INTRODUCTION

No issue emanating from the 1996 Telecommunications Act has engendered more controversy than interconnection pricing. The legal history related to such pricing is well-known. In its August 6, 1996 *Local Competition Order* in CC Docket No. 96-98, the Federal Communications Commission adopted a forward-looking cost standard that it dubbed, "total element long-run incremental cost," or TELRIC. The incumbent LECs and others immediately sought Appellate Court review of the Commission's authority to adopt such a standard, and convinced the Eighth Circuit in 1997 to vacate these TELRIC pricing rules on jurisdictional grounds. This decision was appealed to the United States Supreme Court, which in January 1999 reversed the Eighth Circuit and found that the Commission did have authority under the Act to establish a national pricing standard for interconnection and unbundled network elements.

The incumbent LECs promptly returned to the Eighth Circuit and demanded that the Commission's TELRIC rules again be vacated – this time on their merits. In July 2000, the Eighth Circuit again struck down these rules based largely on its finding that the Act's requirement that prices shall be based on the cost of providing "the" interconnection or element required the use of "actual" costs rather than hypothetical or potential costs. This decision, too, was appealed to the Supreme Court, which in May 2002 again reversed the Eighth Circuit. In its decision in *Verizon v. FCC*, the 7-1 Supreme Court majority affirmed the validity of the Commission's TELRIC rules – but in doing so, not only did this majority opinion find that these rules were legal under the Act and entitled to deference as a reasonable agency action under the *Chevron* doctrine, the majority opinion also examined explicitly the various policy-based attacks against the rules (*e.g.*, they discouraged investment, historical or "parity" cost methods are superior, *etc*.) and found all of these arguments to be unconvincing.

Despite this affirmation of not just the validity, but also the appropriateness of the Commission's TELRIC rules by the Supreme Court and roughly fifty state regulatory commissions, the Commission has again sought comment on these rules, apparently with an eye towards making certain modifications. Perhaps forgotten in all of these heated legal machinations over TELRIC has been the economic foundation for the selection of TELRIC as the basis for setting interconnection and unbundled element prices and the history of its development.

The Commission's TELRIC pricing concept, which applies to network elements, was an outgrowth of a very similar pricing concept known as TSLRIC ("total service long-run incremental cost"), which applied to telecommunications services. TSLRIC, in turn, was a particular instance of the LRIC ("long-run incremental cost") pricing concept which had long been advocated by the incumbent LECs as the appropriate basis for pricing their competitive services. But because LRIC did not allow for the recovery of the carrier's joint and common costs, it was viewed by the Commission and various parties (including CLECs such as AT&T) as being insufficiently compensatory to the incumbents. Thus, the Commission adopted TELRIC as a more generous pricing standard that could provide full compensation for all efficient costs of providing

interconnection and unbundled elements. In settling on TELRIC, the Commission determined that the various embedded cost and parity or opportunity cost pricing standards advocated by the incumbents in CC Docket No. 96-98 for the pricing of their monopoly elements or interconnection were impermissible under the pro-competitive policies of the Act.

Since the Commission's action in adopting TELRIC in 1996, there has been much sniping at individual aspects of the components that make up the Commission's TELRIC rules – raising questions such as: are the required network designs unattainably efficient; is adequate compensation really provided; is facilities investment being discouraged; are the costs of capital, depreciation rates and fill factors set appropriately; do proxy models capture accurately these characteristics; and are there larger roles that alternative embedded or parity cost methods should play in setting interconnection and element prices – but there has been little effort to examine these many issues on a comprehensive economic basis.

To address these and similar questions, AT&T has supported the development of a series of essays on these critical issues concerning the economics of TELRIC. All of these essays' authors are distinguished both by their deep understanding of the theoretical issues surrounding the economics of competitive markets and efficient pricing, but also because of their knowledge of the specific intricacies of telecommunications cost structures and their long experience with setting telecommunications prices – both before and since the Act.

The essays in this series are as follows:

1. *John W. Mayo* discusses why it is appropriate that TELRIC should assume the costs of a network designed to current efficiency standards – and why such an efficiency standard matches closely that which would be expected from a competitive market.

2. *William J. Baumol* explains why the Commission's TELRIC pricing concept provides full compensation to the incumbents for their supply of interconnection and unbundled network elements – and constitutes no "taking" of the incumbents' property.

