COMMONWEALTH OF MASSACHUSETTS

DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

Investigation by the Department on its own motion into the appropriate regulatory plan to succeed price cap regulation for Verizon New England, Inc. d/b/a Verizon Massachusetts' retail intrastate telecommunications services in the Commonwealth of Massachusetts	DTE 01-31

TESTIMONY OF

JOHN W. MAYO

ON BEHALF OF AT&T COMMUNICATIONS OF NEW ENGLAND, INC.

August 24, 2001

I. INTRODUCTION, QUALIFICATIONS AND PURPOSE OF TESTIMONY

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is John W. Mayo. My business address is Georgetown University, McDonough School of Business, Old North Building, 37th and O Streets, N.W., Washington, D.C. 20057.

Q. WHAT IS YOUR OCCUPATION?

A. My present position is Professor of Economics, Business and Public Policy at Georgetown University in the McDonough School of Business.

Q. WOULD YOU PLEASE SUMMARIZE YOUR QUALIFICATIONS?

A. Yes. I hold a Ph.D. in economics from Washington University, St. Louis (1982), with a principal field of concentration in industrial organization, which includes the analysis of antitrust and regulation. I also hold both an M.A. (Washington University, 1979) and a B.A. (Hendrix College, Conway, Arkansas, 1977) in economics.

I have taught economics, business and public policy courses at Georgetown University, Washington University, Webster University, the University of Tennessee and at Virginia Tech (VPI). Beginning in the fall of 1999 and continuing until July 2001, I served as Senior Associate Dean of the McDonough School of Business. Also, I have served as the Chief Economist, Democratic Staff of the U.S. Senate Small Business Committee. Both my research and teaching have centered on the relationship of government and business, with particular emphasis on regulated industries. I have

authored numerous articles and research monographs, and have written a comprehensive text entitled Government and Business: The Economics of Antitrust and Regulation (with David L. Kaserman, The Dryden Press, 1995). I have also written a number of specialized articles on economic issues in the telecommunications industry. These articles include discussions of competition and pricing in the telecommunications industry and have appeared in academic journals such as the RAND Journal of Economics, the Journal of Law and Economics, the Journal of Regulatory Economics, and the Yale Journal on Regulation. A more detailed accounting of my education, publications and employment history is contained at Attachment 1.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The critical driver of this case is that the current regulatory plan for regulating Verizon is expiring. In its order initiating this case, the Department required Verizon to submit a plan that would contain at least: (1) a component for regulating or deregulating retail prices; (2) a plan for regulating service quality; and (3) a plan for intrastate access reform. In response to that order, Verizon submitted a proposed regulatory plan and accompanying testimony on April 12, 2001 ("Verizon Plan"). As noted by the Department, the plan involves reclassification of substantial amounts of its service offerings as sufficiently competitive to warrant the removal of price regulation. As I will discuss below, the Department aptly indicated in its Interlocutory Order on Scope (June 21, 2001) that the merits of the Verizon proposal depend upon a showing of sufficient competition.

In light of the Department's decision to consider the appropriate regulatory framework for Verizon on a forward-going basis and Verizon's proposed plan, the purpose of my testimony is two-fold. First, I will provide an economic framework that I believe the Department can utilize as the basis for shaping its evolving regulatory and deregulatory policies as the telecommunications market in Massachusetts evolves. And, second, in light of this framework, I will respond to the Verizon testimony filed with its proposed plan.

Q. HOW IS YOUR TESTIMONY ORGANIZED?

A. Section II provides both the historical background and theoretical framework necessary to the effective analysis of Verizon's plan for deregulating non-residential local services in Massachusetts. This regulatory and economic context includes a discussion of the regulatory course followed within the state, as well as a summary of the many institutional changes through which policy-makers are seeking to replace economic regulation with effective competition as the guiding force in telecommunication markets. The specific proposals contained within the Verizon plan are evaluated in Section III. This evaluation is, however, preceded by a more general discussion of how economists routinely assess the efficacy of competition. Finally, Section IV provides a set of policy recommendations which I hope will help guide the Department as it attempts to develop policy that will ensure the economic well-being of Massachusetts telecommunication customers.

II. BACKGROUND AND ECONOMIC FRAMEWORK

Q. WHAT FORM OF REGULATION IS CURRENTLY USED IN MASSACHUSETTS?

A. A "price-cap" regime is currently used to regulate local telecommunications rates within the Commonwealth. Like most such plans, the Massachusetts program involved the establishment of maximum charges that the monopoly seller can levy for specific services. These prices have then been modified over time, based on fluctuations in overall prices and predicted increases in productivity within the telecommunications sector.

Q. HISTORICALLY, WHY HAS IT BEEN NECESSARY TO REGULATE LOCAL TELECOMMUNICATIONS PROVIDERS IN MASSACHUSETTS?

A. Verizon's predecessors, New England Telephone (and, prior to Divestiture, AT&T Massachusetts) historically enjoyed a monopoly in the provision of telecommunications services. Given its monopoly position, both the federal and state governments found it necessary to regulate the rates of the company in order to ensure that the local carrier did not exercise its monopoly power to the detriment of the state's residents and businesses. Indeed, most public utilities laws, including the law in Massachusetts, give public utility Departments the obligation to insure that rates are "just and reasonable." In this regard, it is important to note that price regulation is a substitute for rates set by competitive market forces. That is, economists commonly recommend that the rate setting exercise should, insofar as possible, try to establish rates that mimic the rates that would be set by competitive market forces.

Q. HAS PRICE-CAP REGULATION HISTORICALLY BEEN THE DOMINANT FORM OF REGULATION?

A. No. Traditionally, rates for local exchange telephone companies were set within the context of rate-of-return regulation ("ROR"). Under ROR, the magnitude of the firm's capital stock or rate base was determined and then rates for the various services offered by the telephone company were established to achieve the "fair" rate of return on those assets. Because the local exchange company offered multiple services, regulators were free to establish rates for individual services that would achieve a fair overall ROR but which would also be seen to further social goals such as the achievement of universal service. The classic model set rates for basic local exchange telephone service "residually." That is, rates for other services, for example long distance and carrier access services, were set well above cost in order to maximize the "contribution" to be made toward achieving the overall target ROR for the company. Then, once the contributions from these services were maximized, the rates for local exchange service were set at a level as low as possible to achieve the desired return. [1] In this form of regulation, considerable uncertainty existed regarding the appropriate or desired mark-up of access charges that was necessary to "promote" universal service and still allow the firm to earn a fair rate of return. [2] In whichever format was used, the residual pricing methodology led very naturally to a set of largely inefficient prices for the portfolio of

[1] In practice, it was often the case that rate cases chronologically reversed the order of the residual price-setting process. That is, local rates were selected, often by slightly raising or lowering the then-current rates, and long distance and access charges were set residually to achieve the desired ROR. Analytically there is little difference between the two approaches, both of which are referred to herein as the residual pricing approach.

[2] I use the term "promote" in quotations because this regulatory pricing policy was a failure both in concept and practice as a means of promoting universal service in an economically efficient fashion. *See, e.g.*, "Cross-Subsidization in Telecommunications: Beyond the Universal Service Fairy Tale," *Journal of Regulatory Economics*, Volume 2, September 1990, at 231-250.

telephone services offered by the local exchange company (LEC). In particular, pre-divestiture long distance prices and, post-divestiture access charges and long-distance prices were set at rates that were widely acknowledged to be economically inefficient.[3]

Q. HOW DO ECONOMISTS VIEW ROR REGULATION?

A. Over time, substantial and widespread criticism emerged toward ROR regulation. Among these criticisms, it was shown that ROR regulated firms generally have an incentive to invest in inefficiently large amounts of capital and that the ROR regulation provided inadequate incentives for cost efficiencies on the part of the regulated firm. In part because of these inefficiencies and lack of incentives for cost efficiencies, state commissions, including the Massachusetts Department, moved to adopt price-cap regulation. Because, at least in theory, price-cap regulation does not make the fixed price of telephone services dependent on cost,[4] the telephone company is provided some financial incentive to reduce costs (and thereby profit). In this way, price cap regulation is believed to generate public benefits and benefits to the firm while still protecting customers from any underlying monopoly power that the LEC enjoys and might otherwise exploit.

[3] *See* David L. Kasserman and John W. Mayo, Cross-Subsidies in Telecommunications: Roadblocks on the Road to More Intelegent Telephone Pricing,*Yale Journal on Regulation*, Vol. 11, Winter 1994, pp. 119-148.

[4] I say "in theory" because the reality is somewhat different. Price cap plans usually run for a short term of years. At the end of the term, a new plan is negotiated with new rates. At that time, all of the traditional questions regarding the firm's costs, revenues and profitability resurface, as indeed they have here. This means that price cap regulation is not likely to remove all of the ill effects of cost-plus regulation. This also means that pricing and investment decisions made in the later stages of a price cap plan are likely to be more distorted that those in the early stages. For preliminary, suggestive evidence, see Rafael Di Tella and Alexander Dyck, "The Costs and Benefits of Commitment: The Chilean Experience with Price Cap Regulation," working paper, Harvard Business School, August 2001 (cited with authors' permission).

Q. DID THE ESTABLISHMENT OF PRICE-CAP REGULATION END THE INEFFICENT PRICING OF LOCAL EXCHANGE AND ACCESS SERVICES?

A. No. In the vast majority of cases where price cap regulation was adopted (including Massachusetts), the initial prices established for the firm's regulated services were those that prevailed under ROR regulation. Over time, the natural forces of price-cap regulation with positive escalators for inflation and negative forces for productivity modified the set of prices but failed to address the fundamental pricing distortions brought about by residual pricing. In particular, the access charges assessed on long distance carriers for the use of local exchange facilities to originate and terminate calling continued to be significantly marked-up above their economic cost. More generally, there was no reason to believe that the prices of individual services were set at their economically efficient level.

Q. IN THE YEARS SINCE PRICE-CAP REGULATION WAS APPLIED IN MASSACHUSETTS, HAVE THERE BEEN REGULATORY CHANGES THAT HAVE AFFECTED THE NEED FOR THIS FORM OF REGULATION?

