Testimony of William E. Taylor

Prepared on Behalf of Verizon New England Inc.

d/b/a

Verizon Massachusetts

Before the Massachusetts

Department of Telecommunications and Energy

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I. Qualifications

Q. Please state your name, occupation and business address.

A. My name is William E. Taylor. I am Senior Vice President of National Economic Research Associates, Inc. ("NERA"), head of its telecommunications economics practice, and head of its Cambridge office. My business address is One Main Street, Cambridge, Massachusetts 02142.

Q. Please summarize your qualifications.

A. I have been an economist for over twenty-five years. I received a B.A. degree in economics (Magna Cum Laude) from Harvard College in 1968, a master's degree in statistics from the University of California at Berkeley in 1970, and a Ph.D. in Economics from Berkeley in 1974, specializing in industrial organization and econometrics. I have taught and published research in the areas of microeconomics, theoretical and applied econometrics, and telecommunications policy at academic institutions (including the economics departments of Cornell

University, the Catholic University of Louvain in Belgium, and the Massachusetts Institute of Technology) and at research organizations in the telecommunications industry (including Bell Laboratories and Bell Communications Research, Inc.). I have participated in telecommunications regulatory proceedings before state public service commissions the Federal Communications Commission ("FCC") and the Canadian Radio-television and Telecommunications Commission concerning incentive regulation, productivity, access charges, and pricing for economic efficiency. Since 1988, I have testified in incentive regulation implementation and review proceedings in more than a dozen states, filed numerous studies in the Federal Communications Commission's initial and review price regulation dockets for interstate telephone services, consulted on incentive regulation issues in other US jurisdictions, the UK, New Zealand, Canada, and Australia, and published my work in professional journals and books. Recently, I was chosen by the Mexican Federal Telecommunications Commission and Telmex to arbitrate the renewal of the Telmex price cap plan in Mexico.

In Massachusetts, I have testified before the Department of Telecommunications and Energy (and its predecessor, the Department of Public Utilities or "DPU") on numerous occasions. I appeared as an expert witness for NYNEX in D.P.U. 94-50, the proceeding in which the Department established an alternative form of regulation for NYNEX. I also appeared before the Department in D.P.U. 94-185, providing an economic analysis of the terms and conditions for efficient local exchange competition. I have testified before the Department on issues such as price floors, exogenous adjustments in price cap plans, avoided costs from resale of services, efficiency changes resulting from intraLATA presubscription, and reciprocal compensation payments for ISP-bound traffic.

A copy of my vita listing publications and testimonies is shown as WET-Exhibit 1.

II. Introduction and Conclusions

Q. What is the purpose of your testimony?

A. I have been asked by Verizon Massachusetts ("Verizon" or the "Company") to review the Massachusetts Alternative Regulation Plan (the "Plan") and comment as an economist on: (i) events that have altered the competitive nature of telecommunications markets since the current price cap regime was established; (ii) the benefits from adopting flexible regulation in markets opened to competition; and, (iii) the likely decrease in economic efficiency that would result from an indexed price cap plan like the one that has been in place.

Q. Please summarize your testimony.

A. The Company's proposed Plan is much more in keeping with the recent changes in state and federal regulation, legislation and technology than is the

price cap plan adopted by the Department in D.P.U. 94-50 in Massachusetts. In addition, the Plan continues to protect customers in markets where Verizon arguably retains some control over prices but is structured to permit Verizon to compete vigorously in markets where it faces competition.

Implementation of the Telecommunications Act of 1996, along with changes in regulation and technology have changed the structure of telecommunications markets in Massachusetts, opening markets to competition from a variety of different providers using a variety of different entry strategies. Expansion into adjacent markets has enabled entrants to offer attractive packages of services (local, long distance and vertical services; Internet access; wireless service; and cable) to both business and residential customers who prefer to purchase an integrated bundle of services from a single provider. If the dynamic benefits of these competitive initiatives are to be realized by consumers, there must be an associated change in regulation.

Once a market has been opened to competition, regulatory constraints on all competitors must be made competitively neutral so that all market participants—including incumbents—make decisions regarding investment and service introduction, marketing and pricing based on competitive rather than regulatory factors. From an economic standpoint, the pricing flexibility embodied in the Company's proposed Plan generally meets these requirements. Following a revenue neutral rate change to eliminate Touch Tone and increase dial-tone charges, the Company proposes to cap basic residential dial-tone and local usage rates for at least three years. In addition, all other residential service rates would be subject to an aggregate rate cap. For business retail services not covered by the cap, prices would increase or decrease in response to the market on a 30-day notice, at the Company's discretion, subject to the appropriate price floor rules. Verizon faces substantial actual competition in its business service retail markets, and its ability to increase retail prices in those markets is effectively constrained. Verizon does not have the ability to exercise market power for services in the business retail market.