3. *Robert D. Willig* examines whether the availability of unbundled elements at TELRIC discourages otherwise efficient facilities investments by incumbents and competitors, and finds that the competitive stimulus enabled by TELRIC pricing likely enhances, rather than suppresses, investment.

4. *R. Glenn Hubbard and William H. Lehr* discuss the competitive cost of capital that should appropriately be incorporated into TELRIC and determine that currently employed methods properly account for all risk and other factors that bear on capital costs.

5. *Richard N. Clarke* discusses the several calculation methods that may be used to measure the economic depreciation of a carrier's telecommunications plant and explains why current regulatory depreciation methods capture accurately this economic depreciation.

6. *Terry L. Murray* presents the various reasons why local networks cannot be operated at 100% "fill," explains how "fill factors" should be used in TELRIC calculations, and why these factors should reflect the efficient fills that would be sought by a competitive carrier.

7. *Mark T. Bryant* examines the several available tools for calculating TELRIC and explains why proxy models are the most capable tool for capturing accurately all of the real-world costs involved with the provision of unbundled elements, and further notes why accounting records are particularly unsuitable for this task.

8. *Janusz A. Ordover* evaluates the various alternative methodologies that have been proposed for interconnection and unbundled element pricing and explains why these alternatives do not promote efficient pricing or the development of competitive markets and, thus, are inferior to TELRIC.

Although it would have been possible for each of these authors to analyze at an extremely technical level the subject of their essay, this series is intended to be more accessible to policymakers and other interested parties. Rather than speaking just to professional economists, these essays are intended to provide a clear understanding of the basic economic facts surrounding the construction of TELRIC and the purpose of these aspects of TELRIC in promoting the development of fully competitive local telecommunications markets. It is only with such a foundation that informed decisions may be made concerning possible adjustments to TELRIC.

I would like to thank all of the authors for the thoughtful effort they put into making their essays an insightful roadmap for the proper application of economic pricing in wholesale telecommunications networks. I think it is safe to say that all of us had our appreciation for TELRIC improved through review of each other's work. In addition to the authors, I am indebted to Carol Wilner, Joan Marsh, Larry Lafaro and, most specially, Steve Levinson for support of this project. Greg Neff, Mart Vaarsi and David Lawson have supplied valuable editing assistance.

Richard N. Clarke

Bedminster, New Jersey
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BIOGRAPHICAL SKETCHES OF THE ESSAYS' AUTHORS

William J. Baumol is Professor of Economics at New York University and Professor Emeritus at Princeton University. He received his bachelor's degree in economics from the College of the City of New York in 1942 and his Ph.D. from the University of London in 1949. Professor Baumol taught at the London School of Economics from 1947 through 1949 and then served as a member of the faculty of Princeton University for 42 years. He is the author of roughly 40 professional books and more than 500 articles. Professor Baumol served as president of four leading professional organizations of economists, including the American Economic Association and holds ten honorary degrees from universities in the United States and abroad and is an elected member of the National Academy of Sciences and the American Philosophical Society.

Professor Baumol has taught university courses on the economics of antitrust, regulation and industrial organization, and has been invited to lecture on these subjects in forums throughout the world. He has also written a number of articles and books related to these subjects and has testified extensively on antitrust and regulatory issues before courts and regulatory agencies in the United States and abroad.

Mark T. Bryant has over twenty years experience in telecommunications policy and regulation, with particular emphasis on costing and pricing of network elements and the establishment of conditions necessary for the development of competitive telecommunications markets. From 1984 to 2002, Dr. Bryant was employed by MCI Communications Corporation, and later, WorldCom. While with MCI/WorldCom, he was responsible for assisting in the economic analysis of regulatory and antitrust matters. From 1995, Dr. Bryant had primary responsibility for MCI/WorldCom's participation in the development of the HAI Model, an engineering/economic model for the estimation of telecommunications network costs. Dr. Bryant has testified or appeared before many state regulatory commissions, the FCC, the National Telecommunications and Information Administration, the Ministry of Telecommunications of Japan, and the telecommunications regulatory agency of the government of Mexico.

