

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

Joint Application of Charter Communications,
Inc., Charter Communications Holdings, LLC,
and Cox Enterprises, Inc. for Approval Pursuant
to Public Utilities Code Section 854 of the
Indirect Transfer of Control of Cox California
Telcom, LLC (U-5684-C)

Application 25-07-016

OPENING TESTIMONY OF BRYAN KEATING

FOUNDING PARTNER

ECONIC PARTNERS, LLC

ON BEHALF OF JOINT APPLICANTS

January 30, 2026

[PUBLIC VERSION]

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I. INTRODUCTION

Q: Please state your name and occupation.

My name is Bryan Keating. I am a Founding Partner of Econic Partners, LLC, a global economic consulting firm.

Q: Please describe your professional qualifications.

Prior to Econic, I served as an Executive Vice President at Compass Lexecon, LLC, another economic consulting firm. I specialize in antitrust, industrial organization, regulation, and econometrics.

I have advised corporations and government agencies in dozens of antitrust matters, including mergers, investigations, class certification, and damages estimation. My work spans a broad range of industries, such as advertising, healthcare, high technology, industrial goods, media, payment systems, sports, telecommunications, and transportation. I have provided expert testimony in U.S. federal court proceedings, arbitrations, and legislative hearings, as well as before U.S. and international competition and regulatory authorities. In particular, I have submitted written testimony before the California Public Utilities Commission (“Commission”) on three previous occasions.

My research on economic and competition issues has been published in leading academic journals, including *The Journal of Law and Economics*, *The Review of Industrial Organization*, *The Review of Network Economics*, *Antitrust Magazine*, and *Antitrust Source*. I have also co-authored several book chapters, including contributions on Unilateral Effects to the *Oxford Handbook on International Antitrust Economics* and on Econometrics and Regression Analysis to the American Bar Association’s *Proving Antitrust Damages* (Third Edition). I have been recognized as a thought leader in competition economics by *Lexology* (formerly *Who’s Who*

1 *Legal*).

2 I earned a Ph.D. in Economics from Stanford University and graduated *magna cum laude*
3 from Dartmouth College with a B.A. in Economics and Government.

4 My *curriculum vitae* is attached as **Exhibit 1** to this testimony.

5 **Q: What is the purpose of your testimony?**

6 On May 16, 2025, Charter Communications, Inc. (Charter) and Cox Communications,
7 Inc. (Cox) announced a definitive agreement to combine their businesses.¹ Under the terms of
8 the agreement, Cox Enterprises, Inc. (CEI), the parent company of Cox, will contribute Cox to
9 Charter Holdings, LLC (Charter Holdings),² a wholly owned subsidiary of Charter (or to another
10 newly formed wholly owned subsidiary of Charter), in exchange for cash, assumption of debt,
11 and a partial equity stake in Charter Holdings (Transaction).³ Part of the Transaction includes an
12 indirect transfer of control of Cox California Telecom, LLC (Cox California) from CEI to
13 Charter (Transfer). Charter, Charter Holdings, CEI and Cox California (Joint Applicants) filed a
14 joint application requesting approval of the Transfer from the California Public Utilities
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20 ¹ Charter, "Charter Communications and Cox Communications Announce Definitive Agreement to
21 Combine Companies," May 16, 2025, available at <https://ir.charter.com/static-files/d2cd48b4-7bea-40b5-8bad-d24708c4074c>, site accessed January 29, 2026.

22 ² Charter Holdings is an indirect owner of Charter Communications Operating, LLC, under which
substantially all of Charter's operations reside.

23 ³ Charter, "Charter Communications and Cox Communications Announce Definitive Agreement to
24 Combine Companies," May 16, 2025, available at <https://ir.charter.com/static-files/d2cd48b4-7bea-40b5-8bad-d24708c4074c>, site accessed January 29, 2026.

Commission (Commission) on July 30, 2025.⁴ The Commission issued a scoping ruling on December 9, 2025.⁵

I have been asked by counsel for Charter and Cox to evaluate the impact of the Transfer on consumers and competition in California. It is my understanding that my testimony may address some products, services, and topics that are beyond the Transfer for which Commission approval is being sought by Joint Applicants; however, I include such discussion so that the Commission will more fully understand the overall effects of the Transaction, including more fully the impacts on the provision of both regulated and non-regulated services to consumers in California. I do not mean to suggest that all subjects addressed are within the scope of this proceeding.

Q: What materials did you review in forming your opinions?

In order to prepare this testimony, I have reviewed and analyzed documents and data related to Charter's and Cox's respective business operations in California as well as those of their competitors. A list of the materials on which I relied is attached as **Exhibit 2** to this

⁴ *Joint Application of Charter Communications, Inc., Charter Communications Holdings, LLC, and Cox Enterprises, Inc. for Approval Pursuant to Public Utilities Code Section 854 of the Indirect Transfer of Control of Cox California Telcom, LLC (U-5684-C)*, Application 25-07-016, Before the Public Utilities Commission of the State of California, Joint Application of Charter Communications, Inc., Charter Communications Holdings, LLC, and Cox Enterprises, Inc. for Approval Pursuant to Public Utilities Code Section 854 of the Indirect Transfer of Control of Cox California Telcom, LLC (U-5684-C), July 30, 2025 (hereinafter *Joint Application*).

⁵ *Joint Application of Charter Communications, Inc., Charter Communications Holdings, LLC, and Cox Enterprises, Inc. for Approval Pursuant to Public Utilities Code Section 854 of the Indirect Transfer of Control of Cox California Telcom, LLC (U-5684-C)*, Application 25-07-016, Before the Public Utilities Commission of the State of California, Assigned Commissioner's Scoping Memo and Ruling, December 9, 2025 (hereinafter *Scoping Ruling*).

1 testimony.

2 **Q: Please provide a summary of your conclusions.**

3 My primary conclusion is the following: Consumers will benefit from the proposed
4 Transaction, including the proposed Transfer before the Commission. Indeed, because Charter
5 and Cox do not compete with each other in any material way, in California or elsewhere, the
6 Transaction will not lessen competition (or harm consumers in any relevant market).
7 Conversely, the combination of Charter and Cox will benefit consumers across the combined
8 footprint, including in California, as a result of the substantial efficiencies arising from
9 economies of scale and geographic scope, as well as the introduction of new service offerings in
10 the Cox footprint.

11 This primary conclusion is supported by the following more detailed findings, developed
12 throughout this testimony.

13 *The Transaction will not harm competition in the provision of mass-market fixed voice*
14 *services, enterprise services, mass-market fixed broadband services, mobile wireless services, or*
15 *video services (Section II).* Because Charter and Cox operate in almost entirely non-overlapping
16 footprints, they generally do not compete for the same customers, meaning the Transaction and
17 Transfer will not meaningfully result in the elimination of a competitor in any mass-market fixed
18 broadband, video, mobile, enterprise or voice market. Furthermore, both Charter and Cox face
19 growing competition throughout their existing footprints from a variety of competitors.

20 Consequently, the Transaction will not substantially lessen competition in any market, including:

21 • *Fixed Voice Services (Section II.A):* Because Charter and Cox each sell voice
22 service only within their respective footprints and because their footprints have only *de minimis*
23
24

1 overlap (as described further below), the Transaction will not diminish competition in the
2 provision of fixed voice services.

3 • *Enterprise Services (Section II.B)*: Based on Connectbase data available as of
4 April 2025, Charter and Cox provide business data services (BDS) to the same building in only
5 0.3 percent of their combined enterprise footprint in California, which equates to fewer than 160
6 buildings in total. Of this small number of overlap buildings, 96 percent are either served
7 directly by, or are within 2,000 feet of, at least one fiber competitor. Consequently, the
8 Transaction will not substantially lessen competition in the provision of BDS.

9 • *Mass-Market Fixed Broadband Services (Section II.C)*: Based on data from the
10 FCC's Broadband Data Collection available as of December 31, 2024, Charter and Cox make
11 mass-market fixed broadband service available to the same location in less than one half of a
12 percent of their combined footprint in California. Because this overlap is *de minimis*, Charter
13 and Cox do not compete for the same mass-market fixed broadband customers. Moreover,
14 Charter and Cox face competition from at least one other terrestrial mass-market fixed
15 broadband provider offering at least 100/20 Mbps in approximately 83.6 percent of the *de*
16 *minimis* California overlap locations such that Charter and Cox are the only two terrestrial fixed
17 broadband providers at less than 0.1 percent of the California locations in the combined
18 company's footprint; in addition, Charter and Cox face competition at every overlap location
19 from at least one satellite provider offering at least 100/20 Mbps. Consequently, the Transaction
20 will not materially lessen competition in the provision of mass-market fixed broadband services.

21 • *Mobile Wireless Services (Section II.D)*: Charter and Cox each offer mobile
22 wireless services only to their own mass-market fixed broadband customers. Because the
23 overlaps between these footprints are *de minimis*, Charter and Cox also do not compete for the
24

1 same mobile wireless customers. Moreover, Charter and Cox face substantial competition from
2 other providers of mobile wireless services, including AT&T, T-Mobile, and Verizon, which
3 offer mobile wireless service nationwide, including throughout the footprints of both Charter and
4 Cox. Consequently, the Transaction will not lessen competition in the provision of mobile
5 wireless services.

6 • *Video Services (Section II.E):* The footprints in which Charter and Cox offer
7 multichannel video programming distributor (MVPD) video subscriptions overlap with their
8 mass-market fixed broadband footprints. Because the overlaps between these footprints are *de*
9 *minimis*, Charter and Cox do not compete for the same video customers in any material way.
10 Moreover, Charter and Cox face substantial competition from other providers of video services,
11 including facilities-based MVPDs, direct broadcast satellite (DBS) MVPDs, and streaming video
12 providers. Consequently, the Transaction will not substantially lessen competition in the
13 provision of video services.

14 *The Transaction will create substantial efficiencies and benefit consumers (Section III).*
15 Charter and Cox operate in almost entirely non-overlapping and thus geographically
16 complementary footprints. By combining these footprints along with each company's customer
17 base, the Transaction will enable the combined company to take advantage of economies of scale
18 and geographic scope that will allow it to operate more efficiently than either company could on
19 its own. Moreover, delivering broadband services involves significant fixed costs, such as
20 network infrastructure upgrades, CPE management, software platforms, and other support
21 systems; as discussed further below, spreading these costs over a larger footprint reduces the
22 average cost per home passed and/or per customer. These efficiencies create strong economic
23 incentives for the combined company to provide consumers with even greater value than the
24

stand-alone companies do today in the form of higher-quality services and/or lower prices.

These efficiencies can be expected to benefit the consumers of several different products that Charter and Cox offer, including:

- *Enterprise Services (Section III.A)*: Provision of enterprise services, such as BDS, is subject to economies of geographic scope. Multi-location enterprise customers prefer to receive service from a single provider or as few providers as possible. Charter and Cox utilize business relationships with each other (and others) to serve enterprise customers with out-of-footprint locations, and in doing so add markups to the cost of services obtained from each other. The Transaction will eliminate these markups in places where Charter and Cox have these business relationships with each other to provide enterprise services and it will give the combined company an economic incentive to lower prices for these enterprise customers. In addition, the ability to serve more customer locations on the same network will reduce other costs associated with partnering with third parties, leading to more seamless service for customers. Therefore, the Transaction will allow the combined company to better compete for and serve enterprise customers.

- *Mass-Market Fixed Broadband Services (Section III.B)*: Provision of mass-market fixed broadband services is subject to economies of scale. Charter operates a broadband business in California that is approximately [BEGIN CONFIDENTIAL] **HIGHLY** **CONFIDENTIAL** [END CONFIDENTIAL] than Cox's broadband business. Cox addresses its relative lack of scale in part by entering into agreements to utilize [BEGIN CONFIDENTIAL] **CONFIDENTIAL** [END CONFIDENTIAL] network technology and equipment through a syndication agreement. The Transaction will create efficiencies by (a) taking advantage of Charter's greater scale, which for example, allows [BEGIN CONFIDENTIAL] **HIGHLY**

1 **CONFIDENTIAL** [END CONFIDENTIAL]; and (b) eliminating over time the syndication fees
2 that Cox currently pays to [BEGIN CONFIDENTIAL] **CONFIDENTIAL** [END
3 CONFIDENTIAL].

