ORIGINAL

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January 22, 2004

Mrs. Blanca S. Bayó
Division of the Commission Clerk and
Administrative Services
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

Re: Docket No. 030851-TP

Dear Ms. Bayó:

On December 23, 2003, BellSouth filed with this Commission a letter identifying two matters of concern with BellSouth's BACE (BellSouth Analysis of Competitive Entry) model. As indicated in that letter, BellSouth notified the Commission and the parties that the next iteration of the model would address these matters.

BellSouth is now filing the Supplemental Direct Testimony of James W. Stegeman with revised Exhibit JWS-3 and the revised BACE model. The supplemental direct testimony and the revised BACE model address the issues outlined in my December 23, 2003, letter.

Enclosed are an original and fifteen copies of BellSouth Telecommunications, Inc.'s Supplemental Direct Testimony of James W. Stegeman with revised Exhibit JWS-3 and the revised BACE model. The changes made to Mr. Stegeman's testimony and exhibits has necessitated that changes also be made to Exhibit DJA-02 to the Direct Testimony of Dr. Debra J. Aron. Therefore, revised Exhibit No. DJA-02 to the Direct Testimony of Dr. Debra J. Aron is also enclosed, which we ask that you file in the above-captioned docket.

A copy of this letter is enclosed. Please mark it to indicate that the original was filed and return the copy to me. Copies have been served to the parties shown on the attached Certificate of Service.

AUS
CAF
CMP
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CTR
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GCL 1
OPC
MMS 1
SEC 1
OTH

Sincerely,

Nancy B. White

Nancy B. White

Enclosure
cc: Parties of Record
Marshall M. Criser III
R. Douglas Lackey
Meredith Mays
523154

CERTIFICATE OF SERVICE
Docket No. 030851-TP

I HEREBY CERTIFY that a true and correct copy of the foregoing was served via Electronic Mail, Hand Delivery* and FedEx this 22nd day of January 2004 to the following:

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(+)signed Protective Agreement
(*) via Hand Delivery
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SUPPLEMENTAL DIRECT TESTIMONY OF MR. JAMES W. STEGEMAN
ON BEHALF OF BELLSOUTH TELECOMMUNICATIONS, INC.
BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION
DOCKET NUMBER 030851-TP
JANUARY 21, 2004

Q. PLEASE STATE YOUR NAME AND BUSINESS AFFILIATION.

A. My name is James W. Stegeman. I am the President of CostQuest Associates, Inc. I am testifying on behalf of BellSouth Telecommunications ("BellSouth", "BST" or the "Company").

Q. ARE YOU THE SAME JAMES W. STEGEMAN THAT FILED DIRECT TESTIMONY IN THIS PROCEEDING?

A. Yes. In my direct testimony I described the BACE model used for evaluations of economic impairment.

Q. WHY ARE YOU FILING SUPPLEMENTAL DIRECT TESTIMONY?

A. As outlined in Ms. Nancy White's letter dated December 23, 2003, I am filing supplemental direct testimony with the most recent iteration of the BACE (BellSouth Analysis of Competitive Entry) model. This supplemental testimony explains the corrections to the BACE model. I have attached the following revised exhibits and

attachments to my Direct Testimony: JWS-3 and BACE model.

Q. PLEASE DESCRIBE THE CORRECTIONS MADE TO BACE.

A. In the version of BACE that was filed with my direct testimony, two of the reports that the model can generate -- "Revenue_CEA-UNEZone" (which produces the average revenue per customer and is available from the Wizard reporting and from the Saved reports) and "NetIncome-Per Line" (which produces the net income report on a per line basis and which is also available from the Wizard reporting and from the Saved reports) – produce results that could not be utilized. This error did not affect NPV calculations. The underlying SQL query that develops these reports has been corrected in the current version of BACE and the reports can now be produced correctly

Q. WAS THERE A CHANGE IN THE OPTIMIZATION CODE IN BACE?

A. Yes, there were two changes to the optimization code in BACE. First, Enterprise optimization logic was added to provide a user with additional optimization flexibility. Enabling the new toggle found in the CLEC Study Properties Table, **FilterNegativeMarginEnterpriseInMarkets,** allows BACE to filter out enterprise customers within markets when the entire collection of enterprise customers in the market produce a negative margin. Additional detail on this new toggle can be found in the revised JWS-3 Methodology Manual.

This additional optimization step has no impact on BellSouth's filing in Florida because all Enterprise customer groups in the positive NPV markets provide a positive margin. In

other words, in Florida, this additional optimization step does not change the number of markets that are found not to be impaired, and it does not change the magnitude of the positive NPV values for the markets that are not impaired.

Q. WHAT IS THE SECOND CHANGE TO OPTIMIZATION CODE IN BACE?

A. Optimization in BACE is also now modified to allow optimization by different definitions of markets. In my direct testimony (page 51, lines 5-6) I described optimization tasks 4 and 5 as: "4) keep or eliminate CLEC service for Mass Market customers for a market; 5) keep or eliminate CLEC service for a market." For each of these optimization tasks, the prior version of BACE only allowed these optimization tasks to be performed for a market defined as the CEA-UNEZone (the use of only CEA-UNEZone was noted in the description of the filters in the CLEC Study Properties table). In the version of BACE I am filing today, optimization in these tasks (including the Enterprise optimization I described above in my supplemental testimony) is now based upon the user's selection of Market in the wizard. However, since BellSouth is using the CEA-UNEZone as the market, this change has no effect on BellSouth's filed results.

Q. ARE THERE ANY OTHER CORRECTIONS THAT YOU ARE MAKING?

A. Yes, four wire centers were missing in the original BACE filing (PMBHFLNP, FTLDFLAP, HMSTFLAF and MIAMFLAG) which are now included in the current version of BACE for Florida.

Q. DOES THIS CONCLUDE YOUR SUPPLEMENTAL DIRECT TESTIMONY?

A. Yes it does.

BELLSOUTH TELECOMMUNICATIONS, INC

The BellSouth Analysis of Competitive Entry Model

Methodology Manual

DOCUMENTATION VERSION: 2.2
DISTRIBUTION VERSION: 2.2

A NOTE ABOUT INPUTS AND SETTINGS SHOWN IN THIS MANUAL

All inputs and system settings shown in this document are illustrative. They may or may not match values used in a study or proceeding. Nor, should they be construed to represent a view of any party in a proceeding.

Table of Contents

BellSouth Analysis of Competitive Entry (BACE)

BACE

BACE is a competitive entry business case model. Based on user inputs, which include expected product prices, product demand, and costs, BACE calculates the discounted cash flow over a ten-year period resulting from CLEC entry into specific geographic areas.

BACE's Role

BACE allows the user to assess whether lack of access to the incumbent local exchange carrier's (ILEC's) unbundled switch element (switch UNE) makes entry by a CLEC uneconomic. To do this the model estimates the net present value (NPV)[1] of the 10-year cash flows that would be generated by the core products of the CLEC.

The approach used by the model is much like that of a financial model used to develop a business case for entering the CLEC business. It evaluates the opportunities to generate revenue based upon marketplace factors (e.g., customers and prices) and the full array of costs that could be anticipated to enter and operate the business.

The model accounts for the following factors:

CLEC Size – recognizing that there are different sizes of CLECs, the model accounts for the key implications of the CLEC's size (e.g., impact on purchasing power, cost implications of outsourcing certain functions, etc.).

Customers – the model accounts for how many customers in total reside in the relevant territories, how many customers the CLEC might expect to serve (i.e., the CLEC market share), and the types of customers the CLEC will attract (e.g., what types and sizes of customers, and what products and services will they buy). It also accounts for how much customers will pay and the level of customer churn that may be experienced.

[1] The user can choose to include the terminal value of the CLEC's assets in the NPV value in addition to the 10-year cash flows.

Products – the model accounts for the typical products the CLEC might offer, how those products may be bundled, and the implications of bundling on prices and customer take rates.

Quantities – the model accounts for the quantities of products to be sold to those customers choosing CLEC service.

Pricing – the model develops initial prices based on user inputs, initial CLEC price discounts and product price changes over time.

Network Costs – the model accounts for the network infrastructure requirements specific to the markets, customer profiles, and product portfolios being modeled and how those network requirements might be met (e.g., lease or own).

Operational Costs – the model accounts for the nature and level of CLEC operating costs allowing for effects due to the size of the modeled CLEC.

Trends – the model accounts for the changes that might be experienced over a ten-year period (e.g., customer buying behavior trends, pricing trends, and cost trends).

Optimization – the model allows the user to not serve negative NPV products, markets or sub markets. The user can control the degree to which a CLEC could/would identify unprofitable sub markets and avoid service in such sub-markets.

Sensitivity of Assumptions – the model allows the user to create scenarios and analyze the impact of assumptions upon the financial metrics of impairment.

Within the components (and inputs) outlined above, BACE computes a) the CLEC market share achieved (i.e., percentage of products purchased by market segment, by market), b) the resulting revenue (including the impact of product bundling), and c) the network and operational costs required to serve the market (considering the implications of CLEC size).

The model allows the inputs and assumptions to change over a ten-year period as the CLEC grows, costs change, and as anticipated price trends are realized.

The results are presented in terms of the anticipated cash flows for the ten-year period and the associated net present value calculated from the user adjustable discount rate.

Regulatory Guidelines

BACE was developed to calculate whether CLEC entry is economic in the absence of the switching UNE as state regulators satisfy their obligations under the FCC's triennial review order (TRO).[2] Keep in mind however, the model does not provide a framework

[2] In Re Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers (First Report and Order on Remand and Further Notice of Proposed Rulemaking), FCC 03-36, released August, 21, 2003 (hereinafter TRO).

to determine whether either of the "triggers" described in the TRO are satisfied for a determination of no impairment.[3]

The basic elements of an impairment analysis tool were identified in the TRO. The following are some of the keys aspects the TRO describes as the requirements of an economic model for impairment determination (emphasis added).

Capable of granular analysis

§472 ..."We find that technical shortcomings in each of these studies preclude us from relying on their results to evaluate impairment at the national level. These shortcomings include...(2) *insufficient granularity in their analyses."*

§485 All of these studies...strongly support the need for a *more granular analysis of impairment.* We have insufficient evidence in the record, however, to conduct this granular analysis. *Such an analysis would require complete information about UNE rates, retail rates, other revenue opportunities, wire center sizes, equipment costs, and other overhead and marketing costs.* ... That market-specific data is needed is indicated by the significant variation in the costs and revenues an efficient entrant is likely to face. For example, costs appear to vary significantly among locations and types of customers.

§495 ... Rather, state commissions must define each market on a *granular level*, and in doing so they must take into consideration the locations of customers actually being served (if any) by competitors, the *variation in factors affecting competitors' ability to serve each group of customers, and competitors' ability to target and serve specific markets* economically and efficiently using currently available technologies."

Based on efficient business model and network architecture

§517 ...Specifically, state commissions must determine whether entry is likely to be economic utilizing the *most efficient network architecture* available to an entrant...The analysis must be based on the *most efficient business model for entry rather than any particular carrier's business model.*

§495 ... competitors' ability to target and serve specific markets *economically and efficiently using currently available technologies.*

Provides a business case analysis

n. 1581... to evaluate the feasibility of self-deploying a switch, states should perform a *business case analysis* of providing local exchange service...cost factors listed should not be considered in isolation, but only in the context of a *broad business case analysis that examines all likely potential costs and revenues.*

Incorporates all likely revenues and costs

§519... In determining the likely revenues available to a competing carrier in a given market, the state commission must consider *all revenues that will derive from service to the mass market, based on the most efficient business model for entry.* These potential revenues include those associated with providing *voice services, including (but not restricted to) the basic retail price charged to*

[3] The triggers for a finding of no impairment involve a finding of three or more self provisioned CLECs in the market (see TRO paragraph 501), or when two or more providers offer wholesale switching within a market (see TRO paragraph 504).

the customer, the sale of vertical features, universal service payments, access charges, subscriber line charges, and, if any, toll revenues. The state must also consider the revenues a competitor is likely to obtain from using its facilities for providing *data and long distance services and from serving business customers.*

TRO Appendix B – Final Rules, page 22, 51.319(d)(2)(iii)(B)(3) … Specifically, the state commission shall examine whether the *costs of migrating incumbent LEC loops to requesting telecommunications carriers' switches* or the *costs of backhauling* voice circuits to requesting telecommunications carriers' switches from the end offices serving their end users render entry uneconomic for requesting telecommunications carriers.

Uses NPV as the test of impairment

footnote. 260 … Stated in more technical terms, the condition [of a firm entering the market, and hence no-impairment] is *whether the net present value of the expected economic profit is positive.*

Has well-supported parameters

§472 …We find that technical shortcomings in each of these studies preclude us from relying on their results to evaluate impairment at the national level. These shortcomings include…(4) *inadequate support for the parameters they employed.*

BACE Meets the TRO Guidelines

BACE was developed to identify whether CLEC entry is economic in the absence of the switching UNE. In creating BACE, BellSouth was keenly aware of the FCC's finding of prior modeling deficiencies and of the needs and requirements of the model in meeting the state commission's TRO implementation desires. As such, BACE:

1) Is granular in its approach. The model allows the user to input complete information about UNE rates, retail rates and other revenue opportunities specific to each market. BACE allows variations in product offerings and prices across five customer segments (residential and four business segments) and by customer-spend categories. The model provides for bundles of product and service offerings and price discounts. In addition, BACE identifies the specific operational and capital requirements of the CLEC in rolling out its network. Finally, part of the power of BACE is that the cost and revenue information is developed at the lowest level, thereby allowing the user to roll the results up to any geographic level. The current geographic levels of analysis include[4]:
    a. LATAs,
    b. Wire centers,
    c. MSAs Metropolitan Statistical Areas
    d. MCSAs Micropolitan Statistical Areas,

[4] BACE can be easily modified to include other geographic entities as long as the areas can be tied to wire centers.

e. CEAs (Component Economic Area),
f. UNE Zones, and
g. Any combination of the above.

2) BACE allows the user to provide inputs consistent with efficient CLEC entry. As such, the model allows for least-cost choices of architecture (e.g., EELs or collocation); concentrates traffic to take advantage of cost savings; determines whether DSL offerings are economic; determines whether entry into every wire center and/or LATA is efficient using a business case analysis approach.
3) BACE is quite simply, a business case model to determine if, how and where a CLEC should enter the marketplace.
4) BACE accounts for the major sources of CLEC revenues, including local service, vertical features, voice mail, long distance, and data services.
5) BACE allows the user to test impairment using NPV analysis of the cash flows.
6) Finally, BACE allows the user to document inputs within the scenarios.

Analyzing the Modeled Firm

BACE was designed to allow a granular analysis of economic/uneconomic CLEC entry in the absence of the switching UNE in a way generally familiar to members of the financial and investment community. BACE evaluates the CLEC entry business case by calculating discounted cash flows (i.e., by calculating a net present value of entry).

Characteristics of a Business Case

At its core, BACE is a business case model. In other words, BACE was designed to provide inputs, processes, and outputs that comport with considerations of a business case. This section will briefly address some of the attributes that must be part of any business case[5].

Standard Financial Measures

BACE provides output in terms of Net Present Value (NPV) of cash in-flows and out-flows. Displaying raw cash in-flows and out-flows as well as the NPV gives BACE the ability to produce results in terms consistent with the FCC's TRO.

Explicit, variable assumptions

Because a model is, by definition, an abstraction of the real world—BACE is based upon assumptions.

Many of these assumptions can be modified via user adjustable inputs and rules. Using the Edit Inputs process or the Wizard, the user is able to modify assumptions about the business case under study.

Clearly defined scope and problem boundaries

BACE's scope is limited to the telecommunication operations of the CLEC. For example, the modeled CLEC can offer long distance services, voice mail, switched access services, DSL, non-DSL business data service and local service.

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[5] Business Case Essentials: A Guide to Structure and Content, Marty J. Schmidt, MBA, PhD: A Solution Matrix, Ltd. White paper.

Through a defined cost, customer, product, and location hierarchy, the user is able to expand or limit the scope of operations. The reporting engine allows analysis along these hierarchies. Finally, revenue and expense are driven using accepted causative cost and revenue approaches.

Scenarios

In order to support sensitivity analysis, BACE allows the user to bind his or her assumptions together in the form of a scenario. This allows the inputs and outputs to be held in one place. Each scenario, in turn, represents either a new business case or a permutation of an existing business case.

Documented/Auditable Cost Model

BACE was explicitly designed to follow a rational business case model. Revenues, Expenses, Capital Investment, and Engineering assumptions are applied based upon algorithms developed by the BACE development team.

Financial Metrics

As noted, the FCC's TRO discusses relevant costs and revenues and notes the use of Net Present Value (NPV). The evaluation of a business case using cash inflows and outflows and Net Present Value became the most direct financial measure. This section will briefly describe NPV, its calculation and its relation to other financial measures.

Net Present Value

The Net Present Value of a stream of cash flows is the difference between the present value of the cash inflows and the present value of the cash outflows. In other words,

$$NPV=PV_{inflows}-PV_{outflows}$$

The Present Value (PV) of a cash flow is today's value of a cash inflow (or outflow) received (or paid) at some time in the future. Present Value takes into account the effects of the time value of money (which is reflected in the interest rate or discount rate). Present Value is calculated by applying the discount rate to the cash flow. In other words,

$$PV=FutureValue/(1+i)^t$$

Where i is the annual interest rate (discount rate) and t is the number of annual periods.[6]

The objective of NPV is to bring all negative and positive cash flows back to the same point in time. This allows comparison of different investment alternatives that involve cash flows at different points in time. By calculating NPVs, the relative economic attractiveness or unattractiveness of a series of cash flows occurring at different times in the future can be compared. This is why the use of NPV > 0 is common within business case assessments as is NPV(scenario 1) vs. NPV(scenario 2).

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[6] Financial Management-Concepts and Applications-3rd edition. Ramesh K. S. Rao, Southwestern College Publishing, 1995.

BACE's use of NPV

BACE calculates cash inflows and outflows using a mid-year convention. Any cash transaction (e.g., an expenditure) that occurs during year 1, is assumed to occur, for present value purposes, at the mid point of the company fiscal year. (The exceptions are that initial start-up costs are assumed to occur at time zero and therefore require no adjustment to present value and that any terminal value occurs at the end of year 10.)[7] That is, if X cash flowed into the firm at any time during year 1, the Present Value of this cash flow (as of the start of year one) would be calculated as:

$$PV=X/(1+i)^{1-0.5}$$

Where i is the discount rate and the compounding period is 1 year less 0.5 year or 0.5 years (six months). The present value (as of the start of the first year) of a cash outlay X incurred any time during the second year is assumed to $= X/(1+i)^{2-0.5} = X/(1+i)^{1.5}$. The mid-year convention simplifies the present value calculations (as compared to monthly or daily calculations).

Cash Flow Modeling

BACE focuses on discounted cash flows. For ease of discussion, the term "cost" will be used to capture cash outflows. Also, to be clear, "cost" here refers to the cash out-flows of the CLEC, not the cost to the ILEC from which the CLEC may purchase collocation space or unbundled network elements.

The BACE cash flow modeling process embraces the familiar concept in telecommunications incremental costs of "cost causation." That is, BACE identifies the relevant investments, operating expenditures, and customer driven revenues that result from CLEC entry and operation.

The importance of understanding what causes a cash in-flow or out-flow is the reason why BACE was designed with "filter fields." Filter fields help BACE identify which specific circumstances trigger a cash flow (i.e., what causes each cost). These triggers are referred to as drivers.

BACE cash flows are caused by (driven by) the following factors: 1) the existence of the CLEC in total (certain of the sales general and administrative, SG&A, common-like costs); 2) the existence of CLEC service within a geographic area (e.g., the placement of a switch for each LATA; 3) the acquisition of a customer; 4) the initial choice of a product or service by a customer (e.g., the customer chooses to take DSL); 5) the volumes of products and services used; 6) the disconnection of a customer (if the customer does disconnect); and 7) composite triggers as the total number of customers or the total volume of products or services within an area can exhaust the usable capacity of equipment, causing the placement of an expansion in equipment.

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[7] The replacement of startup assets, e.g., billing software systems, are treated in the subsequent year in which they occur and do require a present value calculation corresponding to the year in which the subsequent replacement occurs.

Each cash out flow is tracked according to the factor that drives it.

The remainder of this manual will discuss how BACE models cash flow from revenues as well as outflows from expenses.

Modeling the Costs and Revenues of the CLEC

This chapter will explore how BACE models the Costs and Revenues of the CLEC. There are three main questions to be answered. First, from a financial perspective, what happens within BACE's processing engine? Second from a technical standpoint, how is BACE designed and implemented, and which financial process corresponds to each BACE process? And third, what is BACE's customer, location and product hierarchy?

The Cash Flows of the CLEC

For ease of discussion, this manual will generally use the term "product" to refer to CLEC products and services. BACE starts from the initial point that some[8] products have a price associated with them. BACE then develops a price for products or groups of products (bundles) for each customer segment. This is the task of the "P-Process."

After the price has been established, a quantity demanded for each service or group of services in each wire center must be calculated. In this document, "demand" will generally be used to refer to the quantity demanded and sold. This is the task of the Q-Process.

Knowing the Price (P) and Quantity Demanded (Q) of each service or group of services, BACE can derive the total Revenue (P*Q) by product by location, and customer segment. Calculating the Revenue is the task of the "R-Process."

Knowing the Gross Revenue available to the firm represents the total cash inflow for the period.

Cash outflows are calculated in the Operations and Network Process (ON-Process). This process is dependent upon the outputs of the P, Q, and R processes. The O portion of the ON-Process derives those expenses that are operationally associated with the firm. For example Sales, General and Administrative (SG&A), is an operational expense.

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[8] Not all "products" within BACE have to have associated revenue. For example, if the user decides that non-recurring or installation costs are not charged, the price can be set to zero. This will result in a zero revenue product.

The N portion of the ON-Process derives those outflows necessary to create a network sufficient to handle the voice and data traffic identified in the Quantity Process. In other words, the cash expenditures involved with setting up, maintaining and growing the telecommunications network.

Optimizations in BACE

BACE provides for seven types of optimization processes. The optimization algorithms search for specific activities that yield a negative net present value (i.e., the present value of the relevant revenues less the relevant costs is negative), and then eliminate that activity. The seven activities that can be optimized are: 1) the use of EELs and/or full end-office collocation; 2) the provision of DSL within the wire center (not user adjustable); 3) implement or eliminate CLEC service in total for a wire center; 4) implement or eliminate CLEC service in total for Mass Market customers in a market; 5) implement or eliminate Enterprise customers in a market; 6) implement or eliminate CLEC service in total for all customers in a market; and 7) implement or eliminate CLEC service in total for a LATA.

