

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition of Verizon Florida Inc. to Reform Its)
Intrastate Network Access and Basic Local)
Telecommunications Rates in Accordance with)
Florida Statutes, Section 364.164)
_____)

Docket No. 030867-TL

**AMENDED DIRECT TESTIMONY OF
CARL R. DANNER
ON BEHALF OF
VERIZON FLORIDA INC.**

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I.

INTRODUCTION AND WITNESS BACKGROUND

Q. PLEASE STATE YOUR NAME, TITLE AND BUSINESS ADDRESS.

A. My name is Carl R. Danner. I am a Director with Wilk & Associates/LECG LLC. My business address is 201 Mission Street, Suite 700, San Francisco, California 94105.

Q. PLEASE SUMMARIZE YOUR BACKGROUND AND QUALIFICATIONS.

A. I was Advisor and Chief of Staff to Commissioner (and Commission President) G. Mitchell Wilk during his tenure at the California Public Utilities Commission (CPUC), where I played an important role in the initiation of a successful pricing reform effort with many parallels to that which Verizon’s petition will accomplish in Florida. Since leaving the CPUC, I have provided consulting services to various clients on regulation and policy, with emphases on the telecommunications and energy industries. I hold a Masters and Ph.D. in Public Policy from Harvard University, where my dissertation addressed the strategic management of telecommunications regulatory reform. At Harvard, I served as Head Teaching Assistant for graduate courses in microeconomics, econometrics and managerial economics. I hold an AB degree from Stanford University, where I graduated with distinction in both economics and political science. Recently, I co-taught classes on UNEs and impairment to new state commissioners and staff at Michigan State University’s annual “Camp NARUC” educational program. My experience includes researching and teaching regulation, advising regulators, testifying in regulatory

1 proceedings, and advising clients on regulatory issues. My complete
2 resume is attached as Exhibit CRD-1.

3

4 **Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE STATE REGULATORY**
5 **COMMISSIONS?**

6 A. Yes. I have testified regarding various telecommunications and energy
7 _ issues before state commissions in Florida, Hawaii, California, Oregon,
8 Washington, Illinois, and Indiana, and filed written comments at the FCC. I
9 have also testified in Federal District Court on economic valuation and
10 regulatory issues regarding a water company.

11

12 **Q. HAVE YOU PREVIOUSLY ADDRESSED PRICING REFORM ISSUES**
13 **BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**
14 **(COMMISSION)?**

15 A. Yes. I was instrumental in preparing comments filed by GTE Florida
16 Incorporated (currently, Verizon Florida Inc.) in an undocketed special
17 project regarding fair and reasonable residential basic local
18 telecommunications rates (Special Project 980000A-TP). In addition to
19 preparing comments, I participated in workshops in that special project.

20

21 Based on my experience with pricing reform in Florida, I am aware that this
22 issue has been debated in Florida for a number of years. I am also aware
23 that this debate has now culminated in the decision by the Florida
24 Legislature and the Governor, as a matter of public policy, to create a
25 process by which reform can go forward.

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II.

OVERVIEW OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is twofold. First, I demonstrate that Verizon's rate rebalancing plan meets the first two criteria established in Florida Statutes, Section 364.164. More specifically, I show that Verizon's plan will:

1. remove current support for basic local telecommunications services that prevents the creation of a more attractive competitive local exchange market for the benefit of residential consumers (Section 364.16(1)(a)); and
2. induce enhanced market entry (Section 364.16(1)(b)).¹

Second, I apply economic principles to show that Verizon's plan will have beneficial effects on customers and the Florida economy.

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. My review of Verizon's plan confirms that it meets the foregoing statutory criteria, and will create substantial benefits for (1) competition in local telephone service, (2) telephone service customers, and (3) the Florida economy. I draw from a range of sources to document the sources of competition the plan will encourage. In my opinion, the Commission

¹ Verizon witnesses Fulp demonstrates that Verizon's rate rebalancing plan meets the remaining criteria established in Florida Statutes, Section 364.164.

1 should embrace Verizon's plan for the benefit of the people of Florida.

2

3 **Q. VERIZON HAS AMENDED ITS RATE REBALANCING PLAN, FILED**
4 **ON AUGUST 27, 2003, TO EXTEND THE TIME OVER WHICH**
5 **INTRASTATE NETWORK ACCESS AND BASIC LOCAL**
6 **TELECOMMUNICATIONS RATES WILL BE REFORMED. DOES**
7 **THIS AMENDMENT AFFECT YOUR ANALYSIS OF VERIZON'S**
8 **PLAN?**

9 **A.** After reviewing Verizon's amended plan, I find that it does not affect my
10 analysis.

11

12

III.

13

VERIZON'S RATE REBALANCING PLAN REMOVES SUPPORT

14

FOR BASIC LOCAL TELECOMMUNICATIONS SERVICES (SECTION

15

364.164(1)(A))

16

17 **Q. IS VERIZON'S BASIC LOCAL RESIDENTIAL SERVICE A SUPPORTED**
18 **SERVICE?**

19 **A.** Yes. A supported service is one that is priced below cost. Even if a
20 service covers its incremental cost, it is still supported if it does not make
21 an appropriate contribution towards joint and common costs.²

22

23 A contribution is any amount that a firm receives from the sale of a service

24

² Verizon cannot profitably sustain its services merely by covering only their incremental cost.

1 that exceeds the incremental cost of that service. The incremental cost is
2 the total cost (including a return on investment and depreciation) that a firm
3 will directly incur (or avoid) by deciding to offer (or withdraw) a service.
4

5 Verizon's basic local residential service is a supported service because, as
6 Verizon witness Fulp describes, it is priced below its incremental cost, and
7 thus makes no contribution to the recovery of Verizon's joint and common
8 costs.³
9

10

11

11 **Q. WILL VERIZON'S RATE REBALANCING PLAN REMOVE SUPPORT**
12 **FROM THE COMPANY'S BASIC LOCAL SERVICES?**

13 A. Yes. Increasing the price of a supported service decreases support for
14 that service. Verizon's rate rebalancing plan will increase the price of basic
15 local services, thereby removing support from those services.
16

17

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IV.

