State of New York
Department of Public Service

Framework for Regulatory Relief

A White Paper Prepared by the
State of New York
Department of Public Service Staff

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I. Executive Summary

The New York Public Service Commission (Commission) approved residential pricing flexibility for Verizon of New York (Verizon) and Frontier Telecommunications of Rochester (Frontier Rochester) in its Competition III proceeding (Competition III).[1] While some of New York's other incumbent local exchange companies (ILECs) were also experiencing line and revenue losses to competition, the Commission noted that additional information would be required before such decisions could be made, and invited the ILECs to justify that they also required regulatory relief.

To that end, in September 2006, Frontier Communications petitioned the Commission for residential pricing flexibility for its six other New York affiliates.[2] Similarly, in March 2007, the six Telephone & Data Systems, Inc. (TDS) subsidiaries each filed petitions for residential pricing flexibility.[3] To provide consistency in Staff's consideration of the Frontier Communications and TDS petitions, as well as future petitions for residential pricing and other regulatory relief, Staff has developed a framework to guide Commission action on such requests. The framework utilizes six indicators to determine the status of each company with respect to four dimensions: competitive presence, financial status of each company, network investment, and operating efficiency.

The first indicator, Competitive Gateway is a "threshold" indicator meaning that absent significant competition, residential pricing flexibility, or other regulatory relief, would not be entertained. For the other indicators (annual growth rate of revenues, return on equity, service quality, broadband deployment and unexplained cost per access line) the framework

[1] Case 05 C-0616 – Proceeding on Motion of the Commission to Examine Issues Related to the Transition to Intermodal Competition in the Provision of Telecommunications Services, Statement of Policy on Further Steps Toward Competition in the Intermodal Telecommunications Market and Order Allowing Rate Filings (issued and effective April 11, 2006).

[2] Case 06-C-1261 – Proceeding on Motion of the Commission to Examine Issues Related to the Transition to Intermodal Competition in the Provision of Telecommunications, petition of Frontier Communications for Pricing Flexibility (filed September 14, 2006).

[3] Cases 07-C-0274 through 07-C-0279 – Petitions of Edwards Telephone Company, Inc., Port Byron Telephone Company, Township Telephone company, Inc., Deposit Telephone Company, Inc., Oriskany Falls Telephone Corporation and Vernon Telephone Company, Inc. for Pricing Flexibility (filed March 5, 2007). (Collectively referred to as the TDS petitions.)

recommends certain levels of performance; however it allows for the possibility of further consideration in conjunction with individual company compliance filings for relief.

Similar to the Frontier Communications and TDS petitions, companies will be required to submit compliance filings with the Commission for regulatory relief and the model will need to be updated to reflect the most recently available data. However, assuming the results of an updated model mirror the results described here, Staff's framework indicates that granting residential pricing flexibility to five additional incumbent local exchange telephone companies in the State would be warranted. The five companies (Berkshire, Dunkirk & Fredonia, Warwick, Ontario and State) would qualify for residential pricing flexibility similar to what was granted to Frontier of Rochester. The other ILECs companies would not, at this time, qualify for residential pricing flexibility under Staff's framework.

The framework can also provide guidance with respect to the disposition of Rural Telephone Bank (RTB) funds. The proposed framework finds it reasonable to allow three of the companies receiving RTB funds (Verizon, Berkshire, and Dunkirk & Fredonia) to retain such funds to use at their discretion, subject to conditions.[4]

Staff believes the framework provides an appropriate methodology to evaluate needs for regulatory relief. Further, while residential pricing flexibility and other forms of regulatory relief may flow from the adoption of the proposed framework, the Commission would continue to maintain the regulatory obligation and responsibility to ensure that rates are just and reasonable, and that service quality is maintained. In otherwords, the regulatory relief granted would necessarily be contingent upon continued adequate company performance regarding the indicators. Likewise, should performance on the indicators change for companies not initially granted relief, Staff would entertain future company compliance filings to approve similar pricing flexibility.

Staff believes parties should have an opportunity to comment on the framework proposed herein. Staff intends to update the framework's model based on the 2006 Annual Reports filed by the telephone companies by March 31, 2007, and adjust the model, as necessary, based on party comments.

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[4] The disposition of the RTB funds is being addressed in Case 06-C-0314 - Proceeding on Motion of the Commission to Address the Dissolution of the Rural Telephone Bank, Order Instituting Proceeding Requesting Information and Comments (Issued and Effective, March 21, 2006). Staff proposes here that should the Commission determine that it has jurisdiction over the disposition of the RTB funds, that this model be used to guide the disposition of such funds.

II. Introduction

The competitive telecommunications market in New York continues to evolve. As the Commission observed in its Competition III proceeding, consumers are making greater use of wireless telephony and, in many areas, are exercising their options to obtain telephone services provided over cable television company facilities. Consequently, many of the incumbent telephone companies[5] are losing customers and/or revenues to competitive alternatives. Not all incumbents face the same level of competition and each company may respond to competition in a different manner. Each company is impacted differently depending on, among other things, the nature of its service territory, the components of its revenue base, and its customer characteristics. Some companies are more "at risk" than others and some have responded more proactively to the threat of emerging competition. In brief, each operates in a unique environment; however, it is appropriate that each be evaluated via a common framework.

This White Paper proposes a framework to guide Commission determinations granting regulatory relief to New York ILECs in light of the individual competitive challenges faced by each company. The framework provides an appropriate approach for decisions on residential pricing flexibility[6] and other regulatory relief, while maintaining the Commission's role in assuring adequate service quality and just and reasonable rates.

III. Background

The increasingly competitive telecommunications market has implications on the regulatory treatment accorded to incumbents, and the Commission continues to consider the operating environments of the telephone companies when framing policy decisions. There are several policy matters before the Commission that are directly related to, and are informed by,

[5] These are the forty companies that traditionally provided monopoly local telephone services prior to the development of competitive local markets in the 1980's and 90's.

[6] The pricing flexibility we reference here is the same pricing flexibility authorized by the Commission in its Competition III proceeding. That consists of limited flexibility for residential basic service rates, subject to a statewide cap and unlimited pricing flexibility for non-basic residential service subject to a uniformity rule which requires a uniform price across each company's service territory.

Staff's White Paper analysis. These matters include:

- Competition III (Case 05-C-0616)
- Frontier Communications Petition Requesting Pricing Flexibility (Case 06-C-1261)
- TDS Petitions Requesting Pricing Flexibility (Cases 07-C-0274 through 07-C-0279)
- Disposition of the Rural Telephone Bank Funds (Case 06-C-0314)

Competition III

In its April 2006 Competition III Order, the Commission declared that the residential market for non-basic services in New York is adequately competitive[7] and that Verizon and Frontier of Rochester's prices were being constrained by actual and potential intermodal competition.[8] As a result, the Commission approved residential pricing flexibility for Verizon and Frontier of Rochester. Verizon was allowed to increase its basic monthly residential rates $2 per access line per year up to a cap of $23. Frontier of Rochester was limited to increases for two years, subject to further evaluation because of the Commission's concerns about the impact of residential rate increases over a long term for a company with relatively low basic rates. Regarding the other New York incumbent telephone companies, the Commission found that:

> *While there may be individual companies that have suffered concomitant competitive revenue losses comparable to Verizon and Frontier of Rochester, that fact cannot be determined from this record.…Accordingly, we will examine the relative competitive positions of these incumbents on a case-by-case basis to determine if increased pricing flexibility or other regulatory flexibility is warranted. Whenever an incumbent can demonstrate that its prices are constrained by competition, we will consider granting pricing and other flexibility.* [9]

Thus, the Commission required that any increase in basic residential service rates by the independent companies be offset by access charge decreases, unless they could make individual

[7] Competition III Order, page 6.

[8] Competition III Order, page 40.

[9] Competition III Order, page 36.

showings to support a net revenue increase request.[10] The Commission stated that "individual reviews of the franchise areas of the independent local exchange carrier are required to determine whether additional pricing flexibility is appropriate for the balance of the incumbents"[11] and invited company-specific filings to consider individual company situations.[12]

The Competition III Order also directed Staff to refine its evaluation of the competitiveness of the market and report back to the Commission within twelve months.[13] This framework is a component to that reevaluation.

Frontier Communication's Petition Requesting Pricing Flexibility

In September 2006, Frontier Communications, responding to the Commission's invitation, filed a petition requesting that the Commission extend to six of its affiliates[14] the same pricing flexibility granted to Verizon New York and Frontier of Rochester in the Competition III proceeding.[15] In brief, Frontier did not wish to offset increases in basic residential rates with access charge reductions.[16] The primary rationale used to support the request centered on the argument that the Frontier Communications affiliates are faced by the same mix of unregulated and lightly regulated competitors that operate in the Verizon and Frontier of Rochester territories. Staff's White Paper can be employed to appropriately investigate the Frontier Communications petition.

[10] Competition III Order, page 64.

[11] Competition III Order, page 41.

[12] Competition III Order, page 56.

[13] Competition III Order, page 41.

[14] The six affiliates are Citizens Telecommunications of New York, Inc., Frontier Communications of New York, Inc., Frontier Communications of Sylvan Lake, Inc., Frontier Communications of Ausable Valley, Inc., Frontier Communications of Seneca Gorham, Inc., and Ogden Telephone Company.

[15] Case 06-C-1261 - Petition of Citizens Telecommunications Company of New York, Inc., Frontier Communications of New York, Inc., Frontier Communications of Sylvan Lake, Inc., Frontier Communications of Ausable Valley, Inc., Frontier Communications of Seneca-Gorham, Inc. and Ogden Telephone.

[16] The Competition III required any increases by independents to be offset by access charge decreases, unless they can make individual showings to support a net revenue increase request.

TDS Petitions Requesting Pricing Flexibility

In March 2007, each of the six TDS subsidiaries[17] operating in New York, filed petitions requesting that the Commission extend the same pricing and regulatory flexibility granted to Verizon New York and Frontier of Rochester in the Competition III Proceeding. Each TDS company noted the high level of competition it experiences and the resulting losses in minutes of use, access lines and revenue. Each company requests unlimited pricing flexibility for services (including bundles and packages) other than basic services, subject to service territory price uniformity throughout the Company's serving area.[18] In addition, each company requests that it be allowed to retain any increases in revenue resulting from price changes to its "basic service" and that such increases not be offset by access charge decreases. Increases to the flat-rate basic residential service will be subject to the same $23 per month cap and annual increases will be limited to $2. The TDS companies conclude that despite the rural nature of their service territories, each has an adequately competitive market to justify the regulatory relief requested. Staff's White Paper can be employed to appropriately investigate the TDS petitions.

Disposition of the Rural Telephone Bank Funds

In March 2006 the Commission instituted a proceeding to consider the disposition of proceeds from the dissolution of the Rural Telephone Bank (RTB).[19] As part of the Commission's Order, the ILECs were required to submit proposed plans on the use of these proceeds in May 2006. Many of the filings by the ILECs sought to retain the funds to address competitive pressures, including in many cases, the expansion of their respective broadband capabilities. Thus, the results from Staff's review of the competitiveness of each of the companies operating environment (and the other indicators considered in this Staff White Paper) can inform the Commission in its consideration of approving the disposition of the RTB funds.

[17] Edwards Telephone Company, Port Byron Telephone Company, Township Telephone Company, Deposit Telephone Company, Oriskany Falls Telephone Corporation and Vernon Telephone Company.

[18] The company's do not seek price flexibility for additional directory listings, non-published numbers, PIC change charges and restoral charges.

[19] Case 06-C-0314 – Proceeding on Motion of the Commission to Address the Dissolution of the Rural Telephone Bank, Order Instituting Proceeding Requesting Information and Comments (Issued and Effective, March 21, 2006).