A. Yes. The passage of the Telecommunications Act in 1996 ("Act") represented a watershed event in terms of the public policy that is to be directed toward the telecommunications industry. Specifically, the purpose of the Act was to bring the benefits of competition to all telecommunications markets by creating a "pro-competitive, de-regulatory environment." To do so, the Act endowed state and federal regulatory authorities with a host of responsibilities for advancing the goals of the Act.

Q. SPECIFICALLY, HOW HAS THE ACT CHANGED THE MISSION OF THE PUBLIC UTILITY COMMISSIONS?

A. The Act fundamentally altered the forward-going role of regulatory commissions. In particular, the traditional function of regulatory commissions had been one of *disabling the potential ill-effects of monopoly power*. The Act changed this primary role in telecommunications to one of *enabling competition*. That is, a new and fundamental role of regulatory commissions in the wake of the Act is to develop a set of competition-enabling policies that will allow for the introduction and development of competition. Under this new mandate, as competition grows and becomes effective, markets can replace regulation as the primary source of protection of consumers.

Q. YOU REFER TO "COMPETITION-ENABLING" POLICIES. WHAT ARE THESE AND WHY ARE THEY NECESSARY?

A. The Act seeks to enable competition in at least five ways. These include: (1) eliminating regulatory and legal barriers to entry; (2) establishing efficient prices for necessary inputs provided by the incumbent local exchange carrier (ILEC) that competitors rely upon to provide retail-stage services; (3) unbundling the network and making the unbundled network elements (UNEs) available to competitors; (4) removing restrictions on resale; and, (5) ensuring equal interconnection quality. While each of these is a necessary component to successfully establishing competition in local exchange markets, none, by itself is sufficient. Moreover, while the successful implementation of these policies certainly facilitates competitive entry, it does not guarantee it. Even when *all* of these competition-enabling strategies are in evidence, it is still sometimes possible for incumbents to stifle the emergence of effective competition.

Q. TURNING TO THE FIRST OF THESE, WHY IS IT CRITICAL TO THE SUCCESS OF COMPETITION TO ELIMINATE REGULATORY BARRIERS?

A. The Act seeks (and it is up to the Department to implement) the elimination of barriers to entry into the provision of local exchange services in two fundamental ways. First, consistent with the recognition that merely removing regulatory barriers would be insufficient to assure competition, the Act seeks to create as wide a door as possible through which new entrants might enter. It does so by allowing not only facilities-based entry, but also creating the opportunity for entry in two other ways. Specifically, new entrants are permitted to enter the market by purchasing the services of the incumbent local exchange companies (ILECs) at a wholesale rate and reselling these services (in competition with the ILEC) at the retail stage. Alternatively, new entrants are permitted to enter by compiling the necessary network elements to provide telecommunications services through a combination of self-supply and purchases from the ILEC.

Q. ARE THERE SPECIFIC ADVANTAGES TO ALLOWING ENTRY BY ALL OF THESE ALTERNATIVE MEANS?

A. Yes. The economically efficient entry path may very well be different for particular entrants, for particular geographic areas, and for particular telecommunications services. Thus, by allowing the widest possible set of entry options for new entrants, the prospects for the emergence of effective competition are heightened. For instance, in a very dense urban area with highly concentrated heavy demand for telecommunications services, the efficient entry path may be to enter directly as a facilities-based provider (although the conditions for pure facilities based entry are economically demanding and rarely obtained as explained in the Testimony of Anthony Fea). In other situations, however, the normal and efficient entry path is likely to be for new entrants to avail themselves of the lower

sunk cost entry options afforded by either resale or UNEs. These modes of initial entry provide firms with a foothold in the industry from which it is possible to secure customers and grow revenues. Over time, with a larger customer base and greater revenues the new entrants are likely to find it profitable to move toward establishing their own facilities.

Q. SPECIFICALLY, HOW DOES A POLICY OF ENABLING COMPETITION DICTATE THE EFFICIENT PRICING OF INPUTS?

A. The Act specifies that the pricing of inputs shall be: "(i) based on the costs (without reference to a rate-of-return or other rate-based proceeding) of providing the interconnection or network element (whichever is applicable), and (ii) nondiscriminatory, and (B) may include a reasonable profit."[5] The FCC has determined that "prices for unbundled elements under section 251 must be based on costs under the law, and that should be read as requiring that prices be based on forward–looking economic costs."[6] In particular, the FCC determined that wholesale rates for Unbundled Network Elements (UNEs) must be based on the Total Service Long Run Incremental Cost (TSLRIC) of the elements. This form of TSLRIC was dubbed Total Element Long Run Incremental Cost or TELRIC.

[5] 47 USC §252(d)(1).

[6] Federal Communications Commission, CC Docket No. 96-98 and CC Docket 95-185, First Report and Order, ¶ 620, Released Aug. 8, 2000.

Q. WHY IS THE ESTABLISHMENT OF EFFICIENT (COST-BASED) TELRIC RATES IMPORTANT FOR THE ESTABLISHMENT OF RETAIL-STAGE PRICES AND COMPETITION?

A. Properly established TELRIC rates establish parity in the prices paid by the incumbent firm for efficiently provided inputs that it supplies to itself and the prices paid by its competitors. In this way, both the incumbent and new entrants are made to operate "on a level playing field" in the retail stage of the telecommunications market in Massachusetts. Importantly, by creating this level playing field, the Department fully enables the forces of competition to work in the retail stage of telecommunications markets in Massachusetts. This competition, *to the extent that it is effective,* will significantly reduce the need for regulatory control of the *retail* stage of the telecommunications market in Massachusetts.[7]

Q. WHAT DOES THE COMPETITION-ENABLING REQUIREMENT OF EFFICIENTLY PRICED INPUTS IMPLY ABOUT CARRIER ACCESS CHARGE RATES IN MASSACHUSETTS?

A. For a host of reasons, a competition-enabling approach to the telecommunications industry should be predicated on the establishment of access charge rates that are based upon the underlying economic cost of providing access services. Indeed, as I will describe in some detail later within my discussion of the Verizon Plan, the economic case for reducing access charges to their relevant economic costs is both straightforward and compelling. Where these charges exceed costs, substantial inefficiencies are created, resulting in unnecessary costs that, ultimately, must be borne by Massachusetts consumers. Stated another way, where these charges exceed costs, no amount of

[7] I say "significantly reduce," and not "eliminate," because certain regulatory policies will continue to be necessary to protect against anticompetitive pricing and conduct by the ILEC.

competition will be effective in driving down the price that consumers pay to efficient levels. In addition (and, perhaps, more important), excessive (above-cost) access charges severely hamper the growth of competition in Massachusetts markets – both for intraLATA toll and local exchange services. Thus, high access charges penalize customers in two ways – they raise costs (and, thereby, prices) and delay the advent of more effective competition. In other words, the Department cannot find that there is sufficient competition to ensure that prices will be driven to cost as long as access prices are above economically efficient levels. Therefore, while I understand that procedurally the Department will be making its decision regarding access rates in the subsequent phase of the proceeding, from an economic and policy perspective, the level of competition and access rates are integrally linked and must be viewed as such.

Q. TURNING TO THE FOURTH COMPETITION-ENABLING POLICY, HOW DOES THE REMOVAL OF RESTRICTIONS ON RESALE PROMOTE COMPETITION?

A. A rule requiring the ILEC to allow unrestricted resale of their services can help prevent the incumbent from practicing anticompetitive price discrimination among its customers. Specifically, in situations where a multiproduct regulated firm operates in a mixed market environment, price discrimination can be employed for anticompetitive purposes.[8] Specifically, in markets where entry is threatened, the ILEC may be able to offer discounts only to those customer groups most likely to purchase telecommunications services from a new entrant. When used in this systematic, targeted way, price

[8] *See e.g.*, F.M. Scherer and D. Ross, *Industrial Market Structure and Economic Performance*, 3rd Edition, Houghton Mifflin, Boston, MA 1990, pp. 500-502.

discrimination among customer groups can prevent entry and, thereby, preserve the monopoly position of the incumbent while simultaneously preserving lucrative pricing in market areas and services that do not yet face the threat of competitive entry. Moreover, selective price discounts can have a reputational effect that discourages future attempts to enter, thereby prolonging the monopoly power of the incumbent firm.[9] A necessary condition for such price discrimination to occur, however, is that arbitrage between customer groups be prevented. That is, the price discriminating firm must be able to prevent the low-price customers from buying services and reselling these services to high-priced customers. Otherwise, arbitrage between these groups will frustrate the attempt by the ILEC to engage in non-cost-based price differences across customer groups. Consequently, rules designed to ensure the ability of new entrants to resell the ILEC's services will help prevent price discrimination.

Q. WHAT IS THE ROLE OF UNBUNDLING IN A COMPETITION-ENABLING POLICY FRAMEWORK?

A. The local exchange network facilities owned by incumbent local exchange carriers are both ubiquitous and very capital intensive. Accordingly, replication of the network by a new entrant is completely daunting to a firm that is considering entry into local exchange markets. While total service resale provides, in theory, a way to avoid the sunk costs associated with network investments, it also limits the ability of new entrants to make new and innovative service offerings. Thus, by unbundling the network into its various elements and making these elements available to new entrants, the potential arises for the new firm to choose either to utilize the network elements of the ILEC or, alternatively, to

[9] For a substantive discussion of the role of reputational effects, *see* P. Milgrom and J. Roberts "Predation, Reputation and Entry Deterrence," *Journal of Economic Theory*, Vol. 27, 1982, pp. 280-312.

self-supply network elements. This allows entry to occur on an incremental basis and permits the new entrant the latitude to self-supply those elements of the network that it can provision efficiently. Thus, by unbundling, the entry process is facilitated and, thereby, the prospects for the emergence of effective competition are heightened.

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Q. WHAT ROLE DOES THE REQUIREMENT OF EQUAL, NON-DISCRIMINATORY PROVISION OF ACCESS PLAY IN A COMPETITION ENABLING ENVIRONMENT?