BACE's Architecture

BACE was designed to give the user the necessary control to create a robust, realistic business case. The model architecture is illustrated in the figure below.

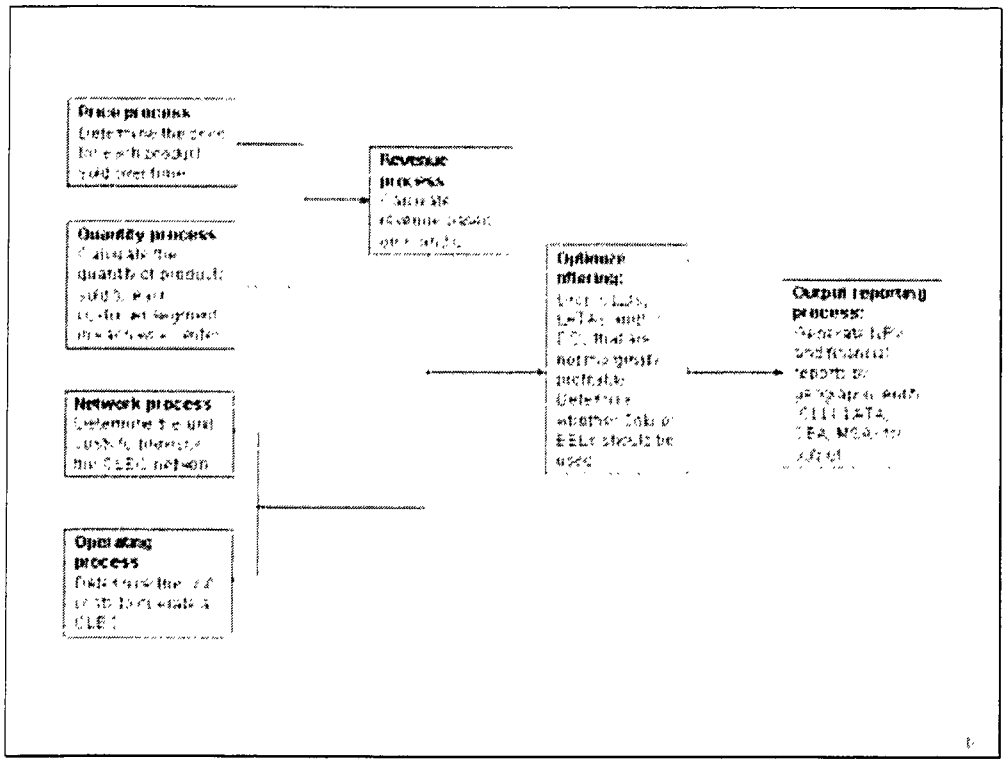

Figure 1--BACE Architecture

BACE Design Attributes

BACE has the following core design attributes.

Familiar

Rather than a complicated text-driven mathematical application, BACE uses standard Microsoft Windows® GUI (Graphical User Interface) conventions. Inputs are manipulated in a tree view; processing and reporting can be done through a simple wizard format. BACE is a very complex model, but the interface was designed to be user friendly and familiar.

Open

BACE was designed to use Microsoft Access as the primary storage and processing database. All data is stored in Access format. Inputs can be reviewed, intermediate tables can be inspected using desktop tools most financial professionals are comfortable with.

The model itself was written in Microsoft Visual Basic® 6.0 SP5. The Visual Basic language is easy to follow and the Structured Query Language code necessary to perform database manipulations is open and understandable.

Granular

BACE was designed to allow granular control. Rather than allowing access to only a few variables, the user can modify granular inputs like the product price per market. Or, the user can modify how the CLEC operates-like allowing Colo versus EEL deployment. The user can control what items of equipment are triggered by location placement or use by a particular type of customer/service. Finally, the user can use the reporting engine to view NPV along a geographic, product or cost hierarchy.

Scenario Based

In a business case, understanding the impact of assumptions is particularly important. BACE uses a scenario structure to allow the user to identify the inputs and outputs that correspond with one another. By maintaining a separate inputs database and reporting structure for each scenario, BACE simplifies What-If analysis and sensitivity tests.

Pragmatically Constructed

BACE processing mimics the steps described in the first section of this chapter. For example, while the P-Process is running, Prices are being determined. While Q is running, the quantity of products sold is being determined.

Further, the cost and product hierarchies mimic the organization of an actual CLEC. These hierarchies assist in not only accurately driving costs and revenues, but they assist in creating reports.

Hierarchies

BACE uses three sets of hierarchies to drive cash flow calculations and reporting. Hierarchies are necessary to allow the user to define—at a particular level—specifically how a cost or revenue is triggered.

For example, because certain products may only be sold to a given customer segment (a level in the customer hierarchy, such as a non-DSL business data service) revenues are attributable to a given customer segment. Further, if the analysis is only concerned with a particular LATA, BACE must be able to track the attributable revenue to that customer segment in those wire centers within the LATA. Because the sale of these products trigger the need to place equipment (or drive other cash outflows), costs are triggered which are attributable to the customer segment, product sold and wire center under study. The use of hierarchies allows cost and revenue drivers to be set and output structured in a way as to make the cost and revenue implications of these actions clear and traceable to levels at which reporting will occur.

Location Hierarchy

The location hierarchy is used to specify from broad levels of geography to narrow levels. The reason the location hierarchy is important is that certain costs are location dependent, e.g., a switch placed in a LATA. The location hierarchy is used to describe specifically those locations for which the existence of CLEC service triggers a certain cost. An example of the BACE location hierarchy is shown below. Please note how the geographic area gets smaller from the Location Family to the Element.

Location Family (LocFam)	Location Area (LocArea)	Location Center (LocCenter)	Element
BellSouth	NC (state)	250 (LATA Code)	GTWDNCMA

Table 1--Location Hierarchy

Note: the hierarchies are used to not only distinguish amongst costs, but also revenue, traffic/weightings (i.e., probability of occurrence is different in different states).

Customer Hierarchy

The customer hierarchy also allows the user to trigger certain costs or revenues based upon specific attributes of customer classes or segments. For example certain costs should be attributed a business customer (equipment to provide DS1 type service rather than DSL) but not a residential customer. An example is below.

Customer Family (CustFam)	Customer Area (CustArea)	Customer Center (CustCntr)	Customer Element (CustElem)
Res	Quintile	Quintile1	NONE
Res	Quintile	Quintile2	NONE

Table 2--Customer Hierarchy

Product Hierarchy

The product hierarchy is similarly designed. It allows granular identification of products. An example is below.

Product Family (ProdFam)	Product Area (ProdArea)	Product Center (ProdCntr)	Product Element (ProdElem)
PSTN	Local	Account	Subscription
PSTN	Local	Line	Subscription
PSTN	Local	Usage	Flat

Table 3--Product Hierarchy

Special Table Values

BACE uses three special values to populate some hierarchy fields. In many cases the hierarchy values are used to join or link some attributes across common data elements (e.g. join overall demand and CLEC market share to the number of products sold in an wire center). If BACE was to be populated with all possible value to accommodate these joins, inputs would multiply exponentially.

Therefore, several special field values were added into BACE.

The Wildcard

BACE uses a % sign to indicate a wildcard field. A wildcard field allows the join[9] to occur on any value in this field. For example if the user were trying to trigger a cost that would apply only to residential customers, regardless of the Customer Center, and Customer Element, the user could populate the Customer Hierarchy as:

Customer Family (CustFam)	Customer Area (CustArea)	Customer Center (CustCntr)	Customer Element (CustElem)
Res	%	%	%

Table 4—Wildcard Values

Else

The Else value is similar to a wildcard, but it acts more as a record expansion. An Else in a table directs BACE to expand this record with all possible values for the field that has an Else value. The distinction between an Else value and a wildcard value is that an Else value will duplicate a record across all possible field values except where the expansion of the record creates a duplication in the source table (e.g., a user may specify a unique value for a specific state, while the Else value will cover all other). The Else value is used mainly on the product hierarchy. Because it programmatically expands a record across many possible solutions, Else logic has a processing time implication. The more Else

[9] A "join" is a term specific to Structured Query Language. A join describes how tables of information are linked.

logic implemented, the slower overall processing. Else logic is not recommended for use in the network tables.

Else values populate many of the product tables. In the **Baseline Product Demand** table, the Else in the UNEZone column means that this record is applicable over all possible UNEZones. When BACE processes this table, it will create a new record for each distinct entry in the UNE Zone table.

None

The None value signifies that there is no value for this level of the hierarchy.

CLEC Study Properties Table

The **CLEC Study Properties** table is a core table within BACE. It provides the user the ability to establish characteristics of the CLEC to be examined and of the BACE analyses in general.

CLEC Study Properties Input Structure

The table mainly contains toggles and values that direct the system if, when and how to perform various analyses within BACE. The table is organized into 6 columns, each of which is described below.

- Property – the name of the BACE variable used within the analysis is identified in this column.
- Value – user-adjustable value of each variable is entered in this column. Where the system requires one of a set of pre-identified values, the user will select from a pull down menu or list box.
- Description – provides some explanation of the property and, when appropriate, the format of the entry.
- Source – user-adjustable field that can help the user in documenting the source of the values entered.
- Notes – user-adjustable field providing additional space for variable documentation.

The entries in the **CLEC Study Properties** table serve several purposes within BACE and can be thought of in several ways.

First, several inputs act as filters identifying characteristics of the CLEC's operations or network which then determine which costs are used within the analyses. The filter variables generally interact with user adjustable inputs in other BACE tables. Table variables, listed in the Property column, that are filters include:

- AllowColo;
- AllowEELs;
- CLECType;
- DS1ToDS0XOver;
- IncludeTerminalValue;
- State;
- TaxTreatmentForLoss; and,
- UseSPAorUNET.

Second, some of the fields in this table act as Descriptors. Descriptors have no impact on the analysis or results but exist for documentation and information purposes only. All of the data entered in the Description, Source, and Notes columns are examples of Descriptor inputs.

Third, many of the variables reflect factors that are used within the calculations and have a numerical impact on the final result. The following variables are Factors:

- AccessToLocalMOUFactor;
- BSTAsPctOfScopeOfOperations;
- EquityPct;
- EquityRate;
- FedTaxRate;
- PreTaxCostOfCapital;
- PurchasePower;
- StateTaxRate;
- TerminalValueMultiplier; and
- Year1.

Finally, there are variables that are optimization toggles. These include:

- AllowColo
- AllowEELs
- FilterNegativeMarginCLLIs;
- FilterNegativeMarginMassMarketInMarkets;
- FilterNegativeMarginMarkets;
- FilterNegativeMarginEnterpriseInMarkets and,
- FilterNegativeMarginLATAs

Note that **AllowColo** and **AllowEELs** are identified as both filter variables and optimization toggles. This, along with a description of each variable, will be explained below.

CLEC Study Properties Table Inputs

The following section will describe the variables for each Property entry in the **CLEC Study Properties** table.

AccessToLocalMOUFactor

Since local minutes are not routinely measured and captured, it is necessary to use another source of measured minutes as a platform from which to develop local minutes of use. Access minutes are routinely measured for billing purposes, so these minutes are multiplied by the **AccessToLocalMOUFactor** to generate the number of local minutes.

AllowColo and AllowEELs

Based on the wholesale services offered by BellSouth, the CLEC has multiple options for how they establish their wire center network architecture. To serve customers connected to a BellSouth end office the CLEC can use EELs and collocate at a distant wire center, or collocate at the end office as well as a distant wire center (e.g., BellSouth Access tandem). The **CLEC Study Properties** table has toggles for the user to identify whether the CLEC will:

a) establish collocation space at each end office (**AllowColo** = "Y" and **AllowEELs** ="N");

b) use EELs and not collocate at any end offices (**AllowColo** = "N" and **AllowEELs** ="Y"); or,

c) allow BACE to determine the most economic approach for each end office (**AllowColo** = "Y" and **AllowEELs** ="Y").

Further, these fields act to filter the cost records in the **Network Cost Input** table. Network cost records with **COLOOrEEL** = COLO will be included in the analysis if **AllowCOLO** = Y. Cost items that have **COLOOrEEL** = EEL will be included in the analysis if **AllowEEL** = Y. Note: If **COLOOrEEL** = ALL for a cost record identified in the **Network Cost Input** table, the cost record is not impacted by the collocation or EEL network architecture. Thus it will be included in all cases.

BookingConvention

The BookingConvention is fixed to mid-year.

BSTAsPctOfScopeOfOperations

The **BSTAsPctOfScopeOfOperations** percentage accounts for the operational scope of CLECs that serve customers outside of the BellSouth state being analyzed. Appropriate values are between 0 and 100 (inclusive) and represent the state specific percentage of the CLECs total coverage territory. The value entered in the **CLEC Study Properties** table is applied to each cost record with **ScopeCat** = Y.

CLECType

The **CLECType** variable has legitimate entries of Small, Medium and Large and represents the size of the CLEC being analyzed. This field works as a filter to ensure that BACE includes only those cost records which meet the user criteria entered in the **CLEC Study Properties** table (and those cost records with **CLECType** = ALL).

DS1ToDS0Xover

The user can select values of 4 or 9 for the **DS1ToDS0Xover** field and represents whether the CLEC begins using DS1s to serve customers with 4 or 9 lines. Possible entries for the analogous input in the **Network Cost Input** table are 4, 9 and ALL. If a cost record has an entry of ALL it is used for both crossover scenarios, otherwise BACE will include only those cost records that match the user input from the **CLEC Study Properties** table.

EquityPct

The user enters the CLEC's percentage of total capital that is equity. The value should be entered in decimal form (0-1), e.g., 0.6 represents a 60%/40% equity to debt ratio.

EquityRate

The user enters the CLEC's cost of equity and the value should be entered in decimal form (0-1), e.g., an entry of 0.213 represents a cost of equity of 21.3%.

FedTaxRate

The user enters the CLEC's effective Federal tax rate and the value should be entered in decimal form (0-1), e.g., 0.35 represents a tax rate of 35%.

FilterNegativeMarginCLLIs

The **FilterNegativeMarginCLLIs** optimization toggle allows the user to determine if BACE will automatically remove wire centers that have a negative NPV. If this toggle is set to "Y", BACE examines the direct costs (and wire center-specific indirect costs) and revenues for each wire center to determine if it provides a positive contribution to the overall operation of the CLEC, i.e., positive NPV, over the 10-year study time frame. If serving customers within any wire center have a negative NPV, BACE assumes that the CLEC would not offer services in that wire center and thus the costs and revenues for that wire center are removed from the overall analysis. If the **FilterNegativeMarginCLLIs** toggle is set to N, all wire centers remain in the analysis.

FilterNegativeMarginMassMarketInMarket

The **FilterNegativeMarginMassMarketInMarkets** optimization toggle allows the user to determine if BACE will automatically remove Mass Market customers from Markets in which the Mass Market customers have a negative NPV. If this toggle is set to "Y",

BACE examines the aggregate direct costs and revenues for Mass Market customers for the positive contribution-wire centers (if the **FilterNegativeMarginCLLIs** is set to Y, all wire centers otherwise) within each market to determine if those customers provide a positive contribution to the CLEC, i.e., positive Mass Market NPV within each market, over the 10-year study time frame. If serving Mass Market customers within any Market has a negative NPV, BACE assumes that the CLEC would not offer services to these customers and thus the costs and revenues are removed from the overall analysis. If the **FilterNegativeMarginMassMarketInMarkets** toggle is set to N, all remaining Mass Market customers remain in the analysis.

FilterNegativeMarginEnterpriseInMarket

The **FilterNegativeMarginEnterprisetInMarket** optimization toggle allows the user to determine if BACE will automatically remove Enterprise customers from Markets in which the Enterprise customers have a negative NPV. If this toggle is set to "Y", BACE examines the aggregate direct costs and revenues for Enterprise customers for the positive contribution-wire centers (if the **FilterNegativeMarginCLLIs** is set to Y, all wire centers otherwise) within each market to determine if those customers provide a positive contribution to the CLEC, i.e., positive Enterprise NPV within each market, over the 10-year study time frame. If serving Enterprise customers within any Market has a negative NPV, BACE assumes that the CLEC would not offer services to these customers and thus the costs and revenues are removed from the overall analysis. If the **FilterNegativeMarginEnterprisetInMarkets** toggle is set to N, all remaining Enterprise customers remain in the analysis.

FilterNegativeMarginMarket

The **FilterNegativeMarginMarkets** optimization toggle allows the user to determine if BACE will automatically remove Markets that have a negative NPV. If this toggle is set to "Y", BACE examines the aggregate direct costs (and wire center-specific indirect costs) and revenues for all remaining customers in the market (post user specified testing resulting from the use of **FilterNegativeMarginCLLIs** and **FilterNegativeMarginMassMarketInMarkets**) to determine if the customers provide a positive contribution to the CLEC, i.e., positive NPV within each market, over the 10-year study time frame. If serving customers within any Market has a negative NPV, BACE assumes that the CLEC would not offer services to these customers and thus the costs and revenues are removed from the overall analysis. If the **FilterNegativeMarginMarkets** toggle is set to N, all remaining Market customers remain in the analysis.

FilterNegativeMarginLATAs

The **FilterNegativeMarginLATAs** optimization toggle allows the user to determine if BACE will automatically remove LATAs that have a negative NPV. If this toggle is set to "Y", BACE examines the aggregate direct costs (and LATA-specific indirect costs) and revenues for the positive contribution customers within each LATA (post user specified testing resulting from the use of **FilterNegativeMarginCLLIs,**

FilterNegativeMarginMassMarketInMarkets, and **FilterNegativeMarginMarkets**) to determine if the LATA overall provides a positive contribution to the CLEC, i.e., positive LATA NPV, over the 10-year study time frame. If serving customers within any LATA has a negative NPV, BACE assumes that the CLEC would not offer services in that LATA and thus the costs and revenues are removed from the overall analysis. If the **FilterNegativeMarginLATAs** toggle is set to N, all remaining LATA customers remain in the analysis.

IncludeTerminalValue

The user can either have the model include or exclude a terminal value in the derivation of the model's NPV. If the user sets **IncludeTerminalValue** = "Y" then BACE will include a multiple of the net book value of the assets in the NPV calculation. The model assumes the CLEC business, including its assets, is sold (e.g., as an ongoing business) at the end of year 10 for a value equal to the net book value of the remaining assets. The net book value is discounted appropriately. If the user sets **IncludeTerminalValue** = "N" then BACE will not include any terminal value in the NPV. (Note: The multiple used is the value of the **TerminalValueMultiplier)**

PreTaxCostOfCapital

The user enters the CLEC's pre tax weighted average cost of capital (WACC) in decimal form (0-1), e.g., entry of 0.15 represents a WACC = 15%.

PurchasePower

The **PurchasePower** factor entered in the **CLEC Study Properties** table represents the CLEC's purchasing power relative to BellSouth. To the extent that a CLEC has the same purchasing power as BellSouth, the **PurchasePower** factor should be set to 100 (e.g., the CLECs PurchasePower as a percentage of BellSouth's Purchasing Power. For CLECs that have larger purchasing volumes than BellSouth and may be able to obtain lower pricing from some vendors, the **PurchasePower** factor should be set to less than 100. CLECs with less purchasing power may have a **PurchasePower** factor greater than 100. For **Network Cost Input** table records with the **AffectedByPurchasePower** toggle set to Y, the **PurchasePower** will be divided by 100, then the result is multiplied against the **Amount**.

State

The user selects one of the nine BellSouth regional states from the drop down list box provided. The selection of a state acts as a filter to the extent that the database may include data for multiple states.

StateTaxRate

The user enters the CLEC's effective State tax rate net of the Federal benefit. The value should be entered in decimal form (0-1), e.g., 0.05 represents a tax rate of 5%.

TaxTreatmentForLoss

The **TaxTreatmentForLoss** toggle allows the user to determine how taxes on tax net income losses are handled. If the user sets **TaxTreatmentForLoss = "CarryOver"** any tax income net loss in any year is rolled into the succeeding year. The tax in the current year is then set to zero. The tax in the following year is then calculated based on the current year tax income and the rollover loss from the prior year. If the user sets **TaxTreatmentForLoss = "CurrentYearCredit"** the user is assuming that the loss is used as an offset in the current year against other CLEC operating profit (from other business ventures). As such, it is a contra-expense in the year of the tax income loss.

TerminalValueMultiplier

The **TerminalValueMultiplier** is used in conjunction with the toggle **IncludeTerminalValue.** If the user sets **IncludeTerminalValue = "Y"** the **TerminalValueMultiplier** is multiplied by the present value of the net book of the assets that is added into the NPV.

UseSPAorUNET

The **UseSPAorUNET** toggle in the **CLEC Study Properties** table allows the user to select if the CLEC network should use Special Access (SPA) or Unbundled Network Element Dedicated Transport (UNET) for the transport facilities between the CLEC collocation sites at the BST end offices and their collocation site at the BST Access Tandem. The **CLEC Study Properties** table toggle works in conjunction with the **SpAOrUNETTransport** field in the **Network Cost Input** table as a filter to include or exclude a cost record depending on the entry.

Year1

In the **Year1** field of the **CLEC Study Properties** table, the user enters the first year of the ten-year period to be analyzed within BACE. The entry in the **Year1** field can be no more than 20 years beyond the **FirstYear** date identified in the **Cost Trends** table.

Optimization Steps

The BACE user controls how the model optimizes the output based on user inputs in the **CLEC Study Properties** table. As noted above, there are 7 variables that guide the optimization:

- **AllowColo;**
- **AllowEELs;**
- **FilterNegativeMarginCLLIs;**
- **FilterNegativeMarginMassMarketInMarkets**
- **FilterNegativeMarginEnterpriseInMarkets;**
- **FilterNegativeMarginMarkets;** and,
- **FilterNegativeMarginLATAs.**

With the toggles set, BACE approaches optimization in the following stages:

DSL deployment is first determined. This is a non-user adjustable optimization. Within each wire center, BACE tests whether the DSL present value of 10 years of revenue exceeds the DSL present value of 10 years of direct costs. If the PV revenue does not exceed PV costs, DSL is assumed to be not deployed from the wire center.

EELs or COLO engineering is then decided for each wire center (**AllowColo** = Y and **AllowEELs** = Y). This determination includes the positive value of DSL deployment against the COLO costs, since the model assumes that DSL can only be deployed with a COLO approach.