Prior to his employment with MCI, Dr. Bryant was Assistant Professor of Economics at the University of Kentucky, where he taught courses in telecommunications and broadcast regulation, statistics and television programming. Dr. Bryant holds a B.F.A. from Southern Methodist University and M.A. and Ph.D. degrees in Economics from the University of Texas at Austin.

Richard N. Clarke is Director of Economic Analysis for AT&T. Dr. Clarke brings both theoretical and practical experience to the study of telecommunications markets. While at Bell Laboratories in the 1980s, he modeled the likely competitive effects of early proposals to eliminate the Regional Bell Holding Company line-of-business restrictions from the MFJ. After moving over to AT&T in 1989, he became responsible

for AT&T's regulatory policy on access charges, LEC price cap regulation and interconnection rules. Since the mid 1990s, Dr. Clarke has been responsible for AT&T's economic policy related to the provision of local telephone services. This includes AT&T's positions on the efficient pricing of interconnection, unbundled network elements and the costing of universal service – for U.S. local networks as well as for foreign local and long distance networks. He has testified on efficient unbundling, interconnection and pricing in state and federal proceedings. Dr. Clarke also directs AT&T's participation in the development of the HAI/Hatfield Model of forward looking economic costs of local exchange networks.

Dr. Clarke is the author of numerous papers on economics and telecommunications. He has an A.B. degree in Mathematics and Economics from the University of Michigan, and an A.M and Ph.D. in Economics from Harvard University. Prior to joining AT&T-Bell Laboratories, he was an Assistant Professor of Economics at the University of Wisconsin-Madison, and served as an economist with the Antitrust Division of the U.S. Department of Justice.

R. Glenn Hubbard is the Russell L. Carson Professor of Economics and Finance in the Department of Economics and Graduate School of Business of Columbia University, where he is also Co-Director of the Program on Entrepreneurship at the Graduate School of Business. From February 2001 until March 2003, he was Chairman of the U.S. Council of Economic Advisers under President George W. Bush, where his responsibilities included advising the President on economic policy, tax and budget policy, emerging market financial issues, international finance, health care, and environmental policy. While CEA Chairman, he also chaired the Economic Policy Committee of the OECD. Professor Hubbard, whose research spans tax policy, monetary economics, international finance, and corporate finance has taught at Northwestern, Harvard, and the University of Chicago, as well as Columbia. In addition to writing more than 90 scholarly articles in economics and finance, he is the author of a best-selling textbook on money and financial markets. He was Deputy Assistant Secretary of the U.S. Treasury Department for Tax Policy from 1991-1993. In addition to his responsibilities at Columbia, he is a research associate at the National Bureau of Economic research and the director of the program on tax policy at the American Enterprise Institute in Washington. He has been a consultant to U.S. and non-U.S. government agencies and numerous private corporations.

Professor Hubbard has received B.A. and B.S. degrees from the University of Central Florida, and earned his A.M. and Ph.D. in Economics from Harvard University.

William H. Lehr is an economist and industry consultant. He also serves as a Research Associate in the Center for Technology, Policy and Industrial Development at the Massachusetts Institute of Technology and is the Associate Director of the MIT Research Program on Internet & Telecoms Convergence. Previously, Dr. Lehr was an Associate Research Scholar and Assistant Professor at Columbia University's Graduate School of

Business. Dr. Lehr lectures and publishes academic research on the regulatory and industrial economics of information infrastructure industries. He has published articles on such topics as the impact of the Internet on the structure of the communications infrastructure industries, telecommunications regulation, and the pricing of Internet services. His current research focuses on the convergence of the Internet and wireless services, and the implications for corporate strategy and public policy. In addition to his academic research, Dr. Lehr provides litigation, economic, and business strategy consulting services for firms and public agencies in information technology industries in the United States and abroad.

Dr. Lehr holds a Ph.D. in Economics from Stanford (1992), an MBA from the Wharton Graduate School (1985), and MSE (1984), B.S. (1979) and B.A. (1979) degrees from the University of Pennsylvania.

