET NO. 990649-TP
FILED MAY 30, 2000

**BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

**ADDITIONAL SUPPLEMENTAL DIRECT TESTIMONY**

**OF**

**JAMES W. SICHTER**

**Q. Please state your name and business address.**

A. My name is James W. Sichter. I am Vice President-Regulatory Policy, for Sprint Corporation. My business address is 6360 Sprint Parkway, Overland Park, Kansas 66251.

**Q. Are you the same James W. Sichter that presented direct and supplemental testimony in this case?**

A. Yes, I am.

**Q. What is the purpose of your additional supplemental testimony?**

A. The purpose of my additional supplemental testimony is to introduce and sponsor the revised Sprint's Price List per the attached Exhibit JWS-11. In this additional supplemental filing Sprint is revising prices for 24 Non-Recurring Charge elements as

described in Mr. Steven M. McMahon's Additional Supplemental Direct Testimony and 24 Recurring Charges for 3 rate elements as described in Mr. Kent W. Dickerson's Supplemental Direct Testimony.

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

A. Yes.

**BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

**FURTHER ADDITIONAL SUPPLEMENTAL DIRECT TESTIMONY**

**OF**

**JAMES W. SICHTER**

**Q. Please state your name and business address.**

A. My name is James W. Sichter. I am Vice President-Regulatory Policy, for Sprint Corporation. My business address is 6360 Sprint Parkway, Overland Park, Kansas 66251.

**Q. Are you the same James W. Sichter that presented direct, supplemental, additional supplemental and rebuttal testimony in this case?**

A. Yes, I am.

**Q. What is the purpose of your further additional supplemental testimony?**

A. The purpose of my further additional supplemental testimony is to introduce and sponsor the revised Sprint's Price List per the attached Exhibit JWS-13. In this further additional supplemental filing Sprint

is revising prices for the High Capacity Loop elements as described in Mr. Kent W. Dickerson's Additional Supplemental Direct Testimony.

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

A. Yes.

SPRINT
DOCKET NO. 990649-TP
FILED JUNE 29, 2000

**BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

**REBUTTAL TESTIMONY**

**OF**

**JAMES W. SICHTER**

**Q. Please state your name and business address.**

A. My name is James W. Sichter. I am Vice President-Regulatory Policy, for Sprint Corporation. My business address is 6360 Sprint Parkway, Overland Park, Kansas 66251.

**Q. Are you the same James W. Sichter that presented direct, supplemental and additional supplemental testimony in this case?**

A. Yes, I am.

**Q. What is the purpose of your rebuttal testimony?**

A. The purpose of my testimony is to rebut the testimony of Ms. Terry Murray, representing Bluestar Networks Inc., Covad Communications Company, and Rhythms Links Inc., as well as Mr.

David Nilson, representing Supra Telecommunications & Information Systems, Inc.

**Q. On page 12, Ms. Murray states that Sprint's loop qualification and conditioning charges could create a barrier to entry? Do you agree?**

A. No. Sprint's total non-recurring charges for loop qualification and conditioning total $29.64, an amount that hardly constitutes a barrier to entry. This total consists of a loop qualification charge of $28.20, and a loop conditioning charge of $1.44. The loop conditioning charge is assessed on all xDSL loops less than 18,000 feet. As reflected in Sprint's NRC Loop Conditioning cost study supported by Sprint Witness McMahon, Sprint estimates that only 3.2% of its loops that are less than 18,000 feet would require load coil removal. Sprint's proposed charge would spread the costs of conditioning those loops over all xDSL loops under 18,000 feet. The effect of Sprint's proposal to spread the cost of loop conditioning actually further reduces barriers to entry for data CLECs.

Moreover, it should be emphasized that the market for xDSL services is in its infancy, and Sprint itself has only recently begun marketing these services in Florida. Sprint incurs the same costs in providing xDSL to our own customers as we propose to charge to ALECs. Thus, every competitor, including Sprint, faces the same level of non-recurring costs for entering the xDSL market in Florida.