Wire centers with a negative margin are then removed (**FilterNegativeMarginCLLIs** = Y). If a wire center has a negative NPV, all revenues and costs for the wire center are removed.

Mass Market customers with a negative margin within a market are then removed (**FilterNegativeMarginMassMarketInMarkets = Y**).

With the MassMarket customers removed from various wire centers, the economics of EELs versus COLO may change. Therefore, the model re-tests each wire center to determine whether COLO or EELs should be used in each wire center.

Enterprise customers with a negative margin within a market are then removed (**FilterNegativeMarginEnterpriseInMarkets = Y**).

Next, Markets with a negative margin are removed (**FilterNegativeMarginMarkets** = Y).

Finally, BACE tests the remaining customers within a LATA to determine if the entire LATA should be removed (**FilterNegativeMarginLATAs** = Y).

The end result of the optimization should be the selection of the appropriate CLEC values in a state for:

- Wire center engineering;
- Served customer segments; and
- Operating footprint.

CLEC Products, Price, Quantity, & Revenue Processes

BACE calculates the present value of cash outflows (costs) and cash inflows (revenues). In order to generate revenues, BACE identifies CLEC products, prices for the products, and quantities sold of the products for each year of a ten-year period. BACE uses six main product classifications: 1) Long distance services; 2) voice mail; 3) switched access services (payments by long distance/inter-exchange carriers to terminate local calls to CLEC customers); 4) DSL (standard high-speed connection); 5) non-DSL business data service; and 6) Local (this includes local access, local usage, subscriber line charge (SLC), directory assistance (DA)/operator services, and vertical features other than voice mail).[10] BACE represents the great majority of services that are likely to be offered but not the absolute scope of services that might be offered (e.g., video is not included).

CLEC prices for these six products as well as prices for CLEC bundles of these products are developed by customer segment, and customer-spend category by year.

BACE uses one residential segment and four business segments: 1) small office/home office (SOHO); 2) small-sized business (SME/A); 3) medium-sized business (SME/B); and 4) large-sized business (SME/C). Each segment is further divided into categories based on the amount of customer spending (spend bands). The residential segment is divided into five spend bands (quintiles) with an equal number of customers in each. Each of the four business segments is divided into three spend bands (high spend, medium spend, and low spend) with an equal number of customers in each. Since the spend bands are determined at the state level, each wire center will contain a unique profile and count of the customer segment/spend data. These segments and spend bands allow the user to vary pricing and penetration (and implicitly, marketing strategies) at a granular level. Quantities of individual CLEC products and CLEC bundles of products are also developed by customer segment and customer value, by year. CLEC

[10] BACE allows the user to include separate prices, quantities, and revenues for directory assistance (DA) services, operator services (OS), and line maintenance if the user has the relevant values for these services.

revenues are developed simply as the multiplication of product price by the corresponding product quantity.

The Price Process

As briefly discussed in Chapter 3, the Price Process (P-Process) derives the market prices for each of the six main products and product bundles offered by the CLEC, by customer segment, by year.

The challenge in the P-Process is to find not only the per-unit price for each individual product sold, but also to account for the implied price of individual products sold as components within bundles. In BACE, a bundle is a group of products or services that are sold together as a single unit. The user defines each bundle and its component products in the Bundles Table.. In order to generate inputs for BACE's Revenue Process (R-Process), implied "prices" for each product/component of a bundle are imputed and stored. This implied or imputed price approach for bundled product/components allows for ease of revenue calculation and reporting of revenues at distinct levels along the location and customer hierarchies.

P-Process Inputs

Several tables provide input to the Price Process. The tables and their key input fields are described below. When reviewing the tables, please note how the customer, location and product hierarchies are used to determine how specific price records are applied. Also note, that the hierarchies are critical in triggering the use of the appropriate prices within this multi-step process. The following tables are used in the P-Process.

Table Bundle Price Curves - This table defines the price trend (expressed as a decimal) per year for each product bundle over the ten-year study. This will capture any expected bundle price increase or decreases over time. (Note that in BACE, the term "curve" will be used to reflect changes in values over time, by year, during the 10-year modeling period).

Table Baseline Bundle Price - This table defines the initial bundle prices offered to each customer segment in a defined geographic area.

Table Baseline Product Price - This table defines the initial prices of *á la carte* products by geographic area. The values in this table can be thought of as representing initial standard market prices since the user can apply a CLEC discount to these prices (i.e., the market entry discount to increase market share).

Table Product Price Curves – This table defines the price trend (expressed as a decimal) per year for each product over the ten-year study. The values in this table will capture any increase or decrease in product prices over time.

Table CLEC Baseline Price Discount - This table defines the initial prices of individual bundle products by geographic area.

P-Process Methods

The first task is to create the bundle price profile over time. This is done by multiplying the initial bundle price (**Baseline Bundle Price**) by the bundle price curves (**Bundle Price Curves** table.). The Bundle Price Curves table reflects changes in bundle prices over time. (Indeed, in BACE, the term "curve" is used to denote changing values over time) This task calculates a bundle price per bundle per year for every year, for each relevant market.

The second task is to develop the initial discounted price for each product by applying the CLEC pricing discount to the Baseline Product Price. This task discounts current baseline market-like prices for user-adjusted CLEC discount levels. In essence, it creates an initial discounted price per product by multiplying the baseline product price by the CLEC product discount (from table **CLEC baseline Product** discount) where records match on the product hierarchy.

The third task is to calculate the CLEC product price profile over time. This is done by multiplying the initial discounted product price by the CLEC price curves in the **Product Price Curves** table. This leads to a calculation of the discounted CLEC *á la carte* product price each year.

Fourth, using the *á la carte* product price, these data are joined with the **Bundle** table to find the sum of *á la carte* prices in a given bundle in a given area by year. This shows the price that would exist if the bundle were sold at list or retail price for each of the individual components (i.e., at 'á la carte' prices).

Fifth, bundle adjustment factors are determined for each product in each market. By comparing the sum of *á la carte* prices (for a given customer bundle in a given area) with the actual bundle price for the same area and customer group, a retail price to bundle price adjustment factor can be calculated. The user has an option to exclude certain products in each bundle from this bundle discount calculation through the **IncludedInDiscount** field.

The sixth task is to determine the implied or imputed discount off of the *á la carte* product prices for each product (this is controlled by the user as noted in the prior paragraph) within the bundles. This is accomplished by multiplying bundle adjustment factors for each bundle by the á la carte prices for each bundle component. As noted, the user has the option of excluding product components from this implied discounting process. Alternatively, the user could assume only toll products should receive the discount by adjusting the **IncludeInDiscount** field for only toll products within the bundle definition.

This calculation of implied or imputed prices for products within a bundle does not affect the NPV (vis-à-vis a calculation with bundle prices only). However, this assumption allows for greater ease in modeling (in the P, Q, and R processes) and reviewing model results at various levels along the product, customer and location hierarchies.

At this stage, BACE has determined the per unit product price (or implied price) for each individual product offered *á la* carte, and within each bundle by all levels of location and customer hierarchy.

The final step is to append these product prices into the BACE processing master pricing table, PMaster. All prices that were established on an *á la carte* basis have "á la carte " appended into the bundle field.

The diagram below summarizes the major tasks of the Price Process.

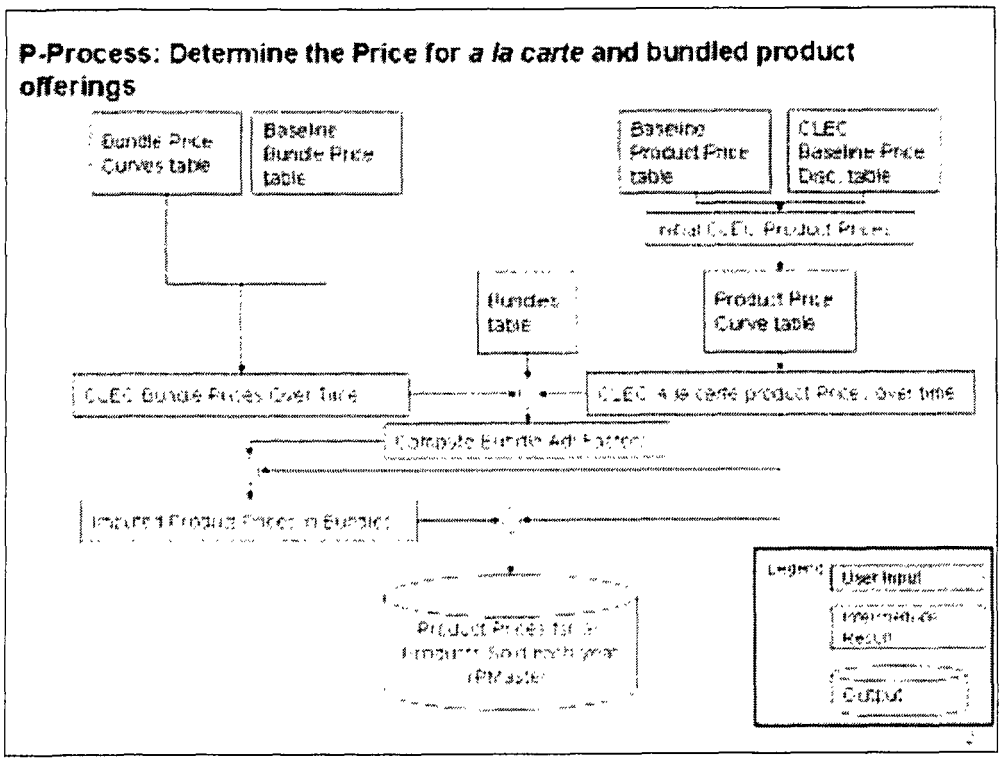

Figure 2--BACE P-Process

The Quantity Process

As discussed in Chapter 3, the Quantity Process (Q-Process) derives the quantity demanded/sold for each product and service offered by the CLEC. (The terms "demand" and "quantity demanded" will be used to refer to quantities that are demanded and actually sold.)

Calculating the quantity demanded of CLEC products takes into account customer segment demographics, anticipated CLEC market share, year of product rollout, and anticipated customer churn (disconnects).

Q-Process Inputs

BACE relies on external market demographics. These data are provided in two input tables. Each table contains information on customer and wire center profiles.

Exchange Info -- The **Exchange Information** table profiles each BellSouth wire center. The table describes each wire center in terms of its membership in various geographic zones (LATA, CEA, BellSouth UNE Zones, etc). The airline distance from the BellSouth end office to the primary BellSouth access tandem within the corresponding LATA is also provided.

Exchange Demographics -- The **Exchange Demographics** table profiles the customer population of each wire center. The wire center population is divided into residence and four business segments described earlier. This segmentation supports granular demand, pricing, market share considerations, and revenue analysis

Beyond these demographics tables, users provide additional input in the following tables.

CLEC Product Profiles - This table allows the user to indicate which products are offered by the CLEC and within what study year the product is first offered. Beyond the first year, the user can also input the product's last offering year.

Baseline Demand - The **Baseline Demand** table describes the expected initial demand for products and services offered by the CLEC.

Demand Curves - The **Demand Curves** table describes the total anticipated market demand change for each product by customer segment, by customer-spend category, by year for study years 2 through 10.

Penetration Curves For Products - This table describes the anticipated CLEC market share for each product by customer type over the ten-year study horizon. This table relies upon user adjustable inputs, and also allows the user to tie product penetration to DSL Addressability.

Churn - This table allows the user to describe the annual churn for each customer grouping for product offered by the CLEC. For BACE, **Churn** is described in terms of disconnects each year by product.

Bundles - The **Bundles** table describes those products and services that are sold within each bundle.

CLEC Profile Bundle - This table allows the user to indicate which bundles are offered by the CLEC and within what study year the bundle is first offered. Beyond the first year, the user can also input the bundle's ending year.

Penetration Curves For Bundles - This table allows the user to determine the proportion of CLEC product sales that occur via bundles, by year, by customer segment and customer-spend category, over the ten-year study horizon. For example, a penetration

rate of .5 indicates that 50% of the customers of the CLEC for a particular customer segment subscribe to the CLEC services through bundles.

Market Growth – This table allow the user to indicate how the current customer base will grow over time. This represents the growth of population and businesses over time.

Q-Process Methods

Given the contents of the demographics and user input tables, BACE performs ten key Q-process tasks. The first six tasks are related to the calculation of the number of customers subscribing to products, by type and location, the CLEC will serve over time. A key concept to understand is that there is a CLEC market penetration of *customers* and then within those customers a market penetration of the CLEC *products*. For example, a CLEC may sign up a customer that takes local service and DSL, but chooses a different carrier for long distance services.

First, BACE develops the CLEC customer penetration for each product on a percentage basis. This data is contained in the **Penetration Curves for Products** table. This data is adjusted to match the first year the CLEC offers each product. This is done by extracting from the **CLEC Product Profiles** table, the first year for which the CLEC offers the product or service and adjusting the market share per period found in table the **Penetration Curves for Products** table. The starting year is used to reflect the CLEC market share in the first year the product is offered. After the ending year (if it occurs before the end of the study horizon), CLEC market share percentage is set to 0.

Second, BACE accounts for the fact that a portion of the products are sold as bundles of products, by adjusting the bundle penetration curves in the **Penetration Curves for Bundles** table for each bundle to match the first year the CLEC offers each bundle (in the **CLEC Profiles Bundle** table) in the same way as it was adjusted for individual products.

Third, using the percentage of each customer segment taking CLEC Products and taking CLEC bundles of products, this step delineates the CLEC market share for each product per period by how the product is sold (i.e., as part of a bundle or *á la carte*).

Fourth, BACE retrieves the initial number of total market customers (assumed to include ILEC plus CLEC customers) by wire center, by customer segment and customer-spend category from the **Exchange Demographics** table.

Fifth, BACE allows the user to identify growth in the number of total market customers, by year, over the 10-year period (in the Market Growth table). This is combined with the Exchange Demographic table to create a total customer curve, representing the change in the number of total market customers year by year.

Sixth, CLEC market share percentages (on a product basis) must be translated into an absolute number of customers taking each CLEC product. BACE calculates this by multiplying the CLEC market share values (table Q4) with the demographics of each

customer segment and customer-spend category found in the **Exchange Information** table (adjusted for market growth).

Seventh, the focus changes from numbers of customers to quantities of products sold. BACE allows the user to identify changes in the baseline demand (from the baseline demand table) per customer segment and sub-segment by product, by year, using the Demand Curve table. (Note, user-adjustable changes in quantities demanded ***per customer*** is different from task 2, which accounted for growth in the number of customers). The end result provides the expected average customer market demand over time for each product, by study year.

Eighth, CLEC customer counts by product on a wire center basis are multiplied by the expected per-customer product quantities, by wire center, to determine total CLEC product quantities. Using a mid-year convention, the quantity of CLEC product demanded for the year is calculated as the average of the end of year demand and prior year's end of year demand. Therefore, the amount reported is actually the mid year balance.

Ninth, BACE calculates the percentage of expected CLEC net adds for each product by year. These percentages are calculated on a product-by-product basis for each customer type. Percentages are derived by applying the disconnect percentages (from the Churn table) to the expected product penetration levels (**Penetration Curves for Products** table) over the ten years. These net addition percentages are applied to the customer count information in the Exchange Demographic table to derive the counts of customer additions.

Tenth, the count of product quantity additions (over the prior year), are appended into table QMaster. These are used to determine the number of customer/product installs in each year.

A diagram summarizing the Q-Process is shown below.

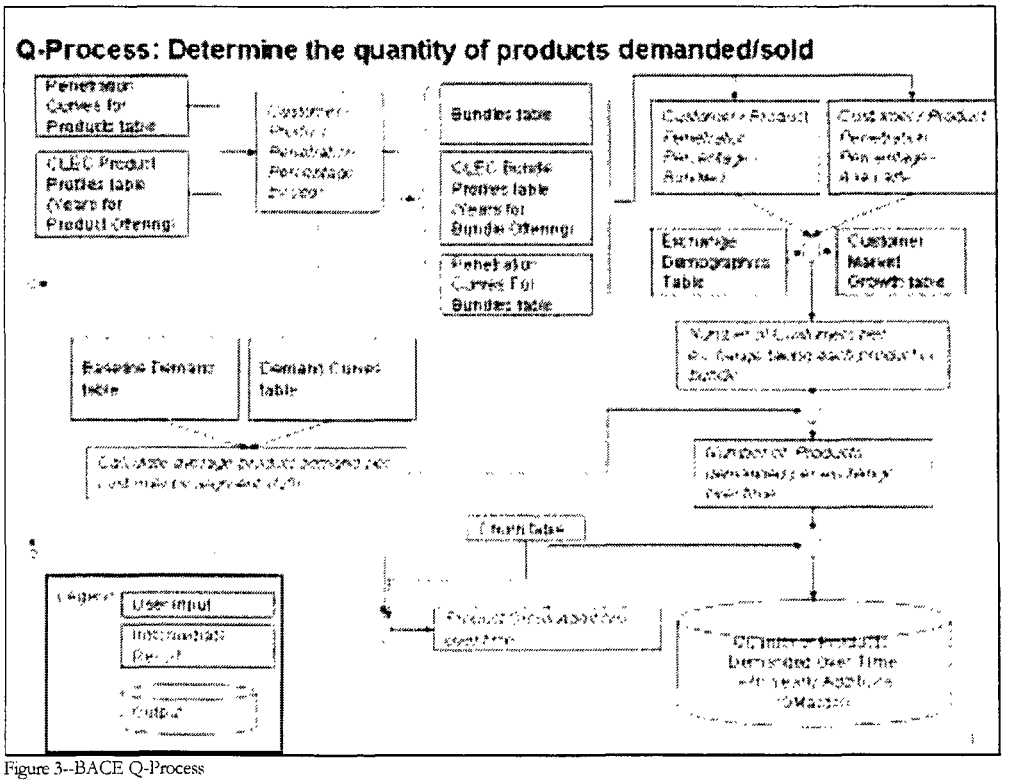

Figure 3--BACE Q-Process

The Revenue Process

The Revenue Process (R-Process) takes information from the Price and Quantity Steps and derives the Gross Revenue due to the CLEC.

R-Process Inputs

Table P Master - This table contains the CLEC price information for each product by customer type in each served location (wire center) over the ten years of the study.

Table Q Master - This table contains the CLEC quantity sold information for each product by customer type in each served location (wire center) over the ten years of the study.

Table USF: Interstate Access Support - This table contains the Universal Service Administrative Company's ("USAC") specified amounts for Interstate Access Support ("IAS") payable to telecom providers by UNEZone and state. These are portable funds that the CLEC can claim if they are an Eligible Telecommunications Carrier ("ETC"). These funds are based on the number of lines the CLEC serves per qualifying area.

Table USF: High Cost Loop Support - This table contains the Universal Service Administrative Company's ("USAC") specified amounts for High Cost Loop Support ("HCLoop") payable to telecom providers by wire center within a state. These are

portable funds that the CLEC can claim if they are an Eligible Telecommunications Carrier ("ETC"). These funds are based on the number of lines the CLEC serves.

Table Alternative Units of Measure - This table allows the user to create additional unit of measure records that can then be used to drive unique costs. For example, the user may determine that DS0s drive certain costs but that the DS0 equivalence of services varies. Through the inputs of this table, the user can create these alternative quantity drivers for services.

R-Process Methods

The Revenue process is a three-step process.

First, the CLEC quantity of each product demanded (by customer segment and location) is multiplied by the CLEC price of each product (by customer segment and location) from table P-Master. This information is calculated for each study year and appended into table R-Master as the revenue in each study year.

Second, given the quantity of lines the CLEC has, the universal service funding revenue records are created based on the inputs in the **USF: Interstate Access Support** and **USF: High Cost Loop Support** tables. These tables provide the monthly funding the CLEC receives for providing service to specific types of customers. After the universal service revenue is added, BACE inserts additional quantity records based on the values in the **Alternative Units of Measure** table.

Next, the present value of the revenue is derived. The present value (as described in Chapter 3) is derived on a mid-year basis. In other words, Year 1 revenue is discounted to six months, Year 2 discounted to 18 months, etc, to bring the values back to time zero.

CLEC PRODUCTS, PRICE, QUANTITY, & REVENUE PROCESSES

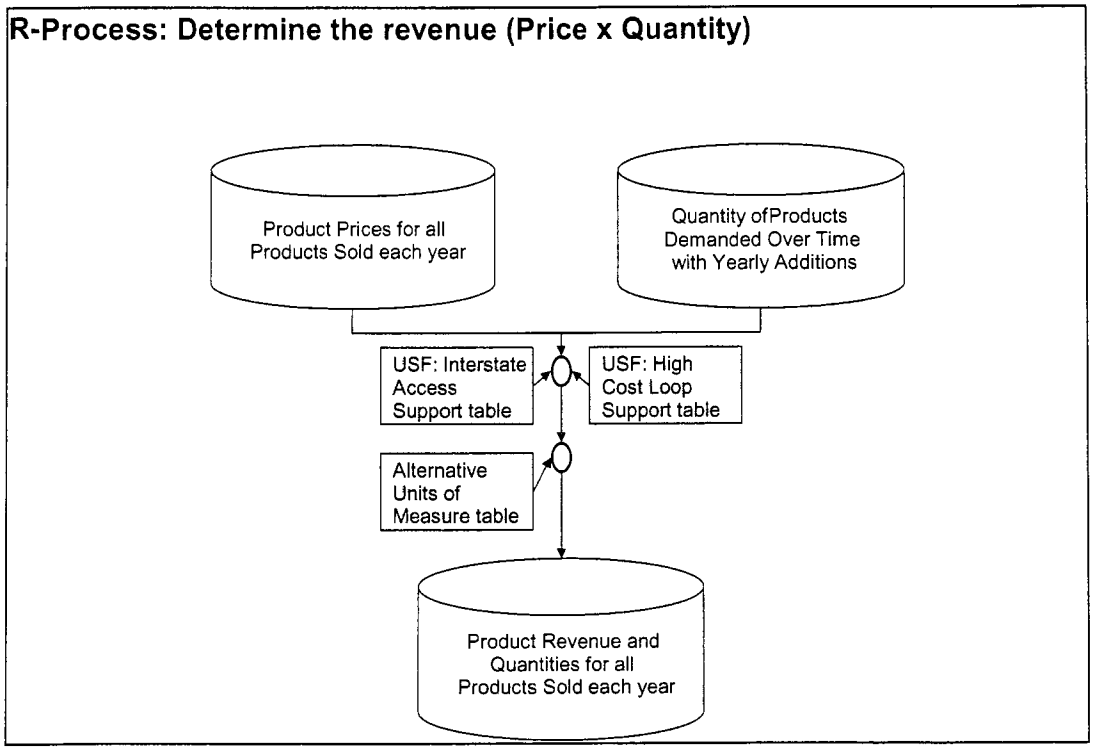

Figure 4--BACE R-Process

Operations and Network Expense Process

The ON Process is BACE's last step and calculates the cost structure of the CLEC. The 'N' Portion calculates investments specific to the network engineering necessary to originate, transport and terminate voice and data over the public switched telephone network (PSTN). The 'O' Portion calculates investments specific to the operations of the company.