The proposed Plan relies primarily on market forces to act as the price control mechanism in markets where this is appropriate; generally provides marketing flexibility essential for Verizon Massachusetts; and, at the same time, protects residential customers that purchase basic exchange and other residential services from Verizon. Customers of other retail services are also protected from exploitation of market power by both actual and potential competition in those service markets, and by the mandatory supply of unbundled network elements ("UNEs") and resold retail services by Verizon at Department-regulated rates. In those markets where Verizon would have marketing flexibility, an attempt to increase retail prices would result in an increased competitive pressure from two sources: (i) the increased margin between the market retail price and Verizon's UNE prices which competitors pay and (ii) the increased absolute margin between

Verizon's retail prices and the prices it charges competitors which purchase its resold services at a fixed percentage discount.

III. Telecommunications Markets Have Changed In Significant Ways Since The Implementation Of The Current price cap plan In Massachusetts

Q. What regulatory and legislative changes have affected legal and/or regulatory barriers to entry into Massachusetts telecommunications markets since 1995 when the Department's price cap plan was adopted?

A. The implementation of the federal Telecommunications Act of 1996 ("Telecom Act") has removed all legal and/or regulatory barriers to entry into Massachusetts telecommunications markets. Section 253 of the Telecom Act requires all states to allow competition and preempts any state or local government rules to the contrary:

No State or local statute or regulation, or other State or local legal requirement, may prohibit or have the effect of prohibiting the ability of any entity to provide any interstate or intrastate telecommunications service (§253 (a)).

It would be difficult to state the point more clearly: legal and regulatory barriers to entry into telecommunications markets are gone.

Implementation of the Telecom Act has also swept away economic barriers to entry into local exchange markets where the sunk costs necessary for a competitor to supply ubiquitous service may have slowed entry in the past. Under the Act and subsequent federal and state regulatory orders, Verizon provides UNEs at incremental cost-based prices and resells all retail telecommunications services at a Department-approved avoided cost discount. As a result, the cost of entry for competitors who can now choose among entry strategies—i.e., building facilities (based on a variety of technology platforms), leasing parts of Verizon's network at regulated rates, or simply reselling existing Verizon retail services at economically efficient rates—is dramatically reduced. As a result, competition is now practical for any service in any geographic area of Massachusetts where a competitor can supply any portion of the facility or service as efficiently as Verizon.

Q. How do these changes affect retail telecommunications services in Massachusetts?

A. Since entry into Massachusetts' retail telecommunications markets is comparatively easy, competitive pressure is brought to bear on retail prices for all services in all geographic areas. That is, in addition to the current facilities-based and resale competition in Massachusetts, the additional threat of entry from large, well-known telecommunications firms presently supplying other services to

Massachusetts customers effectively disciplines Verizon's retail prices even if there were little current competition on the ground. Competition through resale or the use of unbundled network elements provides competitive pressure on Verizon's retail services throughout its territory because any significant deviation between price and cost for a retail service will attract competitors with low sunk costs of entry.

Moreover, the increased demand of customers for packaged services provided by a single supplier through one-stop-shopping reduces the advantages of incumbency in all markets. Verizon is an incumbent local exchange carrier, and other firms are incumbent in markets from which Verizon Massachusetts is currently excluded (that is, interLATA toll and data markets), so that in selling additional services in a package to a current customer, it is no longer clear who is the entrant and who is the incumbent.

Finally, the fact that wholesale prices of UNEs, resold services and interconnection remain extensively regulated under the Telecom Act reduces, if not eliminates, any need for continued regulation of retail service prices. If Verizon contemplated an increase in a retail service price, it would have to recognize that the increase would widen the margin between the UNE rate and the retail rate, making facilities-based entry augmented by use of Verizon UNEs more attractive. Similarly, with a regulated wholesale discount for resold services that is fixed in the short run, an increase in a retail price would increase the absolute (cents per minute or dollars per line) margin within which resellers compete in the retail market with Verizon. Because the sunk costs of entry by UNEs or resale are virtually nil—particularly for current competitors in complementary markets (e.g., IXCs or CAPs)—regulation of wholesale rates thus effectively regulates the rates for retail services.

Q. How have technological changes impacted the market for traditional telephone service?

A. From a broad perspective, technological change is transforming the industry from a supplier of fixed services associated with voice communication to a supplier of fixed and mobile services associated with voice, data, images and video. In this transformation, the demand for mobile service, data and other high capacity services such as Internet access, video and cable services is growing faster than the demand for voice services.

