Appendix A: Telecommunications Study Mandate - Chapter 2 of the Laws of 1995, Section 42

On or before December 1, 1996, the Commissioner of Taxation and Finance shall submit to the Governor, the Temporary President of the Senate, the Speaker of the Assembly, the Minority Leaders of the Senate and of the Assembly, the Chairman and Ranking Minority member of the Senate Finance Committee, and the Chairman and Ranking Minority member of the Assembly Ways and Means Committee, a written report prepared by the Office of Tax Policy Analysis of the Department of Taxation and Finance. A preliminary report shall be submitted to the aforestated persons on or before September 1, 1996. The report will evaluate the effectiveness of sections twenty-four through forty-three of this act in achieving the goal of improved taxation of telecommunication services in New York State, taking into account commonly accepted goals of tax policy (such as fairness, simplicity and effect on the economic climate of this State and its telecommunications industry). The report will also take into consideration developments of new technologies in the provision of telecommunication services and the desired goal that this State should formulate an effective telecommunications tax policy. To this end, the report will recommend tax policies that will modernize the taxation of telecommunications providers. The data and supporting documentation underlying the report, to the extent allowed by law, shall be available to the persons designated to receive a copy of the final report.

To provide advice to the Office of Tax Policy Analysis in connection with this study, the Commissioner shall appoint an advisory panel consisting of representatives of affected telecommunications providers such as interexchange carriers, local exchange carriers, cellular carriers, resellers of telecommunications, the cable television industry, academic experts, persons with accounting or legal expertise, or other persons such Commissioner shall deem appropriate. Prior to the initiation of the study

prescribed hereunder, such Commissioner shall submit to the persons designated to receive a copy of the report, a work plan that describes the study and indicates the members of the advisory panel.

Appendix B: Advisory Panel Members - Telecommunications Study

Mr. Gail L. Allaman
Time Warner Cable

Mr. Mark Allesse
National Federation of Independent Business

Mr. Arthur Angstreich
National Broadcasting Company, Inc.

Mr. Robert D. Brink
Adelphia Cable Communications, Inc.

Mr. E. Parker Brown, II
Attorney at Law
(representing Southwestern Bell)

Mr. Neil Cieminis
Frontier Corporation

Mr. William A. Dvorak
AT&T

Mr. Jeff Gottlinger
Ernst & Young
(representing the Wall Street Tax Assoc.)

Ms. Judy Hard
NYS Executive Chamber

Mr. William A. Hickey
Bell Atlantic NYNEX Mobile

Mr. Cary Hinton
Sprint

Mr. Michael Hyman
NYC Department of Finance

Ms. Debra Keith
MFS Communications Co., Inc.

Mr. James N. Kenny
MCI Telecommunications Corporation

Ms. Ann Kutter
NYS Consumer Protection Board

Mr. George LaPointe
NYS Department of Economic Development

Mr. Richard Lounsbury
NYNEX Corporation

Mr. Don Mele
NYC Chamber of Commerce & Industry

Mr. Daniel C. Murphy
New York State Hospitality & Tourism Association

Mr. Marc J. Naparstek
Teleport Telecommunications Group

Ms. Barbara Patton
NYNEX Corporation

Mr. Brian Perlee
NYS Assembly Ways & Means Committee Minority

Mr. Philip Pinsky
Pinsky & Skandalis
(representing the Cable TV Assoc. of NYS)

Mr. Steven Pleydle
NYS Assembly Ways & Means Committee Majority

Mr. Robert Powers
Phillips, Nizer, Benjamin, Krim & Ballon
(representing Cellular One)

Mr. Lee Van Riper
NYS Senate Finance Committee Majority

Mr. Andrew Roffe
Plunkett & Jaffe
(representing the Cable TV Assoc. of NYS)

Mr. Keith J. Roland
Roland, Fogel, Koblenz & Carr, LLP
(representing Empire Assoc. of Long Distance Telephone Compnaies)

Mr. Michael Rynasko
NYS Senate Finance Committee Minority

Mr. Michael B. Saxman
Securities Industry Association

Mr. Richard S. Schwarz
The Business Council of NYS, Inc.

Mr. Philip S. Shapiro
The Cable Television & Telecommunications Assoc. Of NY, Inc.

Mr. Robert K. Sharp
Rogers and Wells
(representing financial services and newspaper industries)

Mr. James Sherman
NYS Division of the Budget

Mr. Colin R. Stoner
Tele-Communications Inc.