IV. Framework for Analysis

Staff's White Paper was initiated to establish a framework for Commission decisions with respect to granting regulatory flexibility to the independent ILECs. In its Competition III Order, the Commission acknowledges there may be other companies in similar situations as Verizon and Frontier of Rochester relative to competition and revenue losses, but also states that individual reviews of the areas of the independents are required to determine whether additional residential pricing flexibility should be granted. Such individual reviews are also necessary in determinations of other regulatory matters, such as the disposition of RTB proceeds.

The increasing presence of competition has changed the environment in which the independents are operating, and in some cases regulatory flexibility may be warranted. As stated earlier, each of the incumbent local exchange companies faces its own challenges and competitive pressures and each has responded differently. Although each company is different and the Commission has stated that individual reviews must be performed, the process by which those reviews are conducted and regulatory flexibility granted should be consistent. By establishing a framework, we will establish a consistent process to guide Commission determinations and each of the independent companies will be informed by the Commission's directives. The framework we discuss below provides consistency while at the same time allows for individual company circumstances to be taken into consideration. In addition, the framework enables a comparison of individual situations and performance amongst ILECs operating in the state, which may be useful in identifying those companies requiring more scrutiny.

To evaluate company-specific situations, Staff proposes a framework comprised of four dimensions which, when taken together, show the extent to which a company is challenged by, and has responded to, competitive pressures, as well as how it is performing financially and operationally. To establish the relative position of each company with respect to those dimensions, the framework employs the use of six indicators. For each indicator, levels are proposed as either a threshold or expectations. The dimensions and the indicators used to gauge each company's status relative to those dimensions are shown below:

Table 1
Dimensions and Indicators

Dimension	Indicator(s)
Competitive Presence	Competitive Gateway
Financial Status	Change in Annual Growth Rate of Revenues
	Return on Equity (ROE)
Network Investment	Service Quality
	Broadband Deployment
Operating Efficiency	Unexplained Cost per Access Line

This White Paper considers each of the incumbent companies in light of the framework. Staff would expect that any company seeking residential pricing flexibility would update and validate the information[20] contained in the model with their compliance filings for pricing flexibility. What follows is a general discussion of each dimension for the proposed framework, more detailed explanations of the indicators used to measure a company's position relative to those dimensions, and the results of the model for the independent local exchange companies in New York.[21]

COMPETITIVE PRESENCE

The first dimension of the framework is competitive presence in a company's franchise area. Staff considers this a threshold issue, and any company seeking residential pricing flexibility, or other regulatory relief, must "pass" the Competitive Gateway. The proposed Competitive Gateway utilizes an elasticity model[22] to determine which companies could raise

[20] Staff used data from a variety of sources. In addition to the company filed PSC Annual Reports, Staff conducted a survey of the independent companies in July 2006. Further it is important to recognize that the data underlying this analysis are largely self-reported by the companies and have not been validated for accuracy.

[21] It should be noted that Staff's model uses the 2005 Annual Report filings of the independent telephone companies, which were filed on March 31, 2006. The information contained in the Annual Reports has not been audited. Staff intends to update their analysis with the Annual Report filings to be made on March 31, 2007.

[22] This is further explained on pages 13-15.

revenues by simply raising their rates. Many could not, as the corresponding revenue loss due to customers migrating to competitors would outweigh any revenue gains from the rate increase. If a company is subject to competition (at competitive risk) such that it would pass the Competitive Gateway, the company's position on the remaining four elements (financial performance, service quality, broadband deployment and efficiency) would then need to be evaluated.

Competitive Gateway

Overall Approach

To evaluate the competitive risk each company faces, Staff performed a revenue impact analysis similar to the one performed for Verizon's service territory as part of the Competition III White Paper.[23] The analysis attempts to determine whether the competition a company faces would prevent it from increasing its revenues by increasing its rates. If raising rates would reduce a company's revenues because many of its customers would opt for competitive alternatives, instead of paying the higher rates, that company is deemed to face significant competition. If the company could increase its total revenues simply by raising rates, it is deemed not to face significant competition.

Staff's revenue impact calculations are based on many factors. The most important factor is the availability of competitive alternatives within a given telephone company's service territory. Staff analyzed each company to determine whether the company could increase its overall revenues by uniformly increasing rates by 5%.[24] Staff believes this is a reasonable test to determine the competitiveness of a company's service territory. If enough customers have competitive options, the ability of the incumbent to raise revenues from captive customers will be more than offset by losses in revenues from customers who leave for lower priced competitive

[23] See Appendix E, Competitive Indicator Method and Revenue Impacts – Telecommunications in New York: Competition and Consumer Protection – September 21, 2005, Case 05-C-0616.

[24] Staff believes a 5% price increase is representative of an increase that would cause customers to evaluate alternatives. Also, as described in its Horizontal Merger Guidelines, the US Department of Justice uses a 5% price increase to reflect a "small but significant and nontransitory" increase in price for its market power analyses. http://www.usdoj.gov/atr/public/guidelines/horiz_book/11.html

alternatives.[25] Thus, potential competitive losses are driven by the ability of customers to move to another facilities-based platform and the sensitivity of customers to perceived significant differences in price.

In performing the competitive analysis, a uniform five percent price increase is applied against the current average bill to determine whether such a price increase will result in an overall gain in revenues or an overall loss in revenues. The average total residential bill is used for the baseline residential revenues for the revenue impact calculations.[26] The two groups of customers (i.e., the customers with competitive options and the customers without options) face the same uniform price increase. The main difference in modeling the two groups of customers is the price elasticity of demand chosen for each group. Customers with options are much more elastic because they have the option of switching to a competitor. The group of customers without options ("captive customers") will most likely stay with the ILEC, but may reduce their level of usage in response to the price increase. The company will lose revenues associated with the group of customers with options, but raise revenue from the group of captive customers. The overall revenue effect depends on whether the loss in revenues from the group with competitive options outweighs the gain in revenues from the group without options.

The percentage of customers with options is the most important factor in determining whether an ILEC will gain or lose revenues. For Verizon, given the large percentage of its customers with options, and based upon the price elasticity estimates utilized, the Competition III order indicated the customer response to a 5% price increase would cause overall revenues to fall and would therefore constrain Verizon from increasing prices (assuming a uniformity rule). "In the White Paper's example, only 7% of wireline customers have to choose a different provider to render a hypothetical Verizon rate increase ineffective."[27] A second critical factor is the consumers' sensitivity to an increase in price. The Competition III White Paper

[25] An article by Dennis Weisman in the March 2006 issue of the Journal of Competition Law and Economics provides additional support for our method. The article examines the effect of price elasticity on market discipline. The author indicates that "because price increases that produce even small reductions in demand can generate significant losses in contribution to joint/common costs, relatively modest amounts of competition may be sufficient for deregulation."

[26] Staff relies upon a constant elasticity of demand specification for its revenue analysis. The revenue equations are similar to those used in rate case demand restriction and stimulation models.

[27] Competition III Order, page 25.

methodology relied upon a range of price elasticity estimates from a number of respected sources. Price elasticity is a measure of the percentage change in quantity over the percentage change in price. The Competition III competitive loss figures stated above were based upon a -0.5 price elasticity for customers without options and a price elasticity of -1.5 for customers with two inter-modal options. Thus, if the company raises prices by 5% and we only see a 2.5% drop in quantity, the price elasticity of demand would be -0.5. In this case the company makes money. If the company raises prices by 5% and we see a much larger 7.5% drop in quantity, the elasticity would be -1.5. In this case the company loses money. For customers without options, we use the traditional regulated utility elasticity of -0.5. This is the same as was used in the Competition III proceeding analysis. The -0.5 elasticity estimate is used for all 40 ILECs. This figure was chosen because it falls reasonably close to the middle of the range of traditional regulated market elasticity estimates. Additional support for the price elasticities chosen is contained in Appendix I.

Elasticity Estimates for Customers with Options

For customers with options, the elasticity used varies across the 40 ILECs based upon an evaluation of six ILEC-specific factors that affect consumers' price sensitivity. These ILEC-specific factors are measured for each ILEC and are combined to come up with an ILEC-specific elasticity. The resulting elasticities for customers with options range across the 40 ILECs from -1.1 to -2.0.

The six elements used to determine the elasticity factor are

1. Growth Rate of Access Lines
2. Growth Rate of Minutes of Usage (MOU)
3. Percentage of Territory with Competitive Wireless Coverage
4. Percentage of Customers with Cable Phone Available
5. Density (Lines per Square Mile - SQMI)
6. Ratio of ILEC Residential Rate to Competitive Cable Phone Rate

The higher the value of each of these elements, the more likely customers will switch to a competitor. Losses in access lines and usage levels reveal that customers have already deemed it advantageous to switch to competitive offerings. More wireless coverage and greater availability of cable phone not only means that more customers will have the ability to switch providers, but also means that there is greater customer awareness of the presence of alternative options. Since density is correlated with lower costs to serve, the greater the service territory density, the more likely competitive wireless carriers and cable companies will be to build out their networks. If

the ILEC residential rate is below the competitive cable phone rate, customers will be much less likely to switch providers than if the ILEC rate were above the competitive offering.

We choose from three possible degrees of price elasticity to be associated with each of these six factors; a high degree of price elasticity (-2.0), a medium degree of price elasticity (-1.5) and a relatively low degree of price elasticity (-1.1). One of these three possible price elasticities is chosen for each factor depending upon the following thresholds.

Table 2
Price Elasticity Factors

Elasticity Element	Elasticities		
	-2.0 Elasticity	-1.5 Elasticity	-1.1 Elasticity
Growth Rate Access Lines	Growth Rate< -3%	-3% < Growth Rate < -1.5%	Growth Rate>-1.5%
Growth Rate MOUs	Growth Rate< -3%	-3% < Growth Rate < -1.5%	Growth Rate >-1.5%
% Wireless Coverage	Coverage > 90%	90% > Coverage > 80%	Coverage <80%
% Cable Availability	Availability> 80%	80% > Availability > 60%	Availability<60%
Density (Lines per SQMI)	Density >100	100 > Density > 75	Density < 75
Residential Rate to Cable Rate	Ratio > 1	1 > Ratio > 0.75	Ratio < 0.75

The elasticities for each category are then equally averaged together (i.e., each category's elasticity is given a 1/6th weight.) Table 3 illustrates how the elasticity factor for customers with options would be determined for a hypothetical company having operating and demand characteristics which reflect the average characteristics of the 40 ILECs. This hypothetical company has a 3.29% loss in access lines, a 2.69% loss in MOUs, 95.04% competitive wireless coverage, cable phone available to 65.35% of its customers, a service territory density of 48.07 lines per square mile and a residential rate that is 29% less than the competitive cable rate. The

overall weighted elasticity for this hypothetical ILEC would be -1.53. This is roughly the same as the -1.5 used for Verizon in the Competition III White Paper for customers with options.

Table 3
Elasticity Factor for Hypothetical ILEC

Factor	Growth Rate Access Lines	Growth Rate MOUs	% Wireless Coverage	% Cable Phone Availability	Density (Lines per SQMI)	Residential Rate to Cable Rate
Factor Value	**-3.29%**	**-2.69%**	**95.04%**	**65.35%**	**48.07**	**.71**
Factor Elasticity	**-2.0**	**-1.5**	**-2.0**	**-1.5**	**-1.1**	**-1.1**
Average Elasticity = -1.53						

Overall Revenue Impact

The overall revenue impact is a combination of the revenue gain raised from captive customers and the revenue loss associated with the group of customers having competitive options. The ability of customers to move to another facilities-based platform is, in our opinion, the primary challenge to the incumbent industry and the ease of switching providers is the most direct threat incumbent companies face. Thus, the most significant factor driving the revenue changes in this analysis is the percentage of customers who are able to purchase highly substitutable cable telephony services.[28]

Application of Gateway Analysis Results for Decision Making

The results of this analysis are summarized in Table 4 below. The rightmost column (Competitively Price Constrained) indicates whether or not a company is able to raise revenues with a uniform price increase. All of the input factors are subject to measurement error. Thus, even though we estimate that a company would lose revenues if it raised prices, we should have confidence bands around that estimate. We are reasonably confident that a company will fail to raise overall revenues if the estimate for that company shows at least a 2.5% revenue loss. Companies with revenue losses greater than 2.5% can be presumed to be facing significant competition, while companies with revenue losses smaller than 2.5% need to provide more information to demonstrate the competitiveness of their service territories.

