

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Order Instituting Investigation into the State of
Competition Among Telecommunications
Providers in California, and to Consider and
Resolve Questions raised in the Limited
Rehearing of Decision 08-09-042.

Investigation 15-11-007
(Filed November 5, 2015)

JULY 15, 2016, TESTIMONY OF DR. MICHAEL L. KATZ ON BEHALF OF AT&T

July 15, 2016

1 **JULY 15, 2016, TESTIMONY OF DR. MICHAEL L. KATZ ON BEHALF OF AT&T**

2
3 **Q1. Please state your name and business address.**

4 A1. My name is Michael L. Katz. My business address is Compass Lexecon, 1111 Broadway #1500,
5 Oakland, CA 94607.

6 **Q2. Are you the same Michael L. Katz who submitted testimony in this proceeding on March**
7 **15, 2016, and June 1, 2016?**

8 A2. Yes, I am.¹

9 **Q3. What will your testimony discuss?**

10 A3. I have been asked by Pacific Bell Telephone Company d/b/a AT&T California and New
11 Cingular Wireless PCS, LLC d/b/a AT&T Mobility (collectively, "AT&T") to assess from the
12 perspective of economics the reply testimony submitted by Professor Trevor Roycroft on behalf
13 of The Utility Reform Network and Dr. Lee Selwyn on behalf of the Office of Ratepayer
14 Advocates.²

15 ¹ See Order Instituting Investigation into the State of Competition Among Telecommunications
16 Providers in California, and to Consider and Resolve Questions raised in the Limited Rehearing
17 of Decision 08-09-042, Investigation 15-11-007, Testimony of Dr. Michael L. Katz on Behalf of
18 AT&T, March 15, 2016 (hereinafter *Katz Initial Testimony*); Order Instituting Investigation into
19 the State of Competition Among Telecommunications Providers in California, and to Consider
20 and Resolve Questions raised in the Limited Rehearing of Decision 08-09-042, Investigation 15-
21 11-007, June 1, 2016, Testimony of Dr. Michael L. Katz on Behalf of AT&T, June 1, 2016
22 (hereinafter *Katz Reply Testimony*).

23 ² Order Instituting Investigation into the State of Competition Among Telecommunications
24 Providers in California, and to Consider and Resolve Questions raised in the Limited Rehearing
25 of Decision 08-09-042, Investigation 15-11-007, Prepared Testimony of Trevor R. Roycroft,
26 Ph.D. on Behalf of the Utility Reform Network (TURN), June 1, 2016 (hereinafter *Roycroft*
27 *Reply Testimony*); Order Instituting Investigation into the State of Competition Among
28 Telecommunications Providers in California, and to Consider and Resolve Questions raised in
the Limited Rehearing of Decision 08-09-042, Investigation 15-11-007, Direct Testimony of Lee
L. Selwyn, on behalf of the Office of Ratepayer Advocates of the California Public Utilities
Commission, June 1, 2016 (hereinafter *Selwyn Reply Testimony*).

The testimony submitted in this proceeding contains numerous overlapping opinions and
statements. Although I have not tried to rebut every claim made in the testimony that I have
been asked to review, my three pieces of testimony to date are intended to cover all of the major
categories of economic assertions relevant to assessing the role of effective competition in
promoting just and reasonable rates for wireline voice services. Any silence with respect to a
particular empirical or theoretical claim stated should not be interpreted as agreement with that

(cont'd)

1 **Q4. Will your present testimony cover all areas of your assessment of the testimony of**
2 **Professor Roycroft and Dr. Selwyn?**

3 A4. No, it will not. I have previously submitted two rounds of testimony in this proceeding. (*Katz*
4 *Initial Testimony* and *Katz Reply Testimony*.) Many of the points that I made in my earlier
5 testimony are relevant to the assessment of the testimony of Professor Roycroft and Dr. Selwyn.
6 I will not repeat those points here.