Mr. Wayne Thomas
Pattersonville Telephone Co.

Mr. George Trahan
NYS Department of Public Service

Ms. Judy Van Druff
ACC Corporation

Mr. John Urban
Cablevision Systems Corporation

Mr. Robert W. Zinnecker
New York State Telephone Association, Inc.

Appendix C: Mobile Telephone Tax Rates in New York State

NY CGSAs (MSA or RSA)	Counties within each CGSA	New York Local Taxing Jurisdictions within each CGSA	Total Tax Rate on Telephone Service (%)
MSAs			
Albany - Schenectady - Troy	Albany, Montgomery, Rensselaer, Saratoga, Schenectady	Albany County outside...	8
		Albany S.D.	11
		Cohoes S.D.	11
		Watervliet S.D.	11
		Montgomery County outside...	7
		Johnstown S.D.	10
		Rensselaer County	8
		Saratoga County	7
		Schenectady County outside...	7
		Schenectady S.D.	10
Glens Falls	Warren, Washington	Warren County outside...	7
		City of Glens Falls	7
		Washington County	7
Binghamton	New York State - Broome, Tioga	Broome County	8
		Tioga County	7.5
	Pennsylvania - Susquehanna		
Buffalo	Erie, Niagara	Erie County outside...	8
		Lackawana S.D.	11
		Niagara County outside...	7
		Niagara Falls S.D.	10
		City of Lockport	7
		City of North Tonawanda	7
Elmira	Chemung	Chemung County	7

NY CGSAs (MSA or RSA)	Counties within each CGSA	New York Local Taxing Jurisdictions within each CGSA	Total Tax Rate on Telephone Service (%)
New York City	New York State -	City of New York	8.25
	Nassau, Suffolk, Bronx, Kings,	Nassau County outside...	8.5
	New York, Putnam, Queens,	Glen Cove S.D.	11.5
	Richmond, Rockland, Westchester	Long Beach S.D.	11.5
	New Jersey -	Putnam County	7.25
	Bergen, Passaic, Hudson, Somerset,	Rockland County	7.25
	Essex, Morris Union	Suffolk County	8.25
		Westchester County outside...	6.75
		City of Mount Vernon	8.25
		City of New Rochelle outside...	8.25
		New Rochelle S.D.	11.25
		City of White Plains outside...	7.75
		White Plains S.D.	10.75
		City of Yonkers	8.25
Orange County	Orange	Orange County outside...	7.25
		Middletown S.D.	10.25
		City of Newburgh	7.25
		City of Port Jervis	7.25
Poughkeepsie	Dutchess	Dutchess County	7.25
Rochester	Livingston, Monroe, Ontario, Orleans,	Livingston County	7
	Wayne	Monroe County	8
		Ontario County outside...	7
		City of Canandaigua	7
		City of Geneva	7
		Orleans County	8
		Wayne County	7
Syracuse	Madison, Onondaga, Oswego	Madison County outside...	7
		City of Oneida	7
		Onondaga County	7
		Oswego County outside...	4
		City of Fulton	7
		City of Oswego	7
Utica-Rome	Herkimer, Oneida	Herkimer County	8
		Oneida County outside...	8
		City of Rome	8.25
		City of Sherrill	8
		City of Utica	8
		Utica S.D.	11