[28] This figure is derived from self-reported information provided by the companies. Eight companies reported 100% cable telephony availability. However, Staff capped the percentage at 95% to account for some locations that, in all likelihood, do not have cable passing customer's residences.

The results of this analysis (Table 4) indicate that eleven companies appear to be facing significant competition today. The remaining 29 companies may be facing varying levels of competition, but it is not considered significant enough to constrain their abilities to raise prices.

Table 4
ILEC Price Constraint Analysis

Company Name	Elasticity for Customers With Options	Revenue Effect	Competitively Price Constrained
Frontier of Rochester	-1.85	-3.93%	Yes
Verizon NY	-1.85	-3.45%	Yes
Warwick	-1.77	-3.36%	Yes
Frontier of New York	-1.70	-3.07%	Yes
Frontier - Ogden	-1.70	-3.07%	Yes
Frontier of Sylvan Lake	-1.70	-3.07%	Yes
Armstrong	-1.70	-3.07%	Yes
Ontario - Ontario	-1.77	-3.06%	Yes
FRP - Berkshire	-1.77	-3.00%	Yes
Lynch - D&F	-1.70	-2.83%	Yes
State	-1.62	-2.80%	Yes
TDS - Township	-1.55	-2.39%	No
Champlain	-1.55	-2.39%	No
Frontier of Seneca Gorham	-1.47	-2.02%	No
Frontier - Citizens NY	-1.47	-1.87%	No
TDS - Vernon	-1.62	-1.61%	No
Ontario - Trumansburg	-1.53	-1.56%	No
FRP - C&E	-1.62	-1.33%	No
Pattersonville	-1.62	-1.33%	No
TDS - Deposit	-1.53	-1.06%	No
Frontier of Ausable Valley	-1.38	-0.56%	No
Chazy & Westport	-1.38	-0.56%	No
TDS - Oriskany Falls	-1.47	-0.36%	No
Empire	-1.47	-0.32%	No
Oneida County Rural	-1.30	-0.28%	No
Crown Point	-1.32	-0.13%	No
TDS - Port Byron	-1.47	-0.13%	No
Lynch - Cassadaga	-1.55	-0.09%	No
FRP - Taconic	-1.23	-0.05%	No
Germantown	-1.47	0.11%	No
Nicholville	-1.17	0.50%	No
Newport	-1.17	0.83%	No
Windstream (ALLTEL)	-1.62	0.84%	No
TDS - Edwards	-1.17	0.99%	No
Middleburgh	-1.17	1.49%	No
Delhi	-1.38	2.25%	No
Citizens (Hammond)	-1.40	2.36%	No
Fishers Island	-1.55	2.47%	No
Hancock	-1.32	2.47%	No
Margaretville	-1.25	2.47%	No

Example Market Power Calculation - Hypothetical ILEC with Average Characteristics

Table 5 presents the results of applying Staff's analysis to a hypothetical company having operating and demand characteristics which reflect the average characteristics of the 40 ILECs in New York State. Formulas underlying the derivation of this data are shown in Appendix II and an electronic spreadsheet with the underlying formulas is also available. Since the hypothetical ILEC would only be faced with a .82% revenue loss if it were to increase prices by 5%, Staff would place this ILEC in the "No" category regarding its performance against the Competitive Gateway methodology. Staff recognizes that many of the inputs[29] related to the revenue impact calculations for each ILEC are confidential and may be open to debate for their inclusion in this analysis. Staff invites parties to comment on these data and to provide alternative data if so warranted.

Table 5
Application of Competitive Gateway Calculation to Hypothetical ILEC

Company Name	Hypothetical ILEC
Adjusted estimate of % of residences w/ cable phone	65.35%
2005 Residential Access Lines	6,164
% of customers w/ non-affiliate wireless available	95.04
Density (access lines per square mile)	48.07
Total Average Residential Revenues per Line Without Taxes	33.13
Stand alone cable phone price	51.82
Incremental cable phone price	44.33
Relevant Cable Phone Service Price	46.57
Elasticity for Customers With Options (see below)	-1.53
Inelastic Captive Customers	-0.50
Baseline Revenues	2,450,668
% price increase	5.00%
Revenue Gain from Captive Customers	20,968
Revenue Loss from Customers with Options	-41,138
Net Revenue Effect of Price Increase	-20,169
% Revenue Effect	-0.82%
Is competitively constrained and unable to raise revenues with a uniform price increase?	No

[29] Many of the ILEC specific inputs come from confidential sources, including the surveys sent to each of the ILECs during the summer of 2006. Hypothetical data is used to illustrate the Competitive Gateway methodology in order protect this confidential information.

FINANCIAL PERFORMANCE

If a company has passed the Competitive Gateway threshold, the framework next examines its financial performance. This dimension is examined in terms of two primary financial performance indicators:

- Change in Revenues Subject to Separation[30] from 2002-2005; and,
- 2005 Return on Equity (ROE) for Regulated Operations.

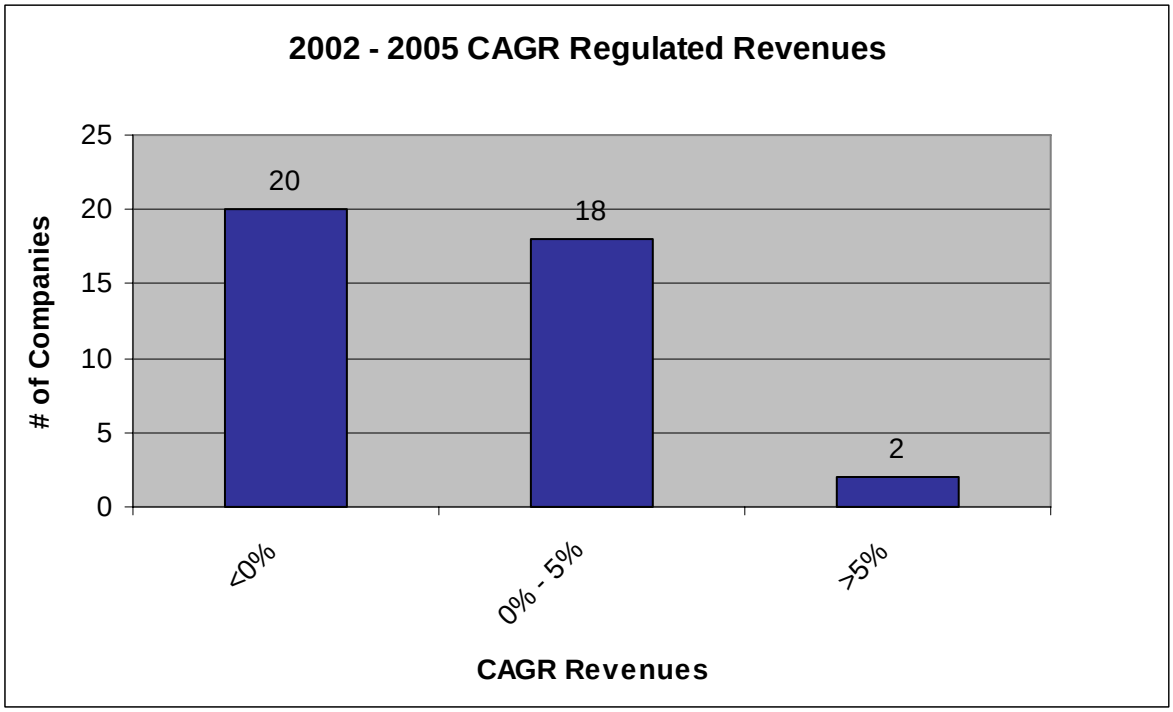
Change in Revenues Subject to Separation

The analysis examines each company's change in revenues subject to separation from 2002-2005 as an indicator of financial performance that may also reflect the level of competitive pressure each company faces. The metric used is the compound annual growth rate (CAGR) of each company's revenues, which reflects the trend in the company's ability to generate sales and revenues. An increase in the revenue metric indicates that a company has been able to grow revenues, perhaps by marketing the services well and meeting customers' demands, perhaps by increasing rates or perhaps simply due to population growth. Conversely, a decrease in the revenue growth rate may show that a company has not reacted well to competitive pressures, but other factors (e.g., loss of a single large account or a general population decline) could also explain this change in its financial position.

Over the past three years half (20) of the 40 ILECs witnessed a decline in annual operating revenues and half experienced an increase. The three companies that experienced the largest annual reductions in regulated revenues were Chazy and Westport (-5.92%), Empire (-5.73%) and Verizon-NY (-5.08%). Despite experiencing line losses exceeding 3.5% annually over the same period, three companies managed to produce annual revenue increases of over 4% -- Cassadaga (4.04%), Sylvan Lake (5.82%), and Township (6.17%).

[30] We have chosen to reflect the data on a "Subject to Separations" basis which reflects the total regulated entity rather than just the intrastate basis since we believe it provides a more complete picture of the status of each ILEC. While an ILEC may be experiencing losses on an intrastate basis they may be realizing gains on the interstate side of the business that offset these losses. For example, though companies may be losing intrastate revenues due to customers dropping their second lines, they may be achieving increased DSL revenues which fall in the interstate jurisdiction. By looking at the total regulated entity we also eliminate any anomalies in revenue and cost allocations between the interstate and intrastate jurisdiction that have yet to be corrected (DSL revenues are 100% interstate but their costs are generally 75% on the intrastate operations.) Finally, there are four companies in New York that do not report all their financial data on a separated basis (Cassadaga, Delhi, Ontario and State). Therefore, looking at all companies total regulated operations allows us to consistently view these companies with their peers.

Figure 1

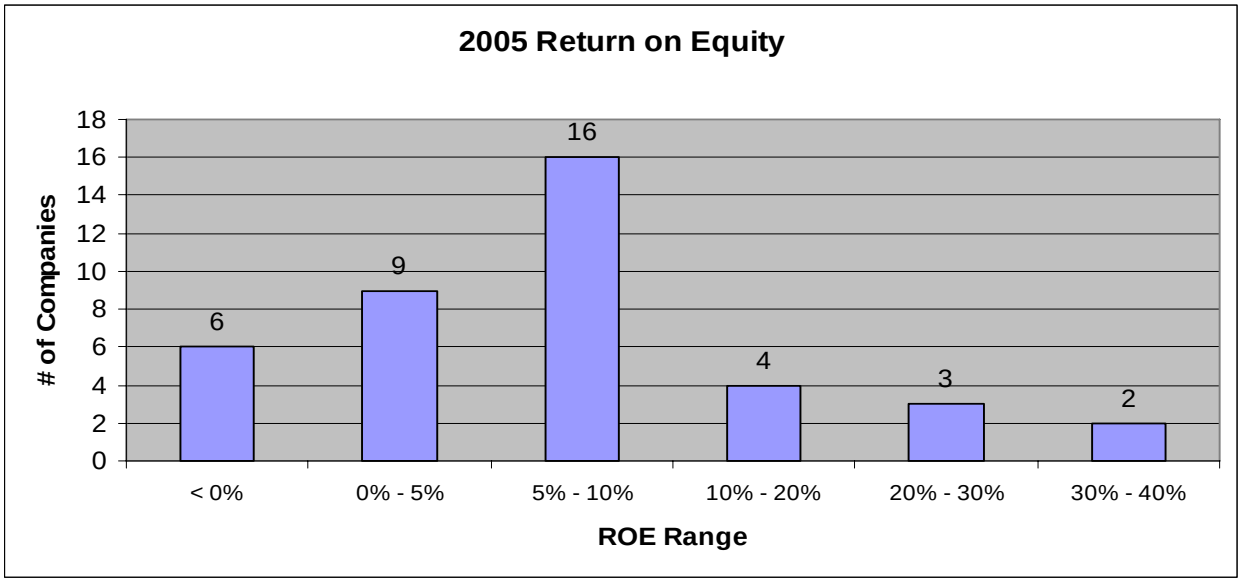


Return on Equity on Regulated Operations

A company's return on equity (ROE) is a measure of its profitability expressed as the ratio of how much income a company generates (return) to the amount of money shareholders have invested (equity). ROE measures management's ability to maintain its revenues and manage its costs even in the face of competition. ROE is useful for comparing the profitability of one company to that of other firms in the same industry. It is also an indicator of whether or not a company needs traditional rate relief. In the access pool case (Case 02-C-0595) companies were not allowed to request expedited rate relief if their ROE would exceed an allowable level.