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VERIZON'S RATE REBALANCING PLAN (1) FACILITATES

20

THE CREATION OF A MORE ATTRACTIVE LOCAL EXCHANGE

21

MARKET FOR THE BENEFIT OF RESIDENTIAL CONSUMERS AND

22

(2) INDUCES ENHANCED MARKET ENTRY (SECTION 364.164(1)(A)– (B))

23

23 **Q. WILL VERIZON'S RATE REBALANCING PLAN FACILITATE THE**
24 **CREATION OF A MORE ATTRACTIVE LOCAL EXCHANGE MARKET**

³ Fulp Direct Testimony at 26:10-16.

1 **FOR THE BENEFIT OF RESIDENTIAL CONSUMERS?**

2 A. Yes. Verizon's rate rebalancing plan will remove support for its basic local
3 residential services by reducing the contribution made by its intrastate
4 access rates. Because the reformed rates will more closely reflect the
5 actual cost of providing these services than do the existing rates, the
6 reformed rates will send more accurate price signals to the market. The
7 existence of more accurate price signals will increase consumer welfare by
8 (1) making the local exchange market more attractive to competitors,
9 thereby inducing enhanced market entry and (2) giving consumers
10 improved economic incentives to demand services based on comparing
11 their value (to a consumer) against their actual economic cost.⁴ As I
12 discuss further below, an important benefit of these improved economic
13 incentives will be the ability for consumers to use their telephones more by
14 making more intrastate long distance calls at lower prices.

15
16 **Q. DOES YOUR ANALYSIS OF ENHANCED MARKET ENTRY EXAMINE**
17 **ALTERNATIVE MARKET DEFINITIONS AND A VARIETY OF TYPES OF**
18 **ENTRY?**

19 A. Yes, it does. I examine the market from the standpoint of basic service
20 only, and also from the standpoint of a basic/non-basic service bundle. In
21 addition, I examine a variety of types of entry with respect to a range of

⁴ Verizon's proposed basic business rates will in certain zones make a substantial contribution to common costs (based on the cost standard used in Mr. Fulp's testimony). The increased basic business service and non-recurring installation charges will create a risk for Verizon, because these prices may be more difficult for Verizon to sustain than its reformed residential service prices. Verizon's willingness to assume this risk is evidence that these prices are reasonable in light of the market conditions in Verizon's Florida service areas.

1 technologies, and how competitive providers using such technologies may
2 approach a basic service-only market, or a more expansive market
3 definition focused on bundles.

4

5 **Q. HOW WILL MORE ACCURATE PRICE SIGNALS INDUCE ENHANCED**
6 **MARKET ENTRY AND WHY IS THIS GOOD FOR CONSUMERS?**

7 A. _ Verizon's current residential basic monthly rates are well below
8 incremental cost, and therefore impair competition for residential
9 customers. The availability of local service at these below-cost or
10 supported prices limits the prices that competitive local providers can
11 charge. To the extent other providers' costs are similar to Verizon's, the
12 existing supported prices make it economically infeasible for those
13 providers to compete.

14

15 If a provider had a cost structure similar to Verizon's, the existing
16 supported prices would be below that provider's costs to provide the same
17 or a similar service. Therefore, to win customers from Verizon, that
18 provider would be forced to price its services at below-cost levels. Absent
19 a support flow similar to Verizon's, it is not rational or profitable for the
20 provider to price its services below cost. For this reason, competitors that
21 have cost structures similar to Verizon's simply cannot compete against
22 Verizon's existing supported rates.

23

24 Prices that more closely reflect underlying costs, such as those in
25 Verizon's rate rebalancing plan, will increase the likelihood that other

1 providers can offer services at a price equal to or lower than that offered by
2 Verizon, and still remain profitable. As a result, reformed prices will make
3 the local exchange market more attractive to competitors and induce
4 enhanced market entry.⁵

5
6 **Q. UNDER VERIZON'S RATE REBALANCING PLAN, THE INCREASE IN**
7 **— BASIC LOCAL RATES WILL BE OFFSET BY A DECREASE IN**
8 **INTRASTATE ACCESS RATES, AND CORRESPONDING REDUCTIONS**
9 **IN INTRASTATE LONG DISTANCE PRICES. IN LIGHT OF THIS FACT,**
10 **IS IT REASONABLE TO CONCLUDE THAT REFORMING PRICES WILL**
11 **INDUCE ENHANCED MARKET ENTRY?**

12 A. Yes. Reforming Verizon's rates will induce market entry even though the
13 basic local rate increases will be offset by decreases in intrastate long
14 distance prices.

15
16 First, the prices of individual services can stimulate market entry.

17

⁵ For example, FCC Chairman Michael Powell has observed the following: "...there's been talk for years about rate rebalancing. I happen to believe strongly that if a state doesn't take on seriously the question about how to examine the issue of rate rebalancing, it's all for naught. You don't know how many competitors are going to find a way to compete if they can't get their retail rate at some level of economic reasonableness..." (Phone+ Magazine, Interview With FCC Chairman Michael Powell, April, 2002, <http://www.phoneplusmag.com/articles/241INTERVIEW.html>). Moreover, Economists Robert Crandall and Leonard Waverman described the impact of pricing in this way: "An obvious explanation exists for the lack of competition in residential lines: regulated flat rates are so low that no new entrant is interested in pursuing such customers. Only when rates are rebalanced toward cost will these entrants attempt to compete for residential customers." (Crandall, Robert W. and Leonard Waverman. Who Pays for Universal Service? When Telephone Subsidies Become Transparent (Brookings Institution Press, 2000), page 137).

1 Basic service and other offerings are priced separately, and customers
2 routinely mix and match basic service from one provider with other
3 offerings from different providers. Moreover, regulators treat basic service
4 and long distance services as distinct offerings, and for many years have
5 required that carriers have equal access to local exchange customers. As
6 a result, competitors may choose to compete in the basic local market, the
7 long distance market, markets for specialized offerings, or all of the above.