**Q. Ms. Murray advocates that if the "…Commission adopts total, cumulative nonrecurring charges that create a barrier to competitive entry in Florida, the Commission should consider converting some or all of the remaining nonrecurring charges to recurring charges" (pg. 14). Do you agree?**

A. No. First, as discussed above, Sprint's proposed non-recurring charges, based on TELRIC costing principles, do not constitute a barrier to entry.

Second, although Sprint would agree with Ms. Murray that BellSouth's and GTE's proposed

nonrecurring charges are barriers to entry, the Commission should recognize that the problem with those non-recurring charges is that they are not based on TELRIC costing principles and are grossly excessive. Permitting BellSouth and GTE to merely shift the recovery of these unwarranted costs from higher non-recurring to higher recurring charges would be just as harmful to competition. The only appropriate course for the Commission is to require that BellSouth and GTE revise their proposed non-recurring charges to be consistent with TELRIC costing principles.

**Q. Ms. Murray suggests on pg. 13 that the Commission "undertake a rigorous review of the proposed non-recurring charges to eliminate costs that are not truly efficient, forward-looking economic costs". Do you agree?**

A. As previously discussed, Sprint agrees that the proposed non-recurring charges of both BellSouth and GTE are excessive and inconsistent with TELRIC costing principles. At the same time, Sprint would emphasize that its own proposed non-recurring charges are both cost-based and

reasonable. To illustrate these differences, the attached exhibit JWS-12 compares the proposed xDSL-related non-recurring charges of the three ILECs in this proceeding. As clearly demonstrated in that exhibit, Sprint's proposed NRCs are in sharp contrast to those proposed by BellSouth and GTE. The total xDSL-related non-recurring charges proposed by BellSouth are over seven times higher than those proposed by Sprint. Similarly, GTE's proposed non-recurring charges for load coil and bridged tap removal are, respectively, as much as 30 times and 150 times those proposed by Sprint.

As is evident from the data presented in the exhibit, the large differences in costs necessitates a comprehensive review to ensure that the NRCs developed by BellSouth and GTE are in compliance with TELRIC methodology and are truly based on least cost, most efficient, forward-looking economic costs. Sprint Witness McMahon will provide a more detailed review of BellSouth and GTE's proposed NRCs in Phase II of this docket.

**Q. Mr. Nilson (page 11) asserts that "non-recurring infrastructure costs" should be recovered over the useful life of the facility? Do you agree?**

A. Yes. Mr. Nilson's argument is consistent with the FCC's rules stating that it would be inappropriate to recover what are essentially recurring costs through non-recurring charges.

Mr. Nilson provides no evidence or examples of where he believes that Sprint has proposed to recover recurring costs through non-recurring charges. Sprint's NRCs are in fact consistent with the FCC's rule that non-recurring charges should recover only non-recurring costs. As explained in the Direct testimony of Sprint Witness McMahon, Sprint's non-recurring charges are based on the actual costs incurred by Sprint to perform only the non-recurring tasks required for service provisioning. Therefore, Mr. Nilson's concerns are unwarranted at least in respect to the non-recurring charges proposed by Sprint.

**Q. Supra Witness Nilson (page 9) asserts that although your testimony recognizes "that there must not be barriers to entry in the competitive market, and that users of facilities will change over time", you nevertheless "ask the commission for financial protection from an ALEC who cancels service early".**

A. Mr. Nilson has totally mischaracterized my testimony. In the first instance, I stated in my direct testimony (p. 25) only that "To the extent that high non-recurring charges are a significant barrier to entry, it may be appropriate to require at least a portion of those non-recurring charges through recurring rates." This qualified statement can hardly be construed as meaning "there must be not be barriers to entry in the competitive market".

Secondly, as discussed in relation to the preceding question, Sprint's non-recurring charges are constructed to recover only non-recurring costs, and therefore the fact that users of the facilities will change over time is irrelevant.