4 • *Mobile Wireless Services (Section III.C)*: Provision of mobile wireless services is
5 subject to economies of scale and geographic scope. [BEGIN CONFIDENTIAL] **HIGHLY**
6 **CONFIDENTIAL** [END CONFIDENTIAL]. The Transaction will create efficiencies through
7 at least two mechanisms: (a) because the number of within-footprint Wi-Fi access points
8 increases in proportion to each provider's fixed broadband customer base, and because the fixed
9 broadband efficiencies described above will increase the total number of fixed broadband
10 customers and thus the number of Wi-Fi access points, the Transaction will reduce reliance on
11 wholesale network access arrangements (*i.e.*, increasing the total number of Wi-Fi access points
12 will increase opportunities to offload mobile traffic to Wi-Fi infrastructure built for broadband
13 customers, which, by definition, is lower in cost than delivering traffic through third-party
14 wholesale network access arrangements that do not use Wi-Fi); and (b) the Transaction will
15 enable the combined company to take advantage of economies of scale and provide mobile
16 devices to customers in the legacy Cox footprint [BEGIN CONFIDENTIAL] **HIGHLY**
17 **CONFIDENTIAL** [END CONFIDENTIAL].

18 • *Video Services (Section III.D)*: Provision of video services is subject to economies
19 of scale. Charter operates a video business that is approximately [BEGIN CONFIDENTIAL]
20 **HIGHLY CONFIDENTIAL** [END CONFIDENTIAL] than Cox's video business. Like its
21 broadband business, Cox addresses its lack of scale in part by syndicating [BEGIN
22 CONFIDENTIAL] **CONFIDENTIAL** [END CONFIDENTIAL] technology and equipment.
23 The Transaction will create efficiencies by eliminating over time the syndication fees that Cox
24

1 currently pays to [BEGIN CONFIDENTIAL] **CONFIDENTIAL** [END CONFIDENTIAL],
2 which will give the combined company an economic incentive to lower prices of video services
3 for legacy Cox customers.

4 I develop these conclusions further and describe the facts and analyses that support them
5 in the remainder of this testimony.

6 **II. THE TRANSACTION WILL NOT DIMINISH COMPETITION IN THE**
7 **PROVISION OF VOICE, MASS-MARKET FIXED BROADBAND, MOBILE**
8 **WIRELESS, VIDEO, OR ENTERPRISE SERVICES**

9 **Q: Please describe the Transaction's impact on competition.**

10 Because Charter's and Cox's wireline footprints are almost entirely non-overlapping,
11 they do not compete in any material way for the same fixed voice, broadband, mobile wireless,
12 or video customers today, and the Transaction consequently will not diminish such competition.
13 Similarly, the Transaction will not harm competition in the provision of BDS because Charter
14 and Cox serve largely distinct BDS customers and locations and, in the minimal places where
15 they do overlap, they face competition from other providers in nearly all of those locations.

16 A. *The Transaction Will Not Diminish Competition in the Provision of Fixed*
17 *Voice Services*

18 **Q: Please explain whether the Transaction will affect competition in the provision of**
19 **fixed voice services.**

20 Because Charter and Cox sell fixed voice service only within their mass-market fixed
21 broadband footprint and because their footprints have *de minimis* overlap (as described in
22 Section II.C below), the Transaction will not diminish competition in the provision of fixed voice
23 services.

Moreover, Charter and Cox face substantial competition in the provision of voice services. Charter accounts for approximately [BEGIN CONFIDENTIAL] **HIGHLY CONFIDENTIAL** [END CONFIDENTIAL] voice lines in California and Cox accounts for approximately [BEGIN CONFIDENTIAL] **HIGHLY CONFIDENTIAL** [END CONFIDENTIAL] lines. Collectively, they make voice services available to just [BEGIN CONFIDENTIAL] **HIGHLY CONFIDENTIAL** [END CONFIDENTIAL] percent of California households.⁶ As the FCC has recognized, “there now exists a multitude of other voice service options for consumers in the United States,” including both fixed and mobile voice services and voice over IP (VoIP) services that are “nearly indistinguishable to the consumer from the core communications functionality of the public switched telephone network.”⁷ Nearly every adult in the United States has at least one mobile line.⁸ And FCC data identify nearly 700 unique providers of voice services in California.⁹

B. *The Transaction Will Not Diminish Competition in the Provision of Enterprise Services*

Q: Please explain whether the Transaction will affect competition in the provision of enterprise services.

The Transaction will not diminish competition in the provision of enterprise services.

As explained below, because Charter and Cox operate in almost entirely non-overlapping

⁶ Charter Data; Cox Data.

⁷ 2024 Communications Marketplace Report, *In the Matter of Communications Marketplace Report*, GN Docket No. 24-119, December 31, 2024 (hereinafter, *2024 Communications Marketplace Report*), ¶ 154.

⁸ 2024 Communications Marketplace Report, Figure II.B.2 (showing more than 300 million traditional handsets in the United States in 2023). See also *2024 Communications Marketplace Report*, ¶ 54 (describing mobile wireless services as “an essential part of everyday life.”).

⁹ FCC, “Form 477 Filers by State as of June 30, 2024,” available at <https://www.fcc.gov/sites/default/files/JUN2024%20State%20Filer%20List.xlsx>.

1 footprints, they do not materially compete for the same enterprise customers, and the Transaction
2 consequently will not result in any lessening of competition for such customers. Moreover,
3 Charter and Cox face substantial competition for BDS customers from the incumbent local
4 exchange carrier (ILEC) and more established providers of enterprise services. Although the
5 ILEC varies across geographies, some have a large presence and compete directly with Charter
6 and Cox across their footprints. For example, in California, AT&T competes in 65 percent of
7 Charter's footprint and 79 percent of Cox's footprint. In total, eight fiber providers have a larger
8 fiber presence within Charter's BDS footprint in California than Cox does. Thus, Charter and
9 Cox not only operate in almost entirely non-overlapping footprints, but also face robust
10 competition for enterprise customers.

11 To assess the extent of BDS overlap for the two companies, I analyze data at the building
12 level. Using data from Connectbase, I identify BDS building overlaps as those enterprise
13 locations where both Charter and Cox offer on-net BDS.¹⁰ I also identify which of these overlap
14 locations are served by at least one other competitor serving the same location and which of
15 these overlap locations have a competing provider offering service within 500 or 2,000 feet.¹¹

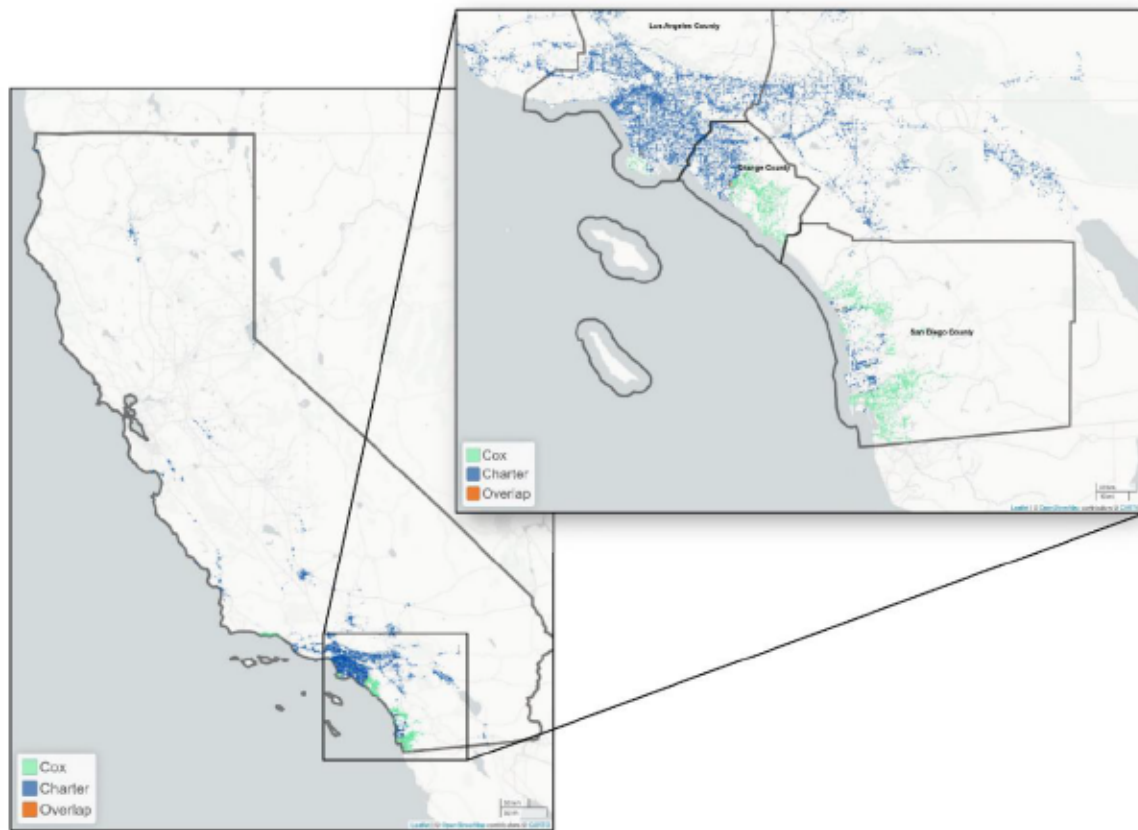
16 As shown in Figure 1 below, Charter and Cox operate non-overlapping enterprise
17 footprints in California. Specifically, I identify only 157 enterprise locations served by both
18 Charter's and Cox's fiber networks, representing just 0.3 percent of the combined company's on-
19 net fiber enterprise footprint in California. Of these on-net overlap buildings, I find that the vast
20

21 ¹⁰ For the purposes of this analysis, BDS is defined as any provider's fiber connection to a building location
22 indicated by Connectbase as being subject to a service-level agreement (SLA). I identify on-net buildings
as locations where Connectbase has indicated that a carrier has a fiber presence. Connectbase includes fiber
connections for Segra and UPN as a part of Cox's network, although neither operates in California.

23 ¹¹ Connectbase identifies a carrier as a near-net provider if its fiber network is within 2,000 feet of a building
24 location. I vary my definition of near-net based on the distance shown by Connectbase between a building
and a provider's fiber network.

majority (92 percent) have at least one other on-net competitor. Among those overlap buildings that have at least one other on-net competitor, the average number of competitors is 1.1. Including near-net competitors with fiber networks within 2,000 feet (approximately 0.4 miles), approximately 96 percent of on-net overlap buildings have at least one on-net or near-net fiber competitor.¹²

Figure 1: Charter and Cox Operate Non-Overlapping Enterprise Footprints in California



¹² I conduct similar analyses where I expand the definition of overlap buildings to include buildings that are on or near both Cox's and Charter's fiber networks, using a 2,000 foot near-net distance threshold. I identify overlaps in 1.3 percent of the parties' combined on-net and near-net building footprints. I find at least one on-net or near-net competitor within 2,000 feet in more than 94 percent of overlap locations. Among those buildings that had at least one competitor present, the average number of competitors is 2.1.

1 Source: Connectbase Data as of April 2025.

2 Notes: Map shows Charter's and Cox's respective fiber-lit buildings in California.

3 The analysis above shows that Charter and Cox provide overlapping enterprise service in
4 a small number of locations and face competition from other enterprise service providers in
5 almost all of those overlap locations. Accordingly, this Transaction will not diminish
6 competition in enterprise services. To the contrary, as described in Section III.A below, it will
7 enhance this competition.

8 C. The Transaction Will Not Diminish Competition in the Provision of Mass-
9 Market Fixed Broadband Services

10 Q: Please explain whether the Transaction will affect competition in the provision of
11 mass-market fixed broadband services.