NY CGSAs (MSA or RSA)	Counties within each CGSA	New York Local Taxing Jurisdictions within each CGSA	Total Tax Rate on Telephone Service (%)
RSAs			
RSA 1 - Jefferson	Jefferson, Lewis, St. Lawrence	Jefferson County outside...	7
		Watertown S.D.	10
		Lewis County	7
		St. Lawrence County outside...	7
		Ogdensburg S.D. inside City	10
		Ogdensburg S.D. outside City	10
RSA 2 - Franklin	Clinton, Essex, Franklin, Hamilton, Fulton	Clinton County	7
		Essex County	7
		Franklin County	7
		Hamilton County	7
		Fulton County outside...	7
		Gloversville S.D. outside City	10
		Gloversville S.D. inside City	10
		Johnstown S.D. outside City	10
		Johnstown S.D. inside City	10
RSA 3 - Chautauqua	Allegany, Cattaraugus, Chautauqua, Genesee, Steuben, Wyoming	Allegany County	8
		Cattaraugus County outside...	8
		City of Olean	8
		City of Salamanca	8
		Chautauqua County	7
		Genesee County outside...	8
		Batavia S.D. outside City	11
		Batavia S.D. inside City	11
		Steuben County outside...	8
		City of Corning	8
		Hornell S.D. outside City	10.5
		Hornell S.D. inside City	10.5
		Wyoming County	8
RSA 4 - Yates	Cayuga, Chenango, Cortland, Schuyler, Seneca, Tompkins, Yates	Cayuga County	8
		City of Auburn	8
		Chenango County outside...	7
		City of Norwich	7
		Cortland County	8
		Schuyler County	7
		Seneca County	7
		Tompkins County outside...	8
		City of Ithaca	8
		Yates County	7
RSA 5 - Otsego	Delaware, Otsego, Schoharie, Sullivan, Ulster	Delaware County	6
		Otsego County	7
		Schoharie County	7
		Sullivan County	7
		Ulster County	7.75
RSA 6 - Columbia	Columbia, Greene	Columbia County outside...	8
		Hudson S.D.	11
		Greene County	8

Appendix D: Telecommunications Study - Annotated Bibliography

American Legislative Exchange Council, "Modernizing America's Telecommunication Infrastructure", The State Factor, December 1990.

This paper examines issues surrounding the telecommunications infrastructure and the taxation of telecommunications and information services. It recommends that government revise tax policies that discourage and distort investments in infrastructure. Government should also foster research and development through R&D credits or other general tax inducements.

Andal, Dean F., The Andal Report: Taxation of Telecommunications and Energy in California, California State Board of Equalization, January 1996.

The study reviews the taxation of utilities in California. It finds that because of the new competitive environment in these industries, California must revise its tax system to ensure the competitive development of an advanced telecommunications network. The report proposes a constitutional amendment that would apply the gross receipts tax at a fixed rate. This would be accompanied by the elimination of the property tax and franchise fees for telecommunications and energy carriers. It would cap the utility user tax at 8 percent, and create a universal telecommunications surcharge. In exchange, all other surcharges on telecommunications and energy services would be eliminated and future establishment of new surcharges would be prohibited.

Black, Uyless, Emerging Communications Technologies, PTR Prentice Hall, 1994.

This textbook provides a description and comparison of the new technologies that are appearing in the telecommunications industry. The book is intended for those who are interested in the fields of telecommunications and computer-based networks at an advanced level.

Case, Karl E., State and Local Tax Policy and The Telecommunications Industry, 1992.

The monograph discusses state and local tax policy towards telecommunications with a focus on changes in the industry since 1986. The basic conclusion of the study is that the changing structure of the industry has made the current tax treatment obsolete in many states. The study consists of two parts. First, it contains a history of the development of telecommunications taxes. Second, it describes and evaluates state and local telecommunication tax structures. The report has one of the most thorough listings of how the states tax telecommunications.

Coopers & Lybrand, State Policy and the Telecommunications Economy in New York, 1987.

This study, commissioned by the New York State Department of Economic Development, described the status of telecommunications in the State during the mid 1980's. This was a time of great change in the industry, immediately following the break-up of the Bell System. The study sought to address State government involvement in telecommunications issues in four main areas; technological development, regulation, procurement, and taxation. The taxation section explored options for improving telecommunications taxation under Article 9, the sales tax, New York City's utility taxes, and local real property taxes. The discussion of Article 9 options led the report to conclude that eliminating the gross receipts tax and switching to Article 9-A made the most sense. The significant revenue loss associated with the option could be softened through a phased-in implementation. The report found no compelling reason to adopt any of the sales tax options, except in the broader context of an overall review of sales taxation on services.

Harvard Law Review Association, "Taxation of Cable Television: First Amendment Limitations", Harvard Law Review, December 1995.

A legal discussion of how cable television is taxed in the United States. The first half of the article reviews the case history of how cable television is treated. The final part of the article describes the rationale for taxation under property, income, franchise, sales and utility taxes.

Hellerstein, Walter, "Critical Issues in State Taxation of Telecommunications" printed in State Taxation of Business: Issues and Policy Options, 1992.

This article discusses the legal and technological changes affecting telecommunications and their ramifications on state tax policy. Some of the issues covered include the taxation of access charges, taxation of interstate services and the reliance on the *Goldberg* allocation method, and a discussion of various studies that analyzed the appropriateness of using a gross receipts tax as the method used by states for taxing interexchange carriers.