Third, Mr. Nilson's characterization of Sprint's position as one of asking for "financial protection" misses entirely the point of the argument laid out in my Direct Testimony (Pages 25-26) in this proceeding. As stated therein, Sprint believes that NRCs should be recovered through non-recurring rates. Allowing NRCs to be recovered through recurring rates imposes a substantial amount of administrative burden on the incumbent LEC and could lead to undesirable and inequitable results. If the CLEC discontinues service before the NRCs are recovered, the incumbent LEC is financially exposed. And to that extent, at least, Mr. Nilson is correct: Sprint does not believe it should be required to bear the costs incurred for the exclusive benefit of an ALEC. Mr. Nilson fails to provide any justification for his apparent belief that it would be appropriate for an ILEC to, in effect, not recover from an ALEC those costs incurred for the benefit of that ALEC.

Moreover, Mr. Nilson fails to recognize that the converse can also be true. That is, there is also the potential of over-recovery if the incumbent LEC does not reduce its recurring rate once the non-recurring costs embedded in that rate have been fully recovered.

**Q. Mr. Nilson contends on page 8 that "The current structure of just one non-recurring rate per UNE loop is allowing the ILEC undue enrichment for activities that are not performed." Is his contention correct?**

A. Mr. Nilson's allegation is simply not accurate with respect to Sprint. Sprint's non-recurring charges include a "migrate" charge of $14.21 for a 2-wire voice grade loop that is already in service, and a $72.98 non-recurring charge for new loop installation. Thus, Sprint has proposed different non-recurring charges that reflect the actual costs of the functions performed in provisioning the service under different circumstances.

However, Mr. Nilson's allegation is valid in respect to BellSouth. BellSouth fails to differentiate between an existing loop and a new loop for service provisioning.

**Q. Mr. Nilson contends that there are additional elements not listed in Issue 9(A) that need to be unbundled, specifically, DSLAMs, WDM, and loops within the distance limitations of xDSL technology? Do you agree?**

A. No. In order for this Commission to define additional elements as UNEs, it must meet the "necessary and impair" standards as set forth by the FCC. Specifically, Section 51.317(a)(1) of the FCC's Rules states that "a network element is 'necessary' if, taking into consideration the availability of alternative elements outside the incumbent LEC's network, including self-provisioning by a requesting carrier or acquiring an alternative from a third party supplier, lack of access to the network element precludes a requesting telecommunications carrier from providing the services that it seeks to offer". Furthermore, Section 51.317(b)(1) states that "a

requesting carrier's ability to provide service is 'impaired' if, taking into consideration the availability of alternative elements outside the incumbent LEC's network, including self-provisioning by a requesting carrier or acquiring an alternative from a third party supplier, lack of access to that element materially diminishes a requesting carrier's ability to provide the services it seeks to offer."

Mr. Nilson has failed to provide any of the evidence required to meet the "necessary and impair" standards. Moreover, he fails to recognize that Section 51.319(c)(3) of the FCC rules already categorize DSLAMs as an unbundled network element under limited conditions.

In the absence of any evidentiary record to support his position, Mr. Nilson's attempt to expand the list of UNEs beyond those defined in the FCC's rules must be rejected.

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

A. Yes.



(Transcript continues in sequence in Volume 4.)

STATE OF FLORIDA)

: CERTIFICATE OF REPORTER

COUNTY OF LEON )

I, JANE FAUROT, RPR, Chief, FPSC Bureau of Reporting Official Commission Reporter, do hereby certify that the Hearing in Docket No. 990649-TP was heard by the Florida Public Service Commission at the time and place herein stated.

It is further certified that I stenographically reported the said proceedings; that the same has been transcribed under my direct supervision; and that this transcript, consisting of 207 pages, Volume 3 constitutes a true transcription of my notes of said proceedings and the insertion of the prescribed prefiled testimony of the witness(s).

I FURTHER CERTIFY that I am not a relative, employee, attorney or counsel of any of the parties, nor am I a relative or employee of any of the parties' attorneys or counsel connected with the action, nor am I financially interested in the action.

DATED THIS 25TH DAY OF JULY, 2000.

JANE FAUROT, RPR
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