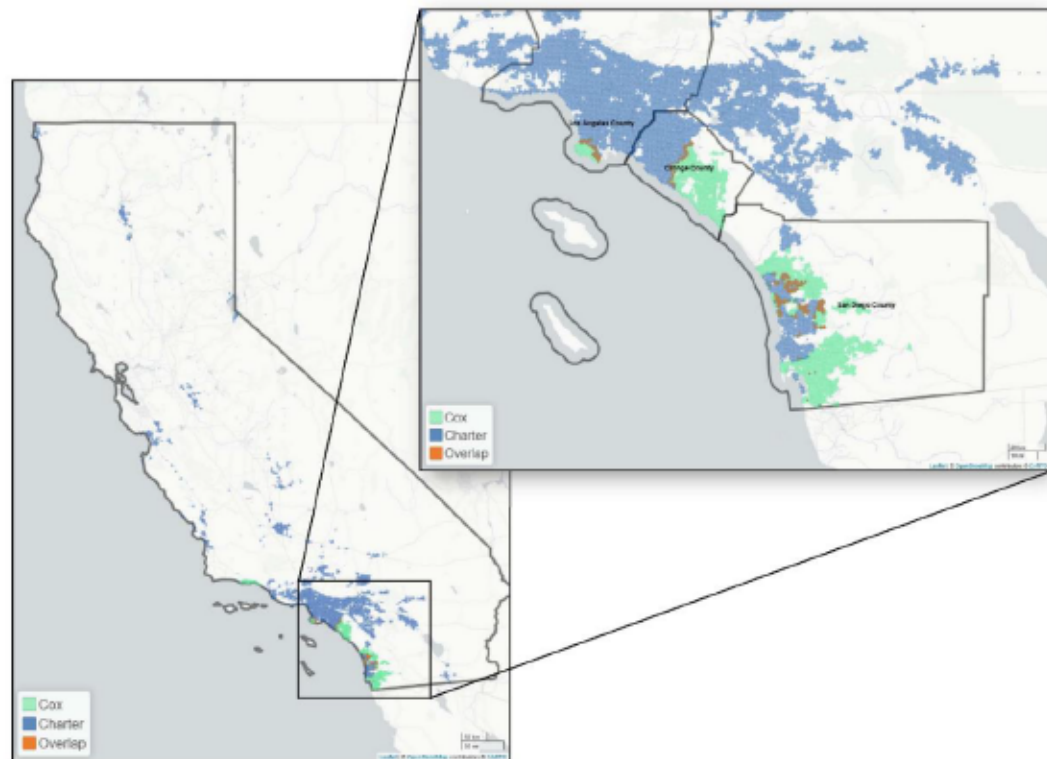
12 The proposed Transaction will not harm competition in the provision of mass-market
13 fixed broadband services.

14 As shown in Figure 2, Charter and Cox operate complementary wireline footprints.
15 Although their footprints are adjacent in certain areas of the country (including in California),
16 overlaps are negligible. Of the 5.4 million mass-market broadband serviceable locations (BSLs)
17 in the combined footprints of Charter and Cox in California, the two companies both serve only
18 22,009 locations (approximately 0.4 percent).¹³ Stated another way, because they operate in
19 distinct geographic areas, Charter and Cox do not compete with each other in more than 99.5

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21
22 ¹³ Calculations based on the December 31, 2024, Broadband Data Collection (BDC) data release.
23 Availability data as of December 31, 2024, were collected from broadband providers between January 2,
24 2025, and March 3, 2025. I define Charter's and Cox's mass-market footprints as the BSLs at which
residential-only or business-and-residential broadband service is available with advertised speeds of at least
100/20 Mbps in the BDC data. Residential locations should not be confused with households. I am unable
to observe the number of dwelling units in each location.

percent of mass-market fixed broadband serviceable locations within their combined footprint in California.

Figure 2: Charter and Cox Operate Non-Overlapping Mass-Market Footprints in California



Source: FCC, National Broadband Map, December 31, 2024 data release.

Notes: Map shows Charter's and Cox's respective footprints in California across broadband technologies and speeds for residential and mixed-use locations.

At approximately 83.6 percent of the *de minimis* overlap locations in California, Charter and Cox face competition from at least one other high-speed terrestrial fixed broadband service offering speeds of at least 100/20 Mbps.¹⁴ Accordingly, Charter and Cox are the only two high-speed terrestrial fixed broadband providers at less than 0.1 percent of the locations in the

¹⁴ Calculations based on the December 31, 2024, BDC data release.

combined company's California footprint.¹⁵ Moreover, at all 22,009 mass-market locations in California where Charter's and Cox's footprints overlap, high-speed broadband service of at least 100/20 Mbps is available via a satellite provider.

Given the extremely limited overlap between Charter's and Cox's footprints, as well as the competition they face from other providers, the Transaction will not diminish competition for broadband customers in California (or elsewhere). To the contrary, as explained in Section III.B below, the Transaction will enhance competition for broadband customers.

D. *The Transaction Will Not Diminish Competition in the Provision of Mobile Wireless Services*

Q: Please explain whether the Transaction will affect competition in the provision of mobile wireless services.

The Transaction will not diminish competition in the provision of mobile wireless services.

Because Charter and Cox sell mobile wireless service only to their fixed broadband customers¹⁶ and because their fixed broadband footprints have *de minimis* overlap (as described in the prior section), the Transaction also will not result in any lessening of competition for mobile wireless customers.¹⁷

¹⁵ Calculations based on the December 31, 2024, BDC data release. A high-speed terrestrial fixed competitor is not present in 3,610 out of the total 22,009 overlap locations.

¹⁶ In some limited instances, customers who were formerly fixed broadband customers and move out of the fixed broadband service footprint may retain their mobile wireless service without also being a fixed broadband customer.

¹⁷ See, e.g., Spectrum, "Unlimited Data Plans," available at <https://www.spectrum.com/mobile/plans/unlimited-data> ("Spectrum Internet® required."); Cox, "Frequently Asked Questions," available at <https://www.cox.com/residential/mobile.html> ("You must have Cox Internet, enroll in EasyPay and enroll in paperless billing to be eligible for Cox Mobile.").

1 In these limited overlap areas, the Transaction will not diminish competition because
2 Charter and Cox face strong competition from mobile network operators such as AT&T, T-
3 Mobile, and Verizon, which all operate nationwide networks and compete throughout Charter's
4 and Cox's footprints, including in California. As a result of this competition, Charter and Cox
5 account for a small share of wireless service. Although mobile wireless service offered by cable
6 companies is growing, Charter accounts for less than three percent of U.S. mobile wireless
7 connections and Cox accounts for [BEGIN CONFIDENTIAL] **HIGHLY CONFIDENTIAL**
8 [END CONFIDENTIAL] percent of national mobile wireless connections.¹⁸

9 Accordingly, the Transaction will not diminish competition for mobile wireless
10 customers. To the contrary, as explained in Section III.C below, the Transaction will enhance
11 competition for mobile wireless customers.

12 E. The Transaction Will Not Diminish Competition in the Provision of Video
13 Services

14 Q: Please explain whether the Transaction will affect competition in the provision of
15 video services.

16 The proposed Transaction will not harm competition in the provision of video services.

17 Charter's and Cox's video footprints align with their broadband footprints, and thus the
18 conclusion that their broadband footprints are almost entirely non-overlapping also holds with
19 respect to their video footprints. This conclusion holds even in instances where Charter and Cox
20

21 ¹⁸ As of March 2025, Charter had 10.4 million mobile wireless lines and Cox had [BEGIN
22 CONFIDENTIAL] **HIGHLY CONFIDENTIAL** [END CONFIDENTIAL] residential mobile wireless
23 lines. In total, there are more than 500 million mobile connections in the United States. (Charter
24 Communications, Inc., *Form 10-Q Q1 2025*, available at <https://ir.charter.com/node/35131/html>, p. 14;
Exhibit D to Public Interest Statement – Declaration of Perley McBride, Executive Vice President and Chief
Financial Officer, Cox Communications (hereinafter, *Exhibit D to PIS*), ¶ 15; *2024 Communications
Marketplace Report*, ¶ 59.)

1 both have franchise areas in the same municipality (e.g., San Diego) because they serve different
2 portions of the municipality. Because Charter and Cox operate in almost entirely non-
3 overlapping video distribution footprints, they do not compete with each other for more than 99.5
4 percent of serviceable video customers in California. The Transaction consequently will not
5 diminish competition for such customers.¹⁹

6 Moreover, Charter and Cox face substantial competition in the provision of video
7 services. The FCC has recognized that the video marketplace has evolved to include three
8 categories of participants: MVPDs, streaming video providers (which the FCC refers to as online
9 video providers or OVDs), and broadcast television stations.²⁰ In addition, social media sites,
10 such as TikTok, Snap, Facebook, and Instagram, increasingly distribute both user- and AI-
11 generated video content that offers consumers even more choices.²¹ Reflecting this evolving
12 video competition, video cord-cutting is prevalent and subscriptions for streaming video
13 providers are increasing.²² Subscription-based on-demand streaming video nearly doubled
14 between 2018 and 2024, while Charter's video subscriptions decreased by approximately one-
15 quarter over the same period, and Cox's video subscriptions decreased by nearly one-half

17 ¹⁹ As the FCC has recognized, "Cable MVPDs generally serve non-overlapping franchise areas;
18 consequently, most consumers have access to one cable MVPD only, and cable MVPDs do not generally
19 compete directly with one another for the same subscribers." (*2024 Communications Marketplace*
Report, ¶ 203.)

20 ²⁰ *2024 Communications Marketplace Report*, ¶ 198.

21 Streaming video providers mentioned in the *2024 Communications Marketplace Report* include
22 subscription-based providers (Netflix, Hulu, Amazon Prime Video, Disney+, YouTubeTV, Max, Apple
TV+, Paramount+, Peacock Premium, ESPN+, Showtime, Starz, Discovery+, DirecTV Stream, Sling TV,
Cinemax, and Fubo TV) and advertising-based providers (YouTube, Facebook, Instagram, Tubi TV,
FreeVee, Pluto TV, The Roku Channel, TikTok, Twitter, Peacock, Snapchat Discover, Samsung TV Plus,
Crackle, Twitch, Watch Free with Plex, Crunchy Roll, Fandango at Home).

23 ²¹ *2024 Communications Marketplace Report*, ¶ 200.

24 ²² *2024 Communications Marketplace Report*, ¶¶ 204, 215, 238-249.

1 between 2019 and 2024.²³ As of December 2025, according to Nielsen, users viewed more
2 television programming via streaming video providers (47.5 percent) than on cable (20.2
3 percent) and broadcast networks (21.4 percent), combined.²⁴ Indeed, Charter itself has aided the
4 rise of streaming (reflecting the complementarity between streaming video providers and
5 Charter's (and Cox's) broadband service) through its investments in Xumo, a video streaming
6 platform that manages access to streaming content, and Charter's Spectrum App Store
7 marketplace, which helps consumers more easily access streaming apps.²⁵

8 Accordingly, the Transaction will not diminish competition for video customers. To the
9 contrary, as explained in Section III.D below, the Transaction will enhance such competition.

10 F. Conclusion with Respect to Competitive Effects

11 **Q: Please summarize your conclusion about the Transaction's competitive effects.**

12 Based on the analysis described in the foregoing sections, I find that, because Charter and
13 Cox operate in almost entirely non-overlapping footprints and face growing competition
14 throughout their existing footprints from a variety of competitors, the Transaction will not
15 substantially lessen competition (or harm consumers in any market). To the contrary, for the

17 ²³ 2020 Communications Marketplace Report, *In the Matter of Communications Marketplace Report*, GN
18 Docket No. 20-60, December 31, 2020, Fig II.D.9; 2024 Communications Marketplace Report, Fig II.E.9;
19 Charter Communications, Inc., *Form 10-K 2018*, available at <https://ir.charter.com/node/26936/html>, p.
20 4. Charter Communications, Inc., *Form 10-K 2024*, available at <https://ir.charter.com/node/34786/html>,
21 p. 5. Cox Data.

22 ²⁴ Nielsen Media Distributor Gauge, available at <https://www.nielsen.com/data-center/the-gauge/>, site
23 accessed January 29, 2026.

24 Viewership of linear streaming is allocated to the either "cable" or "broadcast," as appropriate.
"Streaming" includes advertising- and subscription-based on-demand streaming services.

²⁵ Xumo Press Release, "Xumo Stream Box Integrates Live TV and Popular Streaming Apps, Seamlessly
Delivering Everything Customers Want on One Platform," October 4, 2023, available at
[https://www.xumo.com/press/xumo-begins-nationwide-rollout-of-its-first-streaming-devices-in-charter-
and-comcast-households](https://www.xumo.com/press/xumo-begins-nationwide-rollout-of-its-first-streaming-devices-in-charter-and-comcast-households); Charter, "Introducing The Spectrum App Store, The Next Big Step in Seamless
Entertainment." October 9, 2025, available at [https://corporate.charter.com/newsroom/spectrum-
introduces-the-spectrum-app-store](https://corporate.charter.com/newsroom/spectrum-introduces-the-spectrum-app-store).

1 reasons described in Section III below, the Transaction will increase competition and benefit
2 consumers.