A. A subtle, but powerful, mechanism that the ILEC may employ in an attempt to preserve its monopoly position is to alter the quality, terms or conditions of the inputs it provides to other downstream competitors relative to the quality, terms and conditions under which it provides such services to its own retail operations. While the firm may use either explicit denial of access or, in the alternative, a pricing mechanism to economically deny access to downstream rivals, a more subtle but less easily detected mechanism is to "sabotage" the provision of such inputs to downstream rivals. Thus, regulatory commissions will necessarily have to be extraordinarily vigilant to ensure that such sabotage does not occur, which if present will have the effect of delaying, denying or denigrating the presence of effective competition for the ILEC.

Q. WHAT IS THE PROMISE OF THESE COMPETITION-ENABLING POLICIES?

A. The promise is that competition will take seed, initially at the retail level, and then spread to the wholesale level. While evidence of competition at the retail-stage is presented by Dr. Taylor and Mr. Mudge (a subject to which I will return below), it is important to note that the competition policies proffered in the Act and implemented by the Department and the FCC will naturally lead to retail-stage competition before competition emerges at

the wholesale level. This creates a dual obligation on the Department. First, it is necessary to tenaciously maintain the portfolio of competition-enabling policies in order to promote the development of competition at the retail stage. Second, because competition will be slower to develop at the wholesale stage, the Department must maintain policies to ensure, as best it can, that the monopoly power Verizon maintains through its dominance at the wholesale stage is not utilized to harm either the development of competition at the wholesale stage or the full realization of effective competition at the retail stage.

Q. IN LIGHT OF THESE COMPETITION-ENABLING POLICIES, IS IT POSSIBLE TO CONCLUDE THAT THE LOCAL EXCHANGE MARKETS CAN SAFELY BE DEREGULATED?

A. No. While these competition-enabling policies are, from a theoretical perspective, meant to open fully local exchange markets to competition (and deregulation where effective competition exists), at least two factors indicate that effective competition in local exchange telephony will not necessarily or immediately follow. First, the competition-enabling principles are best viewed as necessary, but not sufficient, for the existence of effective competition. That is, these policies will ideally work to create conditions that are favorable to the development of effective competition. For instance, access to quality inputs at competitive prices – which the Telecommunications Act means to ensure - is a necessary prerequisite to effective competition but it does not guarantee its presence. Second, policymakers have found that the implementation of these competition-enabling principles has been quite controversial and subject to considerable delay. The reason is that firms with monopoly power are, quite naturally, reluctant to cede that monopoly

power. Consequently, regulatory commissions cannot simply presume the absence of monopoly power in the wake of the Act.

III. ANALYSIS OF VERIZON'S PLAN

Q. PLEASE DESCRIBE THE CENTRAL ASPECTS OF VERIZON'S CASE.

A. There are three key features of the Verizon Plan. First, Verizon seeks to cap residential basic telephone rates for three years, after allowing for a revenue neutral adjustment brought about by eliminating Touch Tone charges and increasing the basic dial-tone rate. Other residential services would be subject to an aggregate price cap. Second, Verizon proposes to deregulate the pricing of all other retail services, subject to existing price floor requirements established by the Department in D.P.U. 94-185. Third, Verizon proposes not to alter switched access rates as part of this case, but states that if such a change is to occur that it should be implemented by linking such reductions to increases in basic residential service rates. Importantly, the merits of each of these three basic features of the Verizon Plan turn - either directly or indirectly - on the status of and prospects for competition in Massachusetts telecommunications markets.

Q. CAN YOU PLEASE EXPLAIN HOW VERIZON'S PROPOSAL REGARDING RESIDENTIAL BASIC SERVICE RATES AFFECTS AND IS AFFECTED BY THE STATUS OF COMPETITION?

A. Yes. The present set of basic residential exchange rates is the product of the price cap plan implemented in 1995. These rates, however, are not the product of a "true-up" of prices to costs at the time of the implementation of the price-cap plan. Rather, the prevailing residential rates were simply accepted as the rates going into the price-cap

plan. Those prices, however, had earlier been identified by the Department to be transitional rates that would, over time, move to levels sufficient to recover the cost of providing residential service. The implementation of the price-cap plan truncated this transition prior to the achievement of fully compensatory prices. Today, it is unclear whether the advent of new technologies, streamlined efficiencies, and so on has made the price of residential services in Massachusetts compensatory or not. We simply do not know. The consequences of not knowing are, however, important for the foundation of competition in local exchange markets. Specifically, if the prices proposed by Verizon are below the efficient, forward-looking economic cost of providing residential local exchange services, then adoption of the Verizon Plan will act to deter the advent of local exchange competition in residential markets.[10] If, however, the prices of residential local exchange services in Massachusetts are covering the economic cost of providing those services, then that dimension of the plan is not troublesome for the emergence of competition, because if Verizon increases local rates in a competitive market, CLECs will stand ready to take those customers that do not wish to pay Verizon's increased prices. The point is that the Department simply cannot evaluate the merits of the residential pricing component of the Verizon Plan in the absence of knowing whether the residential local exchange rates are subsidy free.

[10] Moreover, such below-cost rates applied to an entire class of customers cannot be justified on the grounds that it efficiently promotes the goal of universal service. *See, e.g.,* Ross Eriksson, David L. Kaserman, and John W. Mayo, "Targeted and Untargeted Subsidy Schemes: Evidence from Post-Divestiture Efforts to Promote Universal Telephone Service," *Journal of Law and Economics*, Vol. 41, October 1998, pp. 477-502.

Q. TURNING TO THE SECOND KEY FEATURE OF VERIZON'S PROPOSAL, HOW CAN THE DEPARTMENT DETERMINE WHETHER IT CAN SAFELY MOVE FROM HISTORICAL METHODS OF REGULATION, SUCH AS PRICE CAPS, TO DEREGULATE LOCAL EXCHANGE MARKETS?

A. To determine whether the Department can safely move forward to eliminate price regulation of Verizon, it is necessary to: (1) ensure that all of the competition enabling policies are properly in place and fully implemented; and, (2) engage in a formal analysis of Massachusetts markets in order to identify where (if at all) these policies have resulted in a level of competition sufficient to warrant deregulation.

Q. CAN YOU PROVIDE AN EXAMPLE OF WHY IT IS ESSENTIAL THAT THE FULL COMPLEMENT OF COMPETITION ENABLING POLICIES ARE FULLY IMPLEMENTED BEFORE MOVING FORWARD WITH THE DEREGULATED FLEXIBILITY VERIZON SEEKS?

A. Yes. While Verizon has argued that the Act's framework is sufficient to create effective competition, the fact is that the transition to effective competition is less easily attained than Verizon would have the Department believe. As an example, the New York Commission recently concluded an investigation into the provision of special access services provided by Verizon in New York. That investigation found that Verizon "continues to occupy the dominant position in the Special Services market, and by its dominance is a controlling factor in the market."[11] Moreover, the Commission found that "cost considerations force competitors to rely on Verizon's ubiquitous local loop facilities to reach most end users" and that "a competitive facilities-based market for

[11] *See* Opinion and Order Modifying Special Services Guidelines for Verizon New York, Inc., Conforming Tariff, and Requiring Additional Performance Reporting, Case 00-C-2051, Case 92-C-0665, Issued and effective June 15, 2001, p. 9. This opinion and order is appended to my pre-filed testimony at Attachment 2.

Special Services has yet to emerge and that Verizon continues to dominate the market overall."[12]

Q. ARE THERE PARTICULAR CONSEQUENCES OF SUCH DOMINANCE THAT REFLECT ON THE MERITS OF GRANTING VERIZON'S PLAN BASED ON THE EVIDENCE BEFORE THE DEPARTMENT?

A. Yes. Where the sort of situation found by the New York Commission is present, it is likely to lead to actions by the incumbent that will delay or deny the emergence of effective competition. In the particular situation in New York, the Commission's investigation revealed that Verizon has averaged 74% of its appointment met in the provisioning of Special Access to its downstream competitors while it has averaged 94% of its appointments met for its own retail operations. The Commission concluded that "the record suggests that Verizon treats other carriers less favorably than its own end users."[13] Thus, in the presence of such market dominance even the nominal presence of the competition-enabling policies envisioned in the Act may not eliminate the ILEC's monopoly power.

Q. YOU MENTIONED THE TERM "MONOPOLY POWER." WHAT IS MONOPOLY POWER AND WHY IS IT IMPORTANT TO THIS PROCEEDING?

A. Monopoly (or, interchangeably, market) power is the power to control prices or exclude competition. Alternatively stated, it is the ability of a firm to establish and maintain prices above competitive levels without losing so many sales so rapidly that the price

[12] *Id.*, at 7 and 9.

[13] *Id.*, at 9–10.

increase must be rescinded. Because intervention in markets is costly and essentially all firms have at least some small amount of market power, public policy efforts have focused on instances where markets are plagued by the presence of significant monopoly power. In the absence of significant monopoly power a firm is said to be subject to *effective competition*.

Q. ASSUMING, ARGUENDO, THAT THE FULL COMPLEMENT OF COMPETITION-ENABLING POLICIES ARE IN PLACE AND WELL-FUNCTIONING, HOW THEN CAN THE DEPARTMENT DETERMINE WHETHER IT CAN SAFELY MOVE FROM HISTORICAL METHODS OF REGULATION, SUCH AS PRICE CAPS, TO DEREGULATE LOCAL EXCHANGE MARKETS?

A. It is critical that the Department engage in a formal analysis of the degree of market power held by Verizon in the provision of services that it provides in Massachusetts. In this regard, it is first necessary to identify the relevant markets in which Verizon competes. Then, upon identifying the relevant markets, Verizon should develop data sufficient to demonstrate that it does not enjoy significant monopoly power (*i.e.*, it faces effective competition) in those markets that it seeks to have deregulated.[14]

Q. HOW DOES ONE DETERMINE WHETHER A FIRM FACES EFFECTIVE COMPETITION OR, ALTERNATIVELY, ENJOYS SIGNIFICANT MARKET POWER?

A. The standard economic analysis of the extent of market power held by a firm begins with the identification of the relevant economic market or markets within which the firm provides service. Economic markets have both product and geographic dimensions. The

[14] This economic guidepost is consistent with the Department's prevailing policy. For example, in D.P.U. 94-50 (1995), the DPU said "[I]f NYNEX were requesting market-based pricing…it would be required to make a showing of effective competition…" *Id.*, at 114-115.

breadth of these dimensions is determined by the substitutability of the particular good or service in question for other goods and services. In general, the more highly substitutable is the consumption of one good or service for other prospective substitutes, the wider are the product and geographic boundaries of the relevant market.