Hellerstein, Walter, Funding Florida's Public Schools: Alternatives to the Interexchange Carrier Gross Receipts Tax, March 1988.

The study addresses the appropriateness of imposing a gross receipts tax on interexchange carriers to fund education in Florida. The report concludes that there is little justification for such a tax as it violates the basic principles of sound tax policy. Florida's situation is somewhat unique due to the constitutional prohibition against the personal income tax. Thus, Florida has been forced to adopt alternative means of raising dependable revenue for education, including gross receipts taxes.

Hellerstein, Walter and Henry D. Levine, "Utility Gross Receipts Taxes and Interexchange Telecommunications Carriers" printed in Tax Notes, August 1, 1988.

The article considers whether there is any justification for gross receipts taxation of long distance carriers. The history of imposing gross receipts taxes on utilities, in general, and telecommunications companies in

particular is explored. A tax policy analysis of the gross receipts tax on interexchange carriers is performed. This, combined with support from other studies, leads the authors to conclude that there is no longer any justification for imposing a gross receipts tax on interexchange carriers.

Information Highway State and Local Tax Study Group, "Supporting the Information Highway: A Framework for State and Local Taxation of Telecommunications and Information Services" printed in State Tax Notes, July 3, 1995.

The Study Group represents a cross-section of telephone, cable, wireless and information service companies. Their report identifies the problems created by state and local tax laws that have not kept pace with the rapid changes in these industries. Recommendations for consideration by policy makers include equivalent tax treatment of telecommunications and other commercial and industrial businesses and equal treatment of all parties within the telecommunications industry. Taxes that discriminate against the industry or within the industry should be eliminated.

Koenig, Joshua Noah, "Taxation of Cable Television Systems in New York State", Pace Law Review, Fall 1986.

This article contains a comprehensive review of the taxation of cable television companies as of 1986. It covers the sales tax, Articles 9 and 9-A, and real property taxes. Because the article is a decade old, it does not cover more modern issues with cable TV such as the outcomes of the *Capitol Cablevision* and *Newchannels* decisions.

Legislative Commission on the Modernization and Simplification of Tax Administration and the Tax Law, Transportation Taxes in New York State, May 1983.

One chapter of this study give a complete history of the taxation of transportation and transmission companies in New York State. It traces the origins of the gross receipts taxes through the 1800's culminating in its adoption by the Legislature in 1880. The chapter compares the gross receipts tax with the net income tax which was originally enacted in 1917.

New York City Partnership, The $1 Trillion Gamble: Telecommunications and New York's Economic Future, June 1990.

The New York City Partnership examined the role of telecommunications in the City's economy. They found that New York City has an extraordinary dependence on this industry, especially in information-oriented sectors like financial services, publishing and advertising. The report recommended that both the State and City need to undertake an aggressive program to maintain the high level of service. Much of the report and its recommendations centered on new technologies. One recommendation was for the State and City to first stabilize and then reduce taxes on telecommunications. They cited the Coopers & Lybrand study and its finding that telecommunications providers should be taxed like other businesses under the corporate franchise tax.

New York State Telephone Association, Telecommunications Policy Reform: A Competitive Necessity for New York, 1994.

This monograph reflects the consensus view of New York's local exchange companies that New York's telecommunications policy needs to be restructured. The report cites the work of the Telecommunications Exchange in which NYSTA was an active member. The main tax recommendation was to replace the gross receipts tax with a tax based on net income.

New York Telecommunications Exchange, Connecting to the Future: Greater Access, Services and Competition in Telecommunications, December 1993.

The Telecommunications Exchange, established by former Governor Cuomo in 1992, explored how telecommunications can be employed to strengthen New York's competitive position and stimulate economic development. Their report examined the impact of new technologies, regulation and taxation on the future development of the telecommunications industry in the State. However, only two of the report's 90 pages dealt directly with tax issues. The report recommended that taxes be reformed to create a level playing field for all carriers. No new taxes on telecommunications should be enacted. In addition, as

fiscal conditions allow, the gross receipts tax should be phased out and replaced with the corporate franchise tax.

Nugent, Patrick J., "Apportionment of Telecommunications Interstate Attributes for Income, Consumption and Property Tax Purposes" printed in State Taxation of Business: Issues and Policy Options, 1992.