3 **III. THE TRANSACTION WILL CREATE EFFICIENCIES AND BENEFIT** 4 **CONSUMERS**

5 **Q: Please identify the public-interest benefits and efficiencies that will result from the**
6 **Transaction.**

7 As I describe in this section, the Transaction will increase the scale and geographic scope
8 of the combined company, which will create economic efficiencies and benefit consumers.²⁶

9 **A. Efficiencies in the Provision of Enterprise Services**

10 **Q: How will the Transaction generate efficiencies in the provision of enterprise**
11 **services?**

12 The provision of enterprise services is characterized by large providers with nationwide
13 networks, and regional operators such as Charter and Cox often face challenges in serving
14 enterprise customers with out-of-footprint locations. The proposed Transaction will enhance the
15 combined company's ability to provide enterprise services, including BDS, by realizing
16 economies of geographic scope, a form of efficiency that arises when a firm can provide services
17 across a wider set of locations more effectively than separate providers operating in isolation or
18 via arm's-length contracting.²⁷ Both the Commission and the FCC have recognized in the past
19

20 ²⁶ The efficiencies that I describe in this section do not necessarily constitute the full set of efficiencies
21 that may arise because of the Transaction. Instead, I focus on major categories of efficiencies that will
benefit consumers.

22 ²⁷ Charter and Cox, "Charter Communications and Cox Communications Agree to Transformative
23 Combination," May 16, 2025, p. 4, available at [https://ir.charter.com/static-files/17f74638-d569-448c-
be88-76d00f9c6fff](https://ir.charter.com/static-files/17f74638-d569-448c-be88-76d00f9c6fff), site accessed January 29, 2026 (noting that a "[l]arger commercial footprint, together
24 with Cox Business' industry reputation and assets, will position the company to more effectively compete
for national business customers.").

1 that the ability to serve customers with multiple locations benefits business customers.²⁸ By
2 combining Charter's and Cox's footprints, the combined company will be better positioned to
3 serve enterprise customers who prefer to obtain services from a single vendor for all locations
4 and enable the combined company to deliver lower prices and more seamless service.²⁹

5 For many enterprise customers, limitations in geographic coverage can be a disqualifying
6 constraint. To address limitations in geographic scope, enterprise service providers often enter
7 into business arrangements (as in the example above) to provide service to out-of-footprint
8 locations. Under these agreements, one provider owns the customer relationship and sub-
9 contracts service from another service provider that covers out-of-footprint locations. Enterprise
10

11 ²⁸ See, e.g., Decision Granting Application to Transfer Control Subject to Conditions, *In the matter of*
12 *Joint Application of Charter Communications, Inc.; Charter Fiberlink CA-CCO, LLC (U6878C); Time*
13 *Warner Cable Inc.; Time Warner Cable Information Services (California), LLC (U6874C);*
14 *Advance/Newhouse Partnership; Bright House Networks, LLC; and Bright House Networks Information*
15 *Services (California), LLC (U6955C) Pursuant to California Public Utilities Code Section 854 for*
16 *Expedited Approval of the Transfer of Control of both Time Warner Cable Information Services*
17 *(California), LLC (U6874C) and Bright House Networks Information Services (California), LLC*
18 *(U6955C) to Charter Communications, Inc., and for Expedited Approval of a Pro Forma Transfer of*
19 *Control of Charter Fiberlink CA-CCO, LLC (U6878C), Application 15-07-009, July 2, 2015, p. 44,*
20 *available at <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M162/K004/162004567.PDF>*
21 *("Customers typically prefer a single network, with a single set of technical standards and a single point*
22 *of contact for customer support-benefits that Charter, TWC, and BHN operating as independent*
23 *companies cannot provide to many multi-location – when some of the locations are out of footprint – and*
24 *regional businesses. Because the Transaction will increase the size and density of New Charter's footprint,*
the business case for advanced services will be easier to make."); Memorandum Opinion and Order, In
the Matter of Applications of Charter Communications, Inc., Time Warner Cable, Inc., and
Advance/Newhouse Partnership For Consent to Assign or Transfer Control of Licenses and
Authorizations, MB Docket No. 15-149, May 10, 2016, ¶ 377, available at
<https://docs.fcc.gov/public/attachments/FCC-16-59A1.pdf> ("We agree with the Applicants that the
proposed Transaction would likely benefit competition for business services by enabling New Charter to
provide service through a single network.").

²⁹ A Gartner survey found 75 percent of enterprises were actively pursuing vendor consolidation to
streamline operations, reduce costs, and enhance security integration. They thus seek vendors who can
provide services to most or all of their operational sites. See "Gartner Survey Shows 75% of
Organisations Are Pursuing Security Vendor Consolidation in 2022," All About Security, September 13,
2022, available at [https://www.all-about-security.de/gartner-survey-shows-75-of-organisations-are-](https://www.all-about-security.de/gartner-survey-shows-75-of-organisations-are-pursuing-security-vendor-consolidation-in-2022/)
[pursuing-security-vendor-consolidation-in-2022/](https://www.all-about-security.de/gartner-survey-shows-75-of-organisations-are-pursuing-security-vendor-consolidation-in-2022/), site accessed January 29, 2026.

1 service providers typically add a markup to the cost of the sub-contracted service. These
2 markups reflect a form of double marginalization that is common when multiple firms work
3 together to provide complementary products (here, enterprise services in different geographic
4 locations).³⁰

5 Both Charter and Cox utilize business agreements with each other to serve enterprise
6 customers with out-of-footprint locations.³¹ When Charter holds the direct relationship with an
7 enterprise customer and sub-contracts enterprise services from another firm serving out-of-
8 footprint locations, it passes through the wholesale costs plus a markup. As of July 2025,
9 Charter paid Cox approximately [BEGIN CONFIDENTIAL] **HIGHLY CONFIDENTIAL**
10 [END CONFIDENTIAL] per month to serve approximately [BEGIN CONFIDENTIAL]
11 **HIGHLY CONFIDENTIAL** [END CONFIDENTIAL] percent of locations outside Charter's
12 footprint.³² When reselling to its enterprise customers, Charter applies a markup of
13 approximately [BEGIN CONFIDENTIAL] **HIGHLY CONFIDENTIAL** [END
14 CONFIDENTIAL] percent, depending on type of service, type of technology, and number of
15 locations.³³ This structure means that Charter has economic incentives to charge end customers
16 prices that reflect not only Charter's retail margin, but also the underlying wholesale rate charged
17 by Cox.

18 Similarly, Cox Business pays Charter approximately [BEGIN CONFIDENTIAL]
19 **HIGHLY CONFIDENTIAL** [END CONFIDENTIAL] per month to serve approximately
20

21 ³⁰ Jean Tirole (1988), *The Theory of Industrial Organization*, The MIT Press, pp. 174-175.

22 ³¹ Exhibit C to Public Interest Statement – Declaration of Jessica Fischer, Chief Financial Officer, Charter
Communications, Inc. (hereinafter, *Exhibit C to PIS*), ¶ 45; *Exhibit D to PIS*, ¶ 30.

23 ³² *Exhibit C to PIS*, ¶ 45.

24 ³³ *Exhibit C to PIS*, ¶ 45.

1 [BEGIN CONFIDENTIAL] **HIGHLY CONFIDENTIAL** [END CONFIDENTIAL] percent of
2 its enterprise customers with out-of-footprint locations.³⁴ When reselling services obtained from
3 third parties, [BEGIN CONFIDENTIAL] **HIGHLY CONFIDENTIAL** [END
4 CONFIDENTIAL].³⁵

5 Post-Transaction, Charter will no longer need to pay Cox's wholesale charge for out-of-
6 footprint services and vice versa. This eliminates the wholesale margins and, for customers
7 served through partnerships between Charter and Cox, the combined company will have an
8 incentive to charge them a price that reflects only a single margin rather than two, resulting in
9 lower prices. With more competitive pricing, the combined company can better compete for
10 enterprise customers.

11 The proposed Transaction will also result in non-price benefits for multi-location
12 enterprise customers.³⁶ With a combined footprint and network, the combined company can
13 expedite ordering and deployment for customers and offer a more seamless service due to fewer
14 handoffs to other carriers and improved ability to detect and troubleshoot any service
15 interruptions.³⁷

17 ³⁴ *Exhibit D to PIS*, ¶ 30.

18 ³⁵ *Exhibit D to PIS*, ¶ 30.

18 ³⁶ *Exhibit C to PIS*, ¶ 43.

19 ³⁷ Decision Granting Application to Transfer Control Subject to Conditions, *In the matter of Joint*
20 *Application of Charter Communications, Inc.; Charter Fiberlink CA-CCO, LLC (U6878C); Time Warner*
21 *Cable Inc.; Time Warner Cable Information Services (California), LLC (U6874C); Advance/Newhouse*
22 *Partnership; Bright House Networks, LLC; and Bright House Networks Information Services*
23 *(California), LLC (U6955C) Pursuant to California Public Utilities Code Section 854 for Expedited*
24 *Approval of the Transfer of Control of both Time Warner Cable Information Services (California), LLC*
(U6874C) and Bright House Networks Information Services (California), LLC (U6955C) to Charter
Communications, Inc., and for Expedited Approval of a Pro Forma Transfer of Control of Charter
Fiberlink CA-CCO, LLC (U6878C), Application 15-07-009, July 2, 2015, pp. 44-45; Memorandum
Opinion and Order, *In the Matter of Applications of XO Holdings and Verizon Communications, Inc. For*
Consent to Transfer Control of Licenses and Authorization, WC Docket No. 16-70, November 16, 2016,
¶ 63; Memorandum Opinion and Order, *In the Matter of Applications of Level 3 Communications, Inc.*

1 In addition, Cox has competitive advantages in providing services to enterprise customers
2 as [BEGIN CONFIDENTIAL] **HIGHLY CONFIDENTIAL** [END CONFIDENTIAL].³⁸
3 Post-Transaction, the combined company will adopt Cox's best practices, both in product
4 offerings and service delivery, and extend them across a much broader footprint. This will allow
5 the combined company to provide a more complete and competitive offering to enterprise
6 customers currently served by Charter.

7 In California, there are approximately [BEGIN CONFIDENTIAL] **HIGHLY**
8 **CONFIDENTIAL** [END CONFIDENTIAL] enterprise locations serviceable by Charter's fiber
9 BDS network and [BEGIN CONFIDENTIAL] **HIGHLY CONFIDENTIAL** [END
10 **CONFIDENTIAL**] serviceable by Cox's fiber BDS network.³⁹ Integrating Cox's enterprise
11 capabilities with the scale and reach of Charter's footprint will allow the combined company to
12 compete more effectively for enterprise customers and better serve those in legacy Charter
13 footprint.

14 B. Efficiencies in the Provision of Mass-Market Fixed Broadband Services
15 Q: How will the Transaction generate efficiencies in the provision of mass-market fixed
16 broadband services?

17 The provision of broadband services is characterized by substantial economies of scale.⁴⁰
18 By combining the geographic footprints and customer bases of each company, the combined
19

20 and CenturyLink, Inc. For Consent to Transfer Control of Licenses and Authorizations, WC Docket No.
21 16-403, October 30, 2017, ¶ 57. See also Exhibit C to PIS, ¶ 8 (explaining how [BEGIN
22 **CONFIDENTIAL**] **CONFIDENTIAL** [END CONFIDENTIAL]).

23 ³⁸ Exhibit C to PIS, ¶ 44.

24 ³⁹ Connectbase Data.

⁴⁰ Victor Glass and Stela K. Stefanova (2012), "Economies of scale for broadband in rural United States,"
Journal of Regulatory Economics 41:100–119.

1 company will operate at greater scale than either stand-alone company, enabling it to take
2 advantage of economies of scale that will allow it to operate more efficiently. These efficiencies
3 will reduce the combined company's costs to provide broadband services, which will put
4 downward pressure on prices and incentivize the combined company to offer higher quality
5 services and/or lower prices than it otherwise would.

6 Cox operates at a much smaller scale compared to Charter. Cox had approximately
7 [BEGIN CONFIDENTIAL] **HIGHLY CONFIDENTIAL** [END CONFIDENTIAL] million
8 broadband customers compared to Charter's 30 million broadband customers as of March
9 2025.⁴¹ Charter uses its scale to develop technology internally.⁴² In contrast, Cox has addressed
10 its lack of scale in part by syndicating [BEGIN CONFIDENTIAL] **CONFIDENTIAL** [END
11 CONFIDENTIAL] customer premises equipment (CPE) and technology.⁴³ By doing so, Cox
12 incurs [BEGIN CONFIDENTIAL] **HIGHLY CONFIDENTIAL** [END CONFIDENTIAL].⁴⁴
13 Syndication also generally requires Cox to conform to the [BEGIN CONFIDENTIAL]
14 **CONFIDENTIAL** [END CONFIDENTIAL] platform's technical standards and upgrade paths,
15 which reduces flexibility in Cox's network investment decisions.⁴⁵ As a consequence, Cox
16 generally [BEGIN CONFIDENTIAL] **HIGHLY CONFIDENTIAL** [END CONFIDENTIAL].