7 **Q5. Does anything in the testimony of other witnesses that you have reviewed lead you to**
8 **change the professional opinions stated in your previous testimony in this proceeding?**

9 A5. No. The economic principles on which my earlier opinions were based remain sound, and the
10 other witnesses offer no evidence that contradicts those opinions.

11 **Q6. Is Professor Roycroft’s framework for determining whether a market is subject to**
12 **“effective competition” similar to yours?**

13 A6. Professor Roycroft and I have offered similar frameworks. Professor Roycroft’s statement that
14 “[f]or competition to be effective, consumers must have meaningful choices and be able to act
15 upon those choices” (*Roycroft Reply Testimony*, p. 14, ll. 13-14) is similar to my statement that
16 “[e]ffective competition requires generally that consumers have access to meaningful
17 alternatives. Specifically, two conditions establish effective competition: (a) the availability of
18 multiple competing options from independent suppliers, and (b) the ability of some (but not
19 necessarily all) consumers to switch among those options.” (*Katz Initial Testimony*, p. 8, l. 23 –
20 p. 9, l. 2.)

21 **Q7. Do you agree with Dr. Selwyn’s criticism of the frameworks that Professor Roycroft and**
22 **you have proposed?**

23 A7. No, I do not. Dr. Selwyn calls my statement of principles “simplistic” and claims that these
24 principles are inappropriate in the face of what he alleges to be “severe supply constraints” and
25 market segmentation. (*Selwyn Reply Testimony*, p. 30, l. 11 – p. 31, l. 13. See also, *id.*, p. 10, ll.
26 17-18.) Although he asserts that wireless service providers face severe supply constraints, Dr.

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28 _____
claim unless I specifically state such an agreement.

1 Selwyn offers no evidence that wireless service providers are unwilling or unable to serve
2 additional customers, nor does he address how wireless carriers have successfully managed to
3 attract many more subscribers than have wireline access services if the former are as tightly
4 constrained as he imagines. Dr. Selwyn also provides no evidence of the sort of market
5 segmentation that he asserts would pose competitive issues. Moreover, the analytical framework
6 I described is appropriate in any event.

7 **Q8. Do you agree with Dr. Selwyn’s criticism of your testimony regarding whether wireline**
8 **voice service providers are subject to “effective competition”?**

9 A8. Dr. Selwyn mischaracterizes my earlier testimony. Dr. Selwyn claims that I “offered no
10 analytical nor quantitative support for [my] proposition that the existence of *wireless* makes the
11 *wireline* voice market effectively...competitive.” (*Selwyn Reply Testimony*, p. 24, ll. 15-17,
12 emphasis in original. See also, *id.*, p. 23, ll. 1-4.) Similarly, according to Dr. Selwyn,
13 “[a]pparently, Dr. Katz views the fact that both wireline and wireless services can generally be
14 used to place and receive voice telephone calls as a sufficient basis to establish their inherent
15 substitutability and thus satisfy his ‘meaningful alternatives’ standard.” (*Selwyn Reply*
16 *Testimony*, p. 22, ll. 10-13.) In fact, I never expressed such an opinion. Dr. Selwyn is doing
17 nothing more than creating a straw man for him to attack.

18 In my earlier testimony, I described the appropriate analytical framework for assessing
19 whether markets are effectively competitive. As I testified earlier, the key determinant of
20 whether markets are effectively competitive is whether consumers have realistic alternatives
21 provided by independent suppliers. I also provided some data indicating that consumers have
22 such alternatives. Critically, the focus of my testimony was on the appropriate analytical
23 framework. I did not purport to offer a full analysis of the relevant data. I also did not draw a
24 final conclusion regarding whether voice services in California are subject to effective
25 competition, although the evidence I reviewed clearly is consistent with such a conclusion. My
26 testimony regarding the appropriate framework was intended to be—and is—complementary to
27 testimony submitted by Dr. Debra Aron in which she examined relevant data at length.³ I made

28 ³ Order Instituting Investigation into the State of Competition Among Telecommunications