The author provides a summary of telecommunication apportionment methods. This includes a discussion of the *Goldberg* method. *Goldberg* is preferred by the author because it passes constitutional muster and it does not create competitive advantages between companies. The remainder of the article deals with apportionment of tangible and intangible property.

Policy Research Center, Georgia State University, The Taxation of Telecommunications in Ohio, October 1994.

Ohio commissioned this study because their taxes on telecommunications were found to be higher than neighbor states and the national average. The study examined a package of reforms that would treat telecommunications firms like any other private business. This includes moving the local exchange companies to a net income tax, subjecting local service to sales tax, and reducing the personal property tax. Revenue loss could be recovered through an expansion of the sales tax base to include other telecommunication services such as WATS, or alternatively, competitive services such as cable TV.

Regional Financial Associates, Inc., The Economic Impact on New Jersey of Eliminating the Telecommunications Excise Tax, Prepared for AT&T, November 1994.

An economic study that determines the effect of reducing or eliminating the excise tax on telecommunications on the New Jersey economy. An input-output model of the state's economy was used to analyze the direct and indirect effects of the tax change. The report concludes that over 30,000 jobs will be created in New Jersey after eliminating the excise tax for 5 years.

Rosner, Monroe, Telecommunications Tax Issues After Divestiture, Presented at 56th Annual Meeting of the National Association of Tax Administrators, June 1988.

This paper discusses issues related to the increasing competitiveness of the telecommunications industry, the comparatively high tax burden of state telecommunications taxation, and how technological change is affecting tax laws. It focuses on the three major telecommunications taxes: gross receipts, sales, and property. The paper concludes that industry will continue to resist gross receipts taxes because they are inappropriate in the new competitive environment. The sales tax section deals mainly with the taxation of interstate phone service as the industry awaited the outcome of the U.S. Supreme Court decision in *Goldberg v. Sweet.*

Teske, Paul, Telecommunications: Electronic Highway for Economic Development in Upstate New York, Prepared for the New York State Telephone Association, February 1991.

A general study of the telecommunications industry and how these companies participate in the economic development of communities outside the New York metropolitan area. The report contains very little regarding tax policy. The author cites the 1987 Coopers and Lybrand study, but he states that given the recessionary climate of the early 1990's, each industry must do its part in generating taxes. However, it is counterproductive to tax telecommunications at more than its high level.

Texas Comptroller's Office, "Industry: Telecommunications & Information Services", Forces of Change, 1993.

A descriptive piece on the history of telecommunications in the state of Texas. It also examines the current state of technology regarding telecommunications and information services. The report provides a discussion of new technologies and the impact they may have on industry in the future.

The Public Policy Institute, Connections: To Compete in The Information Age, New York State Needs an Updated Policy on Telecommunications, September 1992.

This report, published by the Business Council, describes the state of telecommunications in New York. It points to the high level of taxation and outmoded policies towards this industry. While the tax discussion in only one part of the study, it does recommend the elimination of the gross receipts tax and replacement with a net income tax.

Touche Ross, Taxation of Telecommunications in Pennsylvania, June 1986.

The report outlines telecommunications background and technological changes through the mid 1980's. The report then centers on fundamental questions of how Pennsylvania should apply taxes to this industry. Four alternative tax schemes involving movement away from gross receipts taxes towards combinations of a net income tax, sales tax and excise tax are analyzed. Advantages and disadvantages of each option are discussed, but no recommendation is provided.

Townsend, William D., Cybertaxation: The Virtual Reality of Telecommunication and Information Services Taxes, Presented at the 1993 Institute on State and Local Taxation, Georgetown University Law Center, May 1993.

A partial review of state tax policies towards telecommunications and information services. It also contains a summary and analysis of the Multistate Tax Commission's Model Telecommunications Tax.

Vermont Department of Public Service, Vermont Ten Year Telecommunications Plan, October 1992.

A mandated report that considers broad issues facing the telecommunications industry. Much of the report does not deal with the effect of tax policy on telecommunications. However, an appendix to the report contains a 1991 letter from the Public Service Board to the Legislature describing a study of Vermont's telecommunications taxes performed by the Albany accounting firm of Urbach, Kahn & Werlin. This report makes recommendations regarding the sales tax on telecommunications services. It also recommends the phase out of the gross receipts tax.

Washington State Department of Revenue, Taxation of Cellular Communications in Washington State, November 1993.