Cable technology currently provides a viable alternative to incumbent LEC technology and cable companies have already positioned themselves to compete as alternatives to incumbent telephone company services, particularly for residential customers. They are installing fiber-cable into their networks at a rapid pace, adding capacity, improving quality and reliability, and forging alliances with other broadband providers. Since the implementation of the Telecom Act,

$31 billion has been invested in cable infrastructure, and each year's investment has been larger than the previous year's.

Widespread cable modem service facilitates the provision of both cable telephony and high-speed Internet access. Cable Datacom News, a leading industry source, stated that at the end of February 2000, 1.5 million homes in the United States were cable modem subscribers and that cable modem services were available in 43 million homes. Paul Kagan Associates, Ltd. forecasts that the industry will have 10.7 million subscribers by year 2003.

There are already several well-established firms active in the cable telephony and cable modem markets. Cox Communications and AT&T Broadband (formerly MediaOne) are two of the larger cable companies expanding into cable telephony services.

Q. Why is the development of broadband and cable services important?

A. The fact that these technologies—radically different from traditional wireline voice communications—are competing for different segments of the communications market means that any regulation that distorts suppliers' offerings or consumers' choices is likely to cause serious reductions in efficiency as these firms and technologies jostle for position in the customer's market basket. The more the outcome reflects consumer choice in markets where all firms and technologies have an equal opportunity to compete, the better off customers will ultimately be.

Q. Is there any evidence demonstrating that the changes you describe above have actually affected market conditions in Massachusetts?

A. Yes. There is an abundance of evidence regarding actual competitive entry in Massachusetts and that evidence demonstrates the variety and diversity of entry options that competitors have exercised. In addition, the potential for further entry is evidenced by both widespread collocation and the volume of number assignments made in Massachusetts. Finally, the emergence of robust individual competitors to Verizon, especially the competitive alternatives to Verizon's local voice services posed by the emergence of cable telephony, demonstrates the vibrancy of actual competition.

Entry into the Massachusetts markets is taking place at a dynamic pace: Evidence on the numbers of lines served by competitors is revealing. According to Verizon data, there were at least 184,844 residential lines being served by competitors in January 2001, compared to 121,229 total lines being served in July 2000- representing a growth rate of 52 percent in 6 months or over 100 percent on an annualized basis.

Between September 2000 and January 2001, the total number of access lines (residential and business) that competitors served grew from an estimated 731,000 to 851,000—an increase of 16 percent in just five months.

In fact, in Verizon's Section 271 filing at the Federal Communications Commission, the United States Department of Justice noted that the overall "level of CLEC penetration is greater than the level in either New York or Texas at the time applications were filed in those states."

A lack of entry barriers is evidenced by competitors exercising the full range of entry options: Evidence on entry into Massachusetts telecom markets shows the full range of entry options being exercised. Of the total 851,000 lines served by competitors in January 2001, lines served by facilities-based competition increased to (at least) 554,000 in January 2001, exhibiting an annualized growth rate between September 2000 and January 2001 of 65 percent. By January 2001, UNE Voice-Grade Equivalent loops had grown to about 89,000—27,275 UNE-Ps and 61,441 stand-alone UNE loops—an annualized increase of 213 percent since July. This leaves about 269,000 lines served by resale (851,000 total lines less the 554,000-odd lines served directly through competitor facilities and 27,275 lines served by UNE-Ps).

Facilities-based competition is widely considered the most potent form of competition in the local telephone industry. There are several strong facilities-based competitors in Massachusetts. AT&T, RCN, Z-TEL (UNE-based), MCI and Broadview are among these competitors at year-end 2000.

The potential for rapid further entry exists: Competitors have extensively collocated in Massachusetts wire centers. Competitors have access to 97.8 percent of Massachusetts residence customers and 98.8 percent of Massachusetts business customers through collocation. Fourteen million telephone numbers in Massachusetts have been assigned to competitors. From July 2000 to January 2001, ported numbers grew at an annualized rate of 66 percent; interconnection trunks grew at an annualized rate of 45 percent; DSL UNE loops grew at an annualized rate of 159 percent; and interconnection minutes from CLECs to Verizon grew at an annualized rate of 119 percent.

The emergence of strong individual competitors to Verizon established that competition can be sustained: AT&T Broadband already provides local phone service customers in 64 Bay State communities with plans to add 73 more communities to its list. A comparison of AT&T's Right Pak II package with that of Verizon's equivalent package shows that AT&T Broadband's Right Pak II service offers 2 telephone lines for nearly $20 per month less than the price of a comparable service offering from Verizon. An AT&T Broadband package consisting of a single telephone line, unlimited local service, digital cable service, and cable modem Internet service would be almost $16 per month less expensive than the current comparable Verizon package.