John W. Mayo is Dean and Professor of Economics, Business and Public Policy at the McDonough School of Business of Georgetown University. Professor Mayo teaches and conducts research in economics, business and public policy. His research interests lie in the areas of industrial organization, regulation and antitrust, and, more generally, the application of microeconomics to public policy. His research has appeared in numerous economics, law and public policy journals. He is also co-author of a comprehensive text on *Government and Business: The Economics of Antitrust and Regulation.*

Prior to his appointment at Georgetown University, Professor Mayo taught graduate and undergraduate economics classes at Washington University, the University of Tennessee and Virginia Tech. He has also served as the Chief Economist, U.S. Senate Small Business Committee. Additionally, Professor Mayo has served as an advisor and consultant to both public and private agencies including the U.S. Department of Justice, the Federal Trade Commission, AT&T, MCI, Sprint, Enron, the Tennessee Valley Authority, the Department of Energy and Oak Ridge National Laboratory. Professor Mayo has participated in many regulatory and antitrust proceedings and has testified before state and federal legislative and regulatory bodies on monopolization, price fixing, mergers, and regulatory pricing policy. Professor Mayo received his B.A. degree in from Hendrix College, and his M.A. and Ph.D. degrees in Economics from Washington University.

Terry L. Murray is President of the California-based consulting firm Murray & Cratty, LLC. The firm specializes in economic, financial and policy analysis of issues concerning regulated industries, particularly the telecommunications and energy industries. Recently, the firm's practice has focused on local competition and industry restructuring issues, including the costing and pricing of unbundled network elements and impairment analysis. Ms. Murray has appeared as an expert witness in regulatory and civil proceedings in 30 states as well as before the Federal Communications Commission.

Before becoming a consultant, Ms. Murray had extensive experience as an economist in government and academia. As a member of the staff of the California Public Utilities

Commission from 1984 to 1990, she helped to develop rules for emerging competition in the electric, gas and telecommunications industries. Her CPUC positions included stints as a Commissioner's Advisor, senior telecommunications analyst in the Policy and Planning Division, and Director of the Division of Ratepayer Advocates. She was a member of the economics faculty at Wesleyan University and has taught courses on telecommunications regulation at Golden Gate University.

Ms. Murray holds a B.A. degree in Economics from Oberlin College and did graduate study in Economics at Yale University, where she completed all requirements for the Ph.D. except the dissertation.

Janusz A. Ordover is Professor of Economics and former Director of the Masters in Economics Program at New York University. He served as Deputy Assistant Attorney General for Economics in the Antitrust Division of the U.S. Department of Justice from 1991 to 1992. While at the Antitrust Division, Professor Ordover served on the White House deregulation task force, guided economic analyses of antitrust enforcement and acted as a liaison between the Justice Department and various regulatory agencies. Professor Ordover served as an advisor to the Organization for Economic Cooperation and Development (OECD) in Paris, the World Bank, and the Inter-American Bank for Development on matters of privatization, regulation, international trade policy and competition policy and as a consultant to the U.S. Department of Justice, Federal Trade Commission, and State Attorneys General. He has advised the governments of Poland, Czech Republic, Russia, Hungary, Argentina, and others on regulation and competition matters, as well as on privatization strategies. Professor Ordover has been involved in the analyses of regulatory and competitive issues in the telecommunications sector in the U.S. and abroad, having acted as an advisor to AT&T, Telstra, Telstra/Clear, Nextel, MCI/Worldcom, and T-Mobile.

Professor Ordover holds a Bachelor's degree in Political Economy from Warsaw University, has done graduate work at McGill University and received his Ph.D. in Economics from Columbia University.

Robert D. Willig is Professor of Economics and Public Affairs at Princeton University, where he serves as the Faculty Chair of the MPA Program at the Woodrow Wilson School of Public and International Affairs. A former supervisor of economics research at Bell Laboratories, he is the author of *Welfare Analysis of Policies Affecting Prices and Products*; coauthor of *Contestable Markets and the Theory of Industry Structure*; and coeditor of *The Handbook of Industrial Organization*; *Can Privatization Deliver?: Infrastructure for Latin Ame*rica and *Second Generation Reforms in Infrastructure Services*. Professor Willig has written and lectured widely on these subjects, is a Fellow of the Econometric Society and has served on the editorial boards of the American Economic Review and the Journal of Industrial Economics. He served in the Antitrust Division of the U.S. Department of Justice as Deputy Assistant Attorney General for Economics from 1989 to 1991, and has been a member of policy task forces under the

aegis of the Governor of New Jersey, the Defense Science Board, and the National Research Council. He has worked with the Inter-American Development Bank, the World Bank and the governments of many nations on issues of infrastructure (including telecommunications) privatization, regulation and competition policy.