8
9 Historical patterns of entry and competition show that the prices of
10 individual services influence competition. There is a reason, for example,
11 that long distance providers often bombard customers with competitive
12 service solicitations, but express little or no corresponding interest in
13 supplying the same customers' basic service: the long distance offering is
14 profitable, while the basic local service is not.⁶

15
16 Second, the distribution of customer bills affects competition.

17
18 The inaccurate pricing inherent in Verizon's existing rate structure tends to
19 skew the distribution of customer bills. By overpricing intrastate long
20 distance calling, current rates increase bills for high volume toll and long
21 distance users by an amount greater than the added costs such users
22 impose on carriers. As a result, high volume toll and long distance users
23 are made artificially attractive to competitors, while others (whose bills are

⁶ The price of an individual service may also affect competitors that want to assemble retail bundles for customers from a variety of wholesale providers (including providers of basic service).

1 thereby reduced) are made artificially unattractive.

2

3 This skewed distribution of customer bills has implications for the entry
4 decisions made by competitive providers. For example, a carrier deciding
5 whether to build facilities to a neighborhood must consider factors such as
6 the number of customers it can attract, and their likely spending on its
7 — services. The skewed bills that result from the current rate structure
8 reduce the number of potentially compensatory customers available to the
9 new provider, and therefore force that provider to try to attract the relatively
10 small pool of potentially compensatory customers to help cover its costs.
11 By decreasing the size of the pool of potentially compensatory customers,
12 the current rate structure increases the risk of such investment. Verizon's
13 plan will level out the distribution of customer bills to better resemble the
14 actual costs of service, thus making a greater proportion of customers
15 potentially compensatory for a new provider.

16

17 **Q. WILL VERIZON'S PRICING REFORM PLAN ENCOURAGE INCREASES**
18 **IN TOLL AND LONG DISTANCE USAGE, AND THEREFORE MAKE**
19 **RESIDENTIAL CUSTOMERS MORE ATTRACTIVE TO COMPETITION?**

20 A. Yes. Because the newly enacted legislation requires long distance
21 providers to flow through access reductions,⁷ toll and long distance prices
22 will fall, which in turn would stimulate toll and long distance usage. This
23 reaction will increase the size of the market opportunity for competitors,
24 and therefore also promote competition for residential customers.

⁷ Section 364.163(2).

1

2 **Q. ARE THERE ANY OTHER BENEFITS ASSOCIATED WITH VERIZON'S**
3 **PRICING REFORM PLAN?**

4 A. Yes. Competitive pressures will likely force Verizon to reduce its toll
5 prices. Such reductions will not be offset with increases under §364.164
6 and will therefore serve as an additional customer benefit.

7

8 **Q. IS THERE A PARTICULAR CLASS OF RESIDENTIAL CUSTOMER**
9 **THAT BENEFITS THE MOST FROM VERIZON'S PLAN?**

10 A. Yes. Verizon's plan will benefit existing Lifeline customers and additional
11 customers who will qualify for Lifeline under the expanded provisions of
12 §364.164.⁸ Lifeline subscribers will see the price they pay for basic service
13 preserved at its current level, while at the same time enjoying the benefits
14 of reduced prices for long distance calling created by the pass through of
15 access charge reductions.⁹

16

17 **Q. WHAT ADDITIONAL ECONOMIC BENEFITS WILL FLOW TO**
18 **CUSTOMERS, INCLUDING RESIDENTIAL CUSTOMERS, WHEN**
19 **VERIZON'S PLAN IS APPROVED?**

20 A. There are two important additional economic benefits that customers will

⁸ At present, Verizon serves just over 21,000 Lifeline customers in Florida, and Verizon expects that its Lifeline subscribership will nearly double under the new criteria that make more low income customers eligible for the program's benefits.

⁹ Some of these customers may also benefit from the elimination of fixed monthly in-state access charge recovery fees imposed by long distance carriers.

1 receive under Verizon's plan.¹⁰

2

3 First, as I suggested above, customers will respond to lower toll and long
4 distance prices by increasing their use of those services. It is well
5 established in economics that such volume increases benefit customers; in
6 the instant case, customers will benefit from being able to use the phone
7 — more than they did before at lower prices.¹¹ This point can be
8 demonstrated by a consumer surplus analysis, or by the common-sense
9 observation that a customer who freely elects to make more calls would do
10 so only if he or she is made better off as a result.¹²

11

12 Second, customers will benefit from increased availability of competitive
13 options. Increased competition is likely to provide at least some customers
14 with options they find preferable to their existing Verizon wireline service,
15 including innovations that Verizon may then be encouraged to adopt for its

16

¹⁰ For an outstanding quantitative analysis of some of the benefits of pricing reform, see Hausman, Jerry, Tardiff, Timothy, and Alexander Belinfante. "The Effects of the Breakup of AT&T on Telephone Penetration in the United States," American Economic Review 83, Volume 2 (May, 1993), 178-184. Professor Hausman and his co-authors documented a small, but meaningful increase in universal service due to a Federal pricing reform that was similar to Verizon's plan. The reason was that undercharging for basic phone service through overcharging for long distance calls (the same situation Verizon's plan will remedy in Florida) was a bad bargain; on average, it degraded the value of telephone service to consumers by more than the basic service price discount they thereby obtained.

¹¹ By increasing the value of phone service to customers, such benefits can even cause an increase in universal service (an effect that has previously been documented, e.g., by Hausman et.al).

¹² This additional calling may increase customer phone bills somewhat, but any such increased bill amounts will be more than offset by the consumer benefits of the added calls.

1 remaining customers. Increased competition will also place increased
2 pressure on Verizon to operate efficiently, thereby promoting the efficient
3 use of resources in Florida's economy.

4

5 **Q. FROM A BROAD PUBLIC POLICY PERSPECTIVE, WILL PRICING**
6 **REFORM CREATE BENEFITS FOR THE PEOPLE OF FLORIDA?**

7 A. Yes. Floridians will see net economic benefits and an increase in
8 competitive alternatives. As stated above, more economically rational
9 prices will stimulate local competition based on a sound economic footing,
10 rather than stimulating competition based on the arbitrage of inaccurate
11 prices. As a result, customers (including those who may have been
12 deterred in the past by high prices) will be able to take advantage of more
13 at affordable prices.