ON-Process Input Structure

ON-Process inputs are primarily contained in the Network and Operations cost tables. The entries in these tables largely determine the magnitude of a CLEC's network infrastructure and operations costs and how these costs are incorporated into the BACE analysis. The tables allow the user to include cost records that apply to various CLEC network and operational scenarios. (A cost record represents one row of the Network Cost or Operations Cost Input tables.) From these tables, the ON-Process determines the appropriate cost records to be included in the BACE analyses in accordance with the quantities of products sold obtained from the Q, P and R processes and user entries in other BACE tables.

Put another way, based upon the manner in which the inputs in this table are structured, different costs will be caused based upon some type of driver (like the number of lines in an wire center) or a study parameter the user enters (like the size of the CLEC in the CLEC Study Properties table.)

The entries in the tables can be thought of in several ways.

First, some of the fields act as Filters that assist BACE in determining the appropriate cost records. The Filter variables generally rely on user adjustable inputs in other BACE tables. For example, during the initial steps of processing, BACE ignores network design and cost inputs that are not relevant to the user adjustable inputs entered, like the size of the CLEC in the **CLEC Study Properties** table.

Second, some of the fields in these tables act as Descriptors. Descriptors have no impact on the analysis or results but exist for documentation and information purposes only. The Source/Notes column is an example.

Third, Value Fields are used within calculations and have a direct impact on the final results. For example, the **Amount** field is used directly as the amount of the cost record. Another Value field, **Weight**, is used to factor up or down the **Amount** field.

In the following discussion, keep in mind how the various filter fields are used by BACE with the ultimate goal of finding the correct cost record, then developing the appropriate cost based upon the Value fields.

ON-Process Inputs

The following section will describe the fields for each entry in the Network Cost Table and the Operations Cost Table. As many of the field names are the same, they are treated together in this section.

CLECType

The **CLECType** field works as a filter to ensure that BACE includes only those cost records which meet the user criteria established in the **CLECType** input of the **CLEC Study Properties** table. BACE may use only those cost records that have a **CLECType** equal to ALL or set to the same value as the **CLECType** entered in the **CLEC Study Properties** table.

Possible entries include Large, Medium, Small and ALL. Large, Medium and Small are directly related to the size of the CLEC being analyzed. Cost items with a **CLECType** = ALL are applicable to each size of CLEC.

AcctCat

The Account Category (**AcctCat**) field is another Filter field. Primarily this field helps categorize reported investment.

Possible entries include Capex, COGS, Opex, Sales, Bad Debt, AdValorem and G&A. An entry of Capex indicates that the cost record represents a capital expenditure by the CLEC, for example the purchase of switching equipment. Cost items with **AcctCat** set to Opex represent an operational expense that would most likely not be capitalized in the accounting records of the CLEC. Examples of Opex cost records include the contractual maintenance costs identified for VoiceMail operations that are not captured in the factors applied and the Repair and Maintenance cost records in the **Operations Input Cost** table. Cost items that have the **AcctCat** variable set to COGS (Cost of Goods Sold) represent costs of infrastructure or network services that the CLEC purchases/leases from another carrier. Unbundled Network Elements (UNEs) and wholesale rates are examples of cost items that will have an **AcctCat** set to COGS.

ApplyLoadings (Network Cost table only)

The Yes/No flag indicates whether BACE should apply the InPlant and Loadings factors from the **InPlantAndLoadings** table to the cost record. Possible entries include Y or N. Typically, costs that are capital expenditures represent material only and will require the application of InPlant and Loading factors and have **ApplyLoadings** set to "Y".

COLOOrEEL (Network Cost table only)

This field acts to filter a record for inclusion or exclusion in combination with the **AllowCOLO** and **AllowEEL** variables in the **CLEC Study Properties** table. Possible entries include COLO, EEL or ALL. Cost items with **COLOOrEEL** = COLO will be included in the analysis if **AllowCOLO** = Y. Cost items that have **COLOOrEEL** = EEL will be included in the analysis if **AllowEEL** = Y in the **CLEC Study Properties** table. If **COLOOrEEL** = ALL for a cost item identified in the **Network Cost Input** table, the cost record is not impacted by the collocation or EEL network architecture. Thus it will be considered in all cases.

> Note: If both the **AllowCOLO** and **AllowEEL** toggles in the **CLEC Study Properties** table are set to Y, the system will perform an economic test at each wire center the CLEC serves to determine the best economic alternative over the 10 year period.

SpAOrUNETTransport (Network Cost table only)

This field compliments the entry in the **CLEC Study Properties** table allowing the user to select if the CLEC network should use Special Access (SpA) or Unbundled Network Element Dedicated Transport (UNET) for the transport between CLEC collocation sites at BST end offices and their collocation site at the BST access tandem. The **SpAOrUNETTransport** field works as a filter to include or exclude a cost record. Possible entries include SpA, UNET or ALL.

DS1ToDS0Xover (Network Cost table only)

This DS1ToDS0Xover field compliments the entry in the **CLEC Study Properties** table. It allows the user to select if the CLEC network will use a cross over of 4 or 9 DS0s. (A cross over of 4 indicates that the CLEC would choose individual DS0s up to 3 DS0s, but would choose a DS1 rather than 4 DS0s.) Possible entries in the **Network Cost Input** table are 4, 9 and ALL. A cost record with an entry of ALL indicates that the cost is not sensitive to the DS1 to DS0 cross over.

Cost Hierarchy : CostFam, CostArea, CostCntr, CostElem

Cost hierarchy inputs are typically for information only and are Descriptor inputs. They are used in reporting to clarify costs to levels of the CLEC location, product or customer hierarchy. However in limited cases, BACE may use these entries to filter cost records in or out of a set of calculations. For example, a CostElement set to "GettingStartedInvestment" may trigger the application of the **PctBSTCoverageOfLATA** factor. Other than these few isolated cases, the cost

hierarchy entries have no impact on BACE's network or operational costs. Hierarchy entries conceptually have no limitations although the user should enter descriptions that will be helpful when analyzing results. Current entries provide increasingly more detail from the highest level of the hierarchy (CostFam) to the lowest (CostElement).

CostType

The **CostType** field is used to determine how the cost record will be used in the Optimization Routines. The **CostType** value can be either "Direct" or "Indirect". Cost records identified as Direct are costs that are considered directly attributable to the product identified within the product hierarchy for that cost record. Indirect costs are those costs not directly attributable to a product.[11]

Secondary Driver Inputs

Cost driver inputs within BACE indicate to the system how the cost record should be engineered and/or assigned. In some circumstances, costs are initiated and driven by product demand. In others, equipment and associated costs, are initiated and driven by geographic location. For example, the model may place one switch per LATA. In yet other cases, costs are driven as a factor of other capital expenditures or revenues.

In the cases where the cost is driven by product demand, the Secondary Driver Inputs are not required, and "NONE" should be entered. For cost items that are driven by location, the secondary driver inputs allow for the potential to analyze the costs per location based on the primary cost driver inputs and assign the costs to the appropriate product via the Secondary Driver Inputs.

Whenever Product is used as the DriverType, the Driver and QUOM entries must be consistent with the DriverType entered and the product hierarchy identified for the cost record.

SecondDriverType

In cases where the primary cost driver type is not "Product", the **SecondDriverType** must be identified to ensure that the costs are associated with a product or service. Valid entries include Product and NONE.

SecondDriver

In cases when **SecondDriverType** is set to NONE, **SecondDriver** will also be set to NONE. If **SecondDriverType** = Product, the appropriate entry for **SecondDriver** is Quantity.

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[11] Note that certain indirect costs, that correspond to the level of optimization, are used in the optimization routines. For example, when the LATA optimization toggle is turned to yes, the LATA "indirect" switch getting started costs are included in the optimization calculation since they become, in essence, "direct" costs of the geographic area being analyzed.

SecondQUOM

For cases when the **SecondDriverType** = Product and the **SecondDriverType** = Quantity, the **SecondQUOM** must be set to an appropriate **UOM** for the product (or products if a product family is identified) as identified within the Product Hierarchy inputs of the Network Cost table.

The **UOM** must be consistent with the **UOMs** identified within the BACE **Product Hierarchy** table or those developed in the **Alternative Units of Measure** table. Valid entries include GrossAdds, Lines, MOU and Customers.

The following examples illustrate how the primary and secondary drivers interact.

Network Cost Input	**Example 1**	**Example 2**	**Example 3**
CostDriverType	Product	Loc	Loc
CostDriver	Quantity	Cntr	Elem
QUOM	Lines	Lines	Lines
SecondDriverType	NONE	Product	Product
SecondDriver	NONE	Quantity	Quantity
SecondQUOM	NONE	Lines	MOU

Table 5--Primary and Secondary Driver Interaction

Example 1: The primary cost driver is the product identified within the network cost table and thus the secondary driver is not required.

Example 2: The primary driver inputs indicate that the cost item is engineered/placed on a per LATA basis. (Loc-Cntr indicates location is the driver type and Cntr (center) or LATA is the level of geography selected.) Further, the primary inputs indicate that the cost is driven by the number of CLEC lines within the LATA. Therefore the system will select appropriate costs from the network cost table based on calculated demand (for the product(s) identified) and the CDMin and CDMax entered for the cost item. The secondary inputs indicate that the costs developed should be assigned to the product identified within the product hierarchy inputs and allocated based on the number of lines for that product.

Example 3: The primary drivers indicate that the cost item is engineered/placed at the wire center level. Further, the primary inputs indicate that the cost is driven by lines at each end office location. Therefore the system will select appropriate costs from the network cost table based on calculated demand (for the product(s) identified) and the **CDMin** and **CDMax** entered for the cost item. The secondary inputs indicate that the

costs developed should be assigned to the product identified within the product hierarchy inputs and allocated based on the Minutes of Use (MOU) for that product.

ScopeCat

The **ScopeCat** field is a Y/N text field that indicates whether the **BSTAsPctOfScopeOfOperations** factor entered in the **CLEC Study Properties** table should be applied to the cost record. The intent of this factor is to account for the larger operational scope of CLECs that serve customers outside of BellSouth's territory.

AffectedByPurchasePower (Network Cost table only)

AffectedByPurchasePower is a Y/N field that indicates whether the **PurchasePower** factor entered in the **CLEC Study Properties** table should be applied to the cost record. The intent of this factor is to accommodate different "size" CLECs having different purchasing power from telecommunications equipment and service providers.

LifeCat (Network Cost table only)

The **LifeCat** field indicates which **InPlant** factor is applied. Valid entries include Telco, Mat, Hardwire, PlugIn and PlugInSpStock that can be representative of Field Reporting Codes (FRCs) or sub-FRCs. The entry in the table must correspond to entries in the **InPlant and Loadings** factor table.

PlantCat

The **PlantCat** is an alphanumeric variable populated with asset specific codes. In the **Network Cost Input** table, the codes indicate the appropriate factors to use for trending costs over time and for retirement of assets. In the **Operations Cost Input** table, the **PlantCat** field identifies the asset category to which the factor in the **Amount** field should be applied. Valid entries for **PlantCat** must match the analogous entries in the cost trends and retirement capex tables. In many cases, FRCs or pseudo-FRCs are used to represent the specific assets. For example, 377C is used to identify central office switching equipment. For non-capital cost entries such as operational costs, the appropriate **PlantCat** entry is "NONE".

Bundle

If a network cost is specific to a bundle, that bundle could be identified using this field. Valid entries include ResBundleA, ResBundleB, ResBundleC, SOHOBundleA, SOHOBundleB and SOHOBundleC. These entries are limited to the bundle names defined in the **Bundles** table.

Product Hierarchy : ProdFam, ProdArea, ProdCntr, ProdElem

If a cost is directly associated with a specific product (e.g., local subscription), or a product family (e.g., local) the user can enter a product in the product hierarchy fields of the Network and Operations cost tables.

BACE will assign the costs generated by that cost record to the service(s) identified. Inputs must be consistent with the hierarchy as entered in the **Product Hierarchy** table.

Customer Hierarchy : CustFam, CustCntr, CustCntr

To the extent that a cost item is directly related to a specific segment of customers within a product (or product group), BACE allows the user to identify the customer segment via the **Customer Hierarchy** fields in the cost tables. An example in the **Operations Cost Input** table is the application of different sales costs for different customer segments, i.e., the user can distinguish between the cost of residential customer acquisition and the cost of large business customer acquisition. An example within the **Network Cost Input** table is the use of a DS1 digital loop (instead of a standard 2W wire loop) to provision PSTN local services to the SME/B customer segment. For this DS1 loop cost record, the product hierarchy would be PSTN/Local/Line/Subscription and the customer hierarchy would be:

CustFam = Bus;

CustArea = SME/B; and,

CustCenter = %.

Note that the % sign is a wildcard entry indicating that all possible entries will be considered. Valid entries must be consistent with the **Customer Hierarchy** table.

Location Hierarchy : LocElem, LocArea, LocCntr, LocElem

In many circumstances costs are specific to a location. For example, UNE prices are specific to a state. In some circumstances, although the rate may be the same in all states, the probability of the rate being applied may be different in each state and thus the location hierarchy could be used to distinguish the cost records from one state to the next. Thus BACE provides the opportunity for the user to identify network costs that are location specific. Valid entries for the hierarchy must be consistent with the **Location Hierarchy** table.

NtwkCat (Network Cost table only)

The **NtwkCat** field indicates whether the CLEC has purchased the cost item ("owned") or secured the service or infrastructure from BellSouth or another company. Valid entries include:

- Owned – indicates that the cost item represent equipment that the CLEC has purchased;
- UNE – indicates that the cost item is an Unbundled Network Element (UNE)

- Wholesale – indicates the cost item represents a wholesale rate contracted by the CLEC;
- SPA – indicates the cost item is part of the Special Access rate elements;
- UNET – indicates the cost item is part of the Unbundled Dedicated Transport rate elements purchased by the CLEC from BellSouth;
- EEL – indicates a UNE EEL rate obtained by the CLEC; and,
- Access - indicates all Switched Access cost elements.

Generally, the **NtwkCat** entry should be consistent with the **AcctCat** entry for each cost item.

DemandYearForBuild

The **DemandYearForBuild** field captures the telecommunications engineering/planning horizon differences for different network components. Therefore, the costs related to those components must be treated differently. The "lumpiness" of the capacity of telecommunications network equipment often requires that telecom networks are initially designed based on the expected demand for a time period greater than one year. To capture this effect, BACE includes the **DemandYearForBuild** variable to identify how many years of demand should be considered when the CLEC incurs a cost.

For example, the frames required for multiplexer equipment may be designed to handle anticipated demand for a 3-year period. In this case the **DemandYearForBuild** variable would be set equal to 3 for the multiplexer frame and common plug-in equipment costs. However, multiplexer "line cards" are not purchased 3 years in advance and thus the **DemandYearForBuild** entry for this cost record would be set to 1 indicating that the cards are purchased each year based on demand requirements. (Note: because the model uses annual increments, the user must enter integer values 1 or above for all cost records)

RateZone

RateZone is included in the **Operations and Network Cost Input** tables to identify the rate center zones related to cost records. In the **Network Cost Input** table, the **RateZone** field is entered for Special Access rates. The rate center zones that apply to each wire center are identified during the Q process and thus the appropriate special access rates will be applied for each wire center. Valid entries must be consistent with entries in the **Zone Definitions** table and may include 1N, 1R, 2N, 2R, 3N, 3R and "%".

UNEZone (Network Cost table only)

The **UNEZone** field identifies the UNE zones related to certain UNE rates such as UNE loops and UNE EELs. The UNE zones that apply to each wire center are

identified during the Q process and thus the appropriate UNE rates will be applied for the demand in each wire center. Valid entries must be consistent with entries in the **Zone Definitions** table and the Zones within a state. Values may include: Zone1, Zone2, Zone3, Zone4.

DSLAddressable

The **DSLAddressable** Y/N toggle indicates if the cost item represents a portion of the CLEC network that can support DSL service. As part of the Q process, the Exchange Demographic file has a toggle to indicate that the customer segment is addressable (can be served) by copper cable within the design characteristics of DSL. BACE allows the user to indicate that if a residential or SOHO customer is DSLAddressable, the CLEC may provide service over specific facilities. For example, if the customer is DSLAddressable the CLEC may want the ability to provide DSL service and therefore will use an Unbundled Non-Designed Copper Loop (UNDCL) to serve the customer. In this example, the user would set the cost records related to UNDCL to have a **DSLAddressable** entry = Y. The UNE cost records related to SL1 and SL2 loops would have a **DSLAddressable** entry = N since the user is indicating that these types of loops will not be used to support DSL service.

Cost Driver Inputs

Cost driver inputs indicate how the cost item should be engineered and/or assigned. In many cases, costs are initiated and driven by product demand. In other cases, equipment and the associated costs, are initiated and driven by location, e.g., one piece of equipment per LATA. In yet other cases, costs are driven as a factor of other expenditures or revenue.

CostDriverType

The **CostDriverType** identifies the hierarchy that is the primary driver for the initial and (perhaps) ongoing use of the cost record. In cases where product demand is the driver for the cost item, **CostDriverType** = Product. For cost items that are engineered per LATA or per end office, the **CostDriverType** = Loc, indicating that the location hierarchy will be the primary basis for placing the equipment. Valid entries include Product and Loc.

CostDriver

The **CostDriver** provides additional detail about how the cost is incurred by the CLEC. For a cost driven by product demand, the **CostDriver** = Quantity. If the cost record value is a factor that is applied to product revenue, the **CostDriver** = Revenue. In this case, the system will apply the factor (in the amount field) to the revenue associated with the product identified in the product hierarchy fields for that cost record. Similarly, if the cost record **Amount** is a factor that is intended to be applied to the capital expenditures of specific asset categories (e.g., Maintenance factor), then the **CostDriver** would be set to Capex and BACE applies the factor to the capital expenditures for the **PlantCat**

identified for the cost record. The **CostDriver** entry must be consistent with the **CostDriverType** entry for the same cost record. Valid entries may include: Quantity, Revenue, Cost and Capex (for a **CostDriverType** = Product); and Cntr and Elem (for a **CostDriverType** = Loc).

QUOM

For a **CostDriverType** = Product and **CostDriver** = Quantity, the **QUOM (Quantity Unit of Measure)** variable indicates the units in which the demand is to be measured. In all cases, the **QUOM** is used to determine the appropriate units for the **CDMin** and **CDMax** variables. In cases in which the **SecondaryDriver** inputs are set to NONE, the **QUOM** also determines the units for the capacity of each cost record. Valid entries must be consistent with the UOMs identified within the BACE **Product Hierarchy** table or in the **Alternative Units of Measure** table and may include: GrossAdds, Lines, MOU, Customers and "%".

The following examples illustrate the interaction of the primary and secondary drivers.

Network Cost Input	Example 1	Example 2	Example 3
CostDriverType	Product	Loc	Loc
CostDriver	Quantity	Cntr	Elem
QUOM	Lines	Lines	Lines
SecondDriverType	NONE	Product	Product
SecondDriver	NONE	Quantity	Quantity
SecondQUOM	NONE	Lines	MOU

Table 6--Primary and Secondary QUOM interactions

Example 1: The primary cost driver is the product identified within the network cost table and thus the secondary driver is not required.

Example 2: The primary driver inputs indicate that the cost item is engineered/placed on a per LATA basis. (Loc/Cntr indicates location is the driver type and Cntr (center) or LATA is the level of geography selected.) Further, the primary inputs indicate that the cost is driven by lines within the LATA. Therefore the system will select appropriate costs from the network cost table based on calculated demand (for the product(s) identified) and the **CDMin** and **CDMax** entered for the cost item. The secondary inputs indicate that the costs developed should be assigned to the product identified within the product hierarchy inputs and allocated based on the number of lines for that product.

Example 3: The primary drivers indicate that the cost item is engineered/placed at the wire center level, i.e., at the BellSouth end office level. Further, the primary inputs indicate

that the cost is driven by lines at each end office location. Therefore the system will select appropriate costs from the network cost table based on calculated demand (for the product(s) identified) and the **CDMin** and **CDMax** entered for the cost item. The secondary inputs indicate that the costs developed should be assigned to the product identified within the product hierarchy inputs and allocated based on the Minutes of Use (MOU) for that product.

CDMin and CDMax

In some circumstances, the appropriate choice of telecommunications equipment is driven by the level of demand. Different sized equipment with different costs, may be appropriate under different conditions. The **CDMin** and **CDMax** variables, in the units of the **QUOM**, are used to accomplish this task. For example, anticipated demand in a rural area may establish that a 5000 line switch is appropriate while a 45,000 line switch may be appropriate for a densely populated urban center. BACE addresses this need by allowing the user to enter multiple switching cost records that represent the same cost components (e.g., cost per line) but distinguish the costs by the size of the switching requirement thus ensuring the cost is only accounted for once. For example, switching investments could be established for switches:

- with less than or equal to 10,000 lines;
- more than 10,000 up to and including 25,000 lines; and,
- greater than 25,000 lines.

BACE compares the demand established in the Q process to the values for **CDMin** and **CDMax**. Making this comparison allows BACE to determine which cost record is appropriate for each situation.

Frequency

The **Frequency** field identifies how often a cost should be applied. In addition to the traditional recurring and non-recurring costs, specialized frequency variables were developed to ensure that costs are applied only when required. Valid entries and their treatment in BACE are in the table below.