17 The beneficial effects of Charter's greater scale can be seen in the fact that it charges
18 customers lower prices for similar standalone broadband service compared to Cox, and Charter's
19

20 ⁴¹ *Exhibit D to PIS*, ¶ 9. Charter Communications, Inc., *Form 10-Q Q1 2025*, available at
<https://ir.charter.com/node/35131/html>, p. 14 estimates 28 million residential internet customers and 2
21 million small businesses internet customers at the end of March 2025.

22 ⁴² *Exhibit C to PIS*, ¶ 24.

23 ⁴³ [BEGIN CONFIDENTIAL] **HIGHLY CONFIDENTIAL** [END CONFIDENTIAL]. (Cox Data;
Exhibit D to PIS, ¶¶ 36-37.)

24 ⁴⁴ *Exhibit D to PIS*, ¶¶ 37, 39.

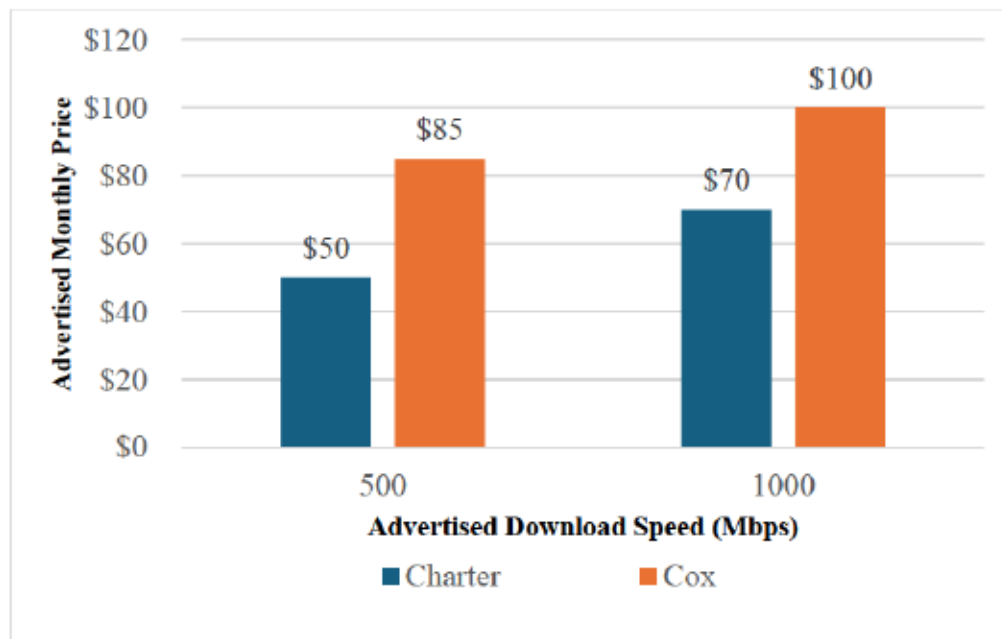
⁴⁵ *Exhibit D to PIS*, ¶¶ 36, 38.

1 prices are even lower when a customer chooses to bundle home internet and mobile wireless
2 plan.

3 As shown in Figure 3 below, Charter charges the same or lower introductory promotional
4 prices for standalone broadband plans relative to Cox. For example, Charter's introductory,
5 promotional pricing is \$30/month less for its 1 Gbps offering, \$35/month less for its 500 Mbps
6 offering compared to Cox.⁴⁶

22 ⁴⁶ Spectrum, "Spectrum Internet," available at <https://www.spectrum.com/internet>, site accessed January
23 25, 2026; Cox, "Cox High-Speed Internet Plans and Pricing," available at
24 <https://www.cox.com/residential/internet.html>, site accessed January 29, 2026. Comparisons are based on
advertised monthly prices.

Figure 3: Comparison of Charter and Cox Advertised Internet-Only Plans Promotional Prices

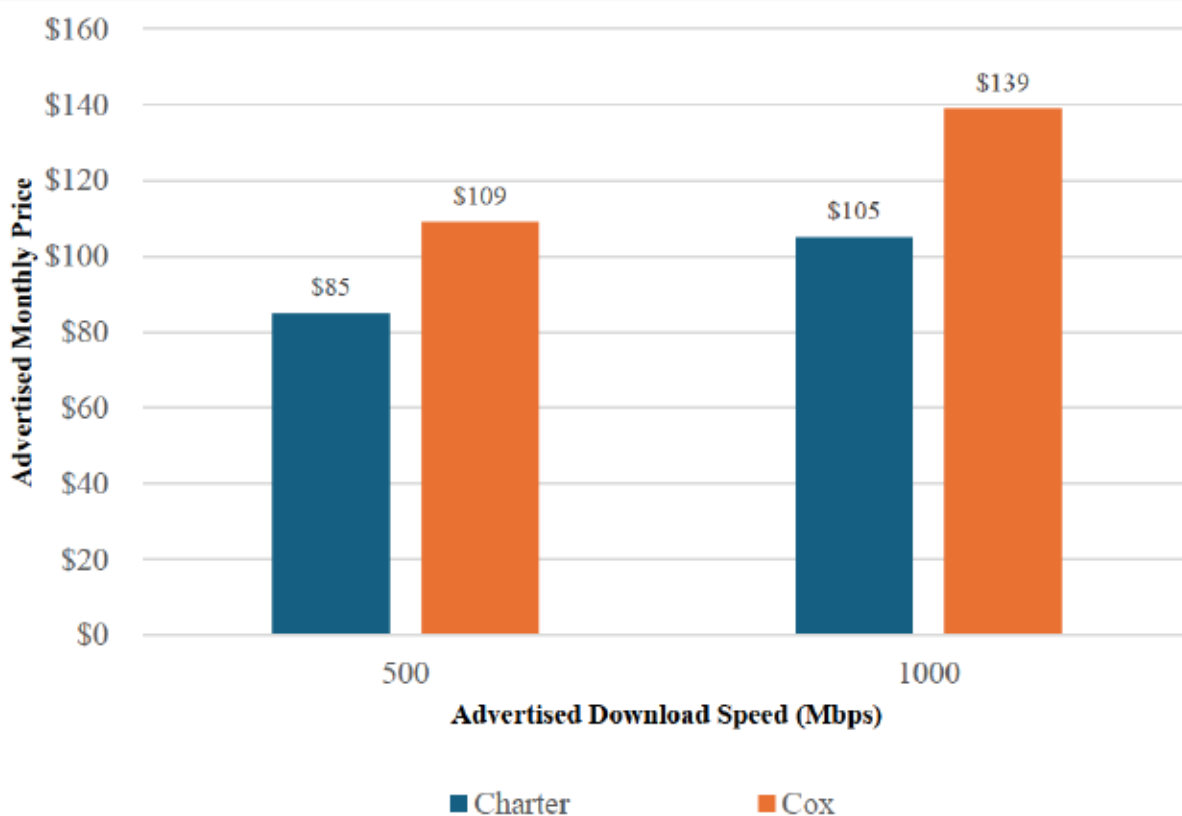


Sources: Spectrum, "Spectrum Internet," available at <https://www.spectrum.com/internet>, site accessed January 29, 2026; Cox, "Cox High-Speed Internet Plans and Pricing," available at <https://www.cox.com/residential/internet.html>, site accessed January 29, 2026.

Note: Figure reports the monthly promotional prices and download speeds as presented on the respective carrier websites as of January 25, 2026.

Charter's non-promotional prices for its standard residential internet service offerings are also lower than Cox's comparable offerings. As shown in Figure 4 below, Charter charges \$34/month less for its 1 Gbps plan and \$24/month less for its 500 Mbps plan compared to Cox.

Figure 4: Comparison of Charter and Cox Advertised Internet-Only Plans Non-Promotional Prices



Sources: Spectrum, "Spectrum Internet," available at <https://www.spectrum.com/internet>, site accessed January 29, 2026; Cox, "Cox High-Speed Internet Plans and Pricing," available at <https://www.cox.com/residential/internet.html>, site accessed January 29, 2026.

Note: Figure reports the monthly non-promotional prices and download speeds as presented on the respective carrier websites as of January 29, 2026.

Charter's bundled prices are even lower when Internet is combined with two or more lines of mobile service.⁴⁷ Currently, Charter offers a 1 Gbps home internet plus two unlimited lines of mobile wireless service for \$100 per month for the first two years, that increases to \$145 per month by year five, constituting a significant discount off of the standard retail rate for these

⁴⁷ See, e.g., Spectrum, "Spectrum Packages – Save More When You Bundle," available at <https://www.spectrum.com/packages>, site accessed January 29, 2026 (showing Internet Premier pricing decreases from \$50 per month for standalone to \$30 per month for 2 years when bundling with two lines of Spectrum Mobile Unlimited at \$30 per month per line). See also Charter Data [BEGIN CONFIDENTIAL] [CONFIDENTIAL] [END CONFIDENTIAL].

1 products.⁴⁸ A comparable plan from Cox (1 Gbps home Internet plus two unlimited mobile
2 wireless lines) would cost \$180 per month, resulting in a Cox customer having access to
3 significantly less expensive alternatives.⁴⁹

4 The proposed Transaction will extend the benefits of Charter's scale to legacy Cox
5 customers in at least two ways.⁵⁰ First, the combined subscriber base and geographic scope will
6 enable a more efficient network, which can be expected to lead to the provision of greater
7 quality, such as higher download and upload speeds, at lower cost. Second, the combined
8 company will eventually not need to syndicate network services from [BEGIN
9 CONFIDENTIAL] **CONFIDENTIAL** [END CONFIDENTIAL] and can transition Cox's
10 legacy subscribers onto Charter's internal platform and CPE. Eliminating these costs of
11 syndication gives the combined company economic incentives to lower prices for legacy Cox
12 customers.

13 1. More Efficient Investment in Network Upgrades

14 Q: How will the Transaction impact the combined company's ability to invest in
15 network upgrades?

16 Delivering broadband services involves significant fixed costs, such as network
17 infrastructure upgrades, CPE management, software platforms, and other support systems.⁵¹

18
19 ⁴⁸ *Exhibit C to PIS*, ¶ 30.

20 ⁴⁹ *Exhibit D to PIS*, ¶ 14.

21 ⁵⁰ In addition, Cox customers will have the option of retaining their existing plan or switching to a Charter plan, meaning that they gain the option value associated with being able to choose the best plan among an expanded set of options.

22 ⁵¹ Organisation for Economic Co-operation and Development (2014), "The Development of Fixed
23 Broadband Networks," OECD Digital Economy Papers, No. 239, OECD Publishing, Paris, available at
24 https://www.oecd.org/content/dam/oecd/en/publications/reports/2014/06/the-development-of-fixed-broadband-networks_g17a24da/5jz2m5mlb1q2-en.pdf, p. 11 ("All fixed communications networks share basic economic characteristics. The first is high fixed costs (capital expenditures), both in absolute terms and relative to variable costs (operational expenditures)."). See also, *Exhibit C to PIS*, ¶ 5 [BEGIN

1 Spreading these costs over a larger footprint reduces the average cost per home passed and/or per
2 customer. Providers operating at greater scale are generally better positioned to invest in
3 network upgrades, negotiate better input pricing, and maintain lower retail prices. By combining
4 the customer bases of the two stand-alone companies, the proposed Transaction will generate
5 economies of scale that allow the combined company to engage in more efficient investment in
6 network upgrades. These upgrades will offer consumers enhanced on-demand download speeds,
7 as well as faster upload speeds and better network experiences.

8 The benefits of scale are evident in a comparison of Charter's and Cox's network
9 evolution costs. [BEGIN CONFIDENTIAL] **CONFIDENTIAL** [END
10 CONFIDENTIAL].