1 repeated reference to the more complete data analysis provided by Dr. Aron. (*Katz Reply*
2 *Testimony*, p. 9, ll. 5-9, p. 10, ll. 14-16, p. 22, fn. 28, and p. 24, ll. 5-7.) Rather than address the
3 empirical evidence provided by Dr. Aron, Dr. Selwyn has chosen to misrepresent the scope of
4 my testimony and to duck addressing the empirical evidence cited by Dr. Aron. Dr. Selwyn
5 references Dr. Aron’s testimony only once, and that reference is only to note that Dr. Aron’s
6 testimony did not invoke a particular economic theory (known as contestability theory) that Dr.
7 Selwyn considers to be irrelevant. (*Selwyn Reply Testimony*, p. 28, ll. 5-6.)

8 **Q9. What is your assessment of Dr. Selwyn’s analysis of concentration?**

9 A9. Dr. Selwyn acknowledges that “market share and market concentration data by itself neither
10 establishes nor disproves that the level of competition extant in a given product /geographic
11 market is sufficient to assure a competitive outcome.” (*Selwyn Reply Testimony*, p. 72, ll. 13-15.)
12 Yet, at other places in his testimony, he asserts that market shares and concentration levels (as he
13 calculates them) are likely to be dispositive.⁴ (See, e.g., *Selwyn Reply Testimony*, p. 10, l. 18 – p.
14 11, l. 2.)

15 In the present marketplace, there are particular reasons to be cautious in interpreting
16 market shares because they may be unrepresentative of true competitive conditions. In

17 Providers in California, and to Consider and Resolve Questions raised in the Limited Rehearing
18 of Decision 08-09-042, Investigation 15-11-007, June 1, 2016, Testimony of Dr. Debra J. Aron
on Behalf of AT&T California, June 1, 2016 (hereinafter *Aron Reply Testimony*).

19 ⁴ Dr. Selwyn introduces a measure of service provider asymmetry, the Market Dominance Index,
20 which he applies to broadband access providers. (*Selwyn Reply Testimony*, p. 59, ll. 18-22.)
21 Because, for reasons described elsewhere in my testimony, the state of competition in the
22 provision of the high speed broadband Internet access services on which he focuses is largely
23 irrelevant to the analysis of competition for voice services, I only note in passing that neither Dr.
24 Selwyn nor I is aware of his measure’s having been adopted by either the California Public
25 Utilities Commission or the Federal Communications Commission. (*Selwyn Reply Testimony*, p.
26 60, ll. 1-3.) In addition, Dr. Selwyn provides no analysis to establish whether his construct is a
27 valid measure of competition. By contrast, the widely used Herfindahl-Hirschman Index
28 (“HHI”) has been shown to vary with competition under certain models of industry behavior.
(See Robert E. Dansby and Robert D. Willig (1979), “Industry performance gradient indexes,”
The American Economic Review, 69(3): 249-260.) As discussed elsewhere in my testimony, the
HHI has to be applied with care and is subject to misinterpretation. Dr. Selwyn provides no
evidence that his measure overcomes these limitations. Lastly, I note that the HHI itself is
designed to account for asymmetries in market shares, so it is not evident what contribution Dr.
Selwyn’s measure makes.

1 particular, there is evidence that regulation suppressed ILEC prices below equilibrium levels.
2 (*Aron Reply Testimony*, p. 59.) Economic principles indicate that, when a firm’s prices are held
3 artificially low, its market share will be higher than otherwise, as long as the firm remains in
4 business. Given the price freeze to which ILECs were subject, as well as the presence of some
5 switching costs and consumer inertia, ILEC market shares very likely overstate the ILECs’
6 current market positions. Dr. Selwyn does nothing to reconcile his claim of market dominance
7 with the fact that the total number of ILEC wireline residential access lines has been falling even
8 as the population of California has grown.⁵ Notably, in contrast to the number of ILEC wireline
9 residential access lines, the numbers of non-ILEC wireline voice subscriptions and wireless
10 voice subscriptions have been rising. (*Katz Testimony*, p. 13, ll. 1-10.)