Frequency Entry	BACE Treatment (example)
StartUp	One time investment for the firm incurred at the beginning of the study period (OSS investment).
Recurring	Treated as monthly, i.e., Amount is multiplied by 12 to obtain annual cost – e.g., monthly UNE loop rates. (Annualization only applies to non-capex

Frequency Entry	BACE Treatment (example)
	AcctCat cost records)
NonRecurring	Cost which is incurred once per unit (e.g., sales acquisition costs, where the unit is a customer)
NonRecurringNetwork	Cost which is incurred once per unit. In this instance, the unit is a network component that is not expected to change in volume with a change in customer demand. The cost record is applied to the incremental new demand each year for the component.
NonRecurringChurn	Amount is multiplied by user entered churn rates to account for the fact that the cost is caused by customer churn (e.g., non-recurring UNE loop disconnect rates)
Annual	Occurs only once per year (G&A capex)
Usage	Not used

Table 7--Frequency Values

Capacity

This variable identifies the engineering capacity, measured in the **QUOM (or SecondQUOM)** units, relative to the **Amount** entered for each cost record. The impacts of utilization and concentration ratios are accounted for in the **Capacity** of each cost. Further, the **Capacity** is identified in equivalent usable units for each cost record. For example, if a DSLAM has a physical limitation of 200 line terminations and a maximum effective utilization of 80%, **Capacity** = 200 * 0.8 = 160 (with the **QUOM** = Lines).

Weight

This variable is generally used to identify the probability of a cost occurring. The **Weight** variable is used as a multiplier against the **Amount** and indicates how many units of the cost are required per the **Capacity** specified. For example, if a cost record has an **Amount** = $5, **Capacity** = 100, **QUOM** = lines and a **Weight** = 2, BACE will place $10 of cost (**Amount** * **Weight**) for each 100 lines of demand identified by the Q process.

MileageBased (Network Cost table only)

This Y/N toggle indicates if the **Amount** entered for the cost record is a per-mile rate and thus must be multiplied by mileage. Mileage is provided in the Exchange Information file as air miles from each BellSouth end office to the BellSouth access tandem[12].

Amount

Amount is the amount associated with each cost record. In the majority of cases the **Amount** is expressed in dollars. For example, the monthly rate associated with UNE loops is entered. However, BACE does not require that **Amount** be expressed in dollars. Since some costs are developed as a factor of product revenue or a percentage of switching investment, **Amount** can also be a factor. In these instances, the **CostDriverType**, **CostDriver** and **QUOM** must be set appropriately.

Vintage (Network Cost table only)

The **Vintage** variable indicates the year in which the **Amount** was developed. This input provides the basis for each cost item that is trended over time using the asset specific factor in the **Cost Trends** table. For example, switching investments (identified with **PlantCat** = 377C) have a **Vintage** of 1998. BACE brings the switch investment from 1998 to the **Year1** date identified in the **CLEC Study Properties** table using the 377C cost trends factors. These Year1 investments are then used for Year1 cost calculations.

Source/Notes

The source/notes field is used for informational purposes only. It has no effect on calculated results.

Operations and Network Process Methods

The Operations and Network ON-Process is split into three major phases. First is the cost preparation phase during which all of the costs are filtered and arranged in preparation for aligning the costs with the results of the price, quantity and revenue processes. The second phase develops appropriate network and operational costs using the cost records prepared in the first phase. The third phase of the ON process incorporates a series of optimization routines to assist in reflecting efficient CLEC operations.

Cost Preparation Phase

The first task is to identify all of the possible investment items that can be driven by BACE. This requires resolving all of the wildcard logic that exists in the **Network and Operations Cost Input** tables.

[12] Air mileage is appropriate in this case since air miles are used to rate Special Access, EELs transport and UNE Dedicated Transport.

Next, since BACE's network and operations cost tables may have inputs for various alternative network and operational scenarios, BACE has several user inputs that act as filters on the network and operations cost input tables. In other words, the user, via these user adjustable inputs, determines how BACE constructs the CLEC network. These inputs are found in the **CLEC Study Properties** Table. Relevant inputs include: **AllowColo, AllowEELs, CLECType, SpAOrUNETTransport, DS1ToDS0XOver.**

For example, if the **AllowEEL** toggle is set to N, then all cost records in the **Network Cost Input** table with the Colo/EEL input set to EEL are eliminated. (A cost record is reference to one row of the **Network Cost Input** or **Operations Cost Input** table.) Similarly, when the **AllowColo** toggle is set to N, the cost records with Colo/EEL set to Colo are removed.

The next task is for BACE to apply the scope and purchase power factors. Within the **CLEC Study Properties** table, the user enters these two factors. The **BSTAsPctOfScopeOfOperations** factor accounts for the relative size of the CLECs national scope of operations as compared to the BellSouth operating territory within the state being analyzed. The second factor reflects the CLEC's ability to secure pricing discounts for network equipment (**PurchasePower)** vis-à-vis the purchasing power of BellSouth. For all network and operations cost records that have ScopeCat = "Y", BACE will apply the **BSTAsPctOfScopeOfOperations** factor entered by the user to the values in the **Amount**, **CDMin**, **CDMax** and **Capacity** fields. For all **Network Cost Input** table records with the variable **AffectedByPurchasePower** = "Y", the **Amount** field value will be multiplied by the **PurchasePower** factor.

Following the application of scope factors, all non-capital recurring costs entered into the operations and network cost tables are converted from monthly to annual. Since BACE works with annual quantities, these records must be multiplied by 12. Thus, records with **AcctCat** not equal to "Capex", that have **Frequency** set to recurring and have a cost driver of quantity, the value in the **Amount** field is multiplied by 12.

In most cases, telecommunications network equipment requires an initial outlay to the equipment vendor as well as other outlays to install the equipment, to ensure that the equipment is properly connected to other equipment, and to provide a safe and efficient environment for the equipment to operate. To capture these investments BACE uses a series of factors that are entered by the user in the **InPlantAndLoadings** table. Applying **InPlant** factors is the next processing task.

InPlant factors account for the cost of installing network equipment. Since the effort required to install equipment varies by type of equipment, these factors are specific to an asset account class (**PlantCat**) and can further be classified at the sub-account level (**LifeCat**). For each capital network component identified in the network cost table, the investment amount is multiplied by the **InPlant** factor whose **PlantCat** and **LifeCat** match those of the cost record. The result is an InPlant investment that captures the costs related to the material investment, any vendor engineering and installation required, and installation investments of the CLEC.

In addition to the **InPlant** investment, the CLEC must make investments to ensure that the equipment is properly connected within the network and that the equipment has the proper power to function. These investments are captured by the Support Equipment Loading and Power Loading, respectively, applied to the **InPlant** investment. For each capital network component identified in the network cost table, the **InPlant** investment is multiplied by the Power and Support factor with a matching **PlantCat** (there is no **LifeCa**t detail for power and support). The Support and Power factor is applied directly to the **InPlant** investment to create an investment that captures material investment, vendor engineering and installation, the CLECs engineering and installation costs and support and power equipment costs.

Finally, for equipment that is purchased by the CLEC and housed within CLEC-owned buildings (i.e., not in collocation space), the CLEC must capture the investment related to outlays for land, building, pole, conduit, trenching, and Right-to-Use (RTU) fees. For all capital cost records in the network cost table that have **ApplyLoadings** = "Y" , BACE will search for loading factors (in the **InPlantAndLoadings** table) that have **PlantCat** and **LifeCa**t variables that matches the **PlantCat** and **LifeCat** of the cost record. For each cost record, all appropriate loadings are applied to the InPlant investment (including the power and support loading). However, since the investments being created from these loadings are not in the same asset class as the original equipment, the resulting investment loadings are entered as a new cost record in the cost table and associated with the **LoadingPlantCat** as entered in the **InPlantAndLoadings** table. The **PlantCat** of each network cost record is used in later calculations including the determination of appropriate retirement and reinvestment in replacement assets.

Next, BACE identifies how the vendor prices and investment values will change over the 10-year study. These factors are a user input into the **Cost Trends** table.

Trending is performed in two steps. In the first step, the capex (i.e., capital investments) are brought from their vintage year (as entered in the **Network Cost Input** table) to the first year of the study (as entered in the **CLEC Study Properties** table). Based on these inputs, and matching on the **PlantCat** to ensure the cost trend for the appropriate **PlantCat** is assigned, BACE identifies the appropriate cost trend changes and applies them to the prior period investment value resulting in an investment value that is consistent with the first year of the study. The second step calculates the investment in years 2 though 10 by applying the nine subsequent cost trend factors to the cost record, again matching on the **PlantCat**. The result is that each capital investment item has an amount for each of the ten years that will be applied within the calculations. Note that since the operational costs are entered for each of the ten years of the study, the cost trend factors are not applied to the operational costs in the **Operations Cost Input** table.

Within this same step, BACE applies the **Weight** input (entered in the **Network Cost Input** table) to each of the cost records. The **Weight** input generally reflects how often the cost record occurs and thus is applied to the value in the **Amount** field for each year.

Next the implications of customer churn are considered. The rate of customer churn has an impact on how often some costs will occur. These costs, generally UNE disconnect

fees, have **Frequency** set to "NonRecurringChurn". For each of these cost records, BACE matches the customer segment of the cost with the churn rate appropriate for that customer segment as entered in the **Churn** table, and applies the churn rate to the value in the **Amount** field of the cost record.

Next, to accommodate the fact that a CLEC, by installing certain equipment in a LATA, may be able to serve customers via UNEs from carriers other than BellSouth within that same LATA, BACE includes a variable accounting for the percentage of these UNE-available customers within each LATA that are served by BellSouth. This allows BACE to apportion some of the fixed costs within a LATA to both the BellSouth operating area and the other ILECs within the LATA. The **BSTCoverageOfLATA** table provides the percentage of lines that are served over BellSouth facilities within each LATA of each state. Since the capacity of some equipment placed in each LATA can serve customers other than those on BellSouth facilities, the investment for these items (e.g., the switch Getting Started Investment) is multiplied by **PctBSTCoverageOfLATA** entry appropriate for the state and LATA where the equipment is placed.

Network Requirement and Cost Development Phase

With the appropriate cost records identified, BACE develops the foundation for determining costs incurred by the CLEC by calculating the underlying service and equipment requirements. Results from the Q-Process that identify demand (where appropriate) for each of the various levels of the product, customer and location hierarchies provide the basis for establishing an appropriately sized CLEC network architecture.

For network equipment purchased by the CLEC, determining the appropriate equipment and number of units to install relies on network engineering rules and equipment capacities. Practically, CLEC engineers would likely examine demand forecasts for a period of time (the time frame is dependent on the type of equipment), work with vendors to identify the equipment appropriate to meet the demand and purchase equipment sufficient to accommodate the expected demand, any administration requirements, spares and perhaps growth. The identification of the number of capital cost units to install within BACE is similar to this process.

The **Network Cost Input** table has entries identifying capital investments related to the various types of telecommunications equipment the CLEC will purchase. Each cost record has an associated Product hierarchy, **DemandYearForBuild**, **CDMin**, **CDMax** and **Capacity** that is relative to the investment **Amount**. Note: The **Capacity** entry should reflect the point of relief for the equipment component investment, not the ultimate physical/logical capacity.

For each of the capital cost records, BACE develops the demand requirements in each year based on the product, customer and location hierarchies specified in the **Network Cost Input** table (based upon output of the Quantity process). The value of the **DemandYearForBuild** input determines how many years of demand are used to determine the initial unit number of each capital cost record that is required. For

example, if **DemandYearForBuild** is equal to 5 then BACE will use the first five years worth of demand. Once the appropriate demand value is determined, BACE identifies the appropriate cost record to use by comparing the demand to the **CDMin** and **CDMax** of the cost record. If the demand does not fall between the **CDMin** and **CDMax** values, the cost record is not used. If the demand does fall within the **CDMin** and **CDMax** values entered, the demand is divided by the capacity of the cost record and rounded up to the next integer to determine the number of cost items that the CLEC requires

For each subsequent year, the annual number of capital cost records is determined by dividing the annual demand by **Capacity** and rounding up to the next integer. In any year in which the number of units of the cost item increases from one year to the next, additional capacity is required, and this will trigger additional investment for that cost record in that year.

For capital cost records that have a **Frequency** of "StartUp" or "Annual", development of unit quantities is more straightforward. Cost records with **Frequency** set to "StartUp" are placed at the beginning of Year 1 of the study (e.g., Operations Support Systems). Cost records with **Frequency** set to "Annual" are placed once each year regardless of capacity (e.g., G&A capital expenditures).

Next, BACE develops the number of units required for non-capital cost records. The development of number of network components purchased by the CLEC as wholesale services, such as reselling of long distance service or the purchase of Unbundled Network Element Loops (UNE-L) from other carriers is similar to that described above for capital cost records. CLEC engineers likely examine demand forecasts and determine the amount of number of non-capital cost items to be purchased. However, the rate structure of the carriers selling wholesale services is different including recurring and non-recurring fees, as well as rates that only apply under special circumstances. BACE logic accounts for these unique characteristics of non-capital costs.

For non-capital cost records that have a **Frequency** of Recurring or NonRecurring, BACE uses the demand requirements in each year (from the Q Process) based on the product, customer and location hierarchies and the **UNEZone** and **RateCenter** entries in the **Network and Operations Cost Input** tables. The units of demand are based on the entry for **QUOM** and/or the **SecondQUOM** for each cost record. The value of the **DemandYearForBuild** input determines how many years of demand are used to for the initial unit quantity for each non-capital cost record. Once the appropriate demand value is determined, BACE identifies the appropriate cost record to use by comparing the demand to the **CDMin** and **CDMax** of the cost record. If the demand does not fall between the **CDMin** and **CDMax** values, the cost record is not used (e.g., if the demand is below the minimum for a DS3, then a DS3 will not be deployed and the DS3 cost record is not used). If the demand does fall within the **CDMin** and **CDMax** values entered, the demand is divided by the **Capacity** corresponding to the cost record and the result is rounded up to the next integer to determine the unit quantity of the component required. In BACE non-recurring cost records are generally those that are reflected due

to either: 1) initial levels of demand; 2) churn; or 3) demand changes that are inherently incremental on a yearly basis (i.e., net adds for the year period).

For each subsequent year, the annual number of non-capital cost items is determined by dividing the annual demand by capacity and rounding up to the next integer. The main difference between capital and non-capital cost records is that COGS costs are incurred for all demand each year; there is no development of the incremental capacity from year to year when the **Frequency** is set to Recurring.

However, there are a few non-recurring costs associated with capacity and activities that might recur. These cost records have **Frequency** set to "NonRecurringNetwork" and those items that are often purchased in bulk capacity, may need incremental additions over time and thus may have non-recurring costs that are re-incurred infrequently. Examples of these are preparation of collocation space and Special Access transport capacity. The CLEC incurs these costs with each purchase of capacity. In any year in which the unit quantity increases from one year to the next, additional capacity is required and this will trigger additional investment for that cost record in that year.

Next BACE determines the replacement capital expenses based upon the retirement of plant. Based on the user entered asset class specific values in the Retirement Input table, Gompertz-Makem[13] survival curves are used to estimate the likelihood of retirement in each year. These likelihoods are then used as the estimated value of percentage of retirement in each year. Using these values, BACE determines the amount of each capital asset that must be retired and thus replaced in the network by year. The resulting cost records have an **AcctCat** of "RetireCapex".

Finally, with the costs of each network component and/or service developed for each year of the 10-year period based on demand, BACE develops the net present value for each cost record as shown in Chapter 2. By setting the **CLEC Study Properties** value of **IncludeTerminalValue** to "Y" the model will include the net book value of the assets into the NPV value. This NPV addition is based on a 10-year discount value (i.e., at the end of the 10^{th} year, not midyear of the 10^{th} year).

Network Optimization Phase

With the NPV of each cost record identified, BACE has the ability to identify economically efficient ways for the CLEC to optimize its operations. As noted in Chapter 3, BACE provides for seven types of optimization processes, six of which are user adjustable. The optimization processes search for specific activities that yield a negative net present value, and then eliminate that activity. The seven activities that can be optimized are: 1) the use of EELs and/or full end-office collocation; 2) the provision

[13] BACE recognizes that plant retires over time and needs to be replaced. BACE uses a probabilistic approach to retirements based upon the Gompertz-Makem retirement curves. These Gompertz-Makem curves are a standard approach used in the telecom industry to understand the retirement patterns of telecommunication assets. From the use of Gompertz-Makem, BACE derives the probability of retirement, by type of asset, in each year. This probability is used to estimate the expected value of plant replacement in year.

of DSL within the wire center (not user adjustable); 3) keep or eliminate CLEC service in total for a wire center; 4) keep or eliminate CLEC service in total for Mass Market customers in a market; 5) keep or eliminate CLEC service in total for Enterprise customers in a market; 6) keep or eliminate CLEC service in total for a Market; and, 7) keep or eliminate CLEC service in total for a LATA. These are discussed below.

Based on the wholesale services offered by BellSouth, the CLEC has multiple options for how it establishes its wire center network architecture. To serve customers connected to a BellSouth end office the CLEC can use EELs and collocate at a distant wire center, or collocate at the end office as well as a distant wire center (e.g., BellSouth Access tandem). The **CLEC Study Properties** table has toggles for the user to identify whether then CLEC will:

a) establish collocation space at each end office (**AllowColo** = "Y" and **AllowEELS** ="N");

b) use EELs and not collocate at any end offices (**AllowColo** = "N" and **AllowEELS** ="Y"); or,

c) allow BACE to determine the most economic approach (**AllowColo** = "Y" and **AllowEELS** ="Y").

If the user has set the toggles for always EELs or always collocation, then this step is not required. However, when the user wants to have the CLEC establish the most economic approach to the network architecture, BACE develops costs for both architectures based on the direct cost of each. In addition, since the CLEC cannot offer DSL service to customers served via EELs, the selection analysis must include the impact of DSL service. Thus, the direct cost of the EEL architecture for each wire center is then compared to the direct cost of the collocation architecture plus the profit of DSL service for that wire center (including if the DSL margin is negative for that wire center). The best economic alternative is selected for implementation.

Following up the network architecture task, BACE examines DSL-related direct costs and revenues for each wire center to determine if the wire center provides a positive contribution, i.e., positive NPV, over the 10-year study time frame. If DSL services have a negative NPV for any specific wire center, BACE assumes that the CLEC would not offer DSL in that wire center and thus the DSL costs and revenues are removed from the overall analysis. It is important to note that only the DSL related cost and revenues are removed. The CLEC is assumed to continue to offer other services to the customers of that wire center. The DSL optimization is not a user-adjustable option; i.e., DSL optimization always occurs.

The **CLEC Study Properties** table includes an input to **FilterNegativeMarginCLLIs**. If this toggle is set to "Y", BACE examines the direct costs (and wire center specific indirect costs) and revenues for each to determine if the wire center provides a positive contribution to the overall operation of the CLEC, i.e., positive NPV, over the 10-year study time frame. If serving customers within any wire center has a negative NPV,

BACE assumes that the CLEC would not offer services in that wire center and thus the costs and revenues for that wire center are removed from the overall analysis.

The **CLEC Study Properties** table includes an input to **FilterNegativeMarginMassMarketInMarkets.** If this toggle is set to "Y", BACE examines the aggregate direct costs and revenues for Mass Market customers for the positive contribution-wire centers (if the **FilterNegativeMarginCLLIs** is set to Y, all wire centers otherwise) within each market to determine if the customers provide a positive contribution to the CLEC, i.e., positive Mass Market NPV within each market, over the 10-year study time frame. If serving Mass Market customers within any Market has a negative NPV, BACE assumes that the CLEC would not offer services to these customers and thus the costs and revenues are removed from the overall analysis. If the **FilterNegativeMarginMassMarketInMarkets** toggle is set to N, all remaining Mass Market customers remain in the analysis.

If Mass Market customers are removed, BACE re-examines whether COLO or EELs should be used within each wire center. This re-analysis is driven by the fact that the reduction in the customer base within a wire center may change the economics of EELs and/or COLO.

The **CLEC Study Properties** table includes an input to **FilterNegativeMarginEnterpriseInMarkets.** If this toggle is set to "Y", BACE examines the aggregate direct costs and revenues for Enterprise customers for the positive contribution-wire centers (if the **FilterNegativeMarginCLLIs** is set to Y, all wire centers otherwise) within each market to determine if the customers provide a positive contribution to the CLEC, i.e., positive Enterprise NPV within each market, over the 10-year study time frame. If serving Enterprise customers within any Market has a negative NPV, BACE assumes that the CLEC would not offer services to these customers and thus the costs and revenues are removed from the overall analysis. If the **FilterNegativeMarginEnterpriseInMarkets** toggle is set to N, all remaining Enterprise customers remain in the analysis.

The **CLEC Study Properties** table includes an input to **FilterNegativeMarginMarkets**. If this toggle is set to "Y", BACE examines the aggregate direct costs (and wire center-specific indirect costs) and revenues for all remaining customers in the market (post user specified testing resulting from the use of **FilterNegativeMarginCLLIs, FilterNegativeMarginMassMarketInMarkets** and **FilterNegativeMarginEnterpriseInMarkets**) to determine if the customers provide a positive contribution to the CLEC, i.e., positive NPV within each market, over the 10-year study time frame. If serving customers within any Market has a negative NPV, BACE assumes that the CLEC would not offer services to these customers and thus the costs and revenues are removed from the overall analysis. If the **FilterNegativeMarginMarkets** toggle is set to N, all remaining Market customers remain in the analysis.

The **CLEC Study Properties** table includes a user input to **FilterNegativeMarginLATAs**. If this toggle is set to "Y", BACE examines the

aggregate direct costs (and LATA-specific indirect costs, e.g., switch getting started costs) and revenues for the positive contribution wire centers (if the **FilterNegativeMarginCLLIs** is set to Y, all wire centers otherwise) within each LATA to determine if the LATA overall provides a positive contribution to the CLEC, i.e., positive LATA NPV, over the 10-year study time frame. If serving customers within any LATA has a negative NPV, BACE assumes that the CLEC would not offer services in that LATA and thus the costs and revenues are removed from the overall analysis.

Final Cost Phase

The final step in BACE processing is the calculation of the income tax liability. First, the user indicates how the tax liability is treated specifically for those years in which a tax income (i.e., income calculated for tax purposes) loss is incurred (a negative tax liability). The user controls the treatment of a loss by setting the **CLEC Study Properties** value of **TaxTreatmentForLoss** to either CarryForward or CurrentYearCredit. If the user selects CarryForward, any tax income loss is carried to succeeding years. The net of the CarryForward loss and the current year's tax income is then used to determine whether a loss exists. This process continues through all ten years. If the user selects CurrentYearCredit the tax loss is actually shown as a contra-expense in that year. This selection implies that the CLEC has other "profitable" business entities, and that the modeled operations loss will be used to offset some portion of the total CLEC tax liability created from accounting profits in its other operations.