RCN is another effective competitor in Massachusetts. A comparison of RCN Platinum servicewith an equivalent package constructed by Verizon shows that RCN has a price advantage of more than $75 per month over Verizon.

Thus, AT&T and RCN are clearly viable competitors, able to sustain price advantages in offering end-use customers some highly attractive integrated communications packages.

New technologies have expanded the universe of potential competitors to Verizon: The emergence of AT&T, RCN, and others as serious rivals to Verizon underscores the diverse sources of competition to Verizon's local services—both AT&T Broadband and RCN have branched into voice telephony and Internet access service from their original cable television operations. Cable telephony is generally expanding at a very rapid rate throughout the nation: for example, at the end of 1999, there were about 195,000 cable telephony subscribers nationally (this does not include Adelphia's subscribers). By October 25, 2000, however, AT&T could boast that "this quarter we added an additional 126,000 cable-telephony customers and we're on target to meet our year-end goal of 550,000-650,000 cable-telephony subscribers." Thus, AT&T alone could, at the end of 2000, boast of roughly three times as many cable telephony subscribers as the entire industry could at the end of 1999.

The empirical evidence that massive changes have occurred in the Massachusetts markets is extremely strong. Moreover, the evidence suggests that as strong as the recent growth in competitive activity has been, the potential for further acceleration clearly exists as facilities-based competitors have access to almost all Massachusetts end-users. The increasing technological sophistication in the telecommunications markets also suggests the potential for strong growth in competitive activity: the evidence from cable telephony implies that the universe of potential competitors to Verizon has expanded greatly in the last few years.

IV. Corresponding Changes In Regulation Are Necessary To Foster Vigorous Competition.

Q. How should regulation reflect the fact that a market has been opened to competition?

A. Once markets are opened to competition, regulation must adapt to set correct incentives for efficient suppliers to enter the market and for inefficient suppliers to exit the market or forgo entry. Such regulation may not treat incumbent firms *identically* with actual or potential entrants. However, regulation of incumbents and entrants should be as *symmetric* as possible so that regulation will be as competitively neutral as possible. Only then will the process of competition benefit customers in the economic sense of channeling the supply of services to those firms that best meet consumers' requirements (including price, features, and service quality).

Competition should function as the price control mechanism. The purpose of adapting regulation to competition is to replicate—to the extent possible—the competitive market outcome, so that market participants base their actions on market factors—customers' preferences—rather than on regulatory factors. In general, three principal changes are required so that regulation does not distort the competitive process. First, as recognized by the Department when it introduced price regulation in Massachusetts, the focus of regulation should not restrict an *outcome* of the competitive process (e.g., rate of return) but rather restrict factors that affect that outcome (e.g., prices). Second, the regulated firm requires commensurate pricing and marketing flexibility in order that the firm best able to supply customers' wants succeeds in the marketplace. Finally, because imperfect competition treats customers far better than imperfect regulation, where regulation is not required to discipline prices, it should be eliminated.

Q. Please explain why a plan that gives Verizon pricing and marketing flexibility is important to the overall success of competition in Massachusetts.

A. Marketing and pricing flexibility are essential to reduce asymmetric regulation of market participants and to provide correct market signals to all competitors regarding the characteristics—products, services, packages, prices, quality levels, term and volume discounts, etc.—that customers value and for which they are willing to pay. Permitting Verizon to market retail services more flexibly as markets open to competition—while controlling prices of services currently deemed in need of protection—will ensure that the least cost supplier is able to serve customers, reducing costs and prices to Massachusetts consumers.

Marketing flexibility is also important in industries undergoing rapid technological change because it allows firms to experiment and discover through market trials what services and combinations of services customers want. All competitors must be free to expose different pricing structures and service packages to a marketplace test. Abstract analysis in a regulatory proceeding is no substitute for real-world experience, and Massachusetts consumers will be poorly served if one major supplier in the market—i.e., Verizon—is prevented from finding out exactly the characteristics of communications services for which they are willing to pay.

Encouraging pricing and marketing flexibility for the incumbent firm—permitting it to respond to market changes—is essential in fostering a dynamic competitive market with consumer choice of supplier and technology.

Q. Please explain how the application of regulation can be harmful when competition already constrains market prices.

A. Any regulation that is applied to one firm and not another produces distorted results. First, regulations apply to markets and services at levels of aggregation that only approximate actual economic markets. For example, regulations which

do not distinguish high-cost from low-cost customers in a particular geographic area will distort market outcomes by (possibly) moving prices away from costs for one set of customers while moving prices towards costs for the other. Second, market conditions can change as new suppliers offer new services or new bundles of services, and regulation can prevent the regulated firm from responding to competitive changes in the same way that an unregulated firm would respond. In markets subject to competitive forces, regulation is not benign, and superfluous regulation in the presence of competition is not merely an innocuous safety net. Such regulation can exclude efficient firms from entering, and can raise costs, inhibit competition and ultimately reduce consumer welfare.