As illustrated in Figure 2 below, there is a wide variation in ROE across the companies. Close to 80% of the incumbents are earning less than 10%, while 15 companies (38%) are earning less than 5%. In today's environment, returns above 10% would be considered to be healthy, while returns below 5% might be called weak. Verizon, the State's largest incumbent (8.5 million access lines) has the lowest ROE (-56%). Whereas, Frontier of Rochester had an 8.61% ROE and the other Frontier Communications companies had the highest ROEs, ranging from 19% – 38%.

Figure 2



Application of Financial Performance Indicators for Decision Making

Under Public Service Law, the Commission is charged with assuring just and reasonable rates. To the extent a company continues to maintain its revenues and earnings, even in the face of competition, there may be little or no rationale for providing additional pricing flexibility or regulatory relief. Presumably the existing system and available rate structures are working for these companies and there is no pressing need to make changes at this time.

We would recommend pricing flexibility be granted to companies that have more than 1% annual loss in revenues and earnings below 5%. Additionally, if only the loss of revenues threshold is met, yet the company's ROE was reasonable Staff proposes limited pricing flexibility would likewise be granted given the competitive exposure and revenue losses the company is facing. Thus, for example if the company experienced revenue losses, yet the company's ROE is between 5% and the company's allowed ROE plus 5% (approximately 12.9% to 15.3% total company depending on equity ratio) then limited pricing flexibility should be granted.[31] If the ROE is greater than the company's allowed ROE plus 5% then no flexibility should be granted at this time.

[31] Currently, allowed intrastate ROEs for fully regulated telephone companies range from approximately 6.25% at a 100% equity ratio to 9.75% for a company with a 40% equity ratio. The interstate allowed ROE is 11.25%. Assuming the ratio of intrastate to interstate operations is 67% and 33% respectively, the total regulated allowed ROE would range from about 7.9% to 10.3%.

If an ILEC is able to maintain an ROE at or above its allowed ROE, then shareholders should not be allowed to retain the RTB proceeds and the disposition of the RTB proceeds will follow traditional regulatory practices to ensure customers receive a benefit. The RTB proceeds originated from a system of full regulation and ratepayers contributed toward those proceeds and should be provided the benefit, whether it be in the form of refunds, rate credits, or improved plant. Shareholders should not be allowed to retain the RTB proceeds, even in a competitive environment, if the company has been earning adequate returns.

Table 7 shows the application of the financial indicators to the companies that pass the Competitive Gateway:

Table 6
Financial Indicator Results[32]

Company Name	2002 – 2005 CAGR Revenues	2005 Regulated ROE
Frontier of Rochester	-1.25%	8.61%
Verizon NY	-5.08%	-56.18%
Warwick	-1.91%	-8.92%
Frontier of New York	0.54%	37.86%
Frontier – Ogden	-1.83%	19.31%
Frontier of Sylvan Lake	5.82%	25.55%
Armstrong	0.50%	4.05%
Ontario – Ontario	-2.58%	5.10%
FRP – Berkshire	-2.05%	1.84%
Lynch – D&F	-3.84%	-9.82%
State	-1.25%	8.86%

What follows are some illustrative examples of how the analysis might be employed.

> Example 1: Frontier–Rochester passes the Competitive Gateway, Frontier-Rochester has been losing revenues (-1.25%), however, its earnings continue to be maintained (8.61% on regulated operations in 2005). Thus, the Commission provided Frontier-Rochester limited (two years) of residential pricing flexibility under the Competition III Order.
>
> Example 2: Frontier–Sylvan Lake also passes the Competitive Gateway. However, Frontier-Sylvan Lake's revenues are growing at 5.82% annually and their 2005 regulated ROE was 25.55%. At this point in time there is no reason to provide Sylvan Lake any residential pricing flexibility. While economic theory indicates they are competitive, the actual results are not indicating this and the current regulatory regime should be maintained. Given the company's high

[32] These 11 companies are those companies that "passed" the Competitive Gateway. The 29 companies who did not pass the Competitive Gateway are not displayed as the gateway is a threshold indicator. Thus, no additional analysis would be required.

> earnings, had it had RTB proceeds to consider for disposition, it would not be allowed to retain them and would be required to use them for ratepayer benefit.
>
> Example 3: Dunkirk & Fredonia (D&F) passes the Competitive Gateway, has been losing 3.84% of revenues per year and its 2005 regulated earnings were negative 9.82%. Thus, assuming they met the other indicators, D&F would thus be allowed limited (two years) pricing flexibility, and given its low earnings, would also be allowed to keep RTB proceeds.

To the extent a company is entitled and chooses to keep the RTB proceeds, or receives residential pricing flexibility, presumably because it is in a competitive environment, its accounting should follow suit. As such, the company should no longer be permitted to book any deferrals. Existing regulatory deferrals should be netted against each other to clean up the balance sheet. To the extent a deferred credit results, it should be passed back to customers. To the extent a deferred debit results, it should be written off. Furthermore, if a company subsequently files for traditional rate of return rate relief, RTB proceeds can be considered. These proposed accounting treatments are consistent with the Commission's treatment of Verizon's gain on the sale of land and buildings discussed in the May 20, 2005, Order Approving Transfers, in Case 05-C-0091. That order indicated the balance between shareholder and ratepayer interests had changed since the company was facing competition. Traditional ratemaking treatment would have required using the gain on the sale to offset rate base for the benefit of ratepayers. Instead, since Verizon had also written off its pension deferrals, it was allowed to book the gain on the sale of the properties to income, both of which are consistent with GAAP accounting. Furthermore, the order, at page 10, stated:

> *Our decision to reach a different balance is based in part on our assumption that traditional rate of return ratemaking (where rates are typically based on a reasonable return on prudent investment) is no longer relevant. To ensure that the balance we are striking here is maintained, we will require that in the event Verizon makes a filing with us seeking rate relief based on cost of service ratemaking with a rate base, the gains on the sales of land be used to reduce rate base.*
>
> *Consistent with representations provided by Verizon, we expect a significant portion of these funds to be used by Verizon to continue to support its service quality and other obligations to upgrade and maintain its physical plant.*

NETWORK INVESTMENT

The framework also employs two indicators that reflect the level of a company's continued investment in its network. Service quality and network modernization are indicative of the levels at which a company is reinvesting in its network. The Commission maintains an

obligation to assure that New York's companies are providing acceptable levels of service quality and that their telecommunications networks are modern. This obligation remains regardless of any individual company's competitive environment or financial performance.

Service Quality

A company's Customer Trouble Report Rate (CTRR)[33] remains the primary indicator utilized by the Commission to measure service quality and is reported to the Commission by all carriers. Thus, the Staff analysis also considers each company's service quality as measured by its CTRR. [34] A low CTRR indicates that a company is investing in its network and its outside plant is in good condition, while a high CTRR could be indicative of a company that is not making the necessary investments in its network or is lax in maintenance and may be a major factor in a consumer's decision to switch to a competitive offering.

While there is significant variance in CTRR across the incumbents, the average CTRR for the 2002-2005 period show that each of the companies has achieved an average CTRR that meets NYPSC guidelines (CTRR < 3.0). In fact, all but three companies fall below a 2.0 CTRR over that time period. Some of the lowest (i.e., best) CTRR rates were achieved by the companies with the fewest access lines.

Broadband Deployment

There is no industry accepted definition of the term broadband. The FCC's definition, established in its first Section 706 report in 1999 defined broadband as the transfer rates of 200kbps in both directions. However, it is clear that this definition is dated. Most broadband users connect at speeds above this level. Currently almost half of broadband connections are greater than or equal to 2.5 mbps and less than 10 mbps in the faster direction,[35] and applications require an increasing amount of bandwidth. Others recommend that the definition of "high

[33] CTRR is the number of customer troubles reported per 100 access lines.

[34] Under 16 NYCRR 603.3 (b) Customer Trouble Report Rate is composed of two metrics. The first metric is defined as the number of initial customer trouble reports per hundred access lines per month and has a performance threshold of 5.5 or less for each central office. The second metric is applicable to service providers with 7 or more central offices, and is defined as the percentage of a service provider's total central office entities that perform at or below 3.3, and has a performance threshold of at least 85%.

[35] High-Speed Services for Internet Access: Status as of June 30, 2006, Report of January 2007.

speed" should be set at 2 mbps downstream and 1 mbps upstream.[36] The International Telecommunications Union, defined broadband as a transmission capacity that is faster than ISDN at 1.5 or 2.0 mbps. [37]

A modern network indicates company investment in its network and Staff considers broadband deployment a good indication of plant modernization efforts. Many factors need to be considered in the design and engineering of a platform for the deployment of broadband services. Among them are customer density per mile, copper loop length, and data rates required to provide advanced services such as video. These factors, along with other key criteria, determine the broadband architecture a telephone company will employ. Recognizing that broadband is provided by Digital Subscriber Line (DSL), and more recently via fiber, both should be considered in assessing a company's broadband deployment.

DSL is the leading technology platform by which telephone companies currently provide broadband and the advanced services associated with it. Rather than a transitional technology for the delivery of broadband and advanced telecommunication services, its deployment is a major indicator of a telephone company's effort to be competitive. Some advanced forms of DSL, such as VDSL (Very High bit rate DSL), make it possible to provide more data-intensive services, such as video, over existing copper loops.[38]

The network of the future may consist largely of fiber optic cable (fiber), which is capable of delivering much greater bandwidth than copper. In fact, some companies have proposed and are in the process of building fiber to the premise (FTTP) networks. However, others have incorporated a more economical hybrid design using both fiber and traditional copper facilities. This hybrid design can allow for very high data rates and support voice, data and video services. Placing fiber deeper into the network and reducing the copper loop lengths provides some indication of a company's ability to respond to competition and offer advanced broadband services. Moving fiber technology closer to the customer is a competitive response that can also provide operational efficiencies as well as the ability to enhance service offerings. However, its use and deployment penetration are considered only one aspect of understanding the initiatives a company is taking in deploying a broadband network. While fiber penetration

[36] Speed Matters – Affordable High Speed Internet for All, (see www.speedmatters.org)

[37] See www.itu.int/home

[38] According to industry trade reports, 61% of the world's broadband access is provided over DSL.

may offer some indication of a telephone company's competitive initiatives it may not be as reliable an indicator as DSL deployment.