A study, mandated by the Washington State legislature, requiring an examination of the tax treatment of the cellular industry and formulating recommendations for a more appropriate tax policy for cellular telecommunications. The Department appointed an advisory committee comprised of representatives of the cellular industry, the legislature, local governments, tax specialists, and the Revenue Department. The major state tax issues centered on the sales tax and property tax. The study recommended that a model ordinance be developed by the parties to the study which provides guidelines for attributing tax revenues, resolution procedures for when local taxes get attributed to the wrong jurisdiction, developing a bad debt deduction for non-regulated telecommunications, and instituting a clear definition of gross revenues. The study further recommended that major cities adopt the substantive provisions of the

model ordinance within one year and the rest of the cities that have local utility taxes should adopt it within 2 years.

Wharton Econometric Forecasting Associates, Inc., Effects on the New York Economy of Regulation of its Telecommunications Market, December 1986.

Wharton Econometrics investigated the potential economic effects of service price changes resulting from a potential deregulation of the New York State telecommunications market. An econometric model was constructed to estimate the effects of changes in telecommunications service prices on consumers, businesses and aggregate statewide production levels.

Appendix E: Glossary

800 Service	Calls that offer consumers information provided free of charge.
900 service	Pay per call information services provided through 1-900, 1-960, 1-976, or similar exchanges, where the consumer (caller) is charged on a per call or per time basis for the information.
Access Charges	Charges an interexchange carrier pays to a local exchange carrier for use of the local exchange network to complete interexchange calls.
Access Line	The circuit between a subscriber and a switching center. For today's individual subscribers, access lines are typically capable of analog transmission. Subscribers requiring digital transmission - mainly businesses - have higher capacity access lines. (See analog and digital transmission).
Alternative Access	Access other than that provided by the local exchange carriers. (See local exchange carriers.)
Alternative Local Transporters (ALTS)	Companies that compete with established local exchange carriers in providing subscribers access to long distance companies (also known as CAPS - competitive access providers).
Alternative Operator Services (AOS)	AOS providers compete with established interexchange carriers to supply operator services such as credit card, collect, and third party billed calls.
Analog Transmission	The transmission of a continuous signal that varies in amplitude or frequency, e.g., voices sent over copper telephone lines. (Compare with digital transmission.)
Basic Service	The minimum set of capabilities deemed necessary for using the public telecommunications networks. Today this package comprises an exchange access line (generally one-party, analog, rotary dial), access to

	local and toll calling, access to emergency calling (e.g., 911), and access to the voice/nonvoice relay system.
Bell Operating Companies (BOCS)	The telephone operating companies formerly owned by AT&T, e.g., New York Telephone, New England Telephone, Bell of Pennsylvania, and New Jersey Bell.
Bypass	The provision of telephone service without using the local exchange or toll network of a regulated telephone utility.
Cable Service	One-way transmission of video programs to subscribers. Cable service increasingly includes the capacity for some subscriber interaction.
Call ID Service	The product name for calling number identification (CNI) service. This service displays the number of the calling party to the called party. A small unit attached to the telephone is necessary for this display.
Cellular Geographic Service Area	As defined by the FCC in 1981, CGSA's generally correspond with the US Department of Commerce Metropolitan and Rural Statistical Areas. One or more cellular providers operate their businesses within a CGSA.
Cell Base Station	A cellular phone system divides CGSAs into cells. Heavy usage areas contain many small cells, each covering one to three square miles. Areas of light cellular phone use rely on fewer cells, each cell covering as much as twenty or more square miles. A cell contains a low power transmitter, a receiver and signaling equipment. This equipment comprises the cell's "base station."
Cellular Mobile Communications	Cellular telephone represents a service and a technology. Cellular technology employs highly efficient use and re-use of the radio spectrum. This permits thousands of conversations to take place in an area where conventional mobile phones might permit only hundreds. Digital technology further increases cellular telephone network efficiency. With analog systems, cellular systems can carry one conversation per channel. Using digital technologies, cellular systems can carry up to four conversations per channel.
Cellular Telephony	A wireless radio transmission system in which a geographic area is subdivided into small "cells," each serviced by a separate transmitter-receiver. This arrangement permits a relatively narrow range of