Professor Willig has served as a consultant on telecommunications policy to AT&T, AT&T Wireless, AT&T Broadband, Regional Bell Operating Companies, Teledirect, Telecom of New Zealand, Telstra, Viacom, Comcast, Singapore Cable, EchoStar, DIRECTV, and Singtech. He has testified on telecommunications policy before Congress, the FCC, federal and state courts, and many state public utility commissions. Professor Willig has received an A.B. degree in Mathematics from Harvard University, an M.S. degree in Operations Research from Stanford University and a Ph.D. in Economics, also from Stanford University.

STATEMENT OF THE FCC'S TELRIC RULES

47 CFR Ch. I (10–1–02 Edition)

Subpart F—Pricing of Elements

§ 51.501 Scope.

(a) The rules in this subpart apply to the pricing of network elements, interconnection, and methods of obtaining access to unbundled elements, including physical collocation and virtual collocation.

(b) As used in this subpart, the term ''element'' includes network elements, interconnection, and methods of obtaining interconnection and access to unbundled elements.

§ 51.503 General pricing standard.

(a) An incumbent LEC shall offer elements to requesting telecommunications carriers at rates, terms, and conditions that are just, reasonable, and nondiscriminatory.

(b) An incumbent LEC's rates for each element it offers shall comply with the rate structure rules set forth in §§ 51.507 and 51.509, and shall be established, at the election of the state commission—

(1) Pursuant to the forward-looking economic cost-based pricing methodology set forth in §§ 51.505 and 51.511; or

(2) Consistent with the proxy ceilings and ranges set forth in § 51.513.

(c) The rates that an incumbent LEC assesses for elements shall not vary on the basis of the class of customers served by the requesting carrier, or on the type of services that the requesting carrier purchasing such elements uses them to provide.

§ 51.505 Forward-looking economic cost.

(a) *In general.* The forward-looking economic cost of an element equals the sum of:

(1) The total element long-run incremental cost of the element, as described in paragraph (b); and

(2) A reasonable allocation of forward-looking common costs, as described in paragraph (c).

(b) *Total element long-run incremental cost.* The total element long-run incremental cost of an element is the forward-looking cost over the long run of the total quantity of the facilities and functions that are directly attributable to, or reasonably identifiable as incremental to, such element, calculated taking as a given the incumbent LEC's provision of other elements.

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

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

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

(c) *Reasonable allocation of forward-looking common costs—*

(1) *Forward-looking common costs.* Forward-looking common costs are economic costs efficiently incurred in providing a group of elements or services (which may include all elements or services provided by the incumbent LEC) that cannot be attributed directly to individual elements or services.

(2) *Reasonable allocation.*

(i) The sum of a reasonable allocation of forward-looking common costs and the total element long-run incremental cost of an element shall not exceed the standalone costs associated with the element. In this context, stand-alone costs are the total forward-looking costs, including corporate costs, that would be incurred to produce a given element if that element were provided by an efficient firm that produced nothing but the given element.

(ii) The sum of the allocation of forward-looking common costs for all elements and services shall equal the total forward-looking common costs, exclusive of retail costs, attributable to operating the incumbent LEC's total network, so as to provide all the elements and services offered.

(d) *Factors that may not be considered.* The following factors shall not be considered in a

calculation of the forward-looking economic cost of an element:

(1) *Embedded costs.* Embedded costs are the costs that the incumbent LEC incurred in the past and that are recorded in the incumbent LEC's books of accounts;

(2) *Retail costs.* Retail costs include the costs of marketing, billing, collection, and other costs associated with offering retail telecommunications services to subscribers who are not telecommunications carriers, described in § 51.609;

(3) *Opportunity costs.* Opportunity costs include the revenues that the incumbent LEC would have received for the sale of telecommunications services, in the absence of competition from telecommunications carriers that purchase elements; and

(4) *Revenues to subsidize other services.* Revenues to subsidize other services include revenues associated with elements or telecommunications service offerings other than the element for which a rate is being established.