14

15 Pricing reform will also signal investors that the Governor, Legislature and
16 this Commission are serious about promoting competition and removing
17 impediments to its success.¹³ For those who might commit new capital to
18 Florida, this signal will be important not just for what it says about current
19 business opportunities, but also for what it says about the Commission's
20 likely future approach to issues that may affect these investments in the
21 future. Reform will thus build confidence in the investment climate for local
22 competition in Florida.

23

¹³ An even stronger positive signal will be sent if the Commission approves pricing reforms at the same time for Verizon, BellSouth and Sprint, which collectively serve 98 percent of ILEC lines in Florida.

1 V.

2 POTENTIAL COMPETITORS ARE POISED TO ENTER
3 THE MARKET IN RESPONSE TO PRICING REFORM

4 (SECTION 364.164(1)(B))

5 Q. HAS THE ENACTMENT OF PRICING REFORM LEGISLATION
6 ALREADY LED TO A SPECIFIC, PRO-COMPETITIVE MARKET
7 DEVELOPMENT THAT BENEFITS RESIDENTIAL CUSTOMERS IN
8 VERIZON'S SERVICE AREA?

9 A. Yes. On July 18, 2003, Knology, Inc. announced that it had agreed to
10 purchase Verizon's broadband cable assets in Pinellas County. Knology
11 already offers bundled video, Internet and phone service in eight other
12 markets in the southeast, and is now positioned to offer these bundles in
13 Pinellas.¹⁴ In its press release regarding the transaction, Knology made
14 clear the potential for future pricing reform influenced its decision to
15 expand. Specifically, the press release states:

16 the Tele-Competition Act recently enacted in Florida
17 positively influenced [Knology's] decision to expand
18 operations in the state. This Act, as written by the Florida
19 Legislature and supported by Governor Bush, laid the
20 foundation for companies like Knology to enter the Florida
21 market, and offer competitive services and products to
22 consumers.

23
24 The Tampa Tribune reported that Knology's senior director of marketing

¹⁴ "Verizon Finds Cable Buyer," St. Petersburg Times, July 19, 2003.

1 "said the deal was facilitated by the state law approved by the Legislature
2 this year that raised local phone rates as a way to stimulate telephone
3 competition."¹⁵

4

5 **Q. DOES VERIZON'S CURRENT RATE STRUCTURE DISCOURAGE**
6 **COMPETITORS THAT ARE WELL POSITIONED TO SERVE**
7 **RESIDENTIAL CUSTOMERS FROM ACTUALLY DOING SO?**

8 A. Yes. The evidence demonstrates that Verizon's distorted rates discourage
9 such competitors from serving residential customers.

10

11 Facilities-based competition has developed for business customers but not
12 for residential customers. In Verizon's Florida service area, competitors
13 now serve approximately 10 business lines for every one residential line,
14 and facilities-based competitors now serve more than one hundred
15 business lines for every residential line.¹⁶

16

17 The scarcity of residential competition cannot be attributed to an absence
18 of viable competitors. Verizon's competitors have deployed extensive
19 facilities (including numerous circuit and packet switches, and more than
20 15 competitive local fiber networks) in geographic locations that include
21 virtually all of Verizon's residential customers.¹⁷ This is significant
22 because, as a technical matter, it is just as feasible to serve residential

¹⁵ "Verizon Sells Cable television Units to Ga. Company," Tampa Tribune, July 19, 2003, Business section page 5.

¹⁶ Leo Direct Testimony, Exhibit ETL-1 at 2.

¹⁷ In many of these locations, four or more CLECs are providing service today.

1 customers using these facilities as it is to serve business customers.

2

3 The disparity in the level of competition for business and residential
4 customers is attributable, at least in part, to distorted residential prices.

5 Fortunately, as explained above, Verizon's rate rebalancing plan will
6 reduce this disparity by making residential customers more attractive to

7 competitors.

8

9 **Q. SHOULD THE COMMISSION CONSIDER A VARIETY OF**
10 **TECHNOLOGIES AND BUSINESS MODELS WHEN EVALUATING THE**
11 **COMPETITIVE LANDSCAPE IN VERIZON'S SERVICE TERRITORY?**

12 A. Yes. Given the diversity of customers, providers, technologies, and
13 possible competitive strategies that exist in the market, a wide range of
14 competitive approaches will be used to reach residential customers. Most
15 of these competitors will not closely copy Verizon's existing network or
16 specific service options because offering something new or slightly
17 different is (1) consistent with many of the available competitive
18 technologies and (2) a good way to attract customers' attention.

19

20 Customers themselves will be likely to differ in the features and services
21 they prefer and how much they will be willing to pay for them. Some
22 customers will opt for less costly, lower-quality alternatives, while others
23 will choose to pay a premium for higher quality service.

24

25 Accordingly, when evaluating the potential impact of Verizon's rate

1 rebalancing plan, the Commission should consider all potential substitutes
2 for Verizon's basic local service.

3

4 **Q. ARE LOCAL CABLE TELEVISION SERVICE PROVIDERS WELL**
5 **POSITIONED TO COMPETE FOR BASIC RESIDENTIAL CUSTOMERS**
6 **IN VERIZON'S FLORIDA TERRITORY?**

7 A. _ Yes. Cable television providers in many parts of the nation have already
8 upgraded their networks to provide a variety of two-way services (including
9 local telephone service) to residential customers.

10

11 Bright House Networks, the principal cable television provider in Verizon's
12 service area, is well on its way to being able to offer cable telephony
13 services. It already provides cable modem service over its network in
14 Tampa, which makes clear that it has completed many of the upgrades
15 needed to provide telephony service and has already gained experience in
16 provisioning and billing non-cable television offerings to its customers.¹⁸

17

18 Moreover, the corporate owners of Bright House Networks have
19 experience with cable telephony services. Before Time Warner sold its
20 Tampa cable system to its venture partner Advance/Newhouse, Time
21 Warner (which is still one of Bright House's owners) completed a trial in
22 Tampa of cable telephony that relies on Internet Protocol (IP)-based

¹⁸ A natural competitive evolution for cable television providers has been to first offer digital cable and cable modem service, and then to begin offering local telephony.