	frequencies to be used efficiently, handling a large number of individual calls.
Central Office	The facility housing the switching system and equipment used to provide telephone service to customers in the surrounding area.
Central Office Equipment (COE)	Switching and related equipment on the company's premises.
Circuit Miles Factor	The ratio of: 1) the product of the average length in miles of revenue-producing communications pathways within New York State used in connection with interstate and/or foreign transmission services and the number of revenue-producing channels within such pathways to (2) the same within and without New York State.
Coaxial Cable	A transmission line consisting of two separate conductors: an inner core plus an outer layer, separated by insulator. Coaxial cable has greater transmission capacity than copper lines, but less than fiber-optic cable. (Compare with fiber-optic cable.)
Common Carrier	An entity that provides conduit services (facilities, functions, or means used for providing electric, electromagnetic, electronic, and photonic transmission of communications, including voice, data, or video) without regard to "content" to the public. "Content" is the information or intelligence transmitted over a "conduit." Information used solely for the provision of a communications "conduit" is not "content."
Communication Protocol	A collection of rules to ensure the compatibility of transmitting and receiving equipment. Three major areas are normally encompassed by protocols: the method by which data is coded; the method by which codes are received; and the methods used to establish control, detect failures or errors, and initiate corrective action.
Community Antenna Television (CATV)	The original name for cable television companies. The New York State Public Service Commission regulates the charges that electric and telephone utilities can charge them for the use of utility poles.

Competitive Access Providers (CAPs)	Companies that compete with established local exchange carriers by providing access to long distance companies as well as to other local services. (Also known as alternative local transporters-ALTs.)
Customer-Owned Coin-Operated Telephone (COCOT)	Privately owned telephones similar to telephone company owned coin telephones. They are usually available for use by the general public and require the caller to pay with coin or currency or arrange payment for calls at the time the calls are made. COCOTS, unlike telephone company owned coin telephones, are capable of performing most of their own billing functions.
Data Compression	Reducing the number of bits of information needed to store or transmit messages, thereby allowing more information to be squeezed into any given transmission.
Digital Switch	A computer that electronically routes digitally encoded messages through the telephone network. Digital switches operate faster, more efficiently, and more flexibly than analog switches.
Direct Broadcast Satellite	The transmission or broadcasting by satellite of programing directly to subscribers' premises without the use of ground receiving or distribution equipment, except at the subscribers' premises or in the uplink process to the satellite.
Digital Transmission	The transmission of data, audio, and video messages in discrete codes generated by computers. (Compare with analog transmission.)
End Office/Central Office	A local exchange carrier switch where subscriber loops are terminated to interconnect for toll and local calling.
Enhanced Services	These differ from basic transmission service in that they involve computer processing acts on the format, content, code, protocol or similar aspects of the transmitted information, or provide the customer additional information.
Federal Communications Commission (FCC)	The FCC, located in Washington, D.C., is the federal agency responsible for regulating interstate telecommunications.

Fiber-Optic Cable	Bundles of thin glass filaments through which light can travel. Fiber-optic lines provide greater transmission capacity, with less interference, than metal cables.
Flat Rate Service	Set monthly rate with unlimited local calls at no additional charge.
Full Value	The current market value appraisal or estimate of what a property would sell for in an arms length transaction between a willing buyer and a willing seller.
Independent Telephone Company	A non-Bell operating company. There are 40 independent telephone companies in the state.
Information Service	Furnishing information or reports that have been collected, compiled, or analyzed by the service provider. Examples include 'dial it' services, adult and other information lines which are usually reached by dialing '900' codes.
Integrated Services Digital Network (ISDN)	A telecommunications system which employs new technologies to convert voice, data and video transmissions into digital signals for high speed transmission over existing telephone networks.
Intelligent Network	A network architecture in which call processing and related functions are controlled by switching software, network computers, and databases. Such networks can provide greater efficiency and control over communications flows.
Interexchange Carriers (IXC)	Companies such as AT&T, MCI, and Sprint, which carry calls between local service areas. (See Local Access and Transport Area.)
Internet	An international network of networks initiated by the Defense Advanced Research Projects Agency in the 1970's, the Internet is supported by the National Science Foundation, the National Aeronautics and Space Administration, and the Department of Energy.