11 Given that shares based on the stock of connections can be misleading because of
12 historical conditions, it can be more informative to look at flow shares (*i.e.*, the shares of new
13 subscriptions that are enjoyed by different service providers). Given that the total number of
14 ILEC access lines has been shrinking, while the numbers of non-ILEC voice subscriptions and
15 wireless voice subscriptions have been rising, it follows as a matter of arithmetic that ILECs’
16 flow shares must be lower than their stock shares—even before one accounts for mobile wireless
17 subscriptions.

18 Consideration of wireless voice services raises a fundamental issue in computing market
19 shares: what products are included in the relevant market and how they are attributed to specific
20 suppliers? Dr. Selwyn makes several choices in this regard—such as his treatment of CLECs
21 that rely in part on ILEC facilities—that are not supported by the evidence.

22 **Q10. What is your concern with respect to Dr. Selwyn’s treatment of CLECs as independent**
23 **competitors?**

24 A10. Dr. Selwyn asserts that CLECs selling wireline access services utilizing UNE-L or leased

25 ⁵ See California Public Utilities Commission, “Market Share Analysis of Retail Communications
26 in California June 2001 through June 2013: Expanding Markets, Market Concentration, and the
27 Impact of Intermodal Competition,” January 5, 2015 at 8 (“The state’s population grew about 12
28 percent” between June 2001 and June 2013 while “the absolute number of wireline telephone
subscriptions declined by about 54 percent.”)

1 facilities should not be counted as competitors. (*Selwyn Reply Testimony*, p. 42, ll. 14-17.) In
2 making this assertion, Dr. Selwyn treats the wholesale prices paid by CLECs as being
3 unregulated. In fact, as the California Public Utilities Commission (“Commission”) previously
4 indicated, “[t]he prices for the UNE-L in California [were] set by this Commission at prices
5 based on TELRIC studies of California-specific costs.”⁶ Subsequent prices have been negotiated
6 between ILECs and CLECs, and have been subject to Commission review.⁷ Dr. Selwyn thus
7 overstates the degree of ILEC control over these prices and understates the degree of retail
8 competition when he dismisses non-facilities based CLECs as competitors.

9 **Q11. Are there other concerns with respect to Dr. Selwyn’s identification of competitors and**
10 **calculation of concentration levels?**

11 A11. Yes, an even larger issue than the treatment of CLECs is whether one includes mobile wireless
12 voice subscriptions when computing shares (especially if one calculates shares using revenues
13 rather than counting all subscriptions as being equal). Dr. Selwyn does not provide convincing
14 evidence for his decision to exclude wireless services from his share calculations.

15 **Q12. Do you agree that Dr. Selwyn’s analysis of wireline and wireless pricing trends**
16 **demonstrates that wireline and wireless voice services are not effective competitors?**

17 A12. I do not agree with Dr. Selwyn. According to him, “[i]f wireless was acting to constrain wireline
18 voice pricing, we should expect to see the prices in both sectors track one another closely – a
19 drop in wireless prices should be mirrored on the wireline side as wireline carriers react to the
20 putative competitive inroads of their wireless rivals. This is not happening.” (*Selwyn Reply*
21 *Testimony*, p. 25, ll. 1-4. See also, *id.*, Figure 2 and surrounding discussion.) Dr. Selwyn’s claim
22 is not grounded in sound economics. Prices depend on demand and supply conditions, as well as
23 the presence of any regulation that limits prices. Dr. Selwyn’s testimony fails to account for the
24 fact that the market was out of equilibrium because of past regulation. He also ignores the fact
25 that wireless technologies have been subject to tremendous technological improvements.

26 ⁶ D.06-08-030 at 84.

27 ⁷ See, *e.g.*, Advice Letter No. 44894 from Eric Batongbacal (AT&T California) to the Public
28 Utilities Commission of the State of California, October 1, 2015.

1 Technological progress and the resulting fall in mobile wireless service prices constitute one of
2 the reasons that wireless services have become an even stronger competitive alternative for
3 wireline access services today. Moreover, wireless services can be expected to continue
4 becoming increasingly attractive.