Application of Network Investment Indicators for Decision Making

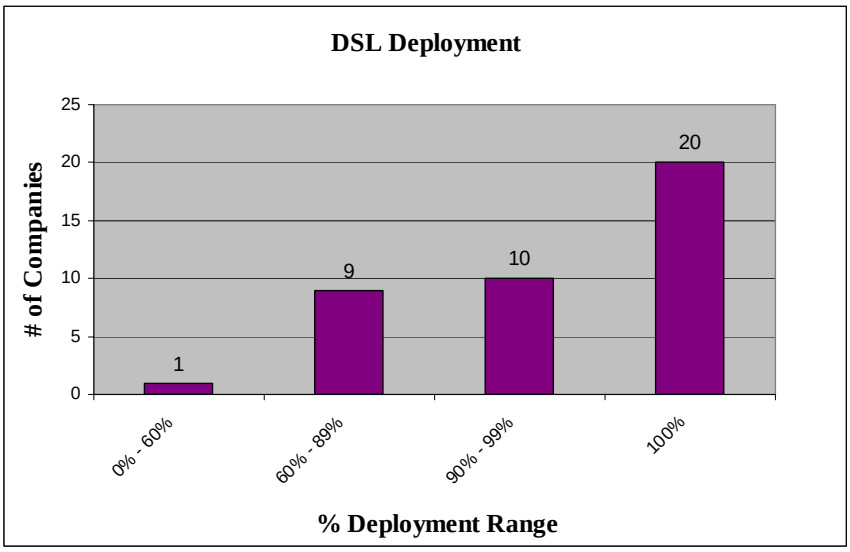
The Commission would be reluctant to allow pricing flexibility, or other regulatory relief, to a company that has poor service quality (i.e., a high CTRR), or to a company that is trending to a higher CTRR over time. In addition, as an average CTRR for a company might give an overall picture of service quality, it would not identify individual offices with poor service. With that in mind, the Commission would look to those companies that maintained an average CTRR of 3.34 or less in at least 90% of their reporting entities on a 12 month rolling basis to be granted pricing flexibility, or other regulatory relief. A company would have 12 reporting opportunities for each central office in a given 12 month band. Thus, for example, a company with four offices would have 48 reporting opportunities in a given year, and would need to maintain a 3.34 CTRR or less for at least 44 of those opportunities. Similar to the Commission's Service Standards, the 90% CTRR indicator would apply under normal operating conditions as defined in Part 603.1(c). This compares to the service commendation criteria which requires, in part, a CTRR of 3.34 or less for 95% of all reporting entities. Each of the 40 ILECs meets this indicator and the Commission would look for a company to maintain such levels going forward.

In response to competitive pressures, it would seem prudent that a telephone company be capable of providing advanced telecommunications services from a broadband platform to as many customers as possible. If a telephone company has a competitive cable operator providing services that provide (or allow) for direct competition to the phone company's service offerings across a high percent of their service territory, it would seem reasonable to expect the telephone company to match the competitive offering. A prime consideration in allowing regulatory relief and residential pricing flexibility should be a telephone company's initiatives to deploy broadband networks capable of providing advanced services proactively, or in response to that of competition.

Conversely, a company that has not shown an interest in expanding its reach of broadband to customers can be viewed as not making a commitment to investment and may be disinvesting in plant to benefit shareholders. In this case, we would be less willing to support additional regulatory freedom. Staff proposes a target of 90% DSL coverage as a sign that a

company is committed to broadband[39] deployment and reinvestment in its network. As seen from Figure 3 below, thirty of the forty ILECs have met this 90% target to date. If a company passes the Competitive Gateway, and meets all expectations except DSL deployment, it should file a broadband deployment plan with the Commission to ensure it will meet or exceed the target within two years. While Staff offers no target level for fiber deployment in the local loop, a company's fiber deployment in the local loop should be viewed as another indicator of a company's investment in broadband.

Figure 3
DSL Deployment



OPERATING EFFICIENCY

Staff also believes that a company's operating efficiency needs to be considered in any regulatory flexibility decision. To address the question of efficiency, Staff's analysis considers the unexplained level of a company's cost per access line (Unexplained CPAL). What follows is a discussion of the rationale for incorporating cost per access line into the model, a brief description of the model, and Staff's proposed application of the unexplained CPAL as an indicator of efficiency for decision making purposes.

[39] For the purposes of this White Paper, Staff employs the FCC's definition of broadband. However, given the increased broadband requirements of new applications, Staff asks for party comments on whether to alter the definition or application of this indicator.

Unexplained Cost per Access Line (CPAL)

Cost per Access Line (CPAL) is a traditional measure of operating efficiency.[40] This measure takes a company's expenses and divides them by the total number of access lines. CPAL is often used to describe a company's ability to deliver telecommunication services at a reasonable cost, which will ultimately affect its ability to compete. For those ILECs that are part of a larger company, CPAL may reflect economies of scale and internal controls that keep costs low. For smaller, rural ILECs CPAL will reflect the higher costs of doing business in rural areas.[41] Access line losses can also impact CPAL, as costs to maintain the network do not decrease at the same rate as access line losses.

CPAL displays the largest variance across the companies of any of the measures reviewed. Crown Point's CPAL was the highest at $124.50, while Ogden's $25.55 was the lowest. Twenty eight (70%) of the companies had a CPAL of less than half that of Crown Point.

In addition to looking at CPAL, we also examined the difference between actual CPAL and a predicted CPAL given the average relationships of the group of forty ILECs relative to the exogenous operating environment characteristics each company faces. The difference between actual and predicted CPAL (unexplained CPAL or unexplained costs) may identify operational inefficiencies, such as inflated management salaries, inefficient operations or the subsidization of non-regulated operations by regulated operations. It may also indicate efficiencies gained by economies of scale resulting from affiliation with a larger entity, or other generally efficient operations.

Using unexplained CPAL is similar in concept to the approach taken in the Access Pool Proceeding, Case 02-C-0595.[42] In that case, in order to be eligible for expedited rate relief a company's total cost per access line could not materially exceed an average of its peers. Specifically, the companies in the Access Pool were ranked according to number of access lines and divided into four quartiles. If a company exceeded the median for its quartile it was not

[40] CPAL is defined as 2005 total operating expenses subject to separations, including depreciation, divided by the total number of 2005 access lines.

[41] CPAL comparisons traditionally employ the use of similar or "peer" companies to more accurately reflect similar size, operating environments and other variables.

[42] Case 02-C-0595, Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of the New York Intrastate Access Settlement Pool, Inc. for Traffic Sensitive and Non-Traffic Sensitive Access Rates, Untitled Orders issued December 26, 2002 and January 30, 2003.

permitted to receive expedited rate relief, and was required to enter into a full rate case if it wanted to increase rates. The unexplained CPAL regression is a more sophisticated approach toward determining companies that have costs that are above a level of reasonableness. Rather than tying the results to the median of a quartile, the expectations are tied to each company's specific characteristics including not only the number of access lines, but also to the service territory area/density and the relationship between business and residential lines.

We performed a preliminary regression analysis to predict CPAL based upon size of the company (in term of lines), service territory area, and the mix of residence to business customers served by each company. Under this analysis, the company whose CPAL exceeds the expected CPAL the most has $44.11 in unexplained costs as estimated by the model. The company whose CPAL falls furthest below the expected CPAL has actual costs $47.23 below what was predicted by the model.[43]

Staff recognizes that further refinement to the unexplained CPAL analysis may be appropriate. We invite parties to propose analyses that better determine both the predicted CPAL and the causes of "unexplained" costs, and also any regulatory action that should be taken to address them.

Figures 4 and 5 show the CPAL and unexplained CPAL distribution among the companies:

[43] A detailed description of the regression analysis is included as Appendix III.

Figure 4

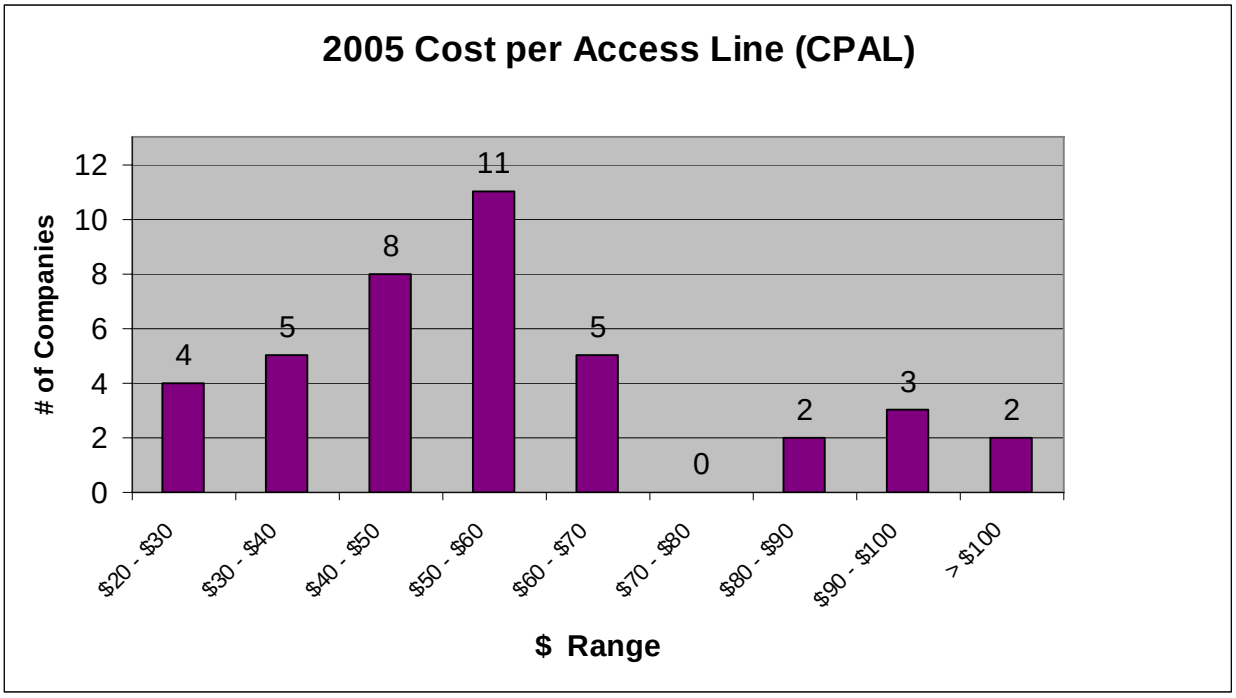


Figure 5

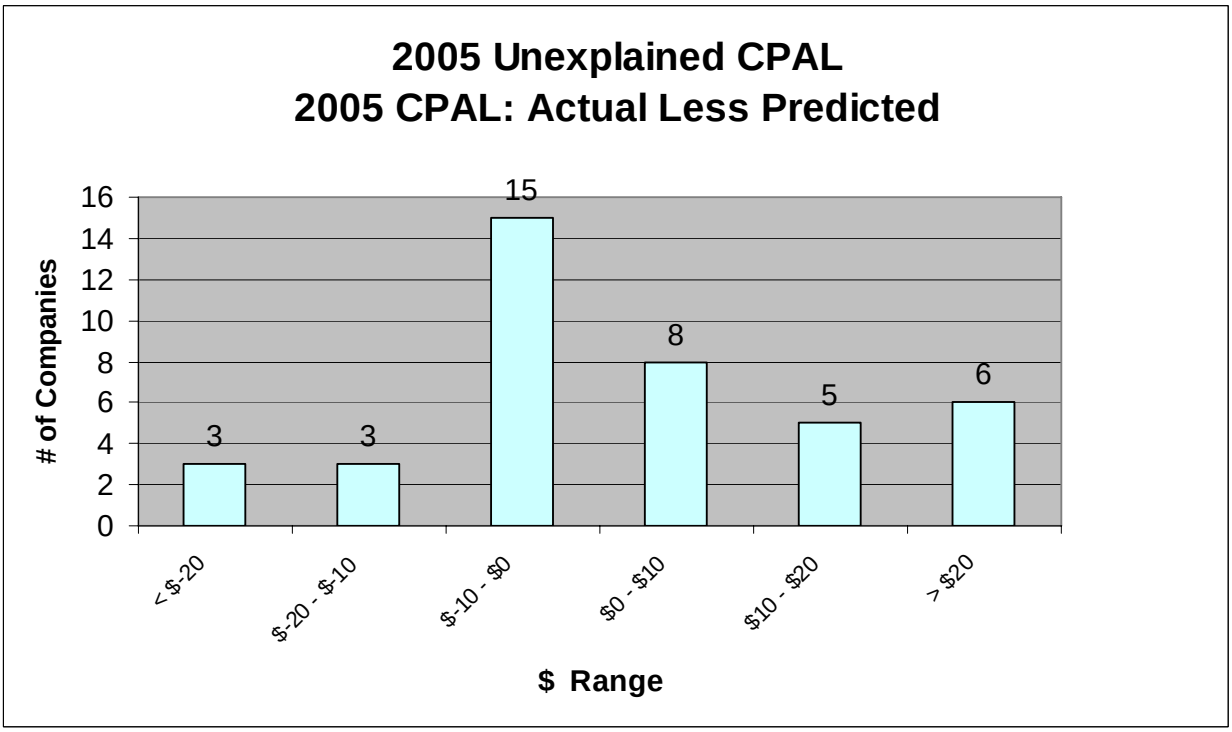


Table 7 shows, for each company, the actual 2005 cost per access line, the cost per access line predicted by the regression model, and the difference between the actual and explained cost per access line.