Once the relevant market has been identified, the issue of whether a firm has significant monopoly power within that market can proceed. In particular, the antitrust economic literature has identified three key determinants of the degree of market power held by firms: (1) market share; (2) the height of entry and expansion barriers (also referred to as the elasticity of supply of "fringe" firms); and (3) the market demand elasticity.[15] An examination of these criteria collectively provides information on the degree of market power held by a particular firm. In general the higher the barriers to entry, the higher the firm's market share, and the lower the price elasticity of demand in the market, the higher the degree of market power held by the firm.

Q. WHY DOES THE MARKET SHARE OF THE INCUMBENT AFFECT THE EXTENT OF COMPETITION?

A. Market share is relevant to the magnitude of market power because, holding all other factors constant, higher market shares give the firm greater control over price. This is easiest to see in the most extreme case of a firm with 100 percent of a relevant market. In that instance, the firm almost certainly has control over market output, and, therefore, price. As market share is dissipated, the firm loses its ability to control the market and price. It is widely recognized that unwavering inferences regarding the extent of

[15] *See, e.g*., William M. Landes and Richard A. Posner "Market Power in Antitrust Cases," 94 *Harvard Law Review* 94, March 1981, at 937-996.

monopoly power held by a given firm cannot be reached by consideration of market share measures alone. Other market power determinants may temper (or reinforce) market power implications of market share measurements. Nonetheless, it has been noted that "the courts will generally regard market shares of 90 percent as sufficient for unilateral monopolistic exploitation and shares of 5 or even 50 percent [of the relevant market] as insufficient."[16] Thus, where a firm maintains very high market shares, the prospects are heightened that the firm is endowed with significant monopoly power.

Q. BUT DOESN'T THE PRESENCE OF REGULATION DISTORT THE INFORMATION CONTENT OF MARKET SHARE DATA?

A. Clearly, under a traditional scenario of economic regulation, wherein a firm is granted a monopoly franchise and is protected by legal barriers to entry, market share data provide little information regarding the presence or sustainability of effective competition. The current economic setting in Massachusetts is not, however, one of traditional regulation. Quite to the contrary, the U.S. Congress, the FCC, and the Commonwealth of Massachusetts have each taken specific steps designed to facilitate and encourage competitive entry in telecommunications markets. This promotion of entry creates market conditions that are very different than those observed under the historical regulatory regime. Within the current setting, where entry is encouraged, market share data are a useful analytical tool.

[16] Naturally, the relevant benchmarks are of properly specified relevant markets. A calculated "market share" of something that is not a market is not a "market share" within the context of a bona fide market power inquiry. *See* Phillip Areeda and Louis Kaplow, *Antirust Analysis: Problems, Text, Cases*, Little Brown and Company, Boston, 1988, at 574.

Q. HOW DOES THE MAGNITUDE OF BARRIERS TO ENTRY AND EXPANSION AFFECT THE DEGREE OF MARKET POWER?

A. While market share data can provide critical insights into the extent of competition within a market, an analysis of the ability of new, or "fringe," firms to enter and expand in the relevant market(s) is critical to understanding whether a dominant firm in the marketplace has significant monopoly power. Where barriers to entry and expansion are low or nonexistent, then regardless of the extent of competition within the market the incumbent firm will be endowed with little monopoly power. On the other hand, where the ability of new entrants to enter and expand in the market is lower (*i.e.*, the elasticity of supply of fringe firms is lower), barrier to entry and expansion are heightened and so is the extent of monopoly power held by the incumbent dominant firm.

Q. HOW DOES THE GENERAL MARKET DEMAND ELASTICITY AFFECT THE DEGREE OF MARKET POWER HELD BY THE FIRM?

A. Aside from considerations of market share and the elasticity of supply of fringe firms, the extent of market power is affected by the general market demand conditions, most obviously captured by the market elasticity of demand. Where the good or service in question has a market demand that is less elastic (say because it is regarded by consumers as a necessity) then, *ceteris paribus,* the incumbent firm will be endowed with more market power.

Q. ARE ANY SPECIAL ISSUES RAISED WHEN THE FIRM IN QUESTION IS VERTICALLY INTEGRATED?

A. Yes. In particular, if the firm in question maintains operational control over facilities, assets and operational systems that competitors must rely upon to be able to compete at

the retail level, then it is possible for the firm to be able to threaten the development of competition by its control over these facilities. In these instances the vertically integrated firm may maintain control over a market through control of the upstream input by, *e.g.* denying access to necessary inputs, manipulating the price of the upstream stage inputs, or engaging in non-price discriminatory tactics that have the effect of "raising rival's costs."[17]

Q. HOW CAN THE DEPARTMENT USE THE ECONOMIC FRAMEWORK THAT YOU HAVE DESCRIBED WITHIN THE CURRENT PROCEEDING?

A. The determination of whether a proposed plan is or is not in the public interest cannot turn simply upon untested claims by its proponent that the regulatory alternative (in this case, price deregulation) is in the public interest. Rather a consistent framework built on sound principles is required to assess accurately whether, indeed, the proposed alternative is in the public interest. The framework that I have described provides just this sort of economic principles-based approach for the Department to draw upon in reaching its assessment of whether to approve or deny Verizon's Plan.

Specifically, if the Department determines that the service offerings Verizon seeks to deregulate are, indeed, subject to effective competition, then the Department should move to approve this aspect of the Verizon Plan. That is, where effective competition can be shown to exist, markets are superior to regulation in generating prices, investment and output that is in the public interest. If, however, the services

[17] For detailed discussion of the economics surrounding these anticompetitive practices, *see e.g.*, Steve Salop and David Scheffman, "Raising Rivals' Costs," *American Economic Review* 73, May 1983, pp. 267-281; J.A. Ordover, A.O. Sykes, and R.D. Willig, "Nonprice Anticompetitive Behavior by Dominant Firms Toward Producers of Complementary Products," in F.M. Fisher *Antitrust and Regulation: Essays in Honor of John J. McGowan*, MIT Press, Cambridge, MA, 1985; Nicholas Economides, "The Incentive for Non-Price Discrimination by an Input Monopolist," *International Journal of Industrial Organization*, 1998, pp. 271-284; and T.R. Beard, David L. Kaserman and J.W. Mayo, "Regulation, Vertical Integration and Sabotage," *Journal of Industrial Economics*, forthcoming.

offered by Verizon for which it seeks deregulation are not found to be subject to effective competition, then approval of the proposed plan is not in the public interest. Rather, approval of a plan to allow essentially unlimited pricing flexibility to a firm that retains significant market power to control price to its customers and competitors is distinctly not in the public interest.

Q. HAS VERIZON EFFECTIVELY UTILIZED THE STANDARD ECONOMIC APPROACH TO DEMONSTRATE THE PRESENCE OF EFFECTIVE COMPETITION FOR THE SERVICES IT SEEKS TO DEREGULATE IN MASSACHUSETTS?

A. No. Verizon's witnesses contend that, with the exception of residential services, the retail market is sufficiently competitive so that little or no regulatory oversight is necessary on a forward-going basis. This conclusion is, however, at this point unwarranted. In particular, Verizon has failed to identify the relevant economic markets within which the services it seeks to have deregulated compete. Then, Verizon offers anecdotal data on the presence of competition in Massachusetts that is essentially impossible to interpret properly. Finally, even the data that are presented are, at least in some instances, at a minimum, inconsistent with other publicly available data and potentially quite misleading. The cumulative effect of these steps is that the Department cannot confidently conclude that the retail services Verizon seeks to have deregulated are subject to effective competition.

Q. HOW HAS VERIZON FAILED TO CORRECTLY DEFINE THE RELEVANT MARKETS FOR COMPETITIVE ANALYSIS?

A. A proper market definition inquiry begins with a narrow product (service) and geographic market and asks the question, could a hypothetical monopolist over that service raise prices by a small but significant and non-transitory amount?[18] If the answer to that question is "yes," then the relevant market has been identified. If, however, in response to the price increase consumers would switch to alternative services in sufficient amounts that the price increase of the "monopolist" would be defeated, then the market must be expanded to include those services and the market definition exercise repeated. This exercise continues until the smallest service and geographic market areas are identified that could, in response to a price increase by the hypothetical monopolist, sustain the price increase.

Rather than identify the relevant markets within which Verizon sells the services it seeks to have deregulated, the incumbent simply asks for a blanket authorization to have all retail services other than residential services price deregulated (*see* Mudge, p. 3, lines 3 ff.). This includes 68 services ranging from Directory Assistance to Apartment Door Answering. This implicitly suggests that Verizon believes that the relevant product market encompasses all of these services and that the relevant geographic market is its entire service territory.[19] This interpretation, however, is directly at odds with sound economic analysis regarding the definition of the relevant markets. For instance, if we

[18] *See* United States Department of Justice and Federal Trade Commission, Horizontal Merger Guidelines, April 2, 1992.

[19] The only other plausible interpretation of the relevant markets being proffered by Verizon is that each of the services it seeks to have deregulated constitutes a separate relevant market. Under this interpretation, however, the Verizon analysis is also flawed because its empirical analysis fails to separately address the relevant competitive indicators for the services at issue. Thus, it is essentially impossible to determine from the empirical evidence presented by Verizon what the extent of competition is in each separate relevant market.

more narrowly consider the provision of local business exchange service sold within Massachusetts municipalities, the standard market definition exercise asks, "Could a hypothetical monopolist of local business exchange services in that municipality profitably raise prices by a small but significant and non-transitory amount?"[20] If the answer to that question is "yes," then Verizon's market definition -- "all rate regulated telecommunications services offered in Verizon's serving territory" -- and subsequent market competition analysis is flawed.[21]

In this regard, it is difficult to imagine that, in response to a price increase by a hypothetical monopolist for business local exchange service in a given central office in Massachusetts, customers would shift away from business local exchange services in sufficient numbers that such a price increase would be defeated.[22] Thus, a proper economic analysis of competition in Massachusetts must necessarily consist of a stand-alone analysis of the extent of competition in business local exchange services that are classified as non-competitive.[23] Verizon has not provided this analysis nor does the evidence it has submitted make it possible for anyone else to perform the necessary examination. Specifically, Verizon's evidence does not show the percent or amount of

[20] *See* United States Department of Justice and Federal Trade Commission, Horizontal Merger Guidelines, April 2, 1992.