1 packet switching, rather than conventional circuit switching.¹⁹

2

3 Time Warner's reliance on IP Protocol is particularly significant because:

4 (1) IP-technology can permit a cable provider to add a telephone line for a

5 one-time cost of about \$300-600,²⁰ which is less expensive than the circuit-

6 switched technology that has been used to provide most of the cable

7 telephony offered to date,²¹ and (2) concerns with the quality of voice-over-

8 IP service have recently diminished, as evidenced by IBM's recent decision

9 (in March, 2003) to transition its workforce to voice-over-IP telephone

10 service.²²

11

12 **Q. IS IT IMPORTANT TO TAKE ACTION TO ENSURE THAT CABLE**
13 **TELEVISION PROVIDERS INVEST IN FLORIDA?**

14 A. Yes. Cable television providers, especially those like Time Warner (a
15 subsidiary of a diversified media, entertainment and information technology
16 company with worldwide operations), have a plethora of investment

¹⁹ Time Warner's experience is not limited to that single trial. It has begun offering commercial versions of IP cable telephony in other parts of Verizon's service territory. Of course, Time Warner is not alone in this endeavor, as Cablevision, Comcast and Cox are also conducting trials of this service in various markets. *Id.* at 12.

²⁰ Merrill Lynch Global Securities Research & Economics Group. "Voice Over Broadband," (June 24, 2003), page 2.

²¹ Using circuit-switched technology, Cox estimates a per-customer investment of \$610 to provide the average 1.3 lines a residential customer demands (\$498 per line); for voice over IP, the corresponding figures are \$564 per customer and \$462 per line. "Cox Communications VoIP Whitepaper," February, 2003, pages 6-8 (<http://www.cox.com/PressRoom/supportdocuments/VOIDwhitepaper.pdf>, viewed July 31, 2003). If the VOIP service is powered from home electricity (i.e., no network backup power), the cost falls to \$404 per customer and \$310 per line.

²² Goldman Sachs Global Equity Research. "VoIP – the enabler of real telecom competition," (July 7, 2003), pages 6, 15-19.

1 opportunities available to them. Even cable television providers that have
2 decided to offer telephone service on a broad basis have the opportunity to
3 invest in a number of different markets outside of Florida. Given that there
4 is competition for the cable companies' investment dollars, it is important
5 for the Commission to improve the attractiveness of investing in telephony
6 in Florida by approving Verizon's pricing reform petition. Pricing reform
7 can move Florida markets ahead in the queue, bringing more telephone
8 service options to consumers sooner.

9

10 **Q. WILL THE INCREASE IN VERIZON'S BASIC LOCAL RESIDENTIAL**
11 **RATES BE PARTICULARLY SIGNIFICANT TO CABLE TELEVISION**
12 **PROVIDERS?**

13 A. Yes. Cable television providers typically have a market share for cable
14 television service of about two-thirds of all homes passed. The cable
15 provider starts with an access line already in the home, onto which
16 telephone service can be added on a purely incremental basis. The start-
17 up cost (of \$600 or less per service) is thus an important benchmark
18 against which a cable provider will evaluate the attractiveness of its
19 residential service offering. Given their high market penetration and this
20 relatively low start-up cost, an increase of four to five dollars on the basic
21 monthly rate is a significant inducement for cable television providers to
22 enter the basic local service market.

23

24 Cable telephony is one alternative for which the stand-alone increase in
25 the basic rate may be particularly significant. Cable television providers

1 use a different technology than a customer may be accustomed to, and
2 therefore may have difficulty capturing all of a customer's local telephone
3 business at first. For example, one option for a cable provider could be to
4 use non-powered equipment, which does not have a battery to permit
5 service during power outages.²³ Cable telephony also uses a different
6 technology from that which a customer may be used to. Reasons like
7 — these may cause customers to hesitate to commit to cable telephony as
8 their primary line before gaining experience with the offering. To the extent
9 a customer initially may wish to try cable telephony as a second or third
10 line rather than a full replacement for existing service, the customer may
11 generate few additional usage charges (e.g., for second lines used for fax
12 or Internet connections). Because the cable provider will need to rely
13 almost entirely on the basic rate to try to recover its investment in these
14 cases, a more cost-based Verizon basic service price will make it easier for
15 cable providers to charge a basic service rate that offers an acceptable
16 investment return.²⁴

17

18 Accordingly, the adoption of Verizon's rate rebalancing plan is particularly
19 important to stimulate market entry among cable television providers.

20

²³ This approach may become more acceptable given the enormous customer penetration of wireless phones that will function in a blackout (as long as their batteries are charged).

²⁴ As a simple illustrative example, the payback period needed to recover a \$600 investment is reduced by nearly a year if one compares a \$20 basic rate ($600 / 20 = 30$ months), versus a \$15 basic rate ($600 / 15 = 40$ months). Other things equal, a shorter payback period generally indicates a more attractive investment opportunity.

1

2 **Q. ARE OTHER PROVIDERS THAT MAKE USE OF ALTERNATIVE**
3 **TECHNOLOGIES WELL POSITIONED TO ENTER THE MARKET IN**
4 **RESPONSE TO PRICING REFORM?**

5 A. Yes. Vonage (www.vonage.com) employs voice over IP technology to
6 offer flat-rate local service for \$25.99 per month, including a large local
7 calling area, 500 minutes of long distance, vertical services and voice mail,
8 and deeply discounted long distance and international calling rates.
9 Vonage will add unlimited long distance calling for \$39.99 per month.
10 Vonage already has gained over 20,000 subscribers nationwide, and plans
11 to acquire 100,000 customers before the end of 2003. Pricing reform will
12 make residential customers more attractive to Vonage (and to other
13 providers that might use similar technology), because Verizon's basic local
14 rate will more closely approach the competitive price that Vonage charges
15 for its local service alternative.