Table 7

2005 CPAL: Actual, Predicted & Unexplained

Company Name	Actual CPAL	Predicted CPAL	Unexplained CPAL
Verizon NY	$61.12	54.93	6.19
Frontier of Rochester	$42.96	35.52	7.44
Warwick	$56.26	38.80	17.47
FRP – Berkshire	$54.00	43.40	10.60
Ontario – Ontario	$48.76	52.88	-4.12
Frontier of Sylvan Lake	$28.00	34.52	-6.52
State	$38.00	43.37	-5.36
Lynch – D&F	$62.68	43.42	19.25
Frontier of Sylvan Lake	$28.00	34.52	-6.52
Frontier – Ogden	$25.55	33.22	-7.68
Frontier of New York	$26.11	34.07	-7.96
Armstrong	$87.52	62.70	24.83
Champlain	$64.53	55.87	8.66
TDS - Township	$43.44	45.99	-2.55
Frontier of Seneca Gorham	$32.10	45.34	-13.24
Frontier – Citizens NY	$35.38	41.48	-6.10
TDS Vernon	$54.78	63.52	-8.74
Ontario-Trumansburg	$57.39	49.00	8.38
TDS – Deposit	$44.18	48.21	-4.02
FRP – C&E	$52.13	48.71	3.42
Pattersonville	$97.11	69.39	27.72
TDS – Oriskany Falls	$38.74	85.96	-47.22
Frontier of Ausable Valley	$36.32	60.75	-24.43
Chazy & Westport	$55.44	55.65	-0.21
TDS – Port Byron	$52.67	56.75	-4.07
Empire	$48.78	48.10	0.68
Oneida County Rural	$66.65	55.47	11.18
Crown Point	$125.29	81.18	44.11
Lynch – Cassadaga	$46.60	71.47	-24.86
FRP – Taconic	$50.09	38.72	11.37
Nicholville	$99.12	66.79	32.33
Germantown	$92.73	54.48	38.25
Windstream (AllTel)	$29.18	38.19	-9.02
TDS – Edwards	$53.64	69.36	-15.72
Newport	$61.80	60.35	1.45
Middleburgh	$49.79	53.73	-3.93
Delhi	$53.34	55.38	-2.03
Citizens (Hammond)	$105.62	69.29	36.33
Fishers Island	$56.53	62.55	-6.01
Hancock	$82.28	76.07	6.21
Margaretville	$43.55	60.38	-16.83

Application of Unexplained CPAL Results for Decision Making

If a company's CPAL is unexplainably high then it should not be allowed pricing flexibility or other regulatory relief. While a company may have passed the return threshold because of a low return, that low return may be a result of unexplained high costs such as high salaries, insufficient cost allocations to non-regulated operations or other cost overruns. The unexplained CPAL points toward a potential area of concern regarding the companies operations and more investigation is necessary before we grant a company with a very high unexplained CPAL (i.e., unexplained CPAL >$20) residential pricing flexibility, or other regulatory relief. Such a company should make efforts to gets its costs in line, to show it is effectively managing its business and is capable of surviving in the face of competition.

V. Summary and Conclusions

Table 8 illustrates the expected outcome for each of the 40 ILECs under Staff's proposed framework. As illustrated, only companies which "pass" the Competitive Gateway (companies that are competitively constrained) are considered for further analysis. In other words, the Competitive Gateway is a threshold indicator. If a company is competitively constrained, five other indicators (Change in Revenue, ROE, Service Quality as measured by Customer Trouble Report Rate, Broadband Deployment as measured by % DSL coverage, and Operating Efficiency as measured by unexplained CPAL) would be considered to evaluate each company's position in today's market.

Table 8
Application of Framework

Company Name	Competitive Presence	Financial Performance		Network Investment		Operating Efficiency		
	Competitive Gateway	2002-2005 CAGR Revenues	2005 Regulated ROE	SQ	Broadband (Propietary)	Unexplained CPAL	Pricing Flexibility Proposed	Regulatory Relief Disposition of RTB Proceeds
Verizon NY	Yes	-5.08%	-56.18%	Yes	*	$6.19	Yes	Yes
Frontier of Rochester	Yes	-1.25%	8.61%	Yes	*	$7.44	2 Years	Not Applicable
Warwick	Yes	-1.91%	-8.92%	Yes	*	$17.46	2 years	Not Applicable
FRP - Berkshire	Yes	-2.05%	1.84%	Yes	*	$10.60	2 years	Yes
Ontario - Ontario	Yes	-2.58%	5.10%	Yes	*	($4.12)	2 Years	Not Applicable
State	Yes	-1.25%	8.86%	Yes	*	($5.37)	2 Years	Not Applicable
Lynch - D&F	Yes	-3.84%	-9.82%	Yes	*	$19.26	2 Years	Yes
Frontier of Sylvan Lake	Yes	5.82%	25.55%	Yes	*	($6.52)	No	Not Applicable
Frontier - Ogden	Yes	-1.83%	19.31%	Yes	*	($7.68)	No	No
Frontier of New York	Yes	0.54%	37.86%	Yes	*	($7.96)	No	Not Applicable
Armstrong	Yes	0.50%	4.05%	Yes	*	$24.83	No	Not Applicable
Champlain	No	-2.55%	26.03%	Yes	*	$8.66	No	Not Applicable
TDS - Township	No	6.17%	5.75%	Yes	*	($2.55)	No	No
Frontier of Seneca Gorham	No	0.81%	19.41%	Yes	*	($13.24)	No	No
Frontier - Citizens NY	No	2.63%	33.73%	Yes	*	($6.10)	No	Not Applicable
TDS - Vernon	No	1.21%	2.85%	Yes	*	($8.74)	No	No
Ontario - Trumansburg	No	1.61%	2.11%	Yes	*	$8.38	No	Not Applicable
TDS - Deposit	No	0.03%	6.13%	Yes	*	($4.02)	No	Not Applicable
FRP – C&E	No	-0.85%	4.42%	Yes	*	$3.42	No	Not Applicable
Pattersonville	No	2.39%	8.63%	Yes	*	$27.72	No	No
TDS - Oriskany Falls	No	0.85%	8.82%	Yes	*	($47.22)	No	Not Applicable
Frontier of Ausable Valley	No	0.06%	25.25%	Yes	*	($24.43)	No	No
Chazy & Westport	No	-5.92%	5.62%	Yes	*	($0.21)	No	No
TDS - Port Byron	No	2.43%	3.67%	Yes	*	($4.07)	No	No
Empire	No	-5.73%	3.02%	Yes	*	$0.68	No	No
Oneida County Rural	No	-3.07%	6.16%	Yes	*	$11.18	No	No
Crown Point	No	-1.03%	9.20%	Yes	*	$44.11	No	No
Lynch - Cassadaga	No	4.04%	8.41%	Yes	*	($24.86)	No	Not Applicable
FRP - Taconic	No	1.34%	10.61%	Yes	*	$11.37	No	Not Applicable
Nicholville	No	-1.91%	3.96%	Yes	*	$32.33	No	No
Germantown	No	-2.89%	-3.68%	Yes	*	$38.25	No	Not Applicable
Windstream (ALLTEL)	No	-0.48%	17.01%	Yes	*	($9.02)	No	No
TDS – Edwards	No	1.58%	9.18%	Yes	*	($15.72)	No	No
Newport	No	0.51%	-2.40%	Yes	*	$1.45	No	No
Middleburgh	No	2.97%	5.16%	Yes	*	($3.93)	No	No
Delhi	No	-0.60%	4.21%	Yes	*	($2.03)	No	No
Citizens (Hammond)	No	-3.47%	7.81%	Yes	*	$36.33	No	No
Fishers Island	No	1.55%	-0.34%	Yes	*	($6.01)	No	Not Applicable
Hancock	No	3.10%	7.49%	Yes	*	$6.21	No	No
Margaretville	No	-3.04%	8.10%	Yes	*	($16.83)	No	No

Commission approval of residential pricing flexibility would be contingent upon continued adequate company performance regarding the indicators. The Commission would maintain its regulatory obligation to ensure that rates are just and reasonable and that service quality is maintained. Company's granted such flexibility should continue to meet the performance indicator measures. Should performance on the indicators deteriorate for these companies, the Commission would consider suspending the residential pricing flexibility. Likewise, for companies not initially granted pricing flexibility, Staff would entertain company compliance filings to approve similar pricing flexibility if the company was able to demonstrate the change in circumstances, including meeting the threshold Competitive Gateway indicator.

Moreover, although Public Service Law §92(5) allows telephone companies to offer time-limited promotional offerings, any telephone company eligible under this construct to receive pricing flexibility would be limited in their ability to offer such promotions so as to not undermine the purposed of the uniformity imposed. Companies wishing to retain pricing flexibility would need to limit discounts to six months with no renewal or other promotion being given to that same customer for a period of 12 months from the expiration of such promotion.[44]

PRICING FLEXIBILITY

Eleven companies are deemed to face significant competition and as a result would "pass" the Competitive Gateway. The remaining 29 companies do not pass the gateway, and thus no further analysis of them in light of the other indicators is considered. Of the 11 companies that "pass" the Competitive Gateway, three have experienced an increase in revenues and would not qualify for pricing flexibility. Eight companies are competitively constrained and have experienced a decline in revenues. One of these companies (Frontier Ogden) has a significantly high rate of return and thus would be ineligible for pricing flexibility.

Thus, under Staff's framework, five additional companies (Berkshire, Dunkirk & Fredonia, Warwick, Ontario and State) would appear to quality for residential pricing flexibility similar to that provided to Frontier of Rochester. Companies seeking the residential pricing flexibility discussed herein would be required to submit a compliance filing to the Commission for such. That filing should indicate the company's willingness to continue to provide a "basic service offering". These basic service offering protections should be available to customers

[44] See Case 06-C-0954, Tariff Filing of Verizon New YorkInc. To Introduce Verizon Save Bundle in its PSC No. 1 Communications Tariff, Order Approving Tariff Filing (issued December 4, 2006).

taking basic service on a stand-alone basis or when they purchase basic service along with other services or features on an a la carte basis.