Q. Please explain how consumers could be harmed if the incumbent firm is not allowed to respond to competitors' initiatives or to changes in market conditions.

A. One effect of not allowing the incumbent firm to respond to competitors' initiatives or changes in market conditions is the constraint it places on the incumbent's ability to spread the recovery of its fixed costs over a wide customer base. In unregulated markets, multiproduct firms recover their shared fixed and common costs in different proportions from different customer classes and services depending upon market conditions. When markets are opened to competition, new entrants concentrate their facilities and marketing initiatives among high margin services customers and geographic areas first. Open entry ensures that these high-margin customers will always have a choice of suppliers for all of their services irrespective of the regulatory treatment of Verizon. What regulation will determine is whether Verizon will be one of the competitors. If regulation constrains Verizon from adapting its services and prices to serve these customers, their contribution to its shared fixed and common costs will go away, placing greater responsibility for such cost recovery on the remaining classes of customers and services. Consumers are also harmed because one competitor—the incumbent—would not be allowed to make a market response to the pricing and service packages offered by other competitors. Inhibiting the development of efficient competition and reducing consumer choice unambiguously harms consumers.

I. The Company's proposal constitutes a reasonable response to changes in telecom law, regulation and markets, and results in more efficient prices

Q. Please summarize the essential components of the Company's proposal.

A. The Company begins with the proposition that intrastate switched access rate reductions should not be an issue before the Department in this proceeding, but recognizes that the Department may require those rates be reduced as part of implementing the next phase of price regulation in Massachusetts. Thus, the Company's proposal accommodates either outcome.

If, as the Company believes is appropriate, access charge reductions are not part of this proceeding, the Company proposes to eliminate Touch Tone charges on a revenue-neutral basis, increasing the dial-tone line rate from $9.91 to $10.38, and thereafter cap basic dial-tone and local usage rates for the first three years of the plan. In addition, all other residential service rates would be subject to an aggregate rate cap. The Company proposes to make all capped rates subject to changes if an event beyond the control of the firm (an "exogenous event") is shown to increase or decrease the Company's costs or revenues. For retail services not covered by the cap, prices would increase or decrease in response to the market on a 30-day notice, at the Company's discretion, subject to the appropriate price floor rules. The Company does not propose to alter the price floor rules established by the Department in D.P.U. 94-185. Neither would the proposed Plan alter wholesale prices for access to UNEs or the level of the Company's wholesale discount when retail services are resold.

In the event the Department does require that intrastate access rates be reduced, the Company would change the proposal described above to include a revenue neutral rebalance of intrastate switched access and residential dial tone rates which then, except for adjustments to account for exogenous events, would be capped for the first three years of the Plan. Under its proposal, the Company would reduce and restructure intrastate switched access rates 75 days after the effective date of the Plan to the current level proposed for interstate switched access rates. Alternatively, the Company would phase-in the access rate reductions with offsetting increases in the basic dial-tone line rate over a two or three-year period.

Q. Is the Company's proposal a traditional price cap plan?

A. No. While there are some basic similarities between the Company's proposal and traditional price cap regulation, there are important differences that make the Company's proposed Plan more appropriate to prevailing market conditions. Traditional price cap plans place (what are today) undue constraints on *average* prices (across the firm or within baskets). Those constraints are frequently tied to a measure of national inflation and a fixed productivity adjustment and, given the current plan's parameters and recent economic conditions, have resulted in overall average price decreases. In contrast, the Company's proposed plan caps the rates of residential services to assure that those customers are protected from rate increases and, in markets where competitive forces will better discipline retail service prices, allows full pricing flexibility for regulated retail services under tariff.

Q. How will the Company's proposed Plan adequately protect consumers in Massachusetts?

A. The Company's proposed Plan will protect customers in those markets where Verizon arguably retains some control over prices, but will permit Verizon to

compete vigorously in markets where it is facing the most competition. All residential service rates are capped in the Company's proposal thus providing more than adequate protection to consumers. In addition, Verizon faces substantial actual competition in its business service retail markets so that its ability to increase retail prices in those markets is effectively constrained. Verizon does not have the ability to exercise market power for services in the business retail market.

Furthermore, the Company's proposed Plan makes no change in the regulation of wholesale prices: the prices of UNEs, local interconnection and the discount applicable to resold services. Thus, UNE and local interconnection prices remain set at cost-based rates as determined by the Department, and the price of resold services remains determined by a fixed discount off of the retail price of the service.