5 Dr. Selwyn focuses on prices and fails to examine market data with respect to quantities.
6 In doing so, he does not see an important part of the overall picture. Two products are defined to
7 be economic *substitutes* if a decrease in the price of one product reduces the demand for the
8 other.⁸ As Dr. Aron demonstrated, between December 2008 and December 2014, the number of
9 residential wireline access lines in California fell by approximately 32 percent, while the number
10 of wireless subscriptions in California increased by approximately 20 percent. (*Aron Reply*
11 *Testimony*, p. 19, Figure 3, and p. 29.) The fall in the number of wireline access lines and rise in
12 the number of wireless subscriptions is fully consistent with the two services' being substitutes
13 and competing with one another, directly contradicting Dr. Selwyn's claim to the contrary.⁹
14 (*Selwyn Reply Testimony*, p. 26, ll. 1-3.)

15 **Q13. What is your assessment of Dr. Selwyn's implicit assertion that wireless and wireline voice**
16 **services cannot be competing alternatives because some households subscribe to both**
17 **wireline and wireless services simultaneously?**

18 A13. Although he acknowledges that "[t]here is no question but that fixed wireline telephone service
19 and mobile wireless voice service are substitutes for many households" (*Selwyn Reply*
20 *Testimony*, p. 24, ll. 1-2.), Dr. Selwyn also argues that they are not substitutes for households that

21 ⁸ See, e.g., N. Gregory Mankiw (2015) *Principles of Economics, Seventh Edition*, Stamford, CT:
22 Cengage Learning, at 70.

23 ⁹ Elsewhere in his testimony, Dr. Selwyn commits a similar error when he asserts that "if the two
24 products' prices tend to move up or down together, one can infer that the two products are close
25 substitutes." (*Selwyn Reply Testimony*, p. 35, ll. 13-14.) In fact, such movements are neither
26 necessary nor sufficient. Dr. Selwyn's error is that he fails to account for the influence of cost
27 changes and other supply-side factors on prices. For example, the prices of two products might
28 move together when the products are unrelated on the demand side but both make extensive use
of an input with widely fluctuating prices.

1 subscribe to wireless and wireline voice services simultaneously. (*Selwyn Reply Testimony*, p.
2 24, ll. 6-13. See also, *id.*, p. 73, ll. 21-24.) Dr. Selwyn’s argument is unsound, and his error is
3 easily demonstrated. Many households in California have multiple mobile wireless
4 subscriptions. By Dr. Selwyn’s argument, mobile wireless subscriptions must therefore not be
5 substitutes for one another and mobile wireless providers must not compete with one another.
6 Similarly, because some households have two wireline access lines, Dr. Selwyn’s logic would
7 lead to the conclusion that wireline access lines are not substitutes for one another. In short, his
8 argument leads to nonsensical conclusions and should be rejected.

9 Professor Roycroft offers a more measured opinion than does Dr. Selwyn. According to
10 Professor Roycroft, the existence of households that simultaneously subscribe to wireless and
11 wireline voice services suggests that the services are complements, rather than substitutes, for
12 these households. (*Roycroft Reply Testimony*, p. 32, ll. 11-15.) However, for the reasons just
13 discussed above, simultaneous subscriptions are consistent with the products’ being substitutes.
14 In any event, Professor Roycroft’s argument would not apply to households that subscribe to
15 only one type of service and, according to data cited by Professor Roycroft, almost half of
16 California households are either wireless-only households or wireline-only households.
17 (*Roycroft Reply Testimony*, p. 32, fn. 58, citing “Wireless Substitution: State-Level Estimates
18 from the National Health Interview Survey, 2014,” February 2016.)