Companies granted residential pricing flexibility would be required to continue to offer a "basic service", be allowed to increase "basic" monthly service by $2 for two years, and with a few minor exceptions, be provided with unlimited residential pricing flexibility for non-basic services, and subject to a service price uniformity rule.[45] Staff's proposed framework (and limited approval) would reflect the Commission's expressed concerns about the impact of residential rate increases over a long term for a company with relatively lower basic rates:

> *A different result is warranted for Frontier because the increases that would be authorized produce more revenues as a proportion of overall revenues and would occur over a longer period of time and have a greater impact on customer bills because of Frontier's relatively low rates. Even though the flat rate parameters we are establishing are justified, we will establish a two year check point for Frontier and require Frontier to demonstrate to the Commission's satisfaction that the competitive impacts and trends that we have identified are continuing and that there is a continuing financial need for the relief prior to implementing basic rate relieve beyond year two.*[46]

Prior to the expiration of the two year basic residential pricing flexibility term, companies that were granted flexibility would be required to notify the Commission of their intent to continue under the basic residential pricing flexibility framework and demonstrate to the Commission's satisfaction that the competitive impacts and trends that we have identified are continuing and that there is a continuing financial need for the relief prior to implementing the basic rate relief beyond year two.

Adoption of Staff's model would suggest that Frontier Communications' petition for its affiliates to receive residential pricing flexibility would be rejected for each of the six companies. Three of the companies (Frontier Communications of Ausable Valley, Frontier Communications of Seneca Gorham and Frontier Citizens) do not pass the Competitive Gateway. The remaining three companies (Frontier Communications of Sylvan Lake, Inc., Frontier Communications of New York and Ogden Telephone) pass the Competitive Gateway, but their high rates of return render them ineligible for pricing flexibility under the model.

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[45] The maximum rate increase to the monthly basic residential service rate will be $2 per month, per year for two years. This maximum includes any provisions for relief granted pursuant to Competition III.

[46] Order, Page 62.

Furthermore, Staff's model indicates that all six of the TDS petitions for pricing flexibility would be denied since none of the TDS companies pass the Competitive Gateway.

DISPOSITION OF RTB FUNDS

Staff's proposed framework may also be utilized to make determinations on the disposition of RTB funds and other proceeds such as gains from the sale of land and buildings. Generally, companies that pass the initial Competitive Gateway, and pass the other indicator thresholds, should be allowed to retain the RTB funds so that they may address competition in any way they see fit. However, the ROE threshold should be treated more traditionally. If a company's ROE exceeds its allowed ROE it should not be allowed to retain the RTB funds. Instead it should be required to use the funds for ratepayer benefit, whether it be for construction programs to improve route diversity or for some other traditional rate base item, or for customer refunds. Of the companies that pass the competitive threshold, Verizon, Berkshire, and Dunkirk & Fredonia would be allowed to retain the RTB proceeds, whereas, Frontier - Ogden would be required to use the RTB proceeds for traditional purposes. Since none of the other 19 RTB recipients pass the Competitive Gateway, they also would be required to use the RTB proceeds for traditional purposes.

REQUEST FOR COMMENTS

The framework proposed here provides a uniform analytical approach to reviewing the need for regulatory relief. At the same time, the model acknowledges the uniqueness of each of the company by considering the competitiveness, financial status and operations of the companies on a case-by-case basis. Staff invites comments on the framework. Among the issues to be considered are:

- Does the model present an appropriate framework to consider residential pricing flexibility?
- Are there additional dimensions that should be considered, and if so, what would be the indicators (measures) of those dimensions?
- Are there other issues should be incorporated into Staff's framework, and what are the data sources to be used to measure?
- We seek comment as to whether the current definition of broadband is adequate given the increasing bandwidth requirements of new applications. Should a demonstration

of higher speed network commitments by ILECs be required before pricing flexibility or retention of RTB funds is allowed? Should filings for rate flexibility or RTB funds contain information allowing the Commission to discern a company's level of commitment to increasing broadband speeds?

- Are the data sources and criteria correct?

- What provisions should be incorporated to prevent "backsliding" on service quality or other indicators?

Additional Support for Elasticity Model

The reaction of consumer purchases to the change in the price of a good or service (all else held constant) is called price elasticity, and is basically the percentage change in quantity divided by the percentage change in price. The empirical price elasticities for other monopolistic public utility industries are in the same range as those measured for local phone service before phone service was opened to competition in the mid 1990s. Price elasticities for other utility industries tend to range between -0.1 and -0.7. The negative sign indicates that a price rise leads customers to reduce their quantity used, all else staying constant. The low end for utility price elasticity seems to be associated with energy use. Energy has a long run, own-price elasticity of only -0.2 over an eight year period.[47] Individual commodities typically have price elasticity in the long run that is further from zero. . The short-to-medium run value for energy is even closer to zero, namely -0.1 over three years, because more customers change long lived equipment that uses energy, like cars and refrigerators in the longer period. The price elasticity for water demand is similarly about -0.3.[48] Other U.S. industries producing goods and services that are similarly characterized as "necessities", such as food, clothing, transportation and shelter each have elasticities in the range -0.5 to -0.6.[49] Before competition for local telephone service, a typical elasticity was -0.5

Industry vs. Firm Elasticities

It is also important to consider the relationship between industry market elasticities and the elasticities for price changes by the individual firms in that industry market. If the firm is the only likely supplier for customers, the firm is the market, and there is no difference between industry and the firm in relation to the consumer reaction to a change in price. If there are several firms in the market, the consumer reaction to a change in price by one firm will be greater than if the industry makes the same price change. This is because the consumer options include buying at an old price from another supplier. Firm elasticities, which apply to an

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[47] Economic Outlook (Dec., 1981) OECD.

[48] Charles W. Howe and F.P.Linaweaver, Water Resources Research, Vol.3 (1967) pp.13-32; Philip H. Carver, 1978 dissertation, Johns Hopkins University.

[49] E. Lazear & R. Michael, "Family Size & the Distribution of Real Per Capita Income," American Economic Review (Mar. 1980 Table 2).

instance in which a single company raises its prices when other firms in the same market do not, are almost always further from zero than market elasticities. For instance in the Food category, Fish has a long run elasticity near -0.7,[50] but Haddock (a kind of fish) has a medium term elasticity about -2.2.[51] Also, compared with the Energy elasticity above, the corresponding elasticities of Natural Gas and of Electricity commodities supplied by firms in the energy industry are further from zero..[52]

Elasticities for Revenue Impact Calculations

Our analysis focuses on two groups of customers. Those customers without options have demands that are similar to those of customers in former regulated monopoly environments, and customers with options have greater level of choice means that firm elasticities are more appropriate. Since each telecommunications firm to be analyzed has customers without options and other customers with options, we need to consider two demand elasticities for each firm.

Elasticity for Customers Without Options (-0.5)

Staff chooses -0.5 as an estimate for the price elasticity of demand for customers without options (i.e., cable telephone is not available to them). The -0.5 elasticity estimate falls within the range of elasticity estimates used in the NYPSC revenue impact analyses of the early 1990's.

Elasticities from the NY rate design analyses in the early 1990's were relatively small (before customers had a choice of local service providers). In Case 92-C-0665 Staff used

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[50] A.P.Barten, "Consumer Demand Functions under Conditions of Almost Additive Preferences, "Econometrical (Jan-April 1964) Table XV.

[51] F.W.Bell, "The Pope and the Price of Fish," American Economic Review, Vol. 58 (Dec. 1968).

[52] J.Beierlein, J.Dunn & J.McConnon Jr. in "Demand for Electricity & Natural Gas in the Northeastern United States," Review Of Economics & Statistics (Aug. 1981) Table 4 found -2.2 for Electricity and -3.4 for Natural Gas, while earlier D.Chapman, T.Tyrrell & T. Mount in "Electricity Demand Growth & the Energy Crisis," Science Vol. 178 (Nov 17, 1972) p. 705 obtained elasticities for Residential Electricity usage of -1.3, for Commercial Electricity of -1.5 and Industrial Electricity of -1.7.

elasticities ranging from -0.035 to -0.268. These are calculated for a one year, rate effect, that is, for the short run. The full effect on sales, i.e., the long-run effect, after several years of a changed price, would be higher. Revenue impact calculations for NYPSC Opinion 98-10, relied upon a Case 28425 toll price elasticity estimate of -0.67.[53] The -0.67 elasticity estimate originally came from John T. Wenders, The Economics of Telecommunications, Ballinger Publishing Company, 1987, p.58.

Also, elasticities contained in Appendix B of the FCC's May 2005 CALLS Analysis (FCC Docket No. 96-262, No. 94-1, No. 99-249 & No. 96-45) include local service elasticities ranging from -0.0080 to -0.4000 and an elasticity of demand for toll service of -0.8.[54]

Range for Elasticities for Customers With Options (-2.0 to -1.1)

Customers with options are defined here as customers who have cable telephone and wireless services available to them. If the cable phone prices are quite attractive and the option is prevalent in the company, Staff anticipates possible revenue erosion from a rise in incumbent telephone price. If customers have many options, their associated revenue impacts are modeled with an elasticity closer to -2.0. For companies whose customers face comparatively high cable phone prices and whose access to cable phone is more limited the own price elasticity ranges from -1.5 to -1.1 for customers with few competitive options. The work mentioned below fully justifies these conservative values.

An affidavit from Robert Willig in a 2002 FCC proceeding has a great deal of discussion of elasticities for digital broadcast services (DBS), ranging from -1.95 to -4.9 (see paragraph 83, especially). These comments also include a discussion of elasticity of demand for DBS services in larger versus smaller markets.[55]

A 1995 market power study, done for the FTC by Michael Ward, shows very large price elasticities of demand for competitive long distance services. In the Executive Summary at page vi, find: "Lower-bound long-run demand elasticities are estimated to be -10.1 for AT&T and –

[53] (See Sprint Witness Siwek's Exhibit SES-1, Exhibit 1 in NYPSC Cases 94-C- 0095/28425).

[54] http://www.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_Link/IAD/callanal.pdf

[55] http://www.fcc.gov/transaction/echostar-directv/genmot_atta022502.pdf

25.4 for AT&T's two primary rivals." The study considers both interstate and intrastate toll services and finds the price elasticities to be in the same ranges, from -4.7 to -10.1 for AT&T and between -16.8 and -26 for its rivals.[56]

Besides the elasticity sources cited above (and also in footnote 73 of the 2005 Staff White Paper in case 05-C-0616), Ken Train, Daniel McFadden and M. Ben-Akiva studied "The demand for local telephone service: a fully discrete model of residential calling patterns and service choices," published in Rand Journal of Economics, Vol. 18, No.1 pp. 109-123. Grouping residential customers by calling patterns, they studied the choice of local voice service within the calling pattern groups. The corresponding own price elasticities are lowest, near -0.5 for the largest group of customers, those with local flat rate service, and range up to -2.0 for other local service options.

Differences Between Framework for Regulatory Relief White Paper and Competition III

There are some differences between this White Paper model and the Comp III White Paper revenue impact models. The Competition III White Paper analysis involved 5 different scenarios which included elasticities ranging over (-2, -1, -1.5 and -1.25) for customers with options. The elasticity for customers without options also ranged over (-0.75, -0.5 and -0.25). For each elasticity scenario, the Competition III analysis also varied the percentage of captive customers to range from 45% to 93%. This produced multiple revenue impacts associated with either a 5% or 20% price increase. A net loss of annual revenues was associated with the great majority of elasticity, price and customers with options percentage scenarios. The Competition III order referred to the scenario based upon 93% customers having options and elasticities of -1.5 and -0.5 for customers with and without options in determining that only 7% of customers would need to switch providers in order to constrain a 5% price increase.

The small company framework analysis estimates the customer with options elasticity to fall within the range of -2.0 and -1.1. Six factors associated with the likely price responsiveness of customers with options are used to produce a single elasticity within the -2.0 to -1.1 range for each company. One revenue impact scenario is performed for each company using the estimated elasticity for customers with options, Staff's estimate of the percentage of customers

[56] http://www.ftc.gov

with independent platform options and a uniformly applied 5% price increase. Using the same price change (5% raise) and elasticities as for Verizon in Competition III (-0.5 for customers without options and -1.5 for those with options) yields minimal differentiation among companies. The six company specific factors use allow a more precise estimate of elasticity for customers with options. The net revenue losses associated with each companies' revenue impact calculation are more distinguishable when using these more precise elasticity estimates.