16

17 **Q. WILL PRICING REFORM PROMOTE CUSTOMER INTEREST IN**
18 **BROADBAND INTERNET CONNECTIONS IN FLORIDA?**

19 A. Yes. Today, broadband connections to the Internet are increasingly
20 available to customers. Florida's current prices for local telephone service
21 systematically under-price the old, less capable network connections, and
22 thus discourage consumers from upgrading to something better. When
23 presented with prices that more closely reflect the genuine costs of their
24 choices, some consumers will doubtless elect to stay with what they have,
25 but others will recognize a better value in upgrading to a broadband

1 connection that may allow them, among other things, to obtain basic
2 telephone service through the same connection over which they access
3 the Internet at high speed. Thus, pricing reform will promote the goal of
4 making broadband use more ubiquitous.

5

6 **Q. WILL VERIZON'S PLAN PROMOTE INCREASED COMPETITION BY**
7 **WIRELESS PROVIDERS?**

8 A. Yes. Wireless services already compete extensively with wireline services,
9 and pricing reform will increase the attractiveness of wireless as a
10 substitute for wireline services. Increased competition from wireless
11 providers will benefit a large number of Floridians because: (1) wireless
12 phones are close substitutes for wireline phones;²⁵ (2) wireless phones are
13 prevalent in this state;²⁶ and (3) a growing number of customers are
14 abandoning their wireline phone service for a wireless phone, and an even
15 larger share of traffic minutes are migrating to wireless networks.²⁷

16

17 **Q. WILL PRICING REFORM MAKE RESIDENTIAL CUSTOMERS IN**
18 **VERIZON'S SERVICE AREA MORE ATTRACTIVE TO REGIONAL**

²⁵ A majority of Florida residents already considered wireless to be a "close substitute" to wireline service in 1998. Florida Public Service Commission. "Telecommunications Markets in Florida," Annual Report on Competition (as of June 30, 2002), pages 7-9.

²⁶ Nationally, there is a wireless phone in service for every one out of two people (including children), and, in Florida, wireless phones are even more prevalent than in the nation as a whole. FPSC Annual Report on Competition, supra note 25. As of year-end 2002, the FCC estimated a penetration of 55.73 percent for Tampa – St. Petersburg – Clearwater, FL. FCC, Eighth Report on CMRS Competition (July 14, 2003), Appendix D, page D-4 (Table 3).

²⁷ For its part, the Commission has already recognized that "Florida ILECs are perhaps more vulnerable to wireless competition than most other states," due to seasonal residents discontinuing landline connections in favor of wireless.

1 **WIRELESS PROVIDERS?**

2 A. Yes. Verizon's plan will encourage competition from smaller, regional
3 wireless providers that can compete directly with wireline basic service
4 through local calling plans with unlimited wireless minutes.²⁸

5
6 In other jurisdictions, regional wireless providers offer packages that are
7 — designed to replace wireline service. For example, in Sacramento,
8 California, SureWest Wireless offers a wireless plan with unlimited local
9 minutes and five vertical services for \$33 per month, which can be
10 upgraded to include unlimited long distance calling within northern
11 California for another \$4 per month.²⁹ Similarly, Cricket Wireless in
12 Columbus, Georgia offers unlimited local usage for \$32.99 per month,
13 which can be upgraded to include three vertical features and 500 minutes
14 of long distance for an additional \$7 per month.³⁰ In their marketing, such
15 carriers make clear that their service is intended as a replacement for a
16 wireline phone, not just an adjunct to it.³¹

²⁸ See a discussion of this strategy at pages 51-52 of the FCC's Eighth Report, supra note 21.

²⁹ SureWest "Unlimited" plan from <http://www.surewestwireless.com/products/plans/unlimited.htm>; SureWest "Unlimitedplus" plan from <http://www.surewestwireless.com/products/plans/unlimitedplus.htm> (pages viewed July 2, 2003). Both plans require two-year contracts, and include discounts on wireless phones (including some "free" handset options).

³⁰ <http://www.cricketcommunications.com/service.asp#cricket> (viewed July 2, 2003). A one-year service commitment is required; customers purchase handsets for prices starting at \$99.

³¹ For example, a recent survey revealed that 37 percent of Cricket customers have no wired phone. Other research indicates that wireless usage (on all wireless carriers) has displaced 25 percent of U.S. landline phone minutes. "Leap Continues to Lead National Trend of 'Cord Cutters'", May 12, 2003 Leap Wireless International press release found at <http://www.leapwireless.com/d/index.html> (viewed July 30, 2003).

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At present, such wireless alternatives do not appear to be available to Verizon's Florida customers, even though Alltel (which does offer wireless service in the area) offers similar plans in several other states.³² A below-cost wireline basic rate obviously impairs competition for residential consumers from this source.

By reducing the gap between the basic wireline monthly rate and the price of this alternative, pricing reform will encourage current (or potential) wireless providers to offer these services in Florida, either by repricing existing service or by building out facilities that may be needed to use existing wireless licenses to provide service.

Q. WILL PRICING REFORM ALSO ENCOURAGE CUSTOMERS WITH EXISTING WIRELESS PLANS TO CONSIDER EXPANDING THEIR WIRELESS USE TO SUCH AN EXTENT THAT THEIR WIRELESS SERVICE BECOMES A COMPLETE SUBSTITUTE FOR THEIR WIRELINE SERVICE?

A. Yes. Pricing reform will encourage such expansion by making it more economically attractive for these customers to shift all of their telephone usage to a wireless service. The average wireless bill is about \$50 per month.³³ In Verizon's Florida service area, a wireless rate plan of about

³² Supra note 26; the FCC reported such Alltel plans in Arizona, New Mexico, North Carolina, Nebraska and Arkansas.

³³ The average was \$48.40 per month for 2002. FCC, Eighth Report (supra note 26), Appendix D, table 9.

1 \$75 per month can substitute for a residential wireline telephone. Thus, for
2 the average customer who already uses a wireless phone, the incremental
3 expense to disconnect the wired phone is approximately \$25 per month. A
4 customer with less than average line usage (or whose wireline usage
5 already tends towards off-peak times as rated for wireless plans) will have
6 an even greater inducement to shift entirely to wireless.³⁴ By bringing
7 Verizon's wireline basic rate to a more cost-based level, pricing reform will
8 make the replacement of wired service with wireless service (for those who
9 already have the latter) potentially attractive to an even greater cross-
10 section of residential customers, and therefore encourage wireless
11 providers to refine and market such plans.