19 **Q14. Have you considered whether wireless services can provide effective competition for**
20 **wireline services if there is only “one-way” substitution?**

21 A14. Yes, I have. According to Professor Roycroft, “wireless mobility services can substitute for
22 wireline services, however, wireline services, because they are not mobile, are not good
23 substitutes for mobility services.”¹⁰ (*Roycroft Reply Testimony*, p. v; see also, *id.*, p. 30, ll. 6-8.)
24 The essential point for the present proceeding is that the distinction Professor Roycroft is

25 ¹⁰ Because of the asymmetry that Professor Roycroft identifies, the U.S. Department of Justice’s
26 decision to exclude wireline services from the relevant market used to assess a recently proposed
27 wireless merger does not imply that wireless services should be excluded from the relevant
28 market used to assess whether wireline voice services face effective competition. (See, *Roycroft
Reply Testimony*, pp. v and p. 30, l. 17 – p. 31, l. 11.)

1 drawing is fully consistent with wireless services' providing effective competition for wireline
2 services. Clearly, many people have purchased wireless subscriptions for reasons other than
3 eliminating their use of wireline voice services. But, at the same time, there has been a broad
4 trend for residential consumers to rely on wireless voice services as replacements for wireline
5 access services. I am unaware of any reason to believe that the price of wireline services does
6 not affect the rate at which this replacement is occurring, which is the economic mechanism
7 through which competitive forces are transmitted. Indeed, Professor Roycroft himself concludes
8 that one-way substitution places "some competitive pressure" on wireline voice service
9 providers. (*Roycroft Reply Testimony*, p. 138, l. 18 – p. 139, l. 2. See also, *id.*, pp. v-vi and p.
10 33, ll. 1-4.)

11 **Q15. Do you agree with Dr. Selwyn's assertion that data reported by the Centers for Disease**
12 **Control and Prevention overstate the degree to which households have replaced wireline**
13 **voice services with wireless services?**

14 A15. No, I do not. Dr. Selwyn challenges the Center for Disease Control and Prevention's ("CDC")
15 finding that 55 percent of children and 47 percent of adults lived in wireless-only households.
16 (*Selwyn Reply Testimony*, p. 23, ll. 6-18 challenging CDC data cited by *Katz Initial Testimony*, p.
17 13, ll. 3-5.) Dr. Selwyn offers his own calculations based on certain Federal Communications
18 Commission ("FCC") data. (*Id.*) There are several flaws in Dr. Selwyn's analysis.

- 19 • First, he uses old data. The CDC data that I cited were for June 2015. (*Katz Initial*
20 *Testimony*, p. 11, fn. 18.) By contrast, the FCC data on which Dr. Selwyn relied were for
21 December 2013. (*Selwyn Reply Testimony*, p. 23, fn. 17, citing Federal Communications
22 Commission, *Local Competition Report as of December 31, 2013*.) Had he used the most
23 recent data available from the FCC, which still is only from 2014, Dr. Selwyn would
24 have found that over 36 percent of households did not have wireline voice service.¹¹ This

25 ¹¹ The FCC reports that there were 8,055,000 wireline end-user switched access lines and
26 interconnected VoIP subscriptions in California as of December 2014. (Federal
27 Communications Commission, Voice Telephone Services Report, State-Level Subscriptions,
28 available at <https://www.fcc.gov/voice-telephone-services-report>, site visited July 10, 2016.)
There were 12,617,280 households in California in 2014. (United States Census Bureau,
Welcome to QuickFacts: California, available at

1 an increase of over four percentage points in a single year, which attests to the rate at
2 which residential consumers are using wireless services to replace wireline services.

- 3 • Second, Dr. Selwyn does not account for the fact that some households have two or more
4 access lines or VoIP subscriptions, which leads him to underestimate the number of
5 households that do not have either wireline end-user switched access lines or
6 interconnected VoIP subscriptions.
- 7 • Third, Dr. Selwyn also does not account for the fact that the number of adults and
8 children in a household could systematically vary with whether the household is a
9 wireless-only one or not. Indeed, the fact that there are systematic differences is evident
10 in the data: as noted above, the CDC found that a higher proportion of children (55
11 percent) live in wireless-only households than do adults (47 percent).

12 In any event, even Dr. Selwyn's out-of-date, understated number is large: by his calculation,
13 almost one-third of California households were wireless only. This is a very substantial number.