Competitive Gateway – Revenue Impact Model

As was done in Appendix E of the September 21, 2005 Staff Whitepaper, the revenue impact calculations for both captive customers and customers with options rely upon a constant elasticity demand curve specification

$$Q_o = AP_o^e$$

Where Q_o is the original quantity of service demanded, P_o is the original price, e is the own price elasticity of demand, and A is a constant.

The original revenues, R_o are

$$R_o = Q_o P_o = AP_o^e P_o = AP_o^{1+e}$$

The new revenues, R_n resulting from the new price, P_n are

$$R_n = Q_n P_n = AP_n^e P_n = AP_n^{1+e}$$

After some algebraic manipulation, the change in revenues, $R_n - R_o$ are

$$R_n - R_o = R_o \left[\left(\frac{P_n}{P_o} \right)^{1+e} - 1 \right]$$

It should be noted that Staff's revenue impact analysis does not factor in cost onsets and cost offsets for the revenue stimulation and restriction that arise from the price increases which are uniformly applied to captive customers and customers with options, respectively.

The detailed model based on the average company is presented below:

Revenue Impact Calculation for Average ILEC

Inputs																	
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
Company Name	% of residences w/ cable available	adjusted estimate of % of residences w/ cable phone	2005 Residential Access Lines	CAGR Res Lines 2002 to 2005	CAGR MOUs 2002 to 2005	% of customers w/ non-affiliate wireless available	Density (access lines per square mile)	Total Average Residential Revenues per Line Without Taxes	stand alone cable phone price	incremental cable phone price	Relevant Cable Phone Service Price	Elasticity for Customers With Options	Elasticity for Captive Customers	% price increase	Annual Net Revenue Effect of Price Increase	% Revenue Effect	Competitively Constrained?
Ave ILEC	67.27	65.35%	6,164	-3.29%	-2.69%	95.04	48.07	$33.13	$51.82	$44.33	$46.57	-1.53	-0.50	5.00%	($20,169)	**-0.82%**	**no**

customers with options													
AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN
Own-Price Elas.	Q0	P0	R0 P0 x Q0 Monthly Base Revenues	P1	Q1	Customer Loss	Percent Customer Loss	(P1-P0)Q0 Monthly Gross Revenue Increase	P1 x Q0 Monthly Gross Price Out	R1 P1 x Q1 Monthly New Revenues	R1-R0 Monthly Net Revenue Increase	Monthly Net Revenue Restriction	Annual Net Revenue Effect
-1.533	4,029	$33.13	$133,464	$34.79	3,738	(290)	7.21%	$6,673	$140,138	$130,036	($3,428)	$10,101	($41,138)

captive customers													
BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN
Own-Price Elas.	Q0	P0	R0 P0 x Q0 Monthly Base Revenues	P1	Q1	Customer Loss	Percent Customer Loss	(P1-P0)Q0 Monthly Gross Revenue Increase	P1 x Q0 Monthly Gross Price Out	R1 P1 x Q1 Monthly New Revenues	R1-R0 Monthly Net Revenue Increase	Monthly Net Revenue Restriction	Annual Net Revenue Effect
-0.500	2,136	$33.13	$70,758	$34.79	2,084	(51)	2.41%	$3,538	$74,296	$72,505	$1,747	$1,791	$20,968

Total													
CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ	CK	CL	CM	CN
	Q0	P0	R0 P0 x Q0 Monthly Base Revenues	P1	Q1	Customer Loss	Percent Customer Loss	(P1-P0)Q0 Monthly Gross Revenue Increase	P1 x Q0 Monthly Gross Price Out	R1 P1 x Q1 Monthly New Revenues	R1-R0 Monthly Net Revenue Increase	Monthly Net Revenue Restriction	Annual Net Revenue Effect
	6,164	$33.13	$204,222 Annual: $2,450,668	$34.79	5,823	(342)	5.55%	$10,211	$214,433	$202,542	($1,681)	$11,892	($20,169)

Variable	Source or Formula
A	Company Name
B	Average of Responses to Survey Question 6 - as corrected after discussions with some companies
C	Average of Responses to Survey Question 6 after adjusting for companies that responded 100% to a maximum of 95%
D	Geometric Average of 2005 Annual Report Data Schedule 61
E	Average of the Compound Annual Growth Rate in Residential Access Lines from 2002 to 2005 as reported in the Annual Report Schedule 61
F	Average of the Compound Annual Growth Rate in Interstate plus Intrastate Minutes of Use from 2002 to 2005 as reported in Survey Question 5
G	Average of the percent of non-affiliate wireless available as reported in Survey Question 7
H	Geometric Average of service territories densities in the state as computed by total number of access lines (Annual Report Schedule 61)
I	divided by square miles in service territory Average Residential Bill Data as reported in response to Survey Question 9 after adjusting for missing data
J	Price charged by either Time Warner or Cablevision in the service territory for stand alone cable.
K	Price that customer would pay for cable phone if bundled with cable television
L	Weighting of Column J and Column K based on average cable penetration of 70%.
M	Average of elasticity estimated for each company using method described in paper and Variables E, F, G, C, H and I/L as inputs.
N	Assumed elasticity of captive customers
O	Assumed price increase
P	P=CI
Q	Q=P/(CE*12)
R	If Q<= -2.50% then Yes, otherwise No

Variable	Source or Formula	Variable	Source or Formula	Variable	Source or Formula
AA	AA=M	BA	BA=N	CA	not used
AB	AB=D*C	BB	BB=D*(1-C)	CB	CB=AB+BB
AC	AC=I	BC	BC=I	CC	CC=I
AD	AD=AB*AC	BD	BD=BB*BC	CD	CD=CB*CC
AE	AE=AC*(1+O)	BE	BE=BC*(1+O)	CE	CE=CC*(1+O)
AF	AF=(AD+AL)/AE	BF	BF=(BD+BL)/BE	CF	CF=AF+BF
AG	AG=AF-AB	BG	BG=BF-BB	CG	CG=CF-CB
AH	AH=1-(AF/AB)	BH	BH=1-(BF/BB)	CH	CH=1-(CF/CB)
AI	AI=(AE-AC)*AB	BI	BI=(BE-BC)*BB	CI	CI=(CE-CC)*CB
AJ	AJ=AE*AB	BJ	BJ=BE*BB	CJ	CJ=CE*CB
AK	AK=AE*AF	BK	BK=BE*BF	CK	CK=CE*CF
AL	AL=(((AJ/AD)^(AA+1))-1)*AD	BL	BL=(((BJ/BD)^(BA+1))-1)*BD	CL	CL=CK-CD
AM	AM=AI-AL	BM	BM=BI-BL	CM	CM=CI-CL
AN	AN=AL*12	BN	BN=BL*12	CN	CN=CL*12

Description of Unexplained CPAL Regressions

To determine unexplained CPAL, total 2005 expense levels are specified for each of the local telephone companies to be a function of each company's outputs and operating territory characteristics. Specifically, total cost is modeled to be a function of the area of the service territory, the number of lines served, and the interaction of business and residence lines.

$$Total\_Cost = f(area\_served, total\_lines,\ res\_lines\_x\_bus\_lines)$$

The functional form is estimated as

$$\ln \cos t = \alpha_0 + \beta_1 \ln area + \beta_2 \ln tot\_lines + \beta_3 [\ln(bus\_lines) \times \ln(res\_lines)] + \varepsilon$$

The antilog of the log of total cost predicted by the regression is divided by 2005 access lines to produce predicted CPAL amounts for each company. The coefficient estimates and summary statistics from an ordinary least squares estimation of this equation are shown in the table below. The equation explains 96% of the variation in the cost data. The interaction between the number of residence and business lines and service territory area are the two most significant estimated explanatory factors.

```
      Source |       SS       df       MS              Number of obs =      40
-------------+------------------------------           F(  3,    36) =  388.09
       Model |  106.418935     3  35.4729783           Prob > F      =  0.0000
    Residual |  3.29057008    36  .091404724           R-squared     =  0.9700
-------------+------------------------------           Adj R-squared =  0.9675
       Total |  109.709505    39  2.81306423           Root MSE      =  .30233
------------------------------------------------------------------------------
     ln_cost |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
     ln_area |   .1205344   .0576775     2.09   0.044     .0035589    .2375098
ln_tot_lines |   .2184051   .1827911     1.19   0.240    -.1523125    .5891227
  ln_res_bus |   .0300076   .0084806     3.54   0.001     .0128081     .047207
       _cons |   10.79849    1.00516    10.74   0.000     8.759936    12.83705
-------------+----------------------------------------------------------------
```

Area was chosen as an explanatory variable since the size of a company's operating territory impacts upon how much outside plant must is necessary to serve far reaching customers. The clustering of customers is also an important factor, but staff only had information on the area of company service territories to model this cost causative characteristic. The total number of access lines served was also chosen as explanatory variables since the number of customers to be served directly affects the total cost of service. Finally, staff chose the interaction of the number

of business and residence lines as an explanatory variable to provide an additional scaling factor which could capture additional cost characteristics that could be expected as firms get larger.

Data Used in Cost Regression Analysis

	company_name	cpal	area	res_lines	bus_lines
1	Windstream (ALLTEL)	29.17609	1334.17	62831	25337
2	Armstrong	87.52222	256.0331	2895	620
3	Frontier of Ausable Valley	36.32139	672.109	4973	1486
4	FRP - Berkshire	53.9971	47.64725	5068	1323
5	Lynch - Cassadaga	46.60448	47.97662	1206	272
6	FRP - C&E	52.12943	279.9791	7888	3161
7	Citizens (Hammond)	105.618	152.9193	1677	250
8	Champlain	64.53179	151.9542	3847	1951
9	Crown Point	125.2921	76.76064	949	153
10	Chazy & Westport	55.44108	125.9496	3125	626
11	Delhi	53.34314	145.2616	3860	1474
12	TDS - Deposit	44.18032	360.6214	7557	1664
13	Lynch - D&F	62.68035	73.05759	6746	3085
14	TDS - Edwards	53.64329	230.1191	2205	579
15	Empire	48.77922	284.3593	6702	1375
16	Fishers Island	56.53268	3.973954	823	230
17	Germantown	92.72519	46.80663	2417	519
18	Frontier - Citizens NY	35.38051	11032.7	225714	73483
19	Hancock	82.27747	85.4875	1289	498
20	Frontier of New York	26.10951	322.2463	48420	24022
21	Margaretville	43.54847	231.851	3396	1026
22	Middleburgh	49.79283	272.0206	5375	1859
23	Newport	61.80051	251.1117	3056	562
24	Nicholville	99.11857	223.8638	2142	351
25	Verizon NY	61.12198	27263.96	5704759	2836462
26	Frontier - Ogden	25.54774	102.4464	16301	3270
27	Oneida County Rural	66.64966	139.8856	3161	572
28	Ontario - Ontario	48.75624	69.18683	3383	1368
29	TDS - Oriskany Falls	38.73705	13.48079	543	120
30	Pattersonville	97.10535	24.42474	1063	243
31	TDS - Port Byron	52.67398	125.5527	2863	522
32	Frontier of Rochester	42.95676	2002.253	300671	155359
33	Frontier of Seneca Gorham	32.10019	244.347	7588	1514
34	State	38.00482	110.0383	6869	1634
35	Frontier of Sylvan Lake	27.99865	77.59485	14090	3617
36	FRP - Taconic	50.0866	581.6458	21791	4733
37	TDS - Township	43.44033	156.2505	4945	641
38	Ontario - Trumansburg	57.38715	188.1701	5555	1249
39	TDS - Vernon	54.77905	69.18189	1961	727
40	Warwick	56.2645	86.28667	11380	6034

Notes:

Total Cost = CPAL*(res_lines + bus_lines) *12
Total lines = Res_lines + bus-lines