Q. Please elaborate on how competition constrains Verizon's ability to increase prices.

A. In markets where customers have a choice of suppliers, if Verizon were to attempt to price above the competitive market level, customers would switch suppliers and the attempted price increase would prove not to be profitable. Even if there were any Massachusetts markets where customers may currently have no alternative source of supply, with low barriers to entry, a Verizon price increase would attract entrants as long as they could make a profit at the higher market price. Entry would then provide substitutes to which consumers could shift, and the contemplated price increase would again turn out not to be profitable for Verizon.

Q. Please elaborate on how the regulation of wholesale prices affects the need to regulate Verizon's retail prices.

A. The mandatory provision of wholesale services under the Telecom Act currently makes it possible for competitors to enter any Massachusetts retail telecommunications market in which they can provide a portion of the service at least as efficiently as the Company. If Verizon were to attempt to increase retail prices, the margin between the prices of the UNEs that a competitor could use to provide the retail service and the retail market price would increase. Entrants that may have been previously excluded from the market because they could not profitably compete against the market price while paying the wholesale price for UNEs could now compete profitably, customers would have additional choices, and the initial decision to raise retail prices would look less profitable.

Similarly, Verizon is obliged to provide to its competitors every retail telecommunications service at a wholesale price determined by subtracting Verizon's retailing costs from its retail price. If the reseller can provide the retailing function for less than Verizon's retailing costs, it can compete

successfully in the retail market. If Verizon were to attempt to increase the price of a retail service, the fact that the discount is a fixed percentage of the retail price means that the *absolute* resale discount—measured in cents per minute or dollars per line per month—would increase, at least in the short run. Thus resellers that may just barely compete with a 5-cent margin would find it easier to compete with a 7-cent margin between the market retail price and the price of the wholesale service.

In summary, in light of existing competition throughout Massachusetts, the immediate threat of competitive entry and continued regulation of UNE prices and resale at a discount, the Company's proposed Plan effectively (directly and indirectly) constrains Verizon's ability to raise prices for any of its retail services above the competitive market level. For services affecting universal service (e.g., residential dial-tone) and other residential services, the proposed price constraint is direct. For services assigned to the Other Retail Service category in the Company's proposal, competitive forces constrain prices. The current presence of facilities-based competition in major Massachusetts markets—competitors such as AT&T, RCN, MCI and Broadview—coupled with the reduction in barriers to entry in all Massachusetts markets stemming from the availability of UNEs, interconnection and resold services, means that competitive forces will govern prices in those retail markets and that further regulation of those retail prices would be inefficient.

Q. Must there be actual competitors offering services for Verizon's retail prices to be constrained?

A. No. Holding aside the substantial actual competitive activity throughout Massachusetts, economic theory informs us that an incumbent's ability to raise prices above the competitive level is held in check by the ease with which a potential competitor can enter the market, provide a substitute service and apply competitive downward pressure on the market price.

Key to this analysis of potential competition is the presence of sunk costs. If sunk costs are large, potential entrants provide little threat to an incumbent, but if the sunk costs of entry are small, the incumbent's pricing decision would have to take the likely reaction of potential entrants into account. The implementation of local exchange unbundling and resale significantly reduced these sunk costs of entry into the local exchange market. Competitors do not have to dig up streets or lay fiber to provide ubiquitous service. Since many of these competitors are currently providing other telecommunications services in the same area, they do not even incur the sunk costs of marketing in order to establish brand awareness. Instead, competitors are now able to lease facilities on a month-to-month basis or resell retail services so that if the market fails to materialize, the losses the entrant incurs are much smaller. As a result, if the incumbent increases its retail price, entrants can respond to the increased profit opportunity quickly, rendering a price increase above the competitive level unprofitable.

Q. The Company's proposal includes a provision for the restructure and reduction of intrastate switched access charges. From an economic perspective, are such price reductions required?

A. Not necessarily. Since intrastate switched access prices exceed the economic costs of the service, it is likely that economic efficiency would be enhanced by the proposed rate reductions. However, multiproduct firms in industries characterized by high proportions of shared fixed and common costs must price some services above forward-looking economic cost in order to recover the total cost of the firm, so that we cannot conclude *a priori* that reduced switched access prices would *necessarily* increase economic efficiency. In addition, there is nothing anticompetitive in recovering shared fixed and common costs from carrier access charges rather than from retail service prices. Imputation rules, as well as the pursuit of self-interest, ensure that the Company prices toll service so that competitors who must purchase its carrier access service are not placed at a competitive disadvantage. The vigorous competition in Massachusetts' toll markets provides empirical evidence that pricing carrier access above incremental cost does not inefficiently or unfairly constrain competition for retail toll services.