14 **Q16. Do all consumers have to view wireline and wireless services to be substitutes for there to**
15 **be effective competition?**

16 A16. No. As I discussed in my initial testimony, competition occurs at the margin, and competition
17 protects even those customers who are not apt to switch providers. (*Katz Testimony*, p. 10, ll. 4-
18 9.) Professor Roycroft and Dr. Selwyn agree that wireless service is a substitute for wireline
19 service for many customers. (*Roycroft Reply Testimony*, p. v, and *Selwyn Reply Testimony*, p. vii
20 and p. 24, ll. 1-2.) However, Dr. Selwyn suggests that providers might be able to "target
21 [different market segments with different demand properties] separately and where practical
22 independently of one another." (*Selwyn Reply Testimony*, p. 31, ll. 9-12.) Likewise, Professor
23 Roycroft raises the theoretical possibility that providers "may take advantage of market
24 segmentation strategies and try to exploit customers who do not have the ability to choose
25 alternatives." (*Roycroft Reply Testimony*, p. xiii.) I am unaware of any evidence that wireline
26 voice service providers have actually targeted price increases at those customers who are not apt
27 <https://www.census.gov/quickfacts/table/PST045215/06/accessible>, site visited July 10, 2016.)
28

1 to switch to mobile wireless service providers.

2 **Q17. Do you agree with Dr. Selwyn’s claim that, when assessing whether voice services are**
3 **subject to effective competition, one should assess competition to supply Internet access**
4 **services with download speeds of at least 25 Mbps and upload speeds of at least 3 Mbps?**

5 A17. No, I do not. Dr. Selwyn claims that “an analysis of the state of competition in the *voice* market
6 cannot be made without also addressing the broadband market upon which any such voice
7 competition is itself utterly dependent.” (*Selwyn Reply Testimony*, p. 27, ll. 5-7, emphasis in
8 original.) He then flatly asserts that the relevant market for the present proceeding is Internet
9 access services with download speeds of at least 25 Mbps and upload speeds of at least 3 Mbps.
10 (*Selwyn Reply Testimony*, p. 33, l. 16 – p. 34, l. 3. See also, p. 5, ll. 34-36, and p. 56, ll. 8-9.)

11 As I explained in my June 1, 2016, testimony, much slower speeds are sufficient to
12 support over-the-top VoIP applications. (*Katz Reply Testimony*, p. 25, l. 21 – p. 26, l. 2.) Dr.
13 Selwyn’s focus on 25/3 services is thus misplaced. I also note that, even if one were to examine
14 broadband services as a distinct product, the 25/3 threshold has never been established as the
15 boundary of a relevant market for purposes of analyzing competition. Instead, it is an
16 aspirational target that has been set by the FCC for use in assessing the success of its efforts to
17 promote broadband deployment and adoption. Dr. Selwyn has not conducted a proper analysis
18 to assess whether 25/3 services meet the conditions necessary to constitute a relevant product
19 market for any purpose, and he does nothing to show that it is relevant for the assessment of
20 voice competition.

21 **Q18. Have you assessed Dr. Selwyn’s claim that over-the-top VoIP should not be considered to**
22 **be a source of competition because broadband providers control access to VoIP services?**

23 A18. Yes, I have. Dr. Selwyn asserts that “[a]bsent any effective competition from multiple providers
24 for the underlying broadband service, VoIP and other services that are dependent upon the
25 customer’s having broadband access have no independent competitive existence in the voice
26 market.”¹² (*Selwyn Reply Testimony*, p. 19, ll. 18-21. See also, *id.*, p.12, ll. 3-6, and p. 21, ll. 8-

27 ¹² I observe in passing that Dr. Selwyn appears to be asserting that broadband access services are
28 available only from ILECs and cable MSOs. (*Selwyn Reply Testimony*, p. 20, ll. 11-17.) In doing
so, he denies the existence of access providers such as Webpass, which Google Fiber recently