12

13 **Q. WILL PRICING REFORM CREATE INCREASED COMPETITIVE RISK**
14 **FOR VERIZON?**

15 A. Yes, Verizon will face increased risk, just as the statute intends through its
16 stimulus of local competition for residential customers. For this reason, it is
17 not possible to predict with any precision what revenues Verizon will
18 ultimately receive following pricing reform, or how those revenues will
19 change in the following months or years. The great uncertainty (and
20 controversy) that would be inherent in any such forecasting effort helps
21 highlight why the Florida Legislature made a wise choice to base pricing
22 reform on recorded revenues and units for a defined period, absent
23 demand stimulation.

³⁴ For example, T-Mobile offers a plan with 1000 peak minutes, unlimited off-peak minutes and the full set of features (including long distance) for \$59.99/month. <http://www.t-mobile.com/plans/national/plus.asp> (viewed August 7, 2003, for Tampa, Florida).

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VI.
PRIOR EXPERIENCE WITH PRICING REFORM
INDICATES THAT IT CAN PROCEED WITHOUT
NOTABLE DIFFICULTIES FOR CUSTOMERS

Q. DOES PRIOR EXPERIENCE WITH PRICING REFORM SUGGEST THAT IT CAN PROCEED WITHOUT CAUSING NOTABLE DIFFICULTIES FOR CUSTOMERS?

A. Yes. In California, for example, the Public Utilities Commission pricing reform order in 1994³⁵ raised basic rates for Pacific Bell and GTE California customers in exchange for reductions in access charges and toll prices. The basic rate increase for Pacific Bell customers was slightly smaller than the increase Verizon proposes for Florida, while the GTE California basic rate increase was larger (from \$9.75 per month to \$17.25 per month). As is proposed here, prices for in-state toll and access charges were also cut sharply to promote competition and to encourage economic efficiency. Lifeline customers were among the biggest beneficiaries of pricing reform in California (as they will be in Florida), and pricing reform was understood to be an essential component of a pro-competition regulatory policy (at that time for toll service in California, and now for basic residential service in Florida).³⁶

³⁵ CPUC decision 94-09-065, September 15, 1994.
³⁶ It is noteworthy that the ratepayer advocacy arm of the CPUC staff (then the Division of Ratepayer Advocates) supported pricing reform as beneficial to consumers.

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Following the implementation of these rate changes in California, there was no apparent impact on universal service, and no widespread expressions of concern from customers that were evident either to me as a close observer of the situation, or to the companies themselves.

– There are other examples that suggest pricing reform does not undermine universal service. For example, Professor Hausman and his co-authors³⁷ noted that the Consumer Federation of America and the U.S. Public Interest Research Group predicted that 6 million subscribers would give up their phone service during 1984-86 due to Federal telephone pricing reform (that again paralleled the reform Verizon proposes for Florida). Contrary to this claim, subscribers actually increased by 4.1 million during this period, in part due to the reform’s beneficial impacts on universal service.

VII.

CONCLUSION

Q. PLEASE SUMMARIZE YOUR PRINCIPAL CONCLUSIONS.

A. Verizon’s pricing reform plan conforms with the requirements of §364.164, and will result in telephone service prices that are more fair, accurate, economically efficient, and consistent with local telephone service competition for residential customers. Through its compliance with §364.164 and in my independent judgment, Verizon’s plan will advance the

³⁷ Hausman et. al, (op. cit.), page 182 note 7.

1 public interest and should be approved.

2

3 **Q. DOES THIS CONCLUDE YOUR TESTIMONY AT THIS TIME?**

4 A. Yes, it does.

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Provide expert consulting and coordinate services of other directors and staff of LECG. Emphasis on energy, telecommunications, and other network industries.

Consultant, Wilk & Associates, Incorporated, San Francisco, CA (1992-1999)

Expert consultant to clients in the telecommunications, natural gas, electricity and postal industries regarding regulation and public policy. Analyzed industry trends; provided case-specific advice regarding legislative and regulatory efforts; delivered expert testimony; served in "sounding board" role to evaluate client initiatives from the perspective of a senior government decision maker; helped develop corporate strategies vis a vis public policy; reviewed and analyzed technical issues of economics, finance and statistics; assisted with public relations and corporate communications efforts; prepared and edited client draft expert testimony, legal briefs, lobbying documents and reports. Typical client interactions at officer level up to CEO; frequent interactions also with attorneys and external affairs staff. Client relationships and assignments fulfilled in many states and nationwide.

Commissioner's Advisor, California Public Utilities Commission, San Francisco, CA (1987-92)

Senior Advisor and Chief of Staff for former CPUC President and Commissioner G. Mitchell Wilk. Lead Commission Advisor on telecommunications issues; also responsible for transportation, water, and selected energy matters. Helped develop Commission regulatory policy, manage proceedings and cases, direct efforts of CPUC staff, draft and revise Commission decisions. Central involvement in successful CPUC regulatory reform initiatives in local exchange, cellular, long distance and pay phone sectors of telecommunications. Analyzed proposed legislation and assisted in formulating Commission legislative strategy and positions. Made numerous public appearances representing the Commission,

including testimony before state legislative oversight committees. Served as media contact on many issues, gave print and radio interviews, and prepared and reviewed press releases.

Staff Analyst, Policy and Planning Division, CPUC (1982-87)

Analyzed regulatory policies and assisted in CPUC organizational strategic planning. Co-author of several Commission Reports to the Legislature regarding telecommunications issues. Advised Executive Director on strategic planning opportunities for the agency and on strategies for effective use of computers and office automation. Helped design agency reorganization that clarified staff advocacy, advice and implementation roles.

Consultant, Citizens Utility Board, Chicago, Illinois (1985-87)

Consultant to consumer advocacy board on several matters before the Illinois Commerce Commission involving energy utility diversification, nuclear power "construction work in progress," and realignment of local telephone usage rates. Testified before ICC.