[21] It should be noted that Verizon's Plan specifically includes the ability to increase prices in narrow, selected areas, while decreasing or maintaining prices in other areas. *See* D.T.E. 01-31, DTE-VZ 1-7.

[22] Since under Verizon's Plan, Verizon would not also have to increase the price of that service in more contested areas (*see* D.T.E. 01-31, DTE-VZ 1-7) there would be little protection for consumers in the central office at issue.

[23] Moreover, the market definition cannot be expanded by simple appeals to widespread collocation. For instance, collocated data local exchange carriers (DLECs) may not have the wherewithal to offer disciplinary voice services within the serving region of the central office in the event of a "small but significant and non-transitory" price increase to such consumers of voice services.

customers that migrated from Verizon nor the services Verizon provided to those customers prior to Verizon losing the customer to a CLEC.

- ?? Verizon's evidence does not show whether CLECs are serving customers with 50 lines or with 2 lines;
- ?? Verizon's evidence does not show whether collocation arrangements are being used for data or business exchange service;
- ?? Verizon's evidence does not show whether CLEC switches are being used to serve only large customers or also small customers; and
- ?? Verizon's evidence does not show the number of business customers being served through collocation arrangements.

I must emphasis that this error is not simply one of economic protocol but rather is likely to profoundly distort the economic analysis of competition. For instance, under the "kitchen sink" approach to market definition adopted by Verizon, a provider of private-line and dedicated Internet access services to businesses in, say, community X, is considered to have its competitive presence felt equally in the provision of one-line business local exchange services throughout the state. Verizon has not presented any evidence that this is correct and it is inconsistent with my review of the available information and data. Indeed, under the kitchen sink approach, Verizon is able to point to the presence of pay telephone providers,[24] wholesale providers,[25] and residential and Internet services to residential public housing[26] as indications of competition "in the Massachusetts telecommunications marketplace." The recitation of these anecdotal statistics concerning competition in services that are not part of the logical inquiry of

[24] *See* Testimony of Robert Mudge ("Testimony of Mudge"), Prepared on Behalf of Verizon New England Inc., d/b/a Verizon Massachusetts, Before the Massachusetts Department of Telecommunications and Energy, D.T.E. 01-31, April 12, 2001, at 7.

[25] *See id*., at 13, where he states "Verizon's competitors are providing wholesale offerings to other carriers."

[26] *See id*., at 13-14.

competition in the relevant market(s) (here, presumably, retail services other than residential) can profoundly distort the implications that are to be taken from a real empirical analysis of which competitors are actually in the market and what ability these competitors have to impose competitive pricing discipline absent the presence of regulation.

Similarly, misidentification of the relevant market opens the door for Verizon's analysis of entry and expansion conditions to mask significantly the difficulties associated with expansion in particular telecommunications services and geographic locations. Thus, Verizon compounds its market definition error by relying heavily on nationwide data or on aggregate, statewide data to support its competition claims. This is inconsistent with the correct market analysis, well accepted in the field of Economics, that begins with *narrow* market definitions and then expands outward as appropriately based on the empirical evidence. In sum, without a proper market definition, it becomes extraordinarily difficult to draw appropriate conclusions regarding the degree of market power held by Verizon.

Q. EVEN IF ONE WERE TO SET ASIDE THE ISSUE OF MARKET DEFINITION, IS THE INFORMATION PROVIDED BY VERIZON WITNESSES SUFFICIENT TO DEMONSTRATE EFFECTIVE COMPETITION IN LOCAL MASSACHUSETTS MARKETS?

A. No, it is not. Most of the information provided by Verizon witnesses simply indicates that progress is being made in affecting competition-enabling policies. Verizon does not, however, demonstrate that these policies have, as yet, resulted in effective competition. For example, Mr. Mudge notes in his testimony that, "As of January 2001, the 54 Resellers currently offering services in Massachusetts provided almost 237,000 business

lines and 32,000 residence lines," and Dr. Taylor observes, "…there were at least 184,844 residential lines being served by competitors in January 2000…"[27] What these witnesses fail to reveal, however, is that Verizon's market share – even in a broadly defined statewide market –remained at 81% for business customers and 94% for residential customers as of December 31, 2000.[28] Dr. Taylor indicates that the new entrant share in Massachusetts residential markets has grown at a rate of 52% over a six month period, but a rapid rate of growth in an exceedingly small market share still results in an exceedingly small market share when the final calculations are done.[29]

Additionally, while Dr. Taylor provides theoretical arguments regarding the way in which a perfectly functioning post-Act marketplace would (and in his interpretation of today's marketplace, does) constrain the market power of Verizon, a variety of marketplace realities, discussed by Mr. Anthony Fea and Ms. Deborah S. Waldbaum indicate that barriers to entry and expansion in Massachusetts are not, as Verizon claims, eliminated. For example, business customers will often have a sufficiently high volume of traffic to warrant non-switched access arrangements. It is my understanding, however, that availability of such access at UNE rates is in the vast majority of cases foreclosed to a CLEC.[30] In such instances, CLECs are driven to utilize special access services provided by Verizon. Unfortunately for the CLECs, however, special access services are

[27] *See* Testimony of Mudge, at 9 and Testimony of William E. Taylor ("Testimony of Taylor"), prepared on Behalf of Verizon New England Inc., d/b/a Verizon Massachusetts, Before the Massachusetts Department of Telecommunications and Energy, D.T.E. 01-31, April 12, 2001, at 7.

[28] *See* "Local Telephone Competition Status as of December 31, 2000", Industry Analysis Division, Common Carrier Bureau, Federal Communications Commission, May 2001.

[29] *See* Testimony of Taylor, at 8.

[30] See the accompanying testimony of Ms. Deborah S. Waldbaum.

provided at rates that exceed their associated underlying economic costs. The result is that CLECs that seek to provide local exchange service to such customers are made to pay a price (*i.e.*, incur a cost) that exceeds the incumbent's costs. Such asymmetries in the costs between new entrants and incumbents constitute a classic barrier to entry and, *ceteris paribus*, confer higher market power on the incumbent.[31]

Q. DO THE DATA SUGGEST THAT MASSACHUSETTS MARKETS FOR BUSINESS CUSTOMERS ARE COMPETITIVE?

A. No. Even at the inappropriately high level of aggregation applied by Verizon, competitive entrants have only captured 19% of the business customer market.[32] Moreover, the evidence suggests that most of this competition is focussed in a few densely populated, but geographically small areas. Without doing the appropriate analysis, any definitive conclusion is impossible. However, even a cursory glance suggests that Verizon continues to dominate local telecommunication markets in most Massachusetts communities regardless of whether the focus is on residential or business customers.

Q. YOU HAVE SUGGESTED THAT SOME OF THE NUMERICAL DATA PRESENTED BY VERIZON WITNESSES MAY CONTAIN INACCURACIES. CAN YOU POINT TO A SPECIFIC EXAMPLE?

A. Yes, Verizon witnesses Mudge and Taylor suggest that as of January 2001, CLECs provided a total of 851,000 customer lines and that 470,000 of these lines were provided

[31] Nobel Laureate George J. Stigler defines barriers to entry as "a cost of producing (at some or every rate of output) which must be borne by firms which seek to enter an industry but is not borne by firms already in the industry." *See* George J. Stigler, *The Organization of Industry* (Homewood, Illinois, Richard Irwin, 1968), p. 67

[32] *See* "Local Telephone Competition Status as of December 31, 2000, Industry Analysis Division, Common Carrier Bureau, Federal Communications Commission, May 2001.

through the exclusive use of CLEC facilities.[33] The total number of CLEC lines is inconsistent with data reported by the FCC for the same period. Moreover, the method through which the number of facilities-based CLEC lines was calculated is questionable. In fact, irregularities within this facilities-based calculation may explain the discrepancy between the FCC CLEC line total and the value used by Verizon witnesses.

In a report on local competition, the FCC concludes that there were 509,731 end-user lines served by reporting CLECs in Massachusetts as of December 31, 2000.[34] Thus, the Verizon estimate of CLEC penetration is nearly 67% greater than the FCC's estimate. The same report also suggests that Verizon supplied 4,252,502 lines, representing an overall market share of more than 89%. Verizon, however, claims its total Massachusetts share (for roughly the same time period) was less than 84% of all lines. Certainly, the fact that the very smallest CLECs were not required to report their lines to the FCC may explain some of the large difference between the FCC's estimate of CLEC activity and that of Verizon. Even so, it seems doubtful that accounting for small CLEC activity could fully reconcile the difference.

An alternative explanation for the difference between Verizon's CLEC line count and that of the FCC lies in the ILEC's treatment of facilities-based CLEC lines. Competitive entry takes four basic forms – resale, UNE-P, other UNE-based entry, and full facilities-based entry. Given that Verizon must actively interact with CLECs in all

[33] In the case of Verizon witness Mudge, the 851,000 value for total CLEC lines is obtained from summing the witness' estimate of resale, UNE-P, UNE-L, and CLEC facilities based customers. Testimony of Mudge at 9-12. The 851,000 value appears explicitly in Dr. Taylor's testimony. Testimony of Taylor at 8.