Once the user selects the Tax-treatment method, BACE calculates an estimated net income statement for tax calculation purposes. This includes an estimate of the yearly book depreciation (which is based on the plant lives entered in the **Retirement Input** table). In addition, an estimate of the yearly interest expense is made using the sum of the capex in the current period and from succeeding periods multiplied by the debt percentage (1-**EquityPct**) and a debt rate calculated in the model from the user's inputs in the **CLEC Study Properties** for **EquityPct, EquityRate, PreTaxCostOfCapital.**

From the net income statement, the model calculates the estimated annual taxes based upon an effective tax rate that is based on the user inputs in the **CLEC Study Properties** for **StateTaxRate** and **FedTaxRate.** The effective tax rate accounts for the fact that state taxes impact the federal tax liabilities.

Finally, once the estimated taxes are calculated, a tax to NPV ratio is developed so that the taxes can be apportioned down to the reporting levels in BACE. This apportionment is only performed to allow the user to analyze impairment using any of the various data dimensions in the model.

Appendix A-Input/Rule Dictionary

Because BACE is a relational model, the following appendices provide detailed information on the tables, fields and rules used in the model.

FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
AccessChargeType	AccessChargeType	Alphanu meric	Input	Designates which access charge adjustments to	**IntraLATA, InterLATA, International, 800Services, CC**	

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FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
				apply to various customers		
AccessToLocalMOUFactor	AccessToLocalMOU Factor	Decimal	Input	A factor which converts access minutes to local minutes of use	*5.3*	Found in the CLEC Properties Table
AcctCat	Account Category	Alphanumeric	Input	Classifies / organizes computed costs into groups on selected output reports	*Capex, COGS, Opex*	Entered in cost input tables
AffectedByPurchasePower	AffectedByPurchase Power	Flag	Input	Indicates whether the Purchasing Power factor applies to a network cost item	**Y or N**	Purchase Power factor is an input in the CLEC Study Properties table
AllowColo	AllowColo	Flag	Input	A yes indicates that the CLEC establishes collocation space at each end office	**Y or N**	If AllowEELs is also set to "Y", BACE performs and economic test and uses the most

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FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
						efficient mechanism at each end office. Found in the CLEC Study Properties Table
AllowEELs	AllowEELs	Flag	Input	A yes indicates that the CLEC does not collocate at any end offices	**Y or N**	If AllowColo is also set to "Y", BACE performs and economic test and uses the most efficient mechanism at each end office. Found in the CLEC Study Properties Table
Amount	Amount	Decimal	Input	States the value of an item. May also have a suffix (e.g., 1, 2..10)	$00.00 or xx.yy% (percentage entered as 0.xxyy)	

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FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
				to indicate how amount varies across years of 1 through 10 of study.		
Anchor	Anchor	Flag	Input	Specifies whether a particular customer and product combination is an anchor (i.e., prerequisite) offering for a CLEC	**True or False**	
ApplyLoadings	ApplyLoadings	Flag	Input	Indicates whether Loading factors apply to a network cost item	**Y or N**	Entered in Network Cost Input table
BookingConvention	BookingConvention		Input	Fixed to mid-year	**Mid-Year**	Found in the CLEC Study Properties Table
BSTAsPctScopeOfOperations	BSTAsPctScopeOfOperations		Input	This variable helps account for the operational	**0 to 100**	Found in the CLEC Study Properties Table

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FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
				scope of the CLEC compared to BST.		
Bundle	Bundle	Alphanu meric	Input	Defines product packages sold to various types of customers	*ResBundleA, SOHOBundleC*	
C	c	Decimal	Input	Parameter in the Gompertz-Makem survival curve. Used to determine retirement capex	*1.13*	Entered in the Retirement Inputs table
Capacity	Capacity	Decimal	Input	Specifies the usable capacity (measured in UOM) associated with a network or operations cost item (relative to the amount)	**0 - 99,999,999,999**	
CapexPlantCat	Capex Plant Category	Alphanu meric	Input	Identifies the field reporting code that a loading should be applied to	*257C, 377C, 852C*	

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FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
CDMax	CDMax	Integer	Input	Establishes the highest cost driver quantity to which the driver applies. This allows for the model to graduate up (or down) the unit cost of specific cost drivers relative to the quantity of driver.	**0 - 99,999,999,999**	Must be greater than CDMin
CDMin	CDMin	Integer	Input	Establishes the lowest cost driver quantity to which the driver applies. This allows for the model to graduate up (or down) the unit cost of specific cost drivers relative to the quantity of driver.	**0 - 99,999,999,999**	Must be less than CDMax
CEA	Component Economic Area		Input	A geographic entity	*Daytona Beach FL, Ocala FL, Dothan AL-*	

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FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
				developed by the Bureau of Economic Analysis to categorize geographic areas with similar purchasing patterns.	*FL-GA*	
CLECProvides	CLECProvides	Flag	Input	Indicates which customer types and locations a modeled CLEC serves	**True or False**	
CLECProvidesInUNEZone1	CLECProvidesInUNEZone1	Flag	Input	Indicates which products the CLEC offers in UNE Zone 1	**True or False**	Entered in CLEC Product Profiles table
CLECProvidesInUNEZone2	CLECProvidesInUNEZone2	Flag	Input	Indicates which products the CLEC offers in UNE Zone 1	**True or False**	Entered in CLEC Product Profiles table
CLECProvidesInUNEZone3	CLECProvidesInUNEZone3	Flag	Input	Indicates which products the CLEC offers in UNE Zone 1	**True or False**	Entered in CLEC Product Profiles table
CLECProvidesInUNEZone4	CLECProvidesInUNEZone4	Flag	Input	Indicates which products the	**True or False**	Entered in CLEC

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FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
				CLEC offers in UNE Zone 1		Product Profiles table
CLECType	CLECType	Alphanumeric	Input	In CLEC Properties table determines what type of CLEC will be analyzed; In Network Cost Input table, determines which cost records are used.	**Small, Medium, Large, or ALL** (ALL is only valid in the Network Cost Input table).	Found in the CLEC Study Properties Table and Network Cost Table
ColoOrEEL	ColoOrEEL	Flag	Input	Indicates if the cost element applies for the collocation and/or EEL network architecture or to all configurations	**Colo, EEL or ALL**	
CostArea	CostArea	Alphanumeric	Input	Indicates the categories of the second highest level of the cost hierarchy	*SwitchingCenter, CagelessColo, Loop*	

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FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
CostCntr	CostCntr	Alphanu meric	Input	Indicates the categories of the third highest level of the cost hierarchy	*2WLoopDisc, DLCEquipment, LocalSwitching*	
CostDriver	CostDriver	Alphanu meric	Input	States the primary quantity measure that causes a direct cost item	*Qty, Revenue & Capex for CostDriverType=Prod*	
CostDriverType	CostDriverType	Alphanu meric	Input	Indicates the primary cost object dimension that applies to a direct cost item	**Product, Loc**	
CostElem	Cost Element	Alphanu meric	Input	Indicates the categories of the lowest level of the cost hierarchy	*DSX3Panel, DSLModem, TrunkMOU*	
CostFam	CostFam	Alphanu meric	Input	Indicates the categories of the highest level of the cost hierarchy	*NetworkCapacity, OperationsMaintenance*	
CostType	CostType	Alphanu	Input	Determines	**DIRECT, INDIRECT**	Impacts

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FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
		meric		whether a cost item is assigned via the primary or secondary cost driver depending on how the cost behaves with respect to the cost object		results of the optimization routines that include direct costs to the product and/or location as appropriate
CurCompZone	CurCompZone	Alphanu meric	Input	Currently not used		
CustArea	Customer Area	Alphanu meric	Input	Indicates the categories of the second highest level of the customer hierarchy	**SOHO, QUINTILE, SME/A, SME/B, SME/C**	
CustCntr	Customer Center (Spend Band)	Alphanu meric	Input	Indicates the categories of the third highest level of the customer hierarchy	**QUINTILE1-QUINTILE5 (for Res) and TOP, MIDDLE, BOTTOM (for Bus)**	
CustElem	CustElem	Alphanu meric	Input	Indicates the categories of the lowest level of the customer		

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FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
				hierarchy (not used presently)		
CustFam	Customer Family (Res or Bus)	Alphanu meric	Input	Indicates the categories of the highest level of the customer hierarchy	**RES, BUS**	
DemandChangePct(1. .10)	DemandChangePct1(1..10)	Decimal	Input	Represents the percent change in an attribute each year, entered as a decimal. Suffix (1..10) indicates the corresponding year of the value.		
DemandYearForBuild	DemandYearForBuild	Integer	Input	Identifies the number of years that should be considered for initial provisioning of the network cost item	**1-10**	
DepreciationPct(1..10)	Yearly Depreciation	Decimal	Input	Represents the		

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FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
				depreciation rate in a given year, entered as a decimal. Suffix (1..10) indicates the corresponding year of the value.		
Descrip	Descrip	Alphanu meric	Input	Provides a brief guideline / instruction to assist the user when setting model parameters		
DisconnectPct(1..10)	DisconnectPct1	Decimal	Input	The Percentage of customers disconnected each year (expressed as a decimal). Suffix (1..10) indicates the corresponding year of the value.	*45% annual churn, entered as 0.45*	Identified by any combination of customer segment, product and UNE Zone
DMA	TV Market Area	Alphanu	Input	Defines the	*ATLANTA, AUGUSTA,*	

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FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
		meric		Designated Market Area associated with each LocElem (DMA® is a trademark of Nielsen Media Research, Inc.)	*NEW ORLEANS, LOUISVILLE*	
DS1ToDS0XOver	DS1 To DS0 Xover	Integer	Input	In CLEC Study Properties table identifies the crossover between DS1 and DS0; In Network Cost table determines if a cost element is included dependent upon the value of the DS1 to DS0 crossover input in the CLEC Study Properties table	**4, 9 (ALL** is applied to the network cost items for which this toggle is not relevant)	Found in the CLEC Study Properties Table
DSLAddressable	DSLAddressable	Flag	Input	Indicates whether a cost item can be associated with	**Y, N, or %**	

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FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
				delivery of DSL service for a particular customer segment		
EndingYear	EndingYear	Integer	Input	Indicates the model year through which a particular product or bundle would be offered	**1-10**	
EnterpriseServiceOffered	Is Enterprise Service Offered	Flag	Input	Indicates whether Enterprise Service is offered in a particular LocElem	**Y or N**	
EquityPct	EquityPct	Decimal	Input	The percentage of total capital that is equity-entered in decimal format.	*0.5*	Found in the CLEC Properties Table
EquityRate	EquityRate	Decimal		The cost of equity entered in decimal format	*0.1125*	Found in the CLEC Properties Table
FirstYear	FirstYear	Integer	Input	Designates the	*1988*	

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FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
				beginning year for each cost trend series (TPI) associated with each PlantCat (FRC)		
FedTaxRate	FedTaxRate	Decimal	Input	The effective Federal Tax Rate entered in decimal form	*0.35*	Found in the CLEC Properties Table
FilterNegativeMarginCLLIs	FilterNegativeMarginCLLIs	Flag	Input	Enables an optimization in BACE which removes wire centers which have a negative NPV.	**Y or N**	Found in the CLEC Properties Table
FilterNegativeMarginLATAs	FilterNegativeMarginLATAs	Flag	Input	Enables an optimization in BACE which removes LATAs which have a negative NPV.	**Y or N**	Found in the CLEC Study Properties Table
FilterNegativeMarginMassMarketInMarkets	FilterNegativeMarginMassMarketInMarkets	Flag	Input	Enables an optimization to remove Mass Market	**Y or N**	Found in the CLEC Study Properties Table

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FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
				customers from Markets in which the Mass Market Customers have a negative NPV.		
FilterNegativeMarginMarkets	FilterNegativeMargin Markets	Flag	Input	Enables an optimization to remove markets that have a negative NPV.	**Y or N**	Found in the CLEC Study Properties Table
Freq	Frequency	Alphanumeric	Input	Designates how often a particular cost item repeats (recurring indicates monthly)	*Recurring, NonRecurring, Annual, NonRecurringChurn, NonRecurringNetwork*	
Frequency	Frequency	Alphanumeric	Input	Designates how often a particular cost item repeats (recurring indicates monthly)	**Recurring, NonRecurring, NonRecurringNetwork, NonRecurringChurn, StartUp, Usage and Annual**	
g	g	Decimal	Input	Parameter in the Gompertz-	*0.217*	

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FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
				Makem survival curve. Used to determine retirement capex		
GeoZone	Geographic Zone	Alphanu meric	Input	Indicates GeoZone of each WireCenter in the Exchange Information table	*Zone2H, Zone3K*	
H	H	Integer	Input	Indicates the horizontal coordinate associated with each LocElem/WireC enter in the Exchange Information table	*1379*	
IDLCPct	IDLCPct	Decimal	Input	States the rate of integrated digital loop carrier that exists in a particular LocElem	**0-1**	

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FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
IncludedInDiscount	Is Product Price Impacted by Bundle Discount	Flag	Input	Indicates whether a product within a bundle participates in the discounting scheme	**Y or N**	
IncludedInPrice	Is Product Included in Bundle Price	Flag	Input	Indicates whether a product within a bundle is included in the bundle price	**Y or N**	
IncludeTerminalValue	IncludeTerminalValue	Flag	Input	Setting this value to Y will include the net book value of the assets in the NPV calculation.	**Y or N**	Found in the CLEC Study Properties Table
InitialOfferingYear	InitialOfferingYear	Integer	Input	Indicates the beginning model year in which a product or bundle is offered to customers	**1-10**	
IsOffered	IsOffered	Flag	Input	Indicates whether a	**True or False**	

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FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
				product is offered by a CLEC sometime during the model period		
Lat	Lat	Decimal	Input	Designates the degrees latitude for each LocElem	*29.02*	
Life	Life	Integer	Input	Specifies the economic life in years for each PlantCat (FRC)	*11 for PlantCat 377C*	
LifeCat	Life Category	Alphanu meric	Input	Classifies plant assets (relative to sub-FRC) for the purpose of applying appropriate in-plant factors	**Telco, Mat, Hardwire, PlugIn, PlugInSpStock, NONE**	Value entered in Network Cost table is matched to the LifeCat variable in the InPlant and Loadings table
LoadingPlantCat	Loading Plant Category	Alphanu meric	Input	Indicates a support related PlantCat (FRC) that is	*10C*	

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FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
				associated with a primary PlantCat		
LocArea	State	Alphanu meric	Input	Indicates the categories of the second highest level of the location hierarchy	**AL, FL, GA, KY, MS, LA, NC, SC, TN**	
LocCntr	LATA	Alphanu meric	Input	Indicates the categories of the third highest level of the location hierarchy	*422, 46017, 250*	
LocElem	WireCenter	Alphanu meric	Input	Indicates the categories of the lowest level of the location hierarchy	*BCMTNCCE, KGMTNCMA, GNVLSCBE*	
LocFam	Operating Area	Alphanu meric	Input	Indicates the categories of the highest level of the location hierarchy	**BellSouth**	
Lon	Lon	Decimal	Input	Designates the degrees longitude for	*-82.46*	

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FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
				each LocElem		
MCSA	Micropolitan Statistical Area	Alphanu meric	Input	Notes the MCSA category associated with a particular LocElem	*Columbia- TN Micropolitan Statistical Area*	
MassMarketServiceOff ered	Is MassMarket Service Offered	Flag	Input	Indicates whether Mass Market Service is offered in a particular LocElem	**Y or N**	
Mileage	Mileage	Decimal	Input	Specifies the mileage between the BST end office and the main BST Access tandem within the same LATA.	*4.5, 36.8*	
MileageBased	MileageBased	Flag	Input	Indicates whether a network cost item amount is stated on a per mile basis	**Y or N**	System uses Mileage input to multiply against amount
MMA	MMA	Alphanu meric	Input	Indicates the mass marketing	*DAYTONA BEACH*	

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FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
				area associated with each LocElem		
MSA	MSA	Alphanu meric	Input	Indicates the metropolitan statistical area associated with each LocElem	*Baton Rouge*	
NewQUOM	NewQUOM	Alphanu meric	Input	Identifies the new quantity of measure after applying a ratio to the original QUOM	*DS0*	
Notes	Notes	Alphanu meric	Input	Provides a general text area for additional explanations of cost items / entries		
NtwkCat	NtwkCat	Alphanu meric	Input	Specifies the broad report category of network resources to which a particular cost item belongs	*UNE, Owned, EEL, SPA, UNET, Wholesale*	

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FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
PctBSTCoverageOfLATA	PctBSTCoverageOfLATA	Decimal	Input	Specifies what portion of each modeled LATA is currently being served by the ILEC area being studied (BST)	**0-1**	Found in CLEC Study Properties Table
PctChange(1..31)	PctChange(1..31)			States the annual rate of increase / decrease in the asset value of each PlantCat	**0-1**	
PctDiscount	PctDiscount	Decimal	Input	States the discount at which the CLEC will offer the product versus the baseline ILEC price	**0-1, e.g., *0.1***	As with other similar inputs, the impact of this factor does not carry forward with each period. Each period's PctDiscount must be entered as a stand-alone input.

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FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
PctGrowth(1..10)	Percent Growth 1	Decimal	Input	Defines the annual growth rate of customers in the state being analyzed	**0-1**	As with other similar inputs, the impact of this factor does not carry forward with each period. Each period's PenPct must be entered as a stand-alone input.
PenAffectedByDSLAddressability	PenAffectedByDSLAddressability	Flag	Input	Indicates whether the ILEC's ability to provide DSL access would affect the market penetration of a CLEC's product bundle	**Y or N**	
PenPct(1..10)	PenPct1	Decimal	Input	Provides the rate of market penetration for a particular customer and	**0-1**	As with other similar inputs, the impact of this factor

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FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
				product combination during each model year		does not carry forward with each period. Each period's PenPct must be entered as a stand-alone input.
PenTiedToAnchor	PenTiedToAnchor	Flag	Input	Indicates whether the penetration rate for a particular customer and product combination is based upon a related anchor product	**True or False**	
PlantCat	PlantCat	Alphanu meric	Input	Classifies plant assets (by FRC) for the purpose of computing loadings, in-plant values, cost trends, and depreciation	*UNE, 377C, 357C*	

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FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
PreTaxCostOfCapital	PreTaxCostOfCapital	Decimal	Input	The Pre Tax Cost of Capital (WACC)	*0.1125*	Found In CLEC Study Properties Table
Price	Price	Decimal	Input	States the baseline / starting price for a product or bundle	*7.50*	
PriceChangePct(1..10)	PriceChangePct1	Decimal	Input	Specifies the rate of change in the price of CLEC products and bundles for each model year	**0-1**	
PriceErosionZone	PriceErosionZone	Alphanu meric	Input	Not used at this time		
ProdArea	ProdArea	Alphanu meric	Input	Indicates the categories of the second highest level of the product hierarchy	*Local, LD, Internet*	
ProdCntr	ProdCntr	Alphanu meric	Input	Indicates the categories of the third highest level of the product	*Line, Usage, NonDSL*	

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FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
				hierarchy		
ProdElem	ProdElem	Alphanu meric	Input	Indicates the categories of the lowest level of the product hierarchy	*IntraLATA, CC, International*	
ProdFam	ProdFam	Alphanu meric	Input	Indicates the categories of the highest level of the product hierarchy	*PSTN, NonSwitched*	
Property	Property	Alphanu meric	Input	Provides the name of each model parameter subject to user configuration		
PurchasePower	PurchasePower	Percenta ge	Input	This variable (expressed as a percentage) represents the CLEC's purchasing power relative to BellSouth. It should be expressed in terms of	Values less than 100%, represent CLECs with more purchasing power than BellSouth, values greater than 100% represent CLECs with less purchasing power than BellSouth.	Found In CLEC Study Properties Table; The percentage, converted to decimal form, is a multiplier to those costs with the

APPENDIX A

FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
				BellSouth's purchasing power as a percentage of the CLECs purchasing power.)		ApplyPurchasePower flag set to "Y"
Qty	Qty	Integer	Input	Indicates how many units of a product are included in the definition of a product bundle, only if the QtyIsLimited value is set to Y.		
QtyIsLimited	QtyIsLimited	Flag	Input	Determines whether the quantity of a product included in a bundle is limited	**Y or N**	
QUOM	QUOM	Alphanumeric	Input	Specifies the type of quantity measure that applies to each of the direct	*GrossAdds, Lines, Customers*	

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FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
				cost items		
RateCenterZone	RateCenterZone	Alphanumeric	Input	Identifies the ILEC tariff schedule for SpA rates that applies to products in particular locations	**3N, 2N, 1N, 3R, 2R, 1R**	
Ratio	Multiplier to convert QUOM to NewQUOM	Decimal	Input	Conversion value to convert QUOM to NewQUOM	*2.0*	
S	S	Decimal	Input	Parameter in the Gompertz-Makem survival curve. Used to determine retirement capex	*0.0239*	
ScopeCat	ScopeCat	Flag	Input	Indicates whether a cost item is subject to constraints based on the type of CLEC	**Y or N**	For cost items with ScopeCat = Y, the BSTAsPctOfScopeOfOperations factor from the CLEC

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FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
						Properties table is applied to the amount
SecondDriver	SecondDriver	Alphanu meric	Input	States the secondary quantity measure used to allocate an indirect cost item	**Quantity or NONE**	
SecondDriverType	SecondDriverType	Alphanu meric	Input	Indicates the secondary cost object dimension used to allocate an indirect cost item	**Product or NONE**	
SecondQUOM	SecondQUOM	Alphanu meric	Input	Specifies the type of quantity measure that applies to each of the indirect cost items	*Lines, MOU, GrossAdds*	
Source	Source	Alphanu meric	Input	Provides an open field for documentation of data sources		
SpAOrUNETEOTrans	Use SpA or UNET	Alphanu	Input	Allows the user	**SPA, UNET or ALL**	

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FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
port	For EO Transport	meric		to identify the CLEC's end office transport medium associated with each network cost item		
StateTaxRate	StateTaxRate	Decimal	Input	The effective state tax rate net of the Federal benefit. Entered as a decimal.	*0.055*	Found In CLEC Study Properties Table
SurvivalCurve	Shape of Survival	Alphanu meric	Input	States the type of retirement curve that applies to a particular plant category (FRC)	**CG&S, SquareLife**	
TaxTreatementForLos s	TaxTreatmentForLos s	Flag	Input	Determines how the taxes on net income losses are handled. Losses can be carried over to the succeeding year or kept as a current year	**CarryForward, CurrentYearCredit**	Found In CLEC Study Properties Table