11 2. Elimination of Syndication Fees

12 Q: How will the Transaction affect syndication fees?

13 Cox addresses its relative lack of scale by syndicating certain network technology from
14 [BEGIN CONFIDENTIAL] **CONFIDENTIAL** [END CONFIDENTIAL]. This leads to a
15 double markup by which [BEGIN CONFIDENTIAL] **CONFIDENTIAL** [END
16 CONFIDENTIAL] includes a margin in the syndication fee that it charges Cox and Cox adds a
17 margin to its retail broadband product. By allowing the legacy Cox network to take advantage of
18 Charter's greater scale and its own network technology, the proposed Transaction will eliminate,
19 over time, the syndication fees Cox currently pays [BEGIN CONFIDENTIAL]
20 **CONFIDENTIAL** [END CONFIDENTIAL] for broadband network technology and equipment

21
22
23
24 [BEGIN CONFIDENTIAL] **CONFIDENTIAL** [END CONFIDENTIAL]

1 with various functionalities. In economic terms, this is a form of eliminating double
2 marginalization.⁵²

3 Since 2022, Cox has paid [BEGIN CONFIDENTIAL] **CONFIDENTIAL** [END
4 CONFIDENTIAL] an average of approximately [BEGIN CONFIDENTIAL] **HIGHLY**
5 **CONFIDENTIAL** [END CONFIDENTIAL] in syndication fees for [BEGIN
6 CONFIDENTIAL] **HIGHLY CONFIDENTIAL** [END CONFIDENTIAL] devices and app
7 access, and the software necessary to manage [BEGIN CONFIDENTIAL] **HIGHLY**
8 **CONFIDENTIAL** [END CONFIDENTIAL] and cable broadband gateway devices.⁵³ These
9 payments reflect both the cost of the equipment and technology that Cox syndicates as well as
10 the margin that [BEGIN CONFIDENTIAL] **CONFIDENTIAL** [END CONFIDENTIAL]
11 earns to syndicate this equipment and technology. By enabling the combined company to utilize
12 Charter's own CPE and Advanced Wi-Fi technology and thus incur the direct costs, but *not* the
13 additional markup, the Transaction will reduce the cost associated with providing services to
14 legacy Cox customers.

15 [BEGIN CONFIDENTIAL] **HIGHLY CONFIDENTIAL** [END CONFIDENTIAL]
16 and the efficiencies described here will give the combined company the incentive to lower prices
17 used to serve legacy Cox subscribers and compete for new customers within the legacy Cox
18 footprint.⁵⁴

19 C. Efficiencies in the Provision of Mobile Wireless Services
20
21

22 ⁵² Jean Tirole (1988), *The Theory of Industrial Organization*, The MIT Press, pp. 174-175.

23 ⁵³ *Exhibit D to PIS*, ¶ 37.

24 ⁵⁴ *Exhibit C to PIS*, ¶¶ 24, 42.

1 Q: How will the Transaction generate efficiencies in the provision of mobile wireless
2 services?

3 Both Charter and Cox provide mobile wireless services using a hybrid infrastructure
4 model.⁵⁵ Within their service footprints, mobile wireless customers primarily obtain mobile
5 connectivity through Wi-Fi access points.⁵⁶ Both Charter and Cox rely on wholesale mobile
6 virtual network operator (MVNO) agreements [BEGIN CONFIDENTIAL] **CONFIDENTIAL**
7 [END CONFIDENTIAL] to provide mobile coverage to customers who travel beyond the reach
8 of Wi-Fi access points (or Wi-Fi and CBRS infrastructure, in Charter's case).⁵⁷

9 The provision of mobile wireless service is characterized by economies of scale and
10 geographic scope. An important feature of Charter's and Cox's mobile wireless networks is that
11 the vast majority of mobile traffic is not served through their MVNO agreements; it is serviced
12 using networks of Wi-Fi access points. It is more cost efficient to support mobile wireless traffic
13 using Wi-Fi networks than purchasing wholesale network access from a third party.⁵⁸ Any
14 mechanism that offloads traffic from the network accessed via an MVNO agreement to a
15 provider's own infrastructure will therefore lower the incremental costs of providing mobile
16 wireless service. For the reasons described below, greater scale and geographic scope can
17 facilitate such offloading of traffic.

18

⁵⁵ *Exhibit C to PIS*, ¶ 26; *Exhibit D to PIS*, ¶ 16.

19 ⁵⁶ *Exhibit C to PIS*, ¶¶ 26 and 31.

20 ⁵⁷ *Exhibit C to PIS*, ¶ 26; *Exhibit D to PIS*, ¶ 16.

21 ⁵⁸ This conclusion follows from the fact that in-home Wi-Fi access points are already distributed to fixed
22 broadband customers and out-of-home Wi-Fi access points are deployed for coverage and not to alleviate
23 congestion and thus the associated costs do not vary with the number of mobile wireless customers or the
24 amount of mobile wireless traffic. Consequently, the incremental costs associated with carrying mobile
wireless traffic over Wi-Fi infrastructure are effectively \$0. (Craig Moffett et al., "U.S. Wireless: The
Other Side of Convergence. What is Cable's Equilibrium Wireless Market Share?" *MoffettNathanson
Research* (September 11, 2024); Craig Moffett et al., "U.S. Cable and U.S. Telecom: Revisiting Cable's
MVNO Margins," *MoffettNathanson Research* (March 7, 2025).)

1 Charter has a much larger mobile wireless subscriber base than Cox.⁵⁹ It also offloads a
2 greater proportion of its mobile traffic onto Wi-Fi. Specifically, Charter currently offloads
3 approximately 87 percent of its mobile traffic onto Wi-Fi while Cox estimates that it offloads
4 approximately [BEGIN CONFIDENTIAL] **HIGHLY CONFIDENTIAL** [END
5 CONFIDENTIAL] percent of its mobile traffic onto Wi-Fi.⁶⁰ Charter's higher Wi-Fi offloading
6 rate enables lower delivery costs as well as improved performance, since Wi-Fi connections
7 often provide higher speeds than third-party cellular access.

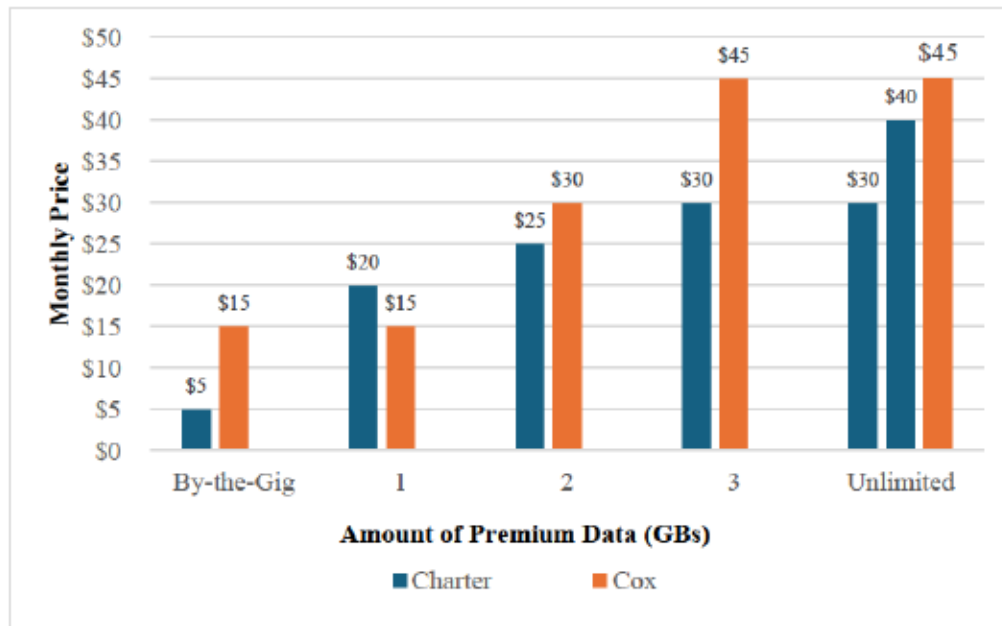
8 The benefits of this greater scale are reflected in a comparison of prices and other plan
9 features for Spectrum Mobile and Cox Mobile plans. As shown in Figure 5 below, Spectrum
10 Mobile's plans are almost always less expensive than Cox's (and offer better non-price terms,
11 such as higher premium data allowances and hotspot data). Both companies offer unlimited and
12 pay-as-you-go plans. For unlimited plans, both of Spectrum's options offer lower prices and
13 higher premium data allowances than Cox. Spectrum offers \$30 per line for 30 GBs of premium
14 data or \$40 per line for 50 GBs of premium data, while Cox offers \$45 per line for only 20 GBs
15 of premium data. For pay-as-you-go plans, Cox's price is only lower for the first GB (\$15
16 compared to Spectrum's \$20) and significantly more expensive for subsequent GBs of data (\$15

17
18 ⁵⁹ Charter has more than [BEGIN CONFIDENTIAL] **HIGHLY CONFIDENTIAL** [END
19 CONFIDENTIAL] the number of mobile wireless subscribers that Cox has. (Charter Communications,
20 Inc., *Form 10-Q Q1 2025*, available at <https://ir.charter.com/node/35131/html>, p. 14. (As of March 2025,
Charter had approximately 10.4 million mobile wireless lines; *Exhibit D to PIS*, ¶ 15 (As of March 2025,
Cox had [BEGIN CONFIDENTIAL] **HIGHLY CONFIDENTIAL** [END CONFIDENTIAL] mobile
wireless lines).)

21 ⁶⁰ "Charter Communications, Inc. (CHTR) Goldman Sachs Communacopia + Technology Conference
22 (Transcript)," Seeking Alpha, September 11, 2024, available at [https://seekingalpha.com/article/4720534-](https://seekingalpha.com/article/4720534-charter-communications-inc-chtr-goldman-sachs-communacopia-technology-conference-transcript)
23 [charter-communications-inc-chtr-goldman-sachs-communacopia-technology-conference-transcript](https://seekingalpha.com/article/4720534-charter-communications-inc-chtr-goldman-sachs-communacopia-technology-conference-transcript) ("So,
24 87% of the traffic for Spectrum Mobile today is offloaded to our small cells and to our partner small cells,
which means that 13% is utilizing the Verizon 5G network, and it's a good network, but it's only when
our network isn't available. And so, in some sense, the 5G radio is the backup network. It's the slowest
portion of our network where we have gigabit wireless everywhere in the 87% of the data that we offload
to our own small cells."); *Exhibit C to PIS*, ¶ 32; *Exhibit D to PIS*, ¶ 17.

per GB for Cox compared to \$5 per GB for Spectrum). Moreover, Spectrum’s unlimited plans all include hotspot data, while Cox’s plans do not.⁶¹

Figure 6: Comparison of Charter and Cox Advertised Mobile Wireless Plans



Sources: Spectrum Mobile, available at <https://www.spectrum.com/mobile>; Cox Mobile, available at <https://www.cox.com/residential/mobile.html>.

Notes: Figure reports the monthly prices and amount of premium data as presented on the respective carrier websites as of January 16, 2026. Spectrum Mobile offers three mobile wireless plans. “By The Gig” costs \$20 per month for the first GB and costs \$5 for each additional GB. After 5 GB per line of full speed data usage, speeds are reduced to 256 Kbps upload/download and data is de-prioritized. “Unlimited” costs \$30 per line per month. After 30 GB of full speed data usage, speeds are reduced to 1 Mbps download/512 Kbps upload and data is deprioritized. “Unlimited Plus” costs \$40 per line per month. After 50 GB of full speed data usage, speeds are reduced to 1 Mbps download/512 Kbps upload and data is deprioritized. All Spectrum Mobile plans include mobile hotspots. Cox offers two mobile wireless plans. “Pay as you Gig” costs \$15 per GB. After 5 GB of full speed data usage, speeds are reduced to a max of 1.5 Mbps download/750 Kbps upload. “Gig Unlimited” costs \$45 per month for one line, \$40 per month per line for two lines, \$35 per month per line for three lines, and \$30 per month per line for 4+ lines. After 20 GB of full speed data usage, speeds are reduced to a max of 1.5 Mbps download/750 Kbps upload. All Spectrum and Cox mobile wireless plans require activation of internet services.

The Transaction will result in significant efficiencies in the provision of mobile wireless services for at least two reasons.

⁶¹ Cox, “Cox Mobile Plans and Pricing,” available at <https://www.cox.com/residential/mobile/cell-phone-plans.html>, site accessed January 29, 2026. In addition, Charter’s Unlimited Plus plan includes anytime upgrade and free roaming in 180+ countries as well as 10 GB of free mobile hotspot data; none of Cox’s plans offer these features. Spectrum, “Unlimited Data Plans,” available at <https://www.spectrum.com/mobile/plans/unlimited-data>, site accessed January 29, 2026.