[34] *See* "Local Telephone Competition: Status as of December 31, 2000", Industry Analysis Division, Common Carrier Bureau, Federal Communication Commission, May 2001, Table 6. Carriers with 10,000 or more lines were required to report their activities to the FCC.

but the fourth form of entry, it would seem that mis-estimation would be most likely in the area of facilities-based entry. Moreover, there is, at least, some empirical evidence that renders Verizon's conclusion suspect. Verizon witness Mudge begins with the total number of E-911 listings for "CLEC customers" (approximately 555,000). He then subtracts out the 85,000 UNE-Loop customers Verizon claims to have been serving at the time (85,000) and concludes that the balance of lines (470,000) represent facilities-based customers in Massachusetts.[35] Mr. Mudge suggests that Verizon's name appears in the Company ID field of the E-911 database when CLEC entry is through resale or the use of UNE-P and that such records are excluded from the 555,000 CLEC total.[36] Again, the process yields an estimate of 470,000 facilities-based CLEC customers at the time of the inquiry.[37]

The methodology employed by Mr. Mudge leaves open an important question. How are CLEC services provided through the lease of non-switched special access lines accounted for? CLECs provide thousands of lines through the use of Verizon-owned special access facilities. While the Verizon witness carefully accounts for the treatment of resale and UNE-P, there is no mention of how special access lines are treated within the E-911 database. If special access is treated as resale, then the lines provisioned in this fashion are being double counted – once as resale and once as facilities based lines. Even if special access lines are not being double counted, there is no possible way to contend that services provided over these lines constitute facilities-based CLEC services.

[35] *See* Testimony of Mudge, at 12.

[36] *See* D.T.E. 01-31, AG-VZ 2-5, g.

[37] Interestingly, Dr. Taylor (p. 8) suggests the number of facilities-based CLEC customers in Massachusetts during the same time period (January 2001) was 554,000 rather than 470,000 as Mr. Mudge claims, even though both witnesses testify to the same total (851,000).

Q. WHAT CAN YOU CONCLUDE FROM THE PRESENTATION OF VERIZON'S CLAIMS THAT COMPETITION IN MASSACHUSETTS IS WIDESPREAD AND VIBRANT. [Mudge, p. 7]?

A. For several reasons, I am unpersuaded with the proposition that all of its retail business services sold in Massachusetts are sold in effective competitive markets. Verizon's presentation is improperly framed, contains anecdotal data that are essentially impossible to interpret and seeks to substitute the establishment of competition-enabling policies for the presence of effective competition. While a proper analysis may demonstrate the presence of effective competition in the relevant markets of at least some of Verizon's business service offerings, it is not possible to draw that conclusion based on the analysis of Dr. Taylor and Mr. Mudge.

Q. TURNING TO THE THIRD KEY FEATURE OF THE VERIZON PLAN, HAVE YOU CONSIDERED THE MERITS OF ITS PROPOSAL TO LINK ACCESS CHARGE REDUCTIONS TO LOCAL RESIDENTIAL RATE INCREASES?

A. Yes. While the other two dimensions of the Verizon plan are subtlety flawed, the proposal to link access charge reductions to increases in local residential rates is blatantly incongruous with the pro-competitive goals of the Telecommunications Act and my understanding of the pro-competitive direction that the Department seeks to see the telecommunications markets in Massachusetts head.

Q. CAN YOU PLEASE EXPLAIN WHY A REVENUE-NEUTRAL INCREASE IN LOCAL RESIDENTIAL RATES COUPLED WITH ACCESS CHARGE REDUCTIONS IS INCONSISTENT WITH A SOUND FORWARD-GOING REGULATORY REGIME IN MASSACHUSETTS?

A. Yes. Either local rate increases are a good idea or they are not. Either access charge reductions are a good idea or they are not. As I noted earlier in my testimony, the factual information necessary to answer the former question is lacking, while the case for reductions in access charges is clear and convincing. Regardless of the merits of these two issues, however, the fact is that they are -- or ought to be -- separable in any forward-going regulatory regime. Indeed, it is only by a perpetuation of the "residual pricing" methodology to rate setting that the linkage proposed by Verizon makes logical (though not good economic) sense. But as I have described, retention of a residual pricing approach to setting rates in Massachusetts is anathema to the emergence of competition in retail local exchange markets. Thus, the Department should reject Verizon's proposal to link access charge reductions with local exchange rate increases.

Q. WHEN YOU SAY THAT CURRENT ACCESS CHARGE RATES ARE AT ECONOMICALLY INEFFICIENT LEVELS, TO WHAT SPECIFICALLY DO YOU REFER?

A. Ms. Brown has testified that the overall switched access rate in Massachusetts is currently $.039 cents per minute of use.[38] At the same time, Verizon's long-run incremental cost of providing the access service is approximately $.007 cents per minute.[39] I am aware of no credible economic theory or empirical evidence that could possibly justify a mark-up

[38] Testimony of Paula L. Brown, D.T.E. 01-31, April 12, 2001, at 16.

[39] This figure represents an average of the calculation based on Verizon's proposed UNE rates in D.T.E. 01-20 and the calculation based on AT&T's proposed UNE rates in D.T.E. 01-20. (The calculation based on Verizon's proposed UNE rates is $.008616 cents per minute and the calculation based on AT&T's proposed UNE rates is $.005666 cents per minute.)

of this magnitude, particularly on an important input that new entrants must purchase in order to compete with Verizon for intraLATA and interLATA intrastate toll calling.

Q. COULD YOU BRIEFLY DESCRIBE THE DISTORTIONS CREATED BY EXCESSIVE ACCESS CHARGES?

A. Yes. I understand that procedurally the Department will be deciding the access issue at a later date. However, analytically, and from an economic policy-making standpoint, competition cannot be assessed in isolation from the impact of access rates on the structure and operation of the marketplace. Because access is an input employed by long-distance carriers to provide interexchange services, inefficient pricing of the access service causes distortions to arise in both the access market itself and in the long-distance market. This fundamental point has been made so many times in so many forums that it hardly seems to warrant repeating.[40] Nonetheless, repetition has not diminished either the validity or importance of this basic result.

Specifically, in the access market, excessive access charges encourage a socially suboptimal usage of ILECs' access services. The most obvious manifestation of this distortion, of course, has been the artificial incentive that has been created for long-distance companies and large business customers to bypass local exchange companies' switched access services by any of several means, including the purchase of either special access or competitive access providers' services, or the construction of private access

[40] This point has been made numerous times in the published literature in this area. *See*, for example, Alfred E. Kahn, "The Road to More Intelligent Telephone Pricing," *Yale Journal on Regulation*, Vol. 1 (1984), pp 139-157; Alfred E. Kahn and William B. Shew, "Current Issues in Telecommunications Regulation: Pricing," *Yale Journal on Regulation*, Vol. 4 (1987), pp 191-256; John T. Wenders, *The Economics of Telecommunications: Theory and Policy*, Ballinger Publishing Company, Cambridge, MA, 1987; David L. Kaserman and John W. Mayo, "Roadblocks on the Road to More Intelligent Telephone Pricing," *Yale Journal on Regulation*, Vol. 11 (Winter,

facilities.[41] Clearly, bypass opportunities can increase rapidly as technological advances (*e.g.*, the internet) open new avenues for circumventing Verizon's access facilities.[42]

Turning to the long-distance market, above-cost access charges push long-distance prices above the true social costs of providing these services. Here, the effect is to discourage long-distance customers from placing calls that have social values that are greater than their associated costs. That is, suboptimal usage of the long-distance network is fostered by artificially high long-distance prices. Various authors using a variety of assumptions and modeling approaches over a number of years have estimated the social welfare losses associated with this regulatory-induced pricing distortion. The resulting estimates have ranged from $1.1 billion to over $10 billion annually for the U.S.[43]

While more access charge reductions have reduced this distortion over time on a per-minute basis, the overall volume of access minutes has grown substantially over time. As a result, it is unclear whether the total social welfare loss associated with excessive access charges has fallen with these lower rates. In addition, technological advances, such as voice-over-the-net, are providing bypass alternatives in this market as well.

1994), pp 120-147; and Steve G. Parsons, "Seven Years After Kahn and Shew: Lingering Myths on Costs and Pricing Telephone Service," *Yale Journal on Regulation*, Vol. 11 (Winter 1994), pp. 149-170.

[41] This artificial incentive to bypass the public switched network is often referred to as "uneconomic bypass" to distinguish it from "economic bypass" that occurs as a consequence of consumers who face economically efficient prices making the choice to use alternative, more efficient means to provide the necessary access service.

[42] Some policy makers have advocated resolution of the bypass problem by taxing bypass service providers and/or facilities. Such a patchwork approach is decidedly ill-advised. It attempts to "correct" one regulatory-induced distortion with another. Setting access charges above incremental cost is a bad public policy and taxing bypass activities will not turn it into a good policy. The solution to bypass is to correct the underlying cause of the problem – excessive access charges – not to attack the symptoms (uneconomic bypass) with additional regulations.

[43] *See* Parsons, op. cit., pp. 237-238, and the sources cited therein.

Technology also responds to price signals; and where those signals are distorted, the resulting advances will be distorted as well.

Q. CAN YOU BE MORE SPECIFIC REGARDING THE LEVEL TO WHICH THESE CHARGES SHOULD BE REDUCED?

A. Yes. The price of access, like the prices of all services provided by an incumbent regulated monopolist that remain subject to supply under conditions of substantial monopoly power should ideally be set equal to the long-run marginal (or incremental) cost of providing that service.[44] Marginal costs provide the unequivocal economic benchmark for efficient pricing in virtually all market settings.[45]

In the telecommunications industry since passage of the Telecommunications Act of 1996, marginal costs have generally been approximated empirically by the concept of total element long-run incremental cost, or TELRIC. Therefore, in order to minimize the economic distortions created by inefficient prices, the Department should set access charges as close as possible to the TELRIC of the elements used to provide access. Any departure from this benchmark necessarily creates inefficiencies which distort market outcomes and impose unnecessary costs on Massachusetts consumers.

[44] The proposition that economic efficiency is generally achieved by marginal cost pricing is widely accepted in the economics profession and is supported by a large body of literature on this topic. Moreover, the Department too has noted the appropriateness of the marginal cost benchmark. *See New England Telephone*, D.P.U. 1731, at 38 (October 18, 1985); *New England Telephone*, D.P.U. 86-33-G, at 384 (March 21, 1989).