University Instructor (various dates)

Co-taught graduate courses in Government Regulation of Business (Harvard University, Kennedy School of Government), and Telecommunications Regulation (Golden Gate University, San Francisco). Head teaching assistant for graduate courses in microeconomics, econometrics, and managerial economics (Kennedy School). Guest lecturer in graduate and executive programs at U.C. Berkeley Hass Graduate School of Business, U.S.C. Graduate School of Management, U.C. Berkeley Sloan Summer Institute, University of San Francisco, the Naval Postgraduate School (Monterey), and the Michigan State University Institute of Public Utilities ("Camp NARUC").

Education: **Harvard University, Kennedy School of Government, Cambridge, MA**
Ph.D. in Public Policy, 1986. Dissertation: Strategic Management of Public Utility Regulation in An Era of Reform: The Case of Telecommunications.
Thesis committee: John R. Meyer, Robert Leone, Joseph P. Kalt. General examinations: Economics, analytic methods (operations research), statistics and econometrics, political analysis and public management.

Master in Public Policy, 1982. Thesis: "The Economics of Visibility and the Policy of Visibility Protection."

Stanford University, Stanford, CA
B.A. in Economics and Political Science, 1980. Degree awarded with
Distinction in both fields.

Articles: “California: Policy and Reform” (with David J. Teece), in Montgomery
Research, Inc. (ed.) Leadership in a Shifting Market, The Utilities Project Volume
3 (San Francisco, CA, 2003).

Second “Manifesto on the California Electricity Crisis” (with David J. Teece et.
al.). A co-author of, and one of 20 signatories to a statement on forward-looking
policy responses to California’s electricity problems, Haas School of Business,
U.C. Berkeley, January 31, 2003.

“California’s Electricity Markets: Structure, Crisis, and Needed Reforms,”
(January 2003; see [http://www.lecg.com/website/home.nsf/OpenPage/Energy-
ResearchPapersTestimony](http://www.lecg.com/website/home.nsf/OpenPage/Energy-ResearchPapersTestimony)). Contributor to, and principal editor of
comprehensive LECG study documenting history of California electricity crisis
and exploring potential reforms.

“Enduring Lessons of the California Electricity Crisis,” in *Regulatory Review*
2002/2003, edited by Peter Vass (Centre for the Study of Regulated Industries,
University of Bath School of Management, Bath, UK, March, 2003); reprinted in
The Development of Energy Regulation – A Collection of Reviews (CRI, May,
2003).

“The Next Stage of Local Telephone Regulatory Reform” (with G. Mitchell
Wilk), in *Markets, Pricing and Deregulation of Utilities*, edited by Michael A.
Crew and Joseph Schuh (Kluwer Academic Publishers, Boston, MA, 2002).

“The California Electricity Manifesto: Choices Made and Opportunities Lost”
(with James D. Ratliff and David J. Teece), in *Electricity Pricing in Transition*,
edited by A. Faruqui and B.K. Eakin (Kluwer Academic Publishers, Boston, MA,
2002).

“Manifesto on the California Electricity Crisis,” (with David Teece et al.). A co-
author of, and one of 31 signatories to a policy statement on appropriate
governmental responses to the electricity crisis, Haas School of Business, U.C.
Berkeley, January 26, 2001.

“Give Electricity Consumers A Chance,” (with John Scadding), San Diego
Union-Tribune, August 7, 2000.

"Bundling and Other Possible Ends to Legacy Regulation: Reply to Professor Noam's Article" (with G. Mitchell Wilk), NRRI Quarterly Bulletin 20, No. 2 (Summer, 1999), 119-123.

"Postal Service and the Telecommunications Analogy," in *Emerging Competition in Postal and Delivery Services*, edited by M.A. Crew and P.R. Kleindorfer (Kluwer Academic Publishers, 1999).

"Common Ground," Public Utilities Fortnightly, May 1, 1993 (analyzes policy similarities between competitive telecommunications and natural gas markets).

"Infrastructure' and the Telephone Network: Defining the Problem," Incidental Paper, Program on Information Resources Policy, Harvard University (July, 1992).

"The Oligopoly Paradox: Cellular Telephones and a Difficult Regulatory Problem," Journal of Policy Analysis and Management 10, Vol. 4, 671-675 (1991).

"Private Pay Phones and AOS: A Current Note in a Continuing Regulatory Theme" (with G. Mitchell Wilk), paper delivered at Annual Williamsburg Regulatory Conference, December 1988.

"Mixing Computer III and Cost of Service Regulation: Some State Concerns," Telematics, Vol. 4, No. 5, 3-5 (1987).

Case
Studies:

"Competitive Bypass of Pacific Gas & Electric," in *Cases in Microeconomics*, Jose A. Gomez-Ibanez and Joseph P. Kalt (1990).

"The CPUC and Telecommunications," Harvard Business School Case Program, Harvard University (1987).

Testimony/
Comments:

Federal Communications Commission
Federal District Court, Northern District of California
California Public Utilities Commission
Florida Public Service Commission
Hawaii Public Utilities Commission
Illinois Commerce Commission
Indiana Utility Regulatory Commission
Oregon Public Utility Commission
Washington Utilities and Commerce Commission

Invited Speeches/
Presentations:

Bellcore and Bell Canada Telecommunications Costing Conference
CPUC Telecommunications Training Seminar
California Telephone Association Annual Conference
Capitol Publications Seminar on Computer III and ONA
Cellular Telecommunications Industry Association
ComNet West
ElectroniCast Network Futures Conference
Golden Gate University
Hawaii Public Utilities Commission
Infocast Competitive Power for California Conference
Information Industry Association
The Junior Statesmen Foundation
Los Angeles County Bar, Antitrust & Trade Regulation Section
National Association of Regulatory Utility Commissioners
National Association of Telecommunications Officers and Advisors
National Engineering Consortium: Eastern Communications Forum
Personal Communications Industry Association: Supercomm
Probe Research
RBOC and GTE Affiliated Interests Group Conference
Rutgers University Postal and Regulated Industries Conferences
San Diego Communications Council
Telocator Spring International Convention
United States Telephone Association Capital Recovery Seminar
UC Berkeley Hass Graduate School of Business
UC Berkeley Graduate School of Public Policy: Sloan Summer Institute
Washington Independent Telephone Association
Washington Utilities and Commerce Commission
Western Conference of Public Service Commissioners

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