1 First, the fixed broadband efficiencies described in the prior section also improve the
2 efficiency of providing mobile wireless services. This conclusion follows from the facts that
3 (a) fixed broadband efficiencies will tend to attract more fixed broadband customers via higher
4 quality and/or lower prices; and (b) the number of Wi-Fi access points available to support
5 mobile services within a provider's fixed broadband footprint increases in proportion to the
6 number of fixed broadband customers the provider has.⁶² And the incremental cost of offloading
7 mobile traffic onto Wi-Fi infrastructure built for broadband customers is, by definition, lower
8 than any cost to deliver traffic through a third-party wholesale network access arrangement not
9 using Wi-Fi. Thus, increasing the amount of Charter and Cox mobile data traffic that can be
10 offloaded to the Wi-Fi network will lead to significant savings.⁶³

11 Second, the Transaction will also create efficiencies in the procurement of mobile devices
12 from various manufacturers. For example, Cox's subscribers will benefit from the lower pricing
13 that Charter generally obtains on Android devices from original equipment manufacturers. In Q1
14 2025, Charter sold almost [BEGIN CONFIDENTIAL] **CONFIDENTIAL** [END
15 CONFIDENTIAL] Samsung Galaxy A16 devices, with a procurement cost of [BEGIN
16 CONFIDENTIAL] **HIGHLY CONFIDENTIAL** [END CONFIDENTIAL] per device; in
17 comparison, Cox sold fewer than [BEGIN CONFIDENTIAL] **CONFIDENTIAL** [END
18 CONFIDENTIAL] Samsung Galaxy A16 devices, with a procurement cost of [BEGIN
19 CONFIDENTIAL] **HIGHLY CONFIDENTIAL** [END CONFIDENTIAL] per device,

21 ⁶² Every fixed broadband customer has a Wi-Fi router. The majority of these routers typically broadcast a
22 non-public-facing SSID for private use and a public-facing SSID for external use. It is my understanding
23 that Charter's Advanced Wi-Fi and Cox's Panoramic Wi-Fi Gateway routers turn on a secondary public-
facing SSID, though customers have the option to opt-out. (See, e.g., Cox Wi-Fi, "Panoramic Wifi for
wall-to-wall coverage," available at <https://www.cox.com/residential/internet/wifi.html>.)

24 ⁶³ *Exhibit C to PIS*, ¶ 32 ("... we expect that the percentage of data traffic flowing over Charter's own
facilities will increase as we deploy additional Wi-Fi and CBRS infrastructure.").

1 [BEGIN CONFIDENTIAL] **HIGHLY CONFIDENTIAL** [END CONFIDENTIAL] than what
2 Charter paid.⁶⁴ By accessing Charter's lower device costs to provide service in Cox's legacy
3 footprint, the Transaction will reduce the costs of providing mobile services.

4 D. Efficiencies in the Provision of Video Services

5 Q: How will the Transaction generate efficiencies in the provision of video services?

6 The Transaction can be expected to lead to the more efficient provision of video services.
7 The provision of video services is subject to economies of scale. Charter, with 12.7 million total
8 video subscribers, operates at substantially greater scale than Cox, with approximately [BEGIN
9 CONFIDENTIAL] **HIGHLY CONFIDENTIAL** [END CONFIDENTIAL] million total video
10 subscribers.⁶⁵ The Transaction will enable the combined firm to take advantage of economies of
11 scale to provide video services at lower costs.⁶⁶

14 ⁶⁴ Charter Data; Cox Data.

15 ⁶⁵ Charter Communications, Inc., *Form 10-Q Q1 2025*, available at
16 <https://ir.charter.com/node/35131/html>, site accessed January 29, 2026, p. 14; *Exhibit D to PIS*, ¶ 20.

17 ⁶⁶ In addition, subscribers in Cox's footprint switching to a Spectrum video plan will gain access to
18 Charter's TV offerings that include more features. For example, Spectrum TV's Select Signature and
19 Select Plus plans include, at no extra cost, access to the basic version of several streaming apps, including
20 Disney+ Basic, Paramount+ Essential, Peacock Premium with Ads, AMC+ (with Ads), Hulu (with Ads),
21 and HBO Max Basic (with Ads).

22 Spectrum, "Frequently Asked Questions," available at <https://www.spectrum.com/cable-tv/streaming>,
23 site accessed January 29, 2026 (Q: Are streaming apps included in Spectrum TV? A: Yes; HBO Max
24 Basic With Ads, ESPN Unlimited, Hulu, Disney+, Paramount+ Essential, Peacock Premium with Ads,
FOX One, AMC+ with Ads and ViX Premium with ads are included at no extra cost with Spectrum TV
Select Signature, TV Select Plus and TV Platinum. Tennis Channel are included at no extra cost with
Spectrum TV Select Plus and Select Platinum. ViX Premium with ads and Paramount+ Essential are
included at no extra cost with Mi Plan Latino.).

Charter, "Spectrum TV Select Customers to Receive Hulu as Part of Expanded Agreement Between
Charter and The Walt Disney Company," June 26, 2025, available at
[https://corporate.charter.com/newsroom/spectrum-tv-select-customers-to-receive-hulu-as-part-of-
expanded-agreement-between-charter-and-the-walt-disney-company](https://corporate.charter.com/newsroom/spectrum-tv-select-customers-to-receive-hulu-as-part-of-expanded-agreement-between-charter-and-the-walt-disney-company), site accessed January 29, 2026.

1 The beneficial effects of Charter's greater scale can be seen in the fact that it generally
2 offers customers greater value at lower prices than Cox. For example, the Spectrum TV
3 Platinum plan has an advertised price of \$160 per month for one year (\$175 per month standard
4 rate), and includes 230+ channels and access at no additional cost to HBO Max Basic with Ads,
5 ESPN Unlimited, Hulu, Disney+, Paramount+ Essential, Peacock Premium with Ads, FOX One,
6 AMC+ with Ads, Tennis Channel, and ViX Premium with Ads streaming services.⁶⁷ In contrast,
7 the Cox Contour TV Ultimate plan has an advertised price of \$184 per month for a package with
8 a similar number of channels.⁶⁸ Although the value that individuals place on the inclusion of
9 streaming services will vary across customers, the combined retail price of these services
10 included in Charter's Spectrum TV packages is up to \$140 per month, whereas the combined
11 retail price of the services included in Cox's Contour TV packages is up to \$75 per month.

12 Charter's prices are even lower when broadband service is combined with a Spectrum TV
13 plan. For example, the Spectrum Internet Premier 500 Mbps plan pricing decreases from \$50 per
14 month for standalone to \$30 per month for two years when bundling with Spectrum TV Select
15 Signature at \$115 per month for a total of \$145 per month.⁶⁹ Even after stepping up to non-
16 promotional pricing after five years, this bundled offering is currently available to Charter
17 customers at a persistent rate of \$165. In contrast, Cox does not typically offer lower prices
18 when bundling. For example, Cox's introductory, promotional pricing for its Go Even Faster
19 500 Mbps plan is at \$85 per month (the same price as a standalone) when bundling with Contour
20

21 ⁶⁷ Pricing available at Spectrum, "Spectrum TV – TV How It Should Be," available at
22 <https://official.spectrum.com/sem/video>, site accessed January 29, 2026.

23 ⁶⁸ Additional information available at Cox, "Cox Streaming and Traditional TV Plans," available at
24 <https://www.cox.com/residential/tv.html>, site accessed January 29, 2026.

⁶⁹ See, e.g., Spectrum, "Spectrum Packages – Save More When You Bundle," available at
<https://www.spectrum.com/packages>, site accessed January 29, 2026.

1 TV Preferred at \$140 per month (also the same price as a standalone), for a total of \$225 per
2 month.⁷⁰ After reaching a non-promotional rate, a Cox customer would be paying \$249 per
3 month.

4 Cox addresses its lack of scale in part by syndicating technology and equipment from
5 [BEGIN CONFIDENTIAL] **CONFIDENTIAL** [END CONFIDENTIAL].⁷¹ Transitioning
6 legacy Cox customers onto Charter's own platform eliminates the need for syndication and thus
7 lowers the costs associated with providing video service to legacy Cox customers.

8 Currently, [BEGIN CONFIDENTIAL] **HIGHLY CONFIDENTIAL** [END
9 CONFIDENTIAL]. Specifically, [BEGIN CONFIDENTIAL] **HIGHLY CONFIDENTIAL**
10 [END CONFIDENTIAL].⁷² Since 2022, Cox has paid [BEGIN CONFIDENTIAL]
11 **CONFIDENTIAL** [END CONFIDENTIAL] approximately [BEGIN CONFIDENTIAL]
12 **HIGHLY CONFIDENTIAL** [END CONFIDENTIAL] in syndication fees for CPEs and
13 software used to provide video services.⁷³

14 As described above, replacing Cox's dependence on syndication over time with Charter's
15 technology can be expected to result in the elimination of double marginalization. This double
16 marginalization arises from the fact that [BEGIN CONFIDENTIAL] **CONFIDENTIAL** [END
17 CONFIDENTIAL], as the upstream technology provider, sets syndication fees above its own
18 marginal costs, and Cox, in turn, must price its video service above these syndicated input costs
19

20 ⁷⁰ See, e.g., Cox, "Getting Started with Cox Services," available at
21 <https://www.cox.com/residential/special-offers/bundles.html>, site accessed January 29, 2026; Cox, "Cox
22 Streaming and Traditional TV Plans," available at <https://www.cox.com/residential/tv.html>, site accessed
January 29, 2026; Cox, "Cox High-Speed Internet Plans and Pricing," available at
<https://www.cox.com/residential/internet.html>, site accessed January 29, 2026.

23 ⁷¹ Exhibit D to PIS, ¶ 36.

24 ⁷² Exhibit D to PIS, ¶¶ 37, 39.

⁷³ Exhibit D to PIS, ¶ 39.

1 to earn a return. Post-Transaction, migrating legacy Cox video subscribers onto Charter's in-
2 house video platform over time will allow the combined company to internalize these costs and
3 substantially reduce the need for external licensing. This will lead to lower costs for the delivery
4 of video services.⁷⁴

5 This type of cost savings is likely to benefit consumers. This conclusion follows from the
6 fact that [BEGIN CONFIDENTIAL] **CONFIDENTIAL** [END CONFIDENTIAL] assesses
7 most fees on a [BEGIN CONFIDENTIAL] **HIGHLY CONFIDENTIAL** [END
8 CONFIDENTIAL], including [BEGIN CONFIDENTIAL] **HIGHLY CONFIDENTIAL** [END
9 CONFIDENTIAL].⁷⁵ In other words, the syndication fees are [BEGIN CONFIDENTIAL]
10 **HIGHLY CONFIDENTIAL** [END CONFIDENTIAL] and a profit-maximizing firm has a
11 strong incentive to pass through lower marginal costs in the form of lower prices or higher
12 quality because doing so increases profits.⁷⁶

13 [BEGIN CONFIDENTIAL] **CONFIDENTIAL** [END CONFIDENTIAL]. Charter,
14 however, [BEGIN CONFIDENTIAL] **HIGHLY CONFIDENTIAL** [END
15 CONFIDENTIAL].⁷⁷ Thus, the described efficiencies will provide incentives to the combined
16 company to lower prices in the legacy Cox footprint, especially for new customers. The benefits
17 resulting from the savings owing to these new subscribers are likely to be material in the legacy
18 Cox footprint.

19 ⁷⁴ *Exhibit C to PIS*, ¶ 42.

20 ⁷⁵ *Exhibit D to PIS*, ¶ 37.

21 ⁷⁶ Hal Varian (2014), *Intermediate Microeconomics with Calculus*, 1st ed., W.W. Norton, pp. 463-464.

22 ⁷⁷ *Exhibit C to PIS*, ¶ 42. Charter also plans to make Spectrum TV app available to all legacy Cox
customers [BEGIN CONFIDENTIAL] **CONFIDENTIAL** [END CONFIDENTIAL]. (*Exhibit C to PIS*,
23 ¶ 40.)

24 Cox currently offers Xumo streaming box on its website; it is my understanding that Charter's Xumo box
serves as traditional set top box in addition to streaming functionalities.