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FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
				credit.		
TerminalValueMultiplier	TerminalValueMultiplier	Decimal	Input	If the IncludeTerminalValue="Y", the TerminalValue Multiplier will be multiplied by the present value of the net book value of the assets that is added into the NPV.	*1.5*	Found In CLEC Study Properties Table
UNEZone	UNEZone	Alphanumeric	Input	Identifies the UNE tariff schedule that applies to particular network cost items	**Zone1, Zone2, Zone3, Zone4**	
UOM	UOM	Alphanumeric	Input	States the unit of measure applicable to each of the products	*Customers, Lines, MOU*	
UseSPAorUNET	UseSPAorUNET	Toggle	Input	Allows the user to select if the CLEC network should use	**SPA or UNET**	

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FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
				Special Access (SpA) or Unbundled Network Element Dedicated Transport for their transport facilities.		
V	V	Integer	Input	Indicates the vertical coordinate associated with each LocElem		
Value	Value	Decimal	Input	Contains the parameter value input by the user for a particular CLEC profile		
Vintage	Vintage	Integer	Input	Designates the year for which the Amount is appropriate	*2002*	Allows for trending of costs/application of TPIs
Weight	Weight	Decimal	Input	Indicates any increase or decrease that applies to a cost item for	*2.35*	Model logic applies the weight against the amount

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FieldName	Alias	Format	Type	Explanation	**Valid Entries** and/or *Examples*	Interactions
				particular customer segments, locations, or products, e.g., probability of occurrence for a cost element		
Year1	Year1	Integer	Input	Indicates the first year of the ten year period to be analyzed. The entry can be no more than 20 years beyond the FirstYear date in the cost trends table.	*2003*	Found In the CLEC Study Properties Table
ZoneName	ZoneName	Alphanumeric	Input	Indicates what Zone grouping is being referenced	*UNEZone*	
ZoneType	ZoneType	Alphanumeric	Input	Indicates which Zone value is being referenced		

Appendix

Appendix B-Table Dictionary

Table Name	Description
Alternative Units of Measure	Provides multipliers to convert existing QUOM values into alternative units of measure for use in the cost development
Baseline Bundle Price	Contains the initial prices for product bundles based upon customer segment
Bundle Price Curves	Allows for an adjustment to the bundle price in each model year based on the customer segment and the price erosion category
Bundles	Defines each bundle in terms of which and how many products are included, and how each one fits into the bundle discounting

APPENDIX C

Table Name	Description
Churn	Provides the gross disconnect rate in each model year by customer-product grouping. Used to factor recurring sales quantities and to drive some network operations costs
CLEC Baseline Price Discount	Provides for adjustments to each of the initial product prices based upon the CLEC's competitive zone
CLEC Profile Bundles	Specifies which bundles the CLEC offers along with when and in which UNE zones
CLEC Profile Products	Specifies which products the CLEC offers along with when and in which UNE zones
CLEC Study Properties	Contains the user provided parameters for the model scenario (ref. separate Properties sheet)
Cost Input Network	Specifies the starting amount of each network cost item, its capacity, what drives it and by what quantity measure, in which location-customer-product-UNEZone cases it applies, the likelihood of it being used/needed, whether related costs also apply, how
Cost Input Operations	Specifies the amount for each model year of each operations cost item, its capacity, what drives it and by what quantity measure, in which location-customer-product-UNEZone cases it applies, the likelihood of it being used/needed, whether related costs al
Cost Trends	Provides the percent change in cost for each of the plant categories (FRCs) during each study year
Customer Hierarchy	Indicates the structure of the customer dimension of the model and which types of customers are included in the CLEC customer base
Demand Curves	Specifies a percent change in the initial year quantity for specific customer-product-UNEZone combinations during each model year
Exchange Information	Specifies the geographic location, market characteristics, and various demographic designations for each location element (wire center) along with whether residential and business customers are to be included in the modeling process
InPlant And Loadings	This table provides the inputs to turn the material prices of the capital inputs in the Cost Input Network table into fully capitalized costs that could include: engineering, power, land, building, supplies, and other items.

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Table Name	Description
Location Hierarchy	Indicates the structure of the location dimension of the model and whether the CLEC would serve each location element.
Market Growth	Defines the growth in the of the market each year during the 10 year study.
Penetration Curves for Bundles	This table allows the user to determine the proportion of CLEC product sales that occur via bundles, by year, by customer segment and customer-spend category, over the ten-year study horizon. For example, a penetration rate of .5 indicates that 50% of the sales by the CLEC for that product are made via bundles.
Penetration Curves for Products	This table describes the anticipated CLEC market share for each product by customer type over the ten-year study horizon. This table relies upon user adjustable inputs, and also allows the user to tie product penetration to DSL Addressability.
Product Hierarchy	Indicates the structure of the product dimension of the model and how to measure the quantity of each product
Product Price Curves	Specifies the percent change in initial price that applies to specific customer-product combinations during each model year
Retirement Inputs	This table provides the inputs required to determine the levels of replacement capital due to the retirement of plant. The inputs are used in the Gompertz-Makem retirement rate estimation approach, described later in this testimony.
Tax Depreciation Schedule	Specifies the percent of the gross value that is depreciated (for taxes) during each model year depending upon the tax life of the asset
USF - Interstate Access Support	Indicates the USAC specified amounts for Interstate Access Support (IAS) providers by UNEZone and state
USF - High Cost Loop Support	Indicates the USAC specified amounts for High Cost Loop Support by wire center within a state.
Zone Definitions	Indicates the allowable values for each zone type (e.g., UNE zone and rate center zone)

Appendix

Appendix C-Comprehensive Field List

GroupName	Table Name	Field	Explanation
CLEC Study Properties	CLEC Study Properties	Source	Provides an open field for documentation of data sources
		ComboSource	Value used by system to populate drop down values

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GroupName	Table Name	Field	Explanation
			in table. Not a User Input
		SortOrder	A system value used to determine the appearance of the table. Not a User Input
		Notes	Provides a general text area for additional explanations of cost items / entries
		Descrip	Provides a brief guideline / instruction to assist the user when setting model parameters
		Value	Contains the parameter value input by the user for a particular CLEC profile
		Property	Provides the name of each model parameter subject to user configuration
Common Files to Processes	Bundles	ProdCntr	Indicates the categories of the third highest level of the product hierarchy
		PenAffectedByDSLAddressability	Indicates whether the ILEC's ability to provide DSL access would affect the market penetration of a CLEC's product bundle
		Bundle	Defines product packages sold to various types of customers

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GroupName	Table Name	Field	Explanation
		ProdArea	Indicates the categories of the second highest level of the product hierarchy
		Is Product Included in Bundle Price	Indicates whether a product within a bundle is included in the bundle price
		QtyIsLimited	Determines whether the quantity of a product included in a bundle is limited
		Qty	"Indicates how many units of a product are included in the definition of a product bundle, only if the QtyIsLimited value is set to Y."
		ProdElem	Indicates the categories of the lowest level of the product hierarchy
		Is Product Price Impacted by Bundle Discount	Indicates whether a product within a bundle participates in the discounting scheme
		ProdFam	Indicates the categories of the highest level of the product hierarchy
Common Files to Processes	Customer Hierarchy	Customer Area	Indicates the categories of the second highest level of the customer hierarchy
		CustElem	Indicates the categories of

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GroupName	Table Name	Field	Explanation
			the lowest level of the customer hierarchy (not used presently)
		Customer Family (Res or Bus)	Indicates the categories of the highest level of the customer hierarchy
		CLECProvides	Indicates which customer types and locations a modeled CLEC serves
		Customer Center (Spend Band)	Indicates the categories of the third highest level of the customer hierarchy
		Operating Area	Indicates the categories of the highest level of the location hierarchy
		WireCenter	Indicates the categories of the lowest level of the location hierarchy
		State	Indicates the categories of the second highest level of the location hierarchy
		CLECProvides	Indicates which customer types and locations a modeled CLEC serves
		LATA	Indicates the categories of the third highest level of the location hierarchy
		Frequency	Designates how often a

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GroupName	Table Name	Field	Explanation
			particular cost item repeats (recurring indicates monthly)
		ProdArea	Indicates the categories of the second highest level of the product hierarchy
		ProdElem	Indicates the categories of the lowest level of the product hierarchy
		ProdCntr	Indicates the categories of the third highest level of the product hierarchy
		UOM	States the unit of measure applicable to each of the products
		ProdFam	Indicates the categories of the highest level of the product hierarchy
Common Files to Processes	Zone Definitions	ZoneName	Indicates what Zone grouping is being referenced
		ZoneType	Indicates which Zone value is being referenced
ON (Expense) Process Files	Alternative Units of Measure	Customer Area	Indicates the categories of the second highest level of the customer hierarchy
		ProdElem	Indicates the categories of the lowest level of the product hierarchy
		ProdFam	Indicates the categories of

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GroupName	Table Name	Field	Explanation
			the highest level of the product hierarchy
		Current QUOM	Specifies the type of quantity measure that applies to each of the direct cost items
		Multiplier to convert QUOM to NewQUOM	Multiplier to convert QUOM to NewQUOM
		New QUOM	Identifies the new quantity of measure after applying a ratio to the original QUOM
		ProdCntr	Indicates the categories of the third highest level of the product hierarchy
		Customer Family (Res or Bus)	Indicates the categories of the highest level of the customer hierarchy
		ProdArea	Indicates the categories of the second highest level of the product hierarchy
ON (Expense) Process Files	Cost Input Network	AffectedByPurchasePower	Indicates whether the Purchasing Power factor applies to a network cost item
		CLECType	"In CLEC Properties table determines what type of CLEC will be analyzed; In Network Cost Input table, determines which cost records are used."

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GroupName	Table Name	Field	Explanation
		Amount	"States the value of an item. May also have a suffix (e.g., 1, 2..10) to indicate how amount varies across years of 1 through 10 of study."
		ProdCntr	Indicates the categories of the third highest level of the product hierarchy
		ProdElem	Indicates the categories of the lowest level of the product hierarchy
		Account Category	Classifies / organizes computed costs into groups on selected output reports
		ProdArea	Indicates the categories of the second highest level of the product hierarchy
		Capacity	Specifies the usable capacity (measured in UOM) associated with a network or operations cost item (relative to the amount)
		CostArea	Indicates the categories of the second highest level of the cost hierarchy
		Bundle	Defines product packages sold to various types of customers
		ProdFam	Indicates the categories of

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GroupName	Table Name	Field	Explanation
			the highest level of the product hierarchy
		WireCenter	Indicates the categories of the lowest level of the location hierarchy
		Use SpA or UNET For EO Transport	Allows the user to identify the CLEC's end office transport medium associated with each network cost item
		Weight	"Indicates any increase or decrease that applies to a cost item for particular customer segments, locations, or products, e.g., probability of occurrence for a cost element"
		Customer Area	Indicates the categories of the second highest level of the customer hierarchy
		CostCntr	Indicates the categories of the third highest level of the cost hierarchy
		QUOM	Specifies the type of quantity measure that applies to each of the direct cost items
		Source	Provides an open field for documentation of data sources
		ApplyLoadings	Indicates whether Loading

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GroupName	Table Name	Field	Explanation
			factors apply to a network cost item
		SecondQUOM	Specifies the type of quantity measure that applies to each of the indirect cost items
		State	Indicates the categories of the second highest level of the location hierarchy
		SecondDriver	States the secondary quantity measure used to allocate an indirect cost item
		ScopeCat	Indicates whether a cost item is subject to constraints based on the type of CLEC
		CDMax	Establishes the highest cost driver quantity to which the driver applies. This allows for the model to graduate up (or down) the unit cost of specific cost drivers relative to the quantity of driver.
		ColoOrEEL	Indicates if the cost element applies for the collocation and/or EEL network architecture or to all configurations
		PlantCat	"Classifies plant assets (by FRC) for the purpose of computing loadings, in-plant

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GroupName	Table Name	Field	Explanation
			values, cost trends, and depreciation"
		RateCenterZone	Identifies the ILEC tariff schedule for SpA rates that applies to products in particular locations
		CostDriver	States the primary quantity measure that causes a direct cost item
		Operating Area	Indicates the categories of the highest level of the location hierarchy
		NtwkCat	Specifies the broad report category of network resources to which a particular cost item belongs
		DS1 To DS0 Xover	In CLEC Study Properties table identifies the crossover between DS1 and DS0; In Network Cost table determines if a cost element is included dependent upon the value of the DS1 to DS0 crossover input in the CLEC Study Properties table
		CostDriverType	Indicates the primary cost object dimension that applies to a direct cost item
		CostElem	Indicates the categories of

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GroupName	Table Name	Field	Explanation
			the lowest level of the cost hierarchy
		CostType	Determines whether a cost item is assigned via the primary or secondary cost driver depending on how the cost behaves with respect to the cost object
		LATA	Indicates the categories of the third highest level of the location hierarchy
		CDMin	Establishes the lowest cost driver quantity to which the driver applies. This allows for the model to graduate up (or down) the unit cost of specific cost drivers relative to the quantity of driver.
		DemandYearForBuild	Identifies the number of years that should be considered for initial provisioning of the network cost item
		SecondDriverType	Indicates the secondary cost object dimension used to allocate an indirect cost item
		Customer Center (Spend Band)	Indicates the categories of the third highest level of the customer hierarchy

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GroupName	Table Name	Field	Explanation
		MileageBased	Indicates whether a network cost item amount is stated on a per mile basis
		Life Category	Classifies plant assets (relative to sub-FRC) for the purpose of applying appropriate in-plant factors
		Customer Family (Res or Bus)	Indicates the categories of the highest level of the customer hierarchy
		CostElem	Indicates the categories of the lowest level of the cost hierarchy
		Frequency	Designates how often a particular cost item repeats (recurring indicates monthly)
		CostFam	Indicates the categories of the highest level of the cost hierarchy
		DSLAddressable	Indicates whether a cost item can be associated with delivery of DSL service for a particular customer segment
		UNEZone	Identifies the UNE tariff schedule that applies to particular network cost items
		Vintage	Designates the actual year in which network equipment is acquired

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GroupName	Table Name	Field	Explanation
		Notes	Provides a general text area for additional explanations of cost items / entries
ON (Expense) Process Files	Cost Input Operations	Amount4	"States the value of an item. May also have a suffix (e.g., 1, 2..10) to indicate how amount varies across years of 1 through 10 of study."
		DemandYearForBuild	Identifies the number of years that should be considered for initial provisioning of the network cost item
		CostElem	Indicates the categories of the lowest level of the cost hierarchy
		CLECType	"In CLEC Properties table determines what type of CLEC will be analyzed; In Network Cost Input table, determines which cost records are used."
		Account Category	Classifies / organizes computed costs into groups on selected output reports
		CostFam	Indicates the categories of the highest level of the cost hierarchy
		Weight	"Indicates any increase or

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GroupName	Table Name	Field	Explanation
			decrease that applies to a cost item for particular customer segments, locations, or products, e.g., probability of occurrence for a cost element"
		CDMin	Establishes the lowest cost driver quantity to which the driver applies. This allows for the model to graduate up (or down) the unit cost of specific cost drivers relative to the quantity of driver.
		Source	Provides an open field for documentation of data sources
		PlantCat	"Classifies plant assets (by FRC) for the purpose of computing loadings, in-plant values, cost trends, and depreciation"
		ProdFam	Indicates the categories of the highest level of the product hierarchy
		SecondDriver	States the secondary quantity measure used to allocate an indirect cost item
		ProdCntr	Indicates the categories of the third highest level of the

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GroupName	Table Name	Field	Explanation
			product hierarchy
		CostArea	Indicates the categories of the second highest level of the cost hierarchy
		ProdElem	Indicates the categories of the lowest level of the product hierarchy
		CostType	Determines whether a cost item is assigned via the primary or secondary cost driver depending on how the cost behaves with respect to the cost object
		ProdArea	Indicates the categories of the second highest level of the product hierarchy
		Customer Area	Indicates the categories of the second highest level of the customer hierarchy
		ScopeCat	Indicates whether a cost item is subject to constraints based on the type of CLEC
		Bundle	Defines product packages sold to various types of customers
		Customer Family (Res or Bus)	Indicates the categories of the highest level of the customer hierarchy

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GroupName	Table Name	Field	Explanation
		Customer Center (Spend Band)	Indicates the categories of the third highest level of the customer hierarchy
		Capacity	Specifies the usable capacity (measured in UOM) associated with a network or operations cost item (relative to the amount)
		RateCenterZone	Identifies the ILEC tariff schedule for SpA rates that applies to products in particular locations
		QUOM	Specifies the type of quantity measure that applies to each of the direct cost items
		SecondQUOM	Specifies the type of quantity measure that applies to each of the indirect cost items
		Amount5	"'States the value of an item. May also have a suffix (e.g., 1, 2..10) to indicate how amount varies across years of 1 through 10 of study."
		Amount7	"States the value of an item. May also have a suffix (e.g., 1, 2..10) to indicate how amount varies across years of 1 through 10 of study."
		Operating Area	Indicates the categories of

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GroupName	Table Name	Field	Explanation
			the highest level of the location hierarchy
		Amount9	"'States the value of an item. May also have a suffix (e.g., 1, 2..10) to indicate how amount varies across years of 1 through 10 of study."
		Amount8	"'States the value of an item. May also have a suffix (e.g., 1, 2..10) to indicate how amount varies across years of 1 through 10 of study."
		DSLAddressable	Indicates whether a cost item can be associated with delivery of DSL service for a particular customer segment
		State	Indicates the categories of the second highest level of the location hierarchy
		SecondDriverType	Indicates the secondary cost object dimension used to allocate an indirect cost item
		Amount6	"'States the value of an item. May also have a suffix (e.g., 1, 2..10) to indicate how amount varies across years of 1 through 10 of study."
		CostElem	Indicates the categories of the lowest level of the cost

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GroupName	Table Name	Field	Explanation
			hierarchy
		Amount1	"'States the value of an item. May also have a suffix (e.g., 1, 2..10) to indicate how amount varies across years of 1 through 10 of study."
		Amount3	"'States the value of an item. May also have a suffix (e.g., 1, 2..10) to indicate how amount varies across years of 1 through 10 of study."
		CostCntr	Indicates the categories of the third highest level of the cost hierarchy
		CostDriverType	Indicates the primary cost object dimension that applies to a direct cost item
		WireCenter	Indicates the categories of the lowest level of the location hierarchy
		CostDriver	States the primary quantity measure that causes a direct cost item
		Notes	Provides a general text area for additional explanations of cost items / entries
		CDMax	Establishes the highest cost driver quantity to which the driver applies. This allows for

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GroupName	Table Name	Field	Explanation
			the model to graduate up (or down) the unit cost of specific cost drivers relative to the quantity of driver.
		LATA	Indicates the categories of the third highest level of the location hierarchy
		Life Category	Classifies plant assets (relative to sub-FRC) for the purpose of applying appropriate in-plant factors
		Amount10	"'States the value of an item. May also have a suffix (e.g., 1, 2..10) to indicate how amount varies across years of 1 through 10 of study."
		Amount2	"'States the value of an item. May also have a suffix (e.g., 1, 2..10) to indicate how amount varies across years of 1 through 10 of study."
		Frequency	Designates how often a particular cost item repeats (recurring indicates monthly)
ON (Expense) Process Files	Cost Trends	PctChange27	States the annual rate of increase / decrease in the asset value of each PlantCat
		PctChange30	States the annual rate of increase / decrease in the

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GroupName	Table Name	Field	Explanation
			asset value of each PlantCat
		PctChange15	States the annual rate of increase / decrease in the asset value of each PlantCat
		PctChange1	States the annual rate of increase / decrease in the asset value of each PlantCat
		PctChange11	States the annual rate of increase / decrease in the asset value of each PlantCat
		PctChange13	States the annual rate of increase / decrease in the asset value of each PlantCat
		PctChange14	States the annual rate of increase / decrease in the asset value of each PlantCat
		PctChange12	States the annual rate of increase / decrease in the asset value of each PlantCat
		PlantCat	"Classifies plant assets (by FRC) for the purpose of computing loadings, in-plant values, cost trends, and depreciation"
		FirstYear	Designates the beginning year for each cost trend series (TPI) associated with each PlantCat (FRC)

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GroupName	Table Name	Field	Explanation
		PctChange25	States the annual rate of increase / decrease in the asset value of each PlantCat
		PctChange19	States the annual rate of increase / decrease in the asset value of each PlantCat
		PctChange16	States the annual rate of increase / decrease in the asset value of each PlantCat
		PctChange2	States the annual rate of increase / decrease in the asset value of each PlantCat
		PctChange10	States the annual rate of increase / decrease in the asset value of each PlantCat
		PctChange18	States the annual rate of increase / decrease in the asset value of each PlantCat
		PctChange17	States the annual rate of increase / decrease in the asset value of each PlantCat
		PctChange3	States the annual rate of increase / decrease in the asset value of each PlantCat
		PctChange21	States the annual rate of increase / decrease in the asset value of each PlantCat
		PctChange22	States the annual rate of

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GroupName	Table Name	Field	Explanation
			increase / decrease in the asset value of each PlantCat
		PctChange24	States the annual rate of increase / decrease in the asset value of each PlantCat
		PctChange20	States the annual rate of increase / decrease in the asset value of each PlantCat
		PctChange26	States the annual rate of increase / decrease in the asset value of each PlantCat
		PctChange28	States the annual rate of increase / decrease in the asset value of each PlantCat
		PctChange9	States the annual rate of increase / decrease in the asset value of each PlantCat
		PctChange8	States the annual rate of increase / decrease in the asset value of each PlantCat
		PctChange6	States the annual rate of increase / decrease in the asset value of each PlantCat
		PctChange7	States the annual rate of increase / decrease in the asset value of each PlantCat
		PctChange5	States the annual rate of increase / decrease in the

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GroupName	Table Name	Field	Explanation
			asset value of each PlantCat
		PctChange4	States the annual rate of increase / decrease in the asset value of each PlantCat
		PctChange31	States the annual rate of increase / decrease in the asset value of each PlantCat
		PctChange29	States the annual rate of increase / decrease in the asset value of each PlantCat
		PctChange23	States the annual rate of increase / decrease in the asset value of each PlantCat
ON (Expense) Process Files	InPlant And Loadings	Loading Plant Category	Indicates a support related PlantCat (FRC) that is associated with a primary PlantCat
		Amount	"States the value of an item. May also have a suffix (e.g., 1, 2..10) to indicate how amount varies across years of 1 through 10 of study."
		Account Category	Classifies / organizes computed costs into groups on selected output reports
		State	Indicates the categories of the second highest level of the location hierarchy

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GroupName	Table Name	Field	Explanation
		Source	Provides an open field for documentation of data sources
		Life Category	Classifies plant assets (relative to sub-FRC) for the purpose of applying appropriate in-plant factors
		Capex Plant Category	Identifies the field reporting code that a loading should be applied to
		Cost Element	Indicates the categories of the lowest level of the cost hierarchy
		Cost Element	Indicates the categories of the lowest level of the cost hierarchy
		Operating Area	Indicates the categories of the highest level of the location hierarchy
ON (Expense) Process Files	Retirement Inputs	S	Parameter in the Gompertz-Makem survival curve. Used to determine retirement capex
		PlantCat	"Classifies plant assets (by FRC) for the purpose of computing loadings, in-plant values, cost trends, and depreciation"
		g	Parameter in the Gompertz-

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GroupName	Table Name	Field	Explanation
			Makem survival curve. Used to determine retirement capex
		Life	Specifies the economic life in years for each PlantCat (FRC)
		c	Parameter in the Gompertz-Makem survival curve. Used to determine retirement capex
		Shape of Survival	States the type of retirement curve that applies to a particular plant category (FRC)
ON (Expense) Process Files	Tax Depreciation Schedule	8th Year Depreciation	"Represents the depreciation rate in a given year, entered as a decimal. Suffix (1..10) indicates the corresponding year of the value."
		7th Year Depreciation	"Represents the depreciation rate in a given year, entered as a decimal. Suffix (1..10) indicates the corresponding year of the value."
		6th Year Depreciation	"Represents the depreciation rate in a given year, entered as a decimal. Suffix (1..10) indicates the corresponding year of the value."