Q. If the Department mandates that intrastate access rates be reduced, please explain how it is in consumer's best interests for the Company to implement a revenue neutral price change for access and dial-tone rates.

A. If the Department mandates a reduction for intrastate access rates, the Company's proposed Plan would (i) implement a reduction for the price of intrastate switched access; and (ii) balance the resulting revenue reduction with an increase in residential dial-tone prices by moving them toward Department-approved target rate levels. While some end-user service prices will increase as others decrease, consumers would benefit (immediately and over the long run) because such price changes would result in achieving more of the dynamic benefits of competition. The dynamic benefits of competition are diminished whenever regulation constrains a price to be different from the price a competitive market would set. When prices are too high (or low) relative to the market-level price, neither consumers nor competitors receive the right price signal. Consumers' demand would be too high (or low) relative to demand at competitive prices and competitors would base their entry strategies on incorrect information. In Massachusetts, competitors' incentives to provide residential service, for example, are diminished because the price Verizon currently charges is held below the price that would prevail in competitive markets.

Q. Is the Company's treatment of new services under its Plan a reasonable response to the marketplace?

A. Yes. The Company proposes to treat new services as it would treat services in the Other Retail Services category of its Plan. Rates and charges for new retail services the Company offers under tariff will be initially set and subsequently

increased or decreased in response to market conditions at the discretion of the Company. New services, by definition, are not essential, and are offered (i) to fulfill an identified demand niche or (ii) in response to a service introduction by an existing competitor. For all the reasons discussed here, there is no economic basis to constrain the Company's prices of such services. Because existing services remain available at unchanged prices, consumers cannot be made worse off by pricing new services at any particular level. It is entirely reasonable that the Company be allowed to treat new services as proposed.

Q. Is the Company's proposed treatment of exogenous events appropriate from an economic perspective?

A. Yes. The Company proposes that an exogenous adjustment can be identified, by any party, as an event beyond the Company's control that uniquely affects the costs or revenues of incumbent telephone service providers in general, and Verizon in particular. Once identified, the effect of the exogenous event on Verizon would be calculated and used to adjust (up or down) the rate caps that constrain the Company's residential service prices. This exercise parallels the treatment of similar events in an unregulated competitive market.

Prices in unregulated competitive markets are governed entirely by market forces that set a level of price in the market at which firms can either survive or go out of business. The market price is a function of both underlying cost (i.e., the underlying direct cost incurred to bring the service to market) and market conditions (i.e., the degree to which supply and demand considerations allow firms in the market to recover shared and common fixed costs in addition to the service's direct costs). When events occur that change the underlying cost basis of the market price—i.e., events analogous to the exogenous events identified in the Company's proposed plan—the market price rises or falls to accommodate the effect of the event. In unregulated competitive markets, the analog of exogenous events that affect the industry are passed through to consumers by market forces and reflected in the prices consumers pay. For exogenous events that affect the regulated company (e.g., an economic event or regulatory change specific to the firm), the Company's proposal ensures that increases or decreases in cost brought about by Commission orders are reflected in the prices consumers pay. Moving prices in the same direction as costs increases economic efficiency.

Q. What has the Department identified as its goals and objectives in fashioning an appropriate incentive regulation plan?

A. The Department has described its overall telecommunications policy goals as economic efficiency, fairness and universal service. The Department has also recognized that a competitive telecommunications market "will better promote our telecommunications goal of economic efficiency." Additionally, at the outset of the price cap plan, the Department proclaimed that "price cap regulation should be particularly well-suited to an increasingly competitive market characterized by

a greater level of investment risk and technological convergence." Initiating the current proceeding, the Department stated that "a well-designed price cap plan should be of sufficient duration to provide Verizon with the appropriate economic incentives and certainty to allow the company the confidence to make and follow through with strategic business decisions."

Q. Is the Company's new Plan consistent with the Department's goals and objectives?

A. Yes. The Company's proposal addresses and meets the Departments goals and objectives. The Company's proposal would provide both the incentives and certainty required to plan and execute a response to (i) the competition that has developed during the term of the current plan and (ii) the market condition changes I have described in this testimony.

Economic efficiency is enhanced under the Company's proposal because rates under the plan are more likely to reflect the cost of providing services and thus will provide more accurate signals to consumers (regarding the underlying cost of fulfilling their demands) and competitors (regarding entry decisions). The Department defines 'fairness' to mean that no class of consumers would pay more than the costs of serving that class. Under the Company's proposal, rates are more likely to move in a direction that assures such an outcome.