1 10.) Such a claim is based on a misunderstanding or mischaracterization of the legal and
2 technical environment. Under the FCC’s recently upheld network neutrality regulations,
3 broadband service providers cannot unreasonably discriminate against VoIP that is run as an
4 application over the underlying broadband Internet access service.¹³ For a household that
5 already subscribes to a broadband Internet access service, the relevant price for assessing the cost
6 of VoIP is the incremental price paid to add VoIP on top of the Internet access service—not the
7 price of the underlying broadband Internet access service itself. In this regard, it is notable that
8 “approximately 74 percent of households in California have fixed residential broadband
9 connections at download speeds exceeding 3 Mbps.” (*Aron Reply Testimony*, p. 34, citing
10 “Internet Access Services: Status as of December, 2014,” Federal Communications Commission,
11 Industry Analysis and Technology Division Wireline Competition Bureau, March 2016, Figure
12 32.) I also note that Professor Roycroft is mistaken when he asserts that I have ignored “the fact
13 that a customer needs a broadband connection to enable over-the-top VoIP.” (*Roycroft Reply*
14 *Testimony*, p. 19, ll. 18-20.) I have not ignored that fact; I have addressed it by taking into
15 account the additional fact that almost three quarters of California households have the necessary
16 broadband connections.

17 **Q19. Do you agree with Professor Roycroft’s and Dr. Selwyn’s policy recommendations?**

18 A19. No, I do not. Professor Roycroft and Dr. Selwyn make several policy recommendations. (See,
19 *e.g.*, *Roycroft Reply Testimony*, p. 140, l. 16 – p. 141, l. 8, and *Selwyn Reply Testimony*, pp. ix-x,
20 p. 7, l. 1 – p. 8, l. 22, and p. 114, l. 4 – p. 125, l. 22.) However, it is my understanding that this
21 proceeding is not intended to set rates, policies, or rules.¹⁴ Rather, “the ultimate question before

22 agreed to acquire. (Webpass Blog, “Google Fiber agrees to acquire Webpass,” June 22, 2016,
23 available at <https://webpass.net/blog/google-fiber-agrees-to-acquire-webpass>, site visited July
12, 2016.)

24 ¹³ Federal Communications Commission (2015) *In the Matter of Protecting and Promoting the*
25 *Open Internet*, Report and Order on Remand, Declaratory Ruling, and Order, released March 12,
2015.

26 ¹⁴ Order Instituting Investigation into the State of Competition Among Telecommunications
27 Providers in California, and to Consider and Resolve Questions raised in the Limited Rehearing
28 of Decision 08-09-042, Investigation 15-11-007, Assigned Commissioner’s Ruling Regarding
Categorization of This Proceeding, February 3, 2016, at 2-3.

1 us is whether intermodal competition, in the decade after URF, has offered sufficient discipline
2 to produce just and reasonable prices for traditional landline services.”¹⁵ Because it is my
3 understanding that policy recommendations are outside of the scope of the current proceeding, I
4 will not offer a detailed analysis of Professor Roycroft’s and Dr. Selwyn’s recommendations.
5 Instead, I confine my testimony to the observation that Professor Roycroft and Dr. Selwyn
6 neither calculate the level of benefits that regulation might generate nor account for the
7 inevitable costs of regulation. Sound policy making would require a full assessment of both the
8 potential benefits and costs of regulation before recommending its implementation. Consider
9 benefits. Even if a market were not fully competitive, it would not follow that regulatory
10 intervention would necessarily improve market performance. The ability to improve market
11 performance is uncertain because of the complexity of market conduct and the limited
12 information available to regulators. Turning to costs, it is well-established that regulation
13 imposes both administrative costs and—more important—costs of unintended consequences
14 (*e.g.*, distorting completion, reducing investment incentives, or limiting innovation).

15 **Q20. Does this conclude your testimony?**

16 A20. Yes, it does.

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26 ¹⁵ Order Instituting Investigation into the State of Competition Among Telecommunications
27 Providers in California, and to Consider and Resolve Questions raised in the Limited Rehearing
28 of Decision 08-09-042, Investigation 15-11-007, Scoping Memo and Ruling of Assigned
Commissioner and Administrative Law Judge, July 1, 2016, at 2.