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GroupName	Table Name	Field	Explanation
		5th Year Depreciation	"Represents the depreciation rate in a given year, entered as a decimal. Suffix (1..10) indicates the corresponding year of the value."
		9th Year Depreciation	"Represents the depreciation rate in a given year, entered as a decimal. Suffix (1..10) indicates the corresponding year of the value."
		4th Year Depreciation	"Represents the depreciation rate in a given year, entered as a decimal. Suffix (1..10) indicates the corresponding year of the value."
		3rd Year Depreciation	"Represents the depreciation rate in a given year, entered as a decimal. Suffix (1..10) indicates the corresponding year of the value."
		2nd Year Depreciation	"Represents the depreciation rate in a given year, entered as a decimal. Suffix (1..10) indicates the corresponding year of the value."
		Life	Specifies the economic life in years for each PlantCat (FRC)
		1st Year Depreciation	"Represents the depreciation

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GroupName	Table Name	Field	Explanation
			rate in a given year, entered as a decimal. Suffix (1..10) indicates the corresponding year of the value."
		10th Year Depreciation	"Represents the depreciation rate in a given year, entered as a decimal. Suffix (1..10) indicates the corresponding year of the value."
P(rice) Process Files	Baseline Bundle Price	Bundle	Defines product packages sold to various types of customers
		Customer Family (Res or Bus)	Indicates the categories of the highest level of the customer hierarchy
		Customer Area	Indicates the categories of the second highest level of the customer hierarchy
		Price	States the baseline / starting price for a product or bundle
		RateCenterZone	Identifies the ILEC tariff schedule for SpA rates that applies to products in particular locations
P(rice) Process Files	Bundle Price Curves	PriceChangePct5	Specifies the rate of change in the price of CLEC products and bundles for each model year
		PriceChangePct9	Specifies the rate of change

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GroupName	Table Name	Field	Explanation
			in the price of CLEC products and bundles for each model year
		PriceChangePct1	Specifies the rate of change in the price of CLEC products and bundles for each model year
		PriceChangePct8	Specifies the rate of change in the price of CLEC products and bundles for each model year
		PriceChangePct6	Specifies the rate of change in the price of CLEC products and bundles for each model year
		PriceChangePct4	Specifies the rate of change in the price of CLEC products and bundles for each model year
		PriceChangePct3	Specifies the rate of change in the price of CLEC products and bundles for each model year
		PriceChangePct10	Specifies the rate of change in the price of CLEC products and bundles for each model year
		PriceErosionZone	Not used at this time
		Customer Area	Indicates the categories of

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GroupName	Table Name	Field	Explanation
			the second highest level of the customer hierarchy
		Customer Family (Res or Bus)	Indicates the categories of the highest level of the customer hierarchy
		Bundle	Defines product packages sold to various types of customers
		PriceChangePct2	Specifies the rate of change in the price of CLEC products and bundles for each model year
		PriceChangePct7	Specifies the rate of change in the price of CLEC products and bundles for each model year
P(rice) Process Files	CLEC Baseline Price Discount	CurCompZone	Currently not used
		ProdFam	Indicates the categories of the highest level of the product hierarchy
		PctDiscount	States the discount at which the CLEC will offer the product versus the baseline ILEC price
		ProdElem	Indicates the categories of the lowest level of the product hierarchy

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GroupName	Table Name	Field	Explanation
		ProdArea	Indicates the categories of the second highest level of the product hierarchy
		ProdCntr	Indicates the categories of the third highest level of the product hierarchy
P(rice) Process Files	Product Price Curves	PriceChangePct9	Specifies the rate of change in the price of CLEC products and bundles for each model year
		ProdFam	Indicates the categories of the highest level of the product hierarchy
		PriceChangePct5	Specifies the rate of change in the price of CLEC products and bundles for each model year
		ProdCntr	Indicates the categories of the third highest level of the product hierarchy
		ProdElem	Indicates the categories of the lowest level of the product hierarchy
		PriceChangePct4	Specifies the rate of change in the price of CLEC products and bundles for each model year
		ProdArea	Indicates the categories of the second highest level of

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GroupName	Table Name	Field	Explanation
			the product hierarchy
		RateCenterZone	Identifies the ILEC tariff schedule for SpA rates that applies to products in particular locations
		PriceErosionZone	Not used at this time
		Customer Family (Res or Bus)	Indicates the categories of the highest level of the customer hierarchy
		Customer Area	Indicates the categories of the second highest level of the customer hierarchy
		PriceChangePct2	Specifies the rate of change in the price of CLEC products and bundles for each model year
		PriceChangePct10	Specifies the rate of change in the price of CLEC products and bundles for each model year
		PriceChangePct6	Specifies the rate of change in the price of CLEC products and bundles for each model year
		PriceChangePct1	Specifies the rate of change in the price of CLEC products and bundles for each model year

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GroupName	Table Name	Field	Explanation
		PriceChangePct3	Specifies the rate of change in the price of CLEC products and bundles for each model year
		PriceChangePct8	Specifies the rate of change in the price of CLEC products and bundles for each model year
		PriceChangePct7	Specifies the rate of change in the price of CLEC products and bundles for each model year
Q(uantity) Process Files	Churn	DisconnectPct1	The Percentage of customers disconnected each year (expressed as a decimal). Suffix (1..10) indicates the corresponding year of the value.
		ProdElem	Indicates the categories of the lowest level of the product hierarchy
		DisconnectPct2	The Percentage of customers disconnected each year (expressed as a decimal). Suffix (1..10) indicates the corresponding year of the value.
		ProdCntr	Indicates the categories of the third highest level of the

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GroupName	Table Name	Field	Explanation
			product hierarchy
		UNEZone	Identifies the UNE tariff schedule that applies to particular network cost items
		ProdFam	Indicates the categories of the highest level of the product hierarchy
		DisconnectPct3	The Percentage of customers disconnected each year (expressed as a decimal). Suffix (1..10) indicates the corresponding year of the value.
		ProdArea	Indicates the categories of the second highest level of the product hierarchy
		Customer Area	Indicates the categories of the second highest level of the customer hierarchy
		DisconnectPct4	The Percentage of customers disconnected each year (expressed as a decimal). Suffix (1..10) indicates the corresponding year of the value.
		DisconnectPct9	The Percentage of customers disconnected each year (expressed as a decimal). Suffix (1..10)

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GroupName	Table Name	Field	Explanation
			indicates the corresponding year of the value.
		DisconnectPct8	The Percentage of customers disconnected each year (expressed as a decimal). Suffix (1..10) indicates the corresponding year of the value.
		DisconnectPct6	The Percentage of customers disconnected each year (expressed as a decimal). Suffix (1..10) indicates the corresponding year of the value.
		Customer Center (Spend Band)	Indicates the categories of the third highest level of the customer hierarchy
		DisconnectPct10	The Percentage of customers disconnected each year (expressed as a decimal). Suffix (1..10) indicates the corresponding year of the value.
		DisconnectPct5	The Percentage of customers disconnected each year (expressed as a decimal). Suffix (1..10) indicates the corresponding year of the value.

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GroupName	Table Name	Field	Explanation
		Customer Family (Res or Bus)	Indicates the categories of the highest level of the customer hierarchy
		DisconnectPct7	The Percentage of customers disconnected each year (expressed as a decimal). Suffix (1..10) indicates the corresponding year of the value.
Q(uantity) Process Files	CLEC Profile Bundles	CLECProvidesInUNEZone1	"Indicates which customer types and locations a modeled CLEC serves. May also have a suffix (e.g., 1, 2) to indicate amount in discrete UNEZones"
		EndingYear	Indicates the model year through which a particular product or bundle would be offered
		Bundle	Defines product packages sold to various types of customers
		InitialOfferingYear	Indicates the beginning model year in which a product or bundle is offered to customers
		CLECProvidesInUNEZone3	"Indicates which customer types and locations a modeled CLEC serves. May

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GroupName	Table Name	Field	Explanation
			also have a suffix (e.g., 1, 2) to indicate amount in discrete UNEZones"
		IsOffered	Indicates whether a product is offered by a CLEC sometime during the model period
		CLECProvidesInUNEZone2	"Indicates which customer types and locations a modeled CLEC serves. May also have a suffix (e.g., 1, 2) to indicate amount in discrete UNEZones"
		CLECProvidesInUNEZone4	"Indicates which customer types and locations a modeled CLEC serves. May also have a suffix (e.g., 1, 2) to indicate amount in discrete UNEZones"
		CLECProvidesInUNEZone4	"Indicates which customer types and locations a modeled CLEC serves. May also have a suffix (e.g., 1, 2) to indicate amount in discrete UNEZones"
		CLECProvidesInUNEZone3	"Indicates which customer types and locations a modeled CLEC serves. May also have a suffix (e.g., 1, 2) to indicate amount in

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GroupName	Table Name	Field	Explanation
			discrete UNEZones"
		CLECProvidesInUNEZone1	"Indicates which customer types and locations a modeled CLEC serves. May also have a suffix (e.g., 1, 2) to indicate amount in discrete UNEZones"
		IsOffered	Indicates whether a product is offered by a CLEC sometime during the model period
		CLECProvidesInUNEZone2	"Indicates which customer types and locations a modeled CLEC serves. May also have a suffix (e.g., 1, 2) to indicate amount in discrete UNEZones"
		ProdElem	Indicates the categories of the lowest level of the product hierarchy
		EndingYear	Indicates the model year through which a particular product or bundle would be offered
		InitialOfferingYear	Indicates the beginning model year in which a product or bundle is offered to customers
		ProdArea	Indicates the categories of

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GroupName	Table Name	Field	Explanation
			the second highest level of the product hierarchy
		ProdFam	Indicates the categories of the highest level of the product hierarchy
		ProdCntr	Indicates the categories of the third highest level of the product hierarchy
Q(uantity) Process Files	Demand Curves	DemandChangePct6	"Represents the percent change in an attribute each year, entered as a decimal. Suffix (1..10) indicates the corresponding year of the value."
		DemandChangePct10	"Represents the percent change in an attribute each year, entered as a decimal. Suffix (1..10) indicates the corresponding year of the value."
		Customer Area	Indicates the categories of the second highest level of the customer hierarchy
		DemandChangePct5	"Represents the percent change in an attribute each year, entered as a decimal. Suffix (1..10) indicates the corresponding year of the value."

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GroupName	Table Name	Field	Explanation
		DemandChangePct4	"Represents the percent change in an attribute each year, entered as a decimal. Suffix (1..10) indicates the corresponding year of the value."
		DemandChangePct3	"Represents the percent change in an attribute each year, entered as a decimal. Suffix (1..10) indicates the corresponding year of the value."
		DemandChangePct2	"Represents the percent change in an attribute each year, entered as a decimal. Suffix (1..10) indicates the corresponding year of the value."
		DemandChangePct7	"Represents the percent change in an attribute each year, entered as a decimal. Suffix (1..10) indicates the corresponding year of the value."
		DemandChangePct1	"Represents the percent change in an attribute each year, entered as a decimal. Suffix (1..10) indicates the corresponding year of the value."

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GroupName	Table Name	Field	Explanation
		UNEZone	Identifies the UNE tariff schedule that applies to particular network cost items
		ProdElem	Indicates the categories of the lowest level of the product hierarchy
		Customer Family (Res or Bus)	Indicates the categories of the highest level of the customer hierarchy
		DemandChangePct9	"Represents the percent change in an attribute each year, entered as a decimal. Suffix (1..10) indicates the corresponding year of the value."
		ProdArea	Indicates the categories of the second highest level of the product hierarchy
		DemandChangePct8	"Represents the percent change in an attribute each year, entered as a decimal. Suffix (1..10) indicates the corresponding year of the value."
		Customer Center (Spend Band)	Indicates the categories of the third highest level of the customer hierarchy
		ProdCntr	Indicates the categories of the third highest level of the

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GroupName	Table Name	Field	Explanation
			product hierarchy
		ProdFam	Indicates the categories of the highest level of the product hierarchy
Q(uantity) Process Files	Market Growth	Percent Growth 9	Defines the annual growth rate of customers in the state being analyzed
		Percent Growth 1	Defines the annual growth rate of customers in the state being analyzed
		Percent Growth 7	Defines the annual growth rate of customers in the state being analyzed
		Percent Growth 10	Defines the annual growth rate of customers in the state being analyzed
		Percent Growth 6	Defines the annual growth rate of customers in the state being analyzed
		Percent Growth 5	Defines the annual growth rate of customers in the state being analyzed
		Percent Growth 4	Defines the annual growth rate of customers in the state being analyzed
		Percent Growth 2	Defines the annual growth rate of customers in the state being analyzed

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GroupName	Table Name	Field	Explanation
		Percent Growth 3	Defines the annual growth rate of customers in the state being analyzed
		Percent Growth 8	Defines the annual growth rate of customers in the state being analyzed
Q(uantity) Process Files	Penetration Curves for Bundles	PenPct7	Provides the rate of market penetration for a particular customer and product combination during each model year. May have a suffix to indicate year of corresponding value.
		PenPct3	Provides the rate of market penetration for a particular customer and product combination during each model year. May have a suffix to indicate year of corresponding value.
		Customer Family (Res or Bus)	Indicates the categories of the highest level of the customer hierarchy
		PenPct8	Provides the rate of market penetration for a particular customer and product combination during each model year. May have a suffix to indicate year of corresponding value.

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GroupName	Table Name	Field	Explanation
		PenPct5	Provides the rate of market penetration for a particular customer and product combination during each model year. May have a suffix to indicate year of corresponding value.
		PenPct10	Provides the rate of market penetration for a particular customer and product combination during each model year. May have a suffix to indicate year of corresponding value.
		Customer Center (Spend Band)	Indicates the categories of the third highest level of the customer hierarchy
		Customer Area	Indicates the categories of the second highest level of the customer hierarchy
		PenPct9	Provides the rate of market penetration for a particular customer and product combination during each model year. May have a suffix to indicate year of corresponding value.
		PenPct1	Provides the rate of market penetration for a particular customer and product

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GroupName	Table Name	Field	Explanation
			combination during each model year. May have a suffix to indicate year of corresponding value.
		UNEZone	Identifies the UNE tariff schedule that applies to particular network cost items
		PenPct4	Provides the rate of market penetration for a particular customer and product combination during each model year. May have a suffix to indicate year of corresponding value.
		Bundle	Defines product packages sold to various types of customers
		PenPct2	Provides the rate of market penetration for a particular customer and product combination during each model year. May have a suffix to indicate year of corresponding value.
		PenPct6	Provides the rate of market penetration for a particular customer and product combination during each model year. May have a suffix to indicate year of

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GroupName	Table Name	Field	Explanation
			corresponding value.
		PenPct9	Provides the rate of market penetration for a particular customer and product combination during each model year. May have a suffix to indicate year of corresponding value.
		Customer Family (Res or Bus)	Indicates the categories of the highest level of the customer hierarchy
		PenPct2	Provides the rate of market penetration for a particular customer and product combination during each model year. May have a suffix to indicate year of corresponding value.
		PenPct10	Provides the rate of market penetration for a particular customer and product combination during each model year. May have a suffix to indicate year of corresponding value.
		PenPct1	Provides the rate of market penetration for a particular customer and product combination during each model year. May have a

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GroupName	Table Name	Field	Explanation
			suffix to indicate year of corresponding value.
		PenPct7	Provides the rate of market penetration for a particular customer and product combination during each model year. May have a suffix to indicate year of corresponding value.
		Customer Area	Indicates the categories of the second highest level of the customer hierarchy
		PenPct4	Provides the rate of market penetration for a particular customer and product combination during each model year. May have a suffix to indicate year of corresponding value.
		PenPct8	Provides the rate of market penetration for a particular customer and product combination during each model year. May have a suffix to indicate year of corresponding value.
		Customer Center (Spend Band)	Indicates the categories of the third highest level of the customer hierarchy

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GroupName	Table Name	Field	Explanation
		Qty	"Indicates how many units of a product are included in the definition of a product bundle, only if the QtyIsLimited value is set to Y."
		ProdFam	Indicates the categories of the highest level of the product hierarchy
		Anchor	"Specifies whether a particular customer and product combination is an anchor (i.e., prerequisite) offering for a CLEC"
		PenTiedToAnchor	Indicates whether the penetration rate for a particular customer and product combination is based upon a related anchor product
		ProdElem	Indicates the categories of the lowest level of the product hierarchy
		ProdCntr	Indicates the categories of the third highest level of the product hierarchy
		PenPct3	Provides the rate of market penetration for a particular customer and product

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GroupName	Table Name	Field	Explanation
			combination during each model year. May have a suffix to indicate year of corresponding value.
		ProdArea	Indicates the categories of the second highest level of the product hierarchy
		PenPct5	Provides the rate of market penetration for a particular customer and product combination during each model year. May have a suffix to indicate year of corresponding value.
		PenPct6	Provides the rate of market penetration for a particular customer and product combination during each model year. May have a suffix to indicate year of corresponding value.
		PenAffectedByDSLAddressability	Indicates whether the ILEC's ability to provide DSL access would affect the market penetration of a CLEC's product bundle
		UNEZone	Identifies the UNE tariff schedule that applies to particular network cost items

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GroupName	Table Name	Field	Explanation
R(evenue) Process Files	USF- High Cost Loop Support	Customer Area	Indicates the categories of the second highest level of the customer hierarchy
		Wire Center	Indicates the categories of the lowest level of the location hierarchy
		Customer Family (Res or Bus)	Indicates the categories of the highest level of the customer hierarchy
		State	Indicates the categories of the second highest level of the location hierarchy
		Monthly HCLoop Amount	"States the value of an item. May also have a suffix (e.g., 1, 2..10) to indicate how amount varies across years of 1 through 10 of study."
R(evenue) Process Files	USF- Interstate Access Support	Customer Area	Indicates the categories of the second highest level of the customer hierarchy
		UNE Zone	Identifies the UNE tariff schedule that applies to particular network cost items
		State	Indicates the categories of the second highest level of the location hierarchy
		Monthly IAS Amount	"States the value of an item. May also have a suffix (e.g., 1, 2..10) to indicate how

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GroupName	Table Name	Field	Explanation
			amount varies across years of 1 through 10 of study."
		Customer Family (Res or Bus)	Indicates the categories of the highest level of the customer hierarchy
WireCenter Files	Exchange Information	MMA	Indicates the mass marketing area associated with each LocElem
		TV Market Area	"Defines the Designated Market Area associated with each LocElem (DMA® is a trademark of Nielsen Media Research, Inc.)"
		WireCenter	Indicates the categories of the lowest level of the location hierarchy
		Geographic Zone	
		Mileage	Specifies the mileage between the BST end office and the main BST Access tandem within the same LATA.
		Is MassMarket Service Offered	Indicates whether Mass Market Service is offered in a particular LocElem
		MSA	Indicates the metropolitan statistical area associated with each LocElem

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GroupName	Table Name	Field	Explanation
		IDLCPct	States the rate of integrated digital loop carrier that exists in a particular LocElem
		Lat	Designates the degrees latitude for each LocElem
		PriceErosionZone	Not used at this time
		Is Enterprise Service Offered	Indicates whether Enterprise Service is offered in a particular LocElem
		Operating Area	Indicates the categories of the highest level of the location hierarchy
		Lon	Designates the degrees longitude for each LocElem
		Micropolitan Statisical Area	Notes the MCSA category associated with a particular LocElem
		Component Economic Area	A geographic entity developed by the Bureau of Economic Analysis to categorize geographic areas with similar purchasing patterns.
		V	Indicates the vertical coordinate associated with each LocElem
		H	Indicates the horizontal coordinate associated with

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GroupName	Table Name	Field	Explanation
			each LocElem
		RateCenterZone	Identifies the ILEC tariff schedule for SpA rates that applies to products in particular locations
		UNEZone	Identifies the UNE tariff schedule that applies to particular network cost items
		CurCompZone	Currently not used
		LATA	Indicates the categories of the third highest level of the location hierarchy
		State	Indicates the categories of the second highest level of the location hierarchy

ADDITIONAL UNIMPAIRED MARKETS IN FLORIDA			
UNE Zone	**CEA**	**Net Present Value**	**NPV for Mass Market**
Zone1	Daytona Beach FL	177,932	79,976
Zone2	Fort Pierce-Port St. Lucie FL	12,787,925	9,512,325
Zone2	Gainesville FL	5,419,734	4,130,810
Zone2	Melbourne-Titusville-Palm Bay FL	14,733,850	11,317,743
Zone2	Panama City FL	1,425,923	656,593
Zone2	Tampa-St. Petersburg-Clearwater FL	550,229	368,886
Zone3	Fort Pierce-Port St. Lucie FL	2,514,603	1,708,707
Zone3	Miami FL	1,021,373	852,516
Zone3	Pensacola FL	156,709	28,830
Zone3	West Palm Beach-Boca Raton FL	2,851,801	2,352,859
	TOTAL:	**41,640,078**	**31,009,245**