[45] While there are some theoretical exceptions to this statement, they are not, in my opinion, relevant here.

Q. ARE THERE OTHER REASONS FOR THE DEPARTMENT TO SET ACCESS RATES AT THEIR UNDERLYING ECONOMIC COSTS?

A. Yes. Not only are the present levels of carrier access charges economically inefficient and unproductive in a static sense, but they also tend to distort the dynamic efficiency. That is, while technological change has been a steady stimulant to the telecommunications industry through the years, the recent explosion of such change has markedly altered the dynamics of the telecommunications industry and placed the industry at the very foundation of the construction and growth of the so-called "New Economy." Specifically, the acceleration and direction of technological change, which fundamentally relies upon long distance telecommunications networks, has opened the door to tremendous economic growth. This same technological change has markedly increased the dynamic cost of failing to adopt efficient carrier access prices. Thus, the dynamic distortions likely to attend a forward-going policy of retaining carrier access charges above their economic costs is probably more important than the static welfare losses that have heretofore been identified. Specifically, as a consequence of excessive pricing of carrier access, goods, services and technologies that are, in an economic sense, complements to long distance telephony are either not brought to market or are under-deployed.[46] Specifically, technologies that rely upon use of long-distance networks are discouraged by the maintenance of excessive access charges. As a result, new services and innovations that otherwise might have appeared fail to materialize, and the social benefits associated with those unborn innovations are never realized.

[46] Economic complements are goods, services, or technologies whose use or development is enhanced by reduced prices of the complementary good, service or technology. For example, because the demand for car stereos is negatively related to the price of automobiles, the two goods are economic complements.

The social welfare consequences of this stifling effect of excessive access charges, of course, cannot be estimated empirically. They are, nonetheless, very real and are likely to be quite substantial. Moreover, these losses are tangible. They represent actual consumer benefits foregone that are obtainable directly by setting access charge rates equal to the underlying economic costs of providing access services. In this regard, I must emphasize that establishing access charges at the economic cost of providing access is not a policy action designed to placate some esoteric preference of economists for marginal cost pricing. It is, instead, an action that will provide real benefits to consumers of telecommunications services.

Q. WHAT IS THE SIGNIFICANCE OF ABOVE COST ACCESS CHARGES FOR THE DEPARTMENT'S EVALUATION OF WHETHER COMPETITION IS SUFFICIENT TO JUSTIFY THE PRICING FLEXIBILITY THAT VERIZON SEEKS?

A. Excessive access charges tend to hamper the growth of competition in all of Verizon's principal telecommunications markets. Specifically, the intensity of competition and its ability to ensure economically efficient prices are likely to be reduced in the markets for both toll and local exchange services.

Q. TURNING TO THE FIRST MARKET YOU MENTIONED, HOW DO EXCESSIVE ACCESS CHARGES HARM COMPETITION IN THE TOLL MARKET?

A. Where firms attempting to enter a market are forced to compete with a vertically integrated incumbent supplier that holds monopoly power over a necessary input that is priced substantially above cost, a variety of opportunities for anticompetitive exclusionary behavior on the part of the incumbent are presented. For example, a simple

price-cost squeeze may be implemented where the incumbent charges a mark-up of output price over the input price that renders entry by non-integrated suppliers unprofitable. In the case at hand, Verizon can hold the margin between toll rates and access charges sufficiently low that interexchange carriers find competing in the toll market becomes unremunerative.[47]

In addition, the monopoly profits collected by the incumbent supplier can be used as a "war chest" to protect its market position against the threat of entry. For example, war chest funds can be used to support other, more highly targeted responses to entry threats through individual contracts negotiated with high-volume (and, therefore, relatively price-sensitive) customers.[48] Due to the excess profits received from the sale of access services to its competitors, the ILEC can afford to undercut its rivals in these negotiations. Again, regulators may attempt to prevent the ILEC from putting these funds to such uses through application of imputation-like controls; but, again, such attempts are unlikely to be fully successful.[49]

The simple point is that, where the incumbent enjoys a stream of excess profits from the sale of a monopolized input, it has opportunities to employ those profits in anticompetitive ways against its rivals who suffer artificially inflated costs. While regulators may attempt to prevent the firm from using these funds in this way, such attempts are not likely to be completely successful. The ingenuity of the regulated firm

[47] This problem, which is created by above-cost access charges, may potentially be resolved by an appropriately designed imputation standard. Such a regulatory fix, however, presents its own problems.

[48] These contracts may represent a form of targeted price discrimination, which has been recognized as a strategy that may be used to retard entry.

[49] Imputation-type controls obviously can err on either side, and overly-stringent imputation rules can have adverse consequences for the competitive process as well. I will return to this point below.

along with the myriad exclusionary strategies that potentially may be implemented make the chances that regulatory “fixes” will succeed extremely remote.

Q. YOU INDICATED EARLIER THAT EXCESSIVE ACCESS CHARGES TEND TO HAMPER THE GROWTH OF COMPETITION IN LOCAL EXCHANGE MARKETS AS WELL. PLEASE EXPLAIN HOW THAT EFFECT OCCURS.

A. There are at least two avenues through which excessive access charges can dampen the emergence of competition in local exchange markets. First and most obvious, if access profits are used to hold local rates below costs, entry into the local exchange market is effectively suppressed. Unregulated firms will only enter markets where they can expect to earn at least a normal profit. Where the ILEC’s services are subsidized and the subsidy is not transferable to new entrants, entry is effectively preempted. By eliminating the source of such subsidies, access charges set equal to the TELRIC of the elements of access would enable the Telecommunications Act’s entry-facilitating policies to operate as intended, because they dry up the source of the entry-retarding subsidies.

Second, any elevation of access charges above the economic cost of providing such services creates the prospect that the ILECs will seek to force new carriers to utilize the supra-cost access rather than UNEs that are sold "based on costs." To the extent that such strategies are successful, the result is that new entrants are made to pay not only for the costs that their utilization of the ILEC's facilities imposes on the ILEC but also an additional "tribute" to the incumbent firm. This creates a wedge between the costs incurred by the incumbent and the cost imposed on new entrants. As I noted earlier in my testimony, this cost asymmetry creates a barrier to entry. An example of the impediments to effective competition in local markets that such supra-cost access pricing

can cause is provided by the present inability of new entrants serving non-switched access customers to avail themselves of such access at UNE rates. Specifically, as long as the availability of UNE rates is foreclosed, new entrants and prospective new entrants face the prospect of paying Verizon for special access, which I understand is priced at levels well in excess of its incremental cost.

Thus, not only have above-cost access charges caused gross inefficiencies in both the access and long distance markets, they have also interfered with the growth of competition in local exchange markets. Moreover, as long as new entrants must pay Verizon supra-competitive prices in order to compete, the competition that does exist will not ensure economically efficient prices for consumers. As long as access charges remain above their economic costs, none of the Act's objectives are likely to be realized in a timely manner. As noted by the FCC, the so-called "policy trilogy" of local competition, access charges, and universal service are closely intertwined.[50]

Q. HAS THE EVOLVING INDUSTRY STRUCTURE ALTERED THE MERITS OF CARRIER ACCESS REDUCTIONS TO THEIR ECONOMIC COSTS?

A. Yes. Given the recent decision to allow Verizon Massachusetts to enter the interLATA market under the provisions of Section 271 of the Telecommunications Act, the prospects for anticompetitive effects from excessive access charges will only heighten. Specifically, reintegration into the interexchange market fundamentally alters the incentives to cooperate with interexchange carriers in two ways. First, prior to its reintegration, the Verizon had only limited incentives to engage in discriminatory tactics

[50] *See First Report and Order*, CC Docket 96-98, Federal Communications Commission, Adopted August 1, 1996, at 6-10.

that might favor one long-distance provider over another. Upon reintegration, however, Verizon has a very clear incentive to engage in discriminatory tactics that are designed to advantage its own downstream affiliate and to disadvantage its downstream (long-distance) rivals.[51] Second, upon reintegration into the interexchange market, there is no longer the "carrot" of Section 271 reintegration to entice the sort of behavior needed to facilitate entry into local exchange markets. Thus, regulatory policies that were adequate prior to reintegration into the interLATA market are likely to become inadequate to ensure competitive performance by the RBOC. While it is possible to hope that the regulatory sanctions are adequate to ensure non-discriminatory behavior, a direct means of reducing opportunities for discriminatory conduct is to lower access charges.

Specifically, by setting the price of carrier access to reflect economic cost, the real price faced by Verizon and its downstream rivals will, in fact, be the same. Professor Marius Schwartz (who filed affidavits on behalf of the Department of Justice regarding the reintegration of Bell operating companies into the interLATA market) concludes that while the threat of price and non-price discriminatory tactics by an RBOC should not in itself prohibit reintegration,

> "[T]he best course of action is to reduce access charges closer to cost, as has been occurring. Assuming that (non-price) access impairment could be prevented, reducing access prices would expand total output and prevent distortions of competition in the long distance market."[52]

[51] Industrial organization economists have validated the concerns that a vertically integrated firm with either a monopoly or dominant firm position in the upstream market can have strong incentives to engage in price and/or non-price discrimination against downstream rivals. *See, e.g.*, Marius Schwartz, "The Economic Logic for Conditioning Bell Entry into Long Distance on Prior Opening of Local Markets," *Journal of Regulatory Economics*, Volume 18, November 2000, pp. 247-286; and T. Randolph Beard, David L. Kaserman, and John W. Mayo, "Regulation, Vertical Integration, and Sabotage," *Journal of Industrial Economics*, forthcoming.

[52] Marius Schwartz, "The Economic Logic for Conditioning Bell Entry into Long Distance on Prior Opening of Local Markets," *Journal of Regulatory Economics*, Volume 18, November 2000, pp. 247-286.