Local Access and Transport Area (LATA)	Service territories which New York Telephone may provide local and toll service, as a result of the divestiture of local operating companies by AT&T.
Local Exchange Carriers	Companies that provide local transmission and switching.
Location Quotient	Equals the percentage of state employment in an industry relative to the same proportion for the nation.
Market Value	The same as full value -, i.e., the amount a willing buyer would pay to a willing seller for a particular property in an arm's length transaction. There are essentially three ways in which appraisers estimate market value: (1) Market Approach: Comparing the subject property to at least five similar properties that have recently sold and making adjustments for varying characteristics. (2) Income Approach: For income-producing properties, such as apartments and stores, figuring the net rental income after all expenses and estimating what an investor would pay to receive such an income using current market conditions as a guide. (3) Cost Approach: For factories, utilities and unique residential properties, calculating what it would cost to replace the building at current construction costs, then subtracting depreciation and obsolescence and adding the current value of the land on which it is located.
Mobile Telephone Switching Office	Telephone lines, microwave transmission equipment or other technologies connect cell base stations to a Mobile Telephone Switching Office (MTSO). The MTSO is a building or buildings somewhere within the CGSA. It houses computers and other equipment to control the cellular system operation for the entire service area and to connect the cellular system to the local telephone network. Sometimes, MTSOs also connect adjacent CGSAs to provide regional services.
	The service uses a dedicated radio channel linked to the local switched

Mobile Telephone Service (Pre-Cellular)	telephone network.
Modem	A device connecting computers to telephone lines, used to convert digital signals into analog signals for transmission - and then to reconvert analog signals into digital signals. (The term is an acronym for modulator-demodulator.)
Modification of Final Judgement (MFJ)	The court document, signed on August 24, 1982, that - modified (actually replaced in its entirety) the Consent Decree (Final Judgment) of January 24, 1956. Actual divestiture of the regional bell operating companies (i.e., NYNEX) from AT&T occurred on January 1, 1984.
Multimedia	The combination of several forms of communication within the same technology, e.g., integrating data, audio, and video communication through computer terminals.
Packet Switching Services	Conversion of analog signals and subsequent aggregation prior to transmission in order to send more efficiently and accurately.
Pagers	Devices used predominantly to receive one-way radio transmissions on specifically assigned frequencies. Functions can vary from simple sound alarms to more sophisticated messages.
Personal Communications Services (PCS)	(No single definition exists.) The fundamental concept is of untethered (radio) access to the telephone network, providing features of portability and mobility, involving some type of wireless connection. Cellular and cordless phones are early forms of PCS.
Point of Presence (POP)	A physical location within a LATA where an IXC establishes itself to obtain local access.
Private Branch Exchange (PBX)	Switching equipment owned by a customer and located on its premises for routing calls.
Property Factor	The ratio of the average value of real property, tangible personal property, and intangible assets within the State to property everywhere.

Regional Holding Company (RHC)	Any of the seven regional companies that now control the BOCs through common stock ownership.
Reseller	A regulated company that does not own transmission facilities but subscribes to services provided by other regulated companies and resells the services to the public.
Roaming	Usage of cellular equipment by subscribers while traveling outside their own CGSA. From a cellular company's perspective, incollect roaming service is provided to their subscriber outside their CGSA and billed to them by the other provider. Outcollect service occurs when the provider serves customers that are not their subscribers. It then bills the customers home carrier.
Shared Tenant Services	A service providing tenants in a building access to the telephone network through a privately-owned PBX.
Telecommunications	The science and technology of communication by electronic transmission of impulses, as by telegraph, cable, telephone, radio, or television.
Telecommuting	Using telecommunications to connect with an employer while working at home or some other location.
Teleconferencing	Using telecommunications to conduct meetings with people at different locations.
Two-Way Radio	Wireless telecommunications through specific channels which include mobile radio (pre-cellular) linked to local telephone networks and radio fleet dispatch services.
Uniform Percentage of Value	The percentage of market value (full value) used by an assessing unit to establish uniform assessments. (Section 305 of the Real Property Tax Law specifies that "all real property in each assessing unit shall be assessed at a uniform percentage of value...")
Unitary Valuation	A unitary approach to the valuation of real property for tax purposes. Utilities are valued as entire systems or units and then values are allocated to individual taxing jurisdictions.

Universal Service	A policy guaranteeing that all households have affordable access to basic service. (See basic service.)
Virtual Network	A network, created with software applications, often using the equipment and circuits of the public switched network.
Wide Area Telecommunications Service (WATS)	A long distance service designed for customers with high call volumes over wide geographic areas. Rates are based on total usage rather than on a call-by-call basis as in message telecommunications service.
Wireless Communications	Systems that use radio transmitters and receivers instead of wirelines.