(e) *Cost study requirements.* An incumbent LEC must prove to the state commission that the rates for each element it offers do not exceed the forward-looking economic cost per unit of providing the element, using a cost study that complies with the methodology set forth in this section and § 51.511.

(1) A state commission may set a rate outside the proxy ranges or above the proxy ceilings described in § 51.513 only if that commission has given full and fair effect to the economic cost based pricing methodology described in this section and § 51.511 in a state proceeding that meets the requirements of paragraph (e)(2) of this section.

(2) Any state proceeding conducted pursuant to this section shall provide notice and an opportunity for comment to affected parties and shall result in the creation of a written factual record that is sufficient for purposes of review. The record of any state proceeding in which a state commission considers a cost study for purposes of establishing rates under this section shall include any such cost study.

§ 51.507 General rate structure standard.

(a) Element rates shall be structured consistently with the manner in which the costs of providing the elements are incurred.

(b) The costs of dedicated facilities shall be recovered through flat-rated charges.

(c) The costs of shared facilities shall be recovered in a manner that efficiently apportions costs among users. Costs of shared facilities may be apportioned either through usage-sensitive charges or capacity-based flat-rated charges, if the state commission finds that such rates reasonably reflect the costs imposed by the various users.

(d) Recurring costs shall be recovered through recurring charges, unless an incumbent LEC proves to a state commission that such recurring costs are de minimis. Recurring costs shall be considered de minimis when the costs of administering the recurring charge would be excessive in relation to the amount of the recurring costs.

(e) State commissions may, where reasonable, require incumbent LECs to recover nonrecurring costs through recurring charges over a reasonable period of time. Nonrecurring charges shall be allocated efficiently among requesting telecommunications carriers, and shall not permit an incumbent LEC to recover more than the total forward-looking economic cost of providing the applicable element.

(f) State commissions shall establish different rates for elements in at least three defined geographic areas within the state to reflect geographic cost differences.

(1) To establish geographically deaveraged rates, state commissions may use existing density-related zone pricing plans described in § 69.123 of this chapter, or other such cost-related zone plans established pursuant to state law.

(2) In states not using such existing plans, state commissions must create a minimum of three cost-related rate zones.

§ 51.509 Rate structure standards for specific elements.

In addition to the general rules set forth in § 51.507, rates for specific elements shall comply with the following rate structure rules.

(a) *Local loops.* Loop costs shall be recovered through flat-rated charges.

(b) *Local switching.* Local switching costs shall be recovered through a combination of a flat-rated charge for line ports and one or more flat-rated or per minute usage charges for the switching matrix and for trunk ports.

(c) *Dedicated transmission links.* Dedicated transmission link costs shall be recovered through flat-rated charges.

(d) *Shared transmission facilities between tandem switches and end offices.* The costs of shared transmission facilities between tandem switches and end offices may be recovered through usage-sensitive charges, or in another manner consistent with the manner that the incumbent LEC incurs those costs.

(e) *Tandem switching.* Tandem switching costs may be recovered through usage-sensitive charges, or in another manner consistent with the manner that the incumbent LEC incurs those costs.

(f) *Signaling and call-related database services.* Signaling and call-related database service costs shall be usage sensitive, based on either the number of queries or the number of messages, with the exception of the dedicated circuits known as signaling links, the cost of which shall be recovered through flat-rated charges.

(g) *Collocation.* Collocation costs shall be recovered consistent with the rate structure policies established in the *Expanded Interconnection* proceeding, CC Docket No. 91-141.

§ 51.511 Forward-looking economic cost per unit.

(a) The forward-looking economic cost per unit of an element equals the forward-looking economic cost of the element, as defined in § 51.505, divided by a reasonable projection of the sum of the total number of units of the element that the incumbent LEC is likely to provide to requesting telecommunications carriers and the total number of units of the element that the incumbent LEC is likely to use in offering its own services, during a reasonable measuring period.

(b)(1) With respect to elements that an incumbent LEC offers on a flat-rate basis, the number of units is defined as the discrete number of elements (e.g., local loops or local switch ports) that the incumbent LEC uses or provides.

(2) With respect to elements that an incumbent LEC offers on a usage-sensitive basis, the number of units is defined as the unit of measurement of the usage (e.g., minutes of use or call-related database queries) of the element.