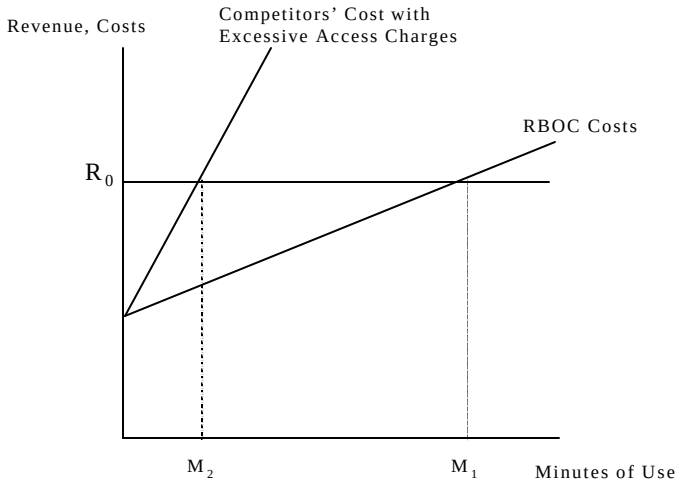
Q. ARE THERE ADDITIONAL CHARACTERISTICS OF THE NEW RE-INTEGRATED TELECOMMUNICATIONS MARKET IN MASSACHUSETTS THAT INDICATE THAT EXCESSIVE ACCESS CHARGES ARE COMPETITIVELY UNDESIRABLE?

A. Yes. Another characteristic of the reintegrated market that is likely to emerge is the presence of bundled telecommunications services. Specifically, local and long distance services may be sold under a plan that bundles these together in a single offering at a flat fee that is time and distance insensitive. While bundled offerings hold the promise of providing consumer benefits if provided under competitive conditions, the presence of excessive access charges likely undermines these benefits in two ways. First, competitors that face the bundled offering cannot drive the flat prices down to squeeze out excess profits that may be earned by Verizon because these competitors face asymmetrically higher costs as a consequence of excessive carrier access charges that are assessed on a per minute basis. Thus, a fundamental salutary effect of competitive markets is undermined by the perpetuation of uneconomic carrier access charges.

Second, if excessive access charges are continued and widespread bundling of telecommunications services arises, it is likely that competitors may not even be able to make a competitive offering, thereby ensuring monopoly control over some customers. For example, with the elimination of the interLATA distinction, it is possible that statewide "flat" pricing schemes will arise. Specifically, as seen in Figure 1, a flat fee of R_0 for a bundled local and long distance offering is fully compensatory for Verizon for all consumers with less than M_1 of usage, while competitors who are charged carrier access charges on a per minute of use basis that are several times higher than the relevant economic cost of providing access service only find such flat-fee bundled offerings profitable for consumers with usage levels less than M_2. Thus, the presence of excessive

access charges will act to limit the ability of Verizons' competitors to make innovative competitive offerings.

FIGURE 1
Carrier Access Charges in a Flat-Fee, Bundled Services Market



Q. BUT DOESN'T MS. BROWN ARGUE THAT THERE IS NO NEED TO REDUCE CARRIER ACCESS CHARGES AT THIS TIME?

A. Yes. Ms. Brown suggests that there is no need to reduce access charges because "the goal of achieving economically efficient prices must be balanced with other policy objectives. Currently, both switched access rates and toll rates contain levels of contribution that ensure lower residence exchange rates."[53]

Q. DO YOU AGREE WITH MS. BROWN?

A. No. Taken as a whole, Ms. Brown's statement on this is a naked defense of the retention of the residual pricing methodology that I have argued is inconsistent with the pro-

[53] Testimony of Brown, at 10.

competitive goals of the Telecommunications Act. Moreover, in light of the overwhelming case for access charge reductions, it is simply inadequate to argue that such inefficient rates must be preserved to support other – unnamed --"policy objectives." If, as I might imagine, the unnamed policy objective is "universal service" then she should say so. Unfortunately, pricing access services above their economic costs in order to reduce local exchange rates is a particularly poor and arguably counterproductive way of achieving the goal of universal service.[54]

Q. DOES DR. TAYLOR AGREE WITH MS. BROWN REGARDING THE LACK OF MERITS OF ACCESS CHARGE REDUCTIONS?

A. No. Indeed, Dr. Taylor acknowledges that "since intrastate switched access prices exceed the economic cost of the service, it is likely that economic efficiency would be enhanced by the proposed rate reductions."[55]

Q. BUT IF DR. TAYLOR AGREES THAT ACCESS CHARGE REDUCTIONS ARE LIKELY TO IMPROVE ECONOMIC EFFICIENCY, WHAT POSSIBLE RATIONALE IS OFFERED TO MAINTAIN ACCESS CHARGES AT THEIR CURRENT LEVELS?

A. While acknowledging that access charge reductions would be likely to increase economic efficiency, Dr. Taylor argues that for multiproduct firms it is necessary that the price of some of its services must be in excess of forward-looking economic cost in order for the firm to recover the total cost of the firm. He concludes based on this that reductions in switched access prices would not necessarily increase economic efficiency.

[54] *See, e.g.*, David L. Kaserman, John W. Mayo and Joseph E. Flynn, "Cross-Subsidization in Telecommunications: Beyond the Universal Service Fairy Tale," Journal of regulatory Economics, Volume 2, September 1990, pp. 231-250; and Ross Eriksson, David L. Kaserman and John W. Mayo, "Targeted and Untargeted Subsidy Schemes: Evidence from Postdivestiture Efforts to Promote Universal telephone Service," *Journal of Law and Economics*, Volume 41, October 1998, pp. 477-502.

[55] Testimony of Taylor, at 14.

Q. DO YOU AGREE WITH THIS RATIONALE?

A. No. It suffers from at least three problems. First, simply as a matter of economic theory, the argument confuses economically efficient pricing with the issue of cost recovery by the firm. That is, it is well known as a matter of economic theory that prices that reflect their marginal (or as proxied in the telecommunications industry, incremental) costs provide the economically efficient guidepost for pricing.[56] This is true whether or not prices that reflect incremental cost provide for a desired level of cost recovery. Thus, even if incremental cost pricing were not to provide for total firm cost recovery, such prices remain the efficient (and therefore desirable) target. Second, while Dr. Taylor is correct that pricing *all* of a multiproduct firms services at their underlying marginal cost may not yield adequate revenues for the firm to recover its total costs, it is also the case that they might. Indeed, whether such prices are fully compensatory will depend on a variety of complicated relationships such as the degree of economies or diseconomies of scope among it service offerings as well as the relationship of incremental to average costs for its various services. Moreover, a proposal to move Verizon's switched access prices to its underlying incremental cost is not the same as pricing *all* of its services at such levels. Thus, concerns over the adequacy of the revenue stream to Verizon as a consequence of pricing access at its economically efficient levels would seem to be overblown. Indeed, to the extent that common cost recovery is an issue for Verizon in a forward-going regulatory regime that prices inputs at their economically efficient levels, it would seem that Verizon could move to collect revenues to cover such costs the same

[56] There are certain theoretical exceptions to this statement, none of which in my opinion are relevant to the pricing of carrier access.

way other firms do -- through the pricing of its retail toll services. Third, to the extent that price increases above economic cost are necessary, fundamental economic principles require that retail, not wholesale (or input) rates be raised. Increasing intermediate product prices above efficient levels creates distortions in downstream production processes that ultimately must be borne by consumers, no matter which carrier they choose for their retail service.[57] As a result, it is more efficient to recover any revenue shortfall from final customers directly in the prices they pay for the firm's retail services. Moreover, this general policy prescription holds *a fortiori* in local exchange markets today, where public policy is attempting to facilitate the transition from monopoly to competitive supply. Therefore, there is simply no economic basis for raising access prices above their respective economic costs.

IV. POLICY RECOMMENDATIONS

Q. DESPITE THE FACT THAT VERIZON'S TESTIMONY IS INSUFFICIENT TO DETERMINE WHETHER EFFECTIVE COMPETITION EXISTS, ARE THERE TANGIBLE AND SOUND STEPS THAT THE DEPARTMENT SHOULD IMPLEMENT AS PART OF ITS REGULATION OF VERIZON ON A FORWARD GOING BASIS?

A. The Act creates both possibilities and responsibilities for the Department on a forward going basis. At a general, but important, level it is critical that the Department diligently establish and maintain a set of competition-enabling policies that include, first, eliminating all regulatory barriers to entry and removing insofar as possible all economic

[57] Indeed, price mark-ups on access have precisely the same economic consequence as the imposition of taxes on intermediate inputs. But the distortionary effects associated with taxation of inputs are well known. *See, e.g.*, Peter Diamond and James A. Mirrlees "Optimal Taxation and Public Production I: Production Efficiency," *American Economic Review*, Vol. 61, March 1971, pp. 8-27. These authors explain (on page 24) that:

> Therefore the optimal tax structure includes no intermediate goods taxes, since these would prevent efficiency In the absence of profits, taxation of intermediate goods must be reflected in changes in final

barriers to entry. This necessitates that the Department ensure that all paths to entry, including UNE, UNE-P and resale entry be protected. Second, the Department must establish efficient, economic cost-based rates for network elements and other inputs such as access charges. By doing so, the Department will enable firms to compete toe-to-toe in retail markets. Third, the Department must maintain access for new entrants to unbundled elements. Fourth, the Department must continue to permit new entrants to resell the services of Verizon free from any restrictions in the way in which the new entrants utilize these resold services. Fifth, and particularly important, the Department must establish policies that are as rigorous as possible to attempt to ensure that the quality of inputs sold by Verizon to it downstream competitors are non-discriminatory.

At a more specific level, I commend the Department for its pursuit of a new regulatory regime that pursues the goals of economic efficiency, universal service and, of course, increased competition in Massachusetts telecommunications markets. At the same time, however, while I readily endorse the removal of regulation in the presence of effective competition, I am not persuaded by Verizon's testimony that the deregulation it seeks is warranted at the present time. Verizon has simply not provided the sort of analysis used by economists to satisfactorily demonstrate the presence of effective competition in the relevant markets in which it seeks deregulation. Until such a full, sound and comprehensive analysis is performed – especially in light of Verizon's continued dominance in the provision of network elements that competitors rely upon to compete – the Department should not proceed with a declaration of "effective competition" and the corresponding shift to deregulation.

goods prices. Therefore, the revenues could have been collected by final good taxation, causing no greater change in final goods prices and avoiding production inefficiency.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.