The Company's proposal meets the goals of simplicity, universal service and continuity. Nothing in the Company's proposal appears to affect how easy it would be to understand the Company's rate structures (the Department's characterization of simplicity). Rates for all residential services are either capped or restricted by revenue-neutral filings, thus meeting the Department's goal of universal service and continuity (i.e., changes in the rate structure should occur in a predictable and gradual manner). Further to the goal of continuity, the rates for all other retail services will move according to changes in market conditions—in other words, no differently than do the prices of the goods and services consumers purchase in the general economy.

While earnings stability is not assured under the plan, the Company is properly subject only to the rewards or penalties of the market. Under the plan, Verizon has additional marketing flexibility and the incentive to introduce products and services and invest the capital required to expand its service mix so that its success—or failure—is in its own hands.

Q. As an economist, what do you consider to be the advantages of the new regulatory plan over the framework adopted by the Department in meeting the Department's objectives?

A. The Company's new regulatory plan recognizes the changed character of telecommunications markets and provides the Company with an appropriate

amount of freedom to offer and/or alter the price of services already subject to competition in Massachusetts. It also continues to protect consumers of services where there currently may arguably be insufficient competition to control prices as a competitive market would.

Q. Why will customers be better off under the proposed plan rather than under a GDPPI-X plan, like the one adopted in DPU 94-50?

A. In theory, price cap regulation has always been seen as regulatory mechanism to govern the transition from pervasively regulated telecommunications markets to markets governed by competition. As competition develops in different markets at different rates, continuing traditional price cap regulation of all services can distort competition and reduce or delay the benefits that customers expect to derive from having a wider choice of suppliers, technologies and services. Specifically, suppose the productivity offset (**X**) in a traditional price cap plan were set correctly, in the sense that GDPPI-X accurately reflected the future average long run reduction in the regulated firm's cost per unit of output. Given that competitive market forces would be expected to reduce prices on average at this rate, what harm would be done by imposing such a price cap constraint as markets became competitive, some more rapidly than others?

First, GDPPI-X is a blunt regulatory instrument, forcing average prices to fall for the regulated firm at the long run rate of decline of unit costs. Productivity growth and cost changes vary significantly from month to month and year to year. In competitive markets, firms do not mechanically match average price reductions each year to the long run average rate of cost reductions. A firm whose prices were subject to such a rule would be at a disadvantage compared with competitors who were free to match price changes to market conditions. Second, the competitive process does not benefit customers exclusively through price reductions. Competition brings technical change, new products and services and levels of service quality in different dimensions that consumers value. Regulation that focuses exclusively on price can distort the mix of other service characteristics that the regulated firm is induced to supply. Third, we must recognize that GDPPI-X is only the target rate of change in unit cost, and in no year should we expect it to be the actual change in unit costs. If that productivity target is ambitious—i.e., based on industry productivity growth plus an historical input price growth differential plus a stretch factor plus an accumulated inefficiencies factor—it is likely that prices will be forced to fall more rapidly than unit costs. While such excess price reductions may benefit customers in the short run, they do not in the long run: the mix of service characteristics the firm supplies is distorted under such regulation and potential competitors are artificially discouraged from entering the market. Consider the business plan of a potential entrant. The CLEC incurs costs today in order to build facilities, attract customers and sell services in the future. If it knows with certainty that the ILEC's retail prices will fall each year in the future irrespective of market conditions, its incentive to invest is strongly reduced.

Q. Doesn't the Department's GDPPI-X plan result in efficient prices?

A. Not entirely. In addition to the blunt effect of the plan alluded to above, another concern I have with a GDPPI-X plan is that it doesn't capture the effects of competitive price reductions the Company is required to sustain when providing services to its largest business customers. Under price regulation, prices generally change (mostly fall) at an average rate determined by changes in a measure of economy-wide inflation and a productivity offset. A traditional GDPPI-X plan is based on a productivity offset determined, in part, on the basis of a total factor productivity analysis—that is, it is based on an analysis of how all inputs are used to produce all the firm's outputs. On the presumption that the current productivity offset was set correctly, implementation of the current indexed price cap formula results in price changes, which on average, when applied to all the firm's outputs, will track changes in the firm's overall unit costs. This is precisely the intent of the price cap formula in a GDPPI-X price cap plan.

In Massachusetts, however, the effect of the plan is felt on only a subset of (price cap regulated) services. The problem is that while the prices for those price cap regulated services are forced to change according the GDPPI-X plan, the prices for other services—which were also included in the productivity analysis underlying the productivity offset—are likely to be pressed down at a faster rate by competition. If the overall objective of a regulatory plan is to have the prices of price cap regulated services change as they would if in a competitive market, then any productivity offset factor determined as described above should be decreased. It can be shown that the appropriate decrease would be proportional to the fraction of Verizon's total revenue that is derived from the sale of uncapped services.

Q. Does this conclude your testimony?

A. Yes.