1 **Q: Does this conclude your opening testimony?**

2 Yes, it does.

EXHIBIT 1

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2007 Ph.D., Economics, Stanford University

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Fields of Specialization

Industrial organization, applied econometrics, economic and econometric analysis of mergers (including merger simulation), economic and econometric analysis of damages in antitrust matters, economic and econometric analysis of class certification in antitrust matters

Professional Experience

2025 – Present Econic Partners, Washington, DC, Founding Partner

2007 – 2025 Compass Lexecon, Washington, DC, Executive Vice President, April 2016 - February 2025;
Senior Vice President, April 2013 - March 2016; Vice President, April 2010 - March 2013;
Senior Economist, August 2007 - March 2010

2006 – 2007 Acumen, LLC, Burlingame, CA, Senior Research Analyst

2004 – 2006 Stanford University, Palo Alto, CA, Research Assistant for Professors Tom MaCurdy, Susan Athey, and Liran Einav

2003 – 2005 Stanford University, Palo Alto, CA, Teaching Assistant for graduate econometrics and undergraduate microeconomics

1999 – 2002 NERA Economic Consulting, Chicago, IL, Senior Analyst

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An Economic Analysis of Mobile Wireless Competition in the United States, December 11, 2023, available at <https://www.ctia.org/news/compass-lexecon-competition-report>, Exhibit A to Comments of CTIA, *In the Matter of Safeguarding and Securing the Open Internet*, Federal Communications Commission, WC Docket No. 23-320, December 14, 2023

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Economic Assessment of the Conditions to MOLIT's Approval of the Joint Venture Between Delta Air Lines and Korean Air, *Renewal Application for Joint Venture between Delta Air Lines and Korean Air*, Ministry of Land, Infrastructure and Transport (Republic of Korea), December 11, 2020

An Economic Analysis of the Joint Venture between Delta and LATAM, *Joint Application of Delta Air Lines, Inc. and LATAM Airlines Group S.A., D/B/A LATAM Airlines, TAM Linhas Aéreas S.A., D/B/A LATAM Airlines Brasil, LAN Perú S.A., D/B/A LATAM Airlines Perú, Transportes Aereos Del Mercosur S.A., D/B/A TAM Mercosur, and Aerovías de Integración Regional, Aires S.A., D/B/A LATAM Colombia Under 49 U.S.C. §§41308 and 41309 for Approval of and Antitrust Immunity for Alliance Agreements*, DOT-OST-2020-0105, July 1, 2020

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The Proposed Merger of Sprint and T-Mobile is Procompetitive when Evaluated Using Two Additional Approaches to Estimating Diversion Ratios (with Mark Israel and Michael Katz), *In the Matter of Applications of T-Mobile US, Inc. and Sprint Corporation, Consolidated Applications for Consent to Transfer Control of Licenses and Authorizations*, Federal Communications Commission, WT Docket No. 18-197, April 12, 2019

New T-Mobile's Planned In-Home Broadband Traffic would have No Material Effect of Mobile Broadband Consumers' Welfare in 2021 and 2024 (with Mark Israel and Michael Katz), *In the Matter of Applications of T-Mobile US, Inc. and Sprint Corporation, Consolidated Applications for Consent to Transfer Control of Licenses and Authorizations*, Federal Communications Commission, WT Docket No. 18-197, March 6, 2019

Porting Data are Biased and Inferior to Both Survey Data and Structural Demand Estimation as a Means of Estimating Diversion Ratios (with Mark Israel and Michael Katz), *In the Matter of Applications of T-Mobile US, Inc. and Sprint Corporation, Consolidated Applications for Consent to Transfer Control of Licenses and Authorizations*, Federal Communications Commission, WT Docket No. 18-197, February 7, 2019

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An Economic Analysis of Joint Venture between Delta and WestJet, *Joint Application of Delta Air Lines, Inc. and WestJet Under 49 U.S.C. §§41308 and 41309 for approval of and antitrust immunity for Alliance Agreements*, Docket DOT-OST-2018-0154, October 9, 2018

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Economic Analysis of the Remedies and Limitations Proposed in the Show Cause Order, *Joint Application of Delta Air Lines, Inc. and Aerovias de Mexico, S.A. de C.V. Under 49 U.S.C. §§41308 and 41309 for Approval of and Antitrust Immunity for Alliance Agreements*, DOT-OST-2015-0070, November 18, 2016

Reply Declaration of Michael L. Katz and Bryan G.M. Keating (with Michael Katz), *In the Matters of Business Data services in an Internet Protocol Environment, Investigation of Certain Price Cap Local Exchange Carrier Business Data Services Tariff Pricing Plans, Special Access for Price Cap Local Exchange Carriers; AT&T Corp. Petition for Rulemaking to Reform Regulation of Incumbent Local Exchange Carrier Rates for Interstate Special Access Services*, WC Docket Nos. 16-143, 15-247, 05-25, RM-10593, August 9, 2016

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The Economic Impact of Delta Air Lines Seattle Expansion (with Steven Peterson), on behalf of Delta Air Lines, September 2015

Economic Analysis of the Effect of the Comcast-TWC Transaction on Voice and Broadband Services in California (with Mark A. Israel and David A. Weiskopf), Exhibit D attached to Opening Brief of Joint Applicants, *Joint Application of Comcast Corporation, Time Warner Cable Inc., Time Warner Cable Information Services (California), LLC, and Bright House Networks Information Services (California), LLC for Expedited Approval of the Transfer of Control of Time Warner Cable Information Services (California), LLC (U-6874-C); and the Pro Forma Transfer of Control of Bright House Networks Information Services (California), LLC (U-6955-C), to Comcast Corporation Pursuant to California Public Utilities Code Section 854(a)*, Application No. A. 14-04-013, December 3, 2014

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An Analysis of the Benefits of Allowing Satellite Broadband Providers to Participate Directly in the Proposed CAF Reverse Auctions (with Jonathan Orszag), attached to Comments of ViaSat, Inc. *In the Matter of Connect America Fund; A National Broadband Plan for Our Future; Establishing Just and Reasonable Rates for Local Exchange Carriers; High-Cost Universal Service Support; Developing an Unified Intercarrier Compensation Regime; Federal-State Joint Board on Universal Service Lifeline and Link-Up*, WC Docket No. 10-90, GN Docket No. 09-51, WC Docket No. 07-135, WC Docket No. 05-337, CC Docket No. 01-92, CC Docket No. 96-45, WC Docket No. 03-109, Exhibit B, April 18, 2011

Response to Supplementary Comments of Hubert Horan (with Robert Willig, Mark Israel, and Jonathan Orszag), *Joint Application of Delta Air Lines, Inc.; Virgin Blue Airlines PTY LTD; Virgin Blue International Airlines PTY LTD d/b/a V Australia; Pacific Blue Airlines (NZ) LTD; and Pacific Blue Airlines (Aust) PTY LTD*, Docket DOT-OST-2009-0155, October 22, 2010

Measuring Consumer Benefits from Antitrust Immunity for Delta Air Lines and Virgin Blue Carriers (with Robert Willig, Mark Israel, and Jonathan Orszag), Appendix to Joint Applicants’ Response to Show Cause Order 2010-9-4, *Joint Application of Delta Air Lines, Inc.; Virgin Blue Airlines PTY LTD; Virgin Blue International Airlines PTY LTD d/b/a V Australia; Pacific Blue Airlines (NZ) LTD; and Pacific Blue Airlines (Aust) PTY LTD*, Docket DOT-OST-2009-0155, October 13, 2010

Competitive Effects of Airline Antitrust Immunity: Response of Robert Willig, Mark Israel, and Bryan Keating (with Robert Willig and Mark Israel), attached to Joint Applicants’ Answer to the Department of Justice’s Motion for Leave and Comments *in re: Joint Application of American Airlines, Inc., British Airways PLC, Finnair OYJ, Iberia Líneas Aéreas de España, S.A., and Royal Jordanian Airlines, Before the Department of Transportation*, DOT-OST-2008-0252, Exhibit 1, January 11, 2010

Competitive Effects of Airline Antitrust Immunity (with Robert Willig and Mark Israel), attached to Joint Applicants’ Motion for Leave to File and Supplemental Comments *in re: Joint Application of American Airlines, Inc., British Airways PLC, Finnair OYJ, Iberia Líneas Aéreas de España, S.A., and Royal Jordanian Airlines, Before the Department of Transportation*, DOT-OST-2008-0252, Exhibit 1, September 8, 2009

Selected Consulting Engagements

In support of Mark Israel, developed economic and econometric evidence related to market definition and competitive effects, and assisted in preparation of expert reports and testimony on behalf of the Defendants in *United States of America et al. v. Google LLC*, in the United States District Court for Eastern District of Virginia, Case No. 1:23-cv-00108-LMB-JFA

In support of Mark Israel, developed economic and econometric evidence related to market definition and competitive effects, and assisted in preparation of expert reports and testimony on behalf of the Defendants in *Federal Trade Commission v. IQVIA Holdings Inc. et al*, in the United States District Court for Southern District of New York, Case No. 1:23-cv-06188

In support of Mark Israel, developed economic and econometric evidence related to market definition and monopoly power, and assisted in preparation of expert reports and testimony on behalf of the Defendants in *United States of America et al. v. Google LLC*, in the United States District Court for District of Columbia, Case No. 1:20-cv-03010

Selected Consulting Engagements (continued)

In support of Robert Willig and Jonathan Orszag, developed economic and econometric evidence related liability and damages associated with certain challenged contractual provisions, and assisted in preparation of expert reports and testimony on behalf of the Defendants in *Sidibe v. Sutter Health*, in the United States District Court for Northern California, Case No. 3:12-cv-04854

In support of Michael Katz, developed economic and econometric evidence related to the competitive effects of the merger, and assisted in preparation of expert reports and testimony on behalf of the Defendants in *State of New York, et al., v. Deutsche Telekom, et al.*, in the United States District Court for the Southern District of New York, Case No. 1:19-cv-5434-VM-RWL

In support of Michael Katz, developed economic analysis related to royalty rates, and assisted in preparation of expert testimony on behalf of Pandora *In the Matter of Determination of Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)*, Before the United States Copyright Royalty Judges, Docket No. 16-CRB-0003-PR (2018-2022)

In support of Dennis Carlton, developed economic and econometric evidence related to liability and damages, and assisted in preparation of expert reports and testimony on behalf of the Defendants *In the Matter of Arista Networks, Inc., v. Cisco Systems, Inc.*, in the United States District Court for the Northern District of California, Case No. 5:16-cv-00923 (BLF)

In support of Michael Katz, developed economic analysis related to class certification, and assisted in preparation of expert reports on behalf of the Defendants *In the Matter of Zack Ward and Thomas Buchar v. Apple Inc.*, in the United States District Court for the Northern District of California, Case No. 4:12-cv-05404 (YGR)

In support of Mark Israel, developed economic and econometric evidence, and assisted in preparation of expert reports and testimony on behalf of the Defendants *In the Matter of the United States of America v. Energy Solutions, Inc., Rockwell Holdco, Inc., Andrews County Holdings, Inc., and Waste Control Specialists, LLC*, Civil Action No. 16-cv-01056-SLR

In support of Jon Orszag, developed economic and econometric evidence, and assisted in preparation of expert reports and testimony on behalf of the Defendants *In the Matter of United States and Plaintiff States v. Aetna Inc., et al.*, Civil Action No. 16-1494

In support of Robert Willig, developed economic and econometric evidence, and assisted in preparation of expert reports and testimony on behalf of the Defendants in *Re: Federal Trade Commission and Commonwealth of Pennsylvania vs. Penn State Hershey Medical Center and PinnacleHealth System*, Civil Action No. 1:15-cv-02362

In support of Mark Israel, developed economic and econometric evidence related to liability and damages, and assisted in preparation of expert reports and testimony on behalf of the Defendants *In the Matter of iPic Gold Class Entertainment, LLC et al., v. Regal Entertainment Group, AMC Entertainment Holdings, Inc., et al.*, In the District Court of Harris County, Texas, 234th Judicial District, No. 2015-68745

In support of Mark Israel, developed economic analysis related to class certification, and assisted in preparation of expert reports and testimony on behalf of the Defendants *In the Matter of Darren Ewert v. Nippon Yusen Kabushiki Kaisha et al.*, Supreme Court of British Columbia, No. S134895

In support of Robert Willig and Jerry Hausman, developed economic and econometric evidence related to class certification, damages and liability, and assisted in preparation of expert reports on behalf of the Defendants *In re: Domestic Drywall Antitrust Litigation*, MDL No. 13-MD-2437

In support of Janusz Ordovery, developed economic analysis related to class certification, and assisted in preparation of expert reports on behalf of the Defendants *In the Matter of Garber et al. v. Office of the Commissioner of Baseball, Major League Baseball Enterprises Inc et al.*, 1:12-cv-03704

Selected Consulting Engagements (continued)

In support of Janusz Ordovery, developed economic analysis related to class certification, damages, and liability, and assisted in preparation of expert reports on behalf of the Defendants *In the Matter of United States and Plaintiff States v. American Express Co., et al.*, 10-CV-4496 (and related cases)

In support of Michael Katz and Mark Israel, developed economic and econometric evidence related to merger effects, and assisted in preparation of expert reports and testimony on behalf of the merging parties *In the Matter of Comcast Corporation and NBC Universal*, Federal Communications Commission, MB Docket No. 10-56

In support of Dan Rubinfeld and Robert Willig, developed economic and econometric evidence related to merger effects, and assisted in preparation of expert reports and presentations to the U.S. Department of Justice in the *Investigation of the Merger of Delta Air Lines Inc. and Northwest Airlines Corporation*

In support of Robert Willig, developed economic and econometric evidence related to class certification, and assisted in preparation of expert reports on behalf of the Defendants *In the Matter of Reed v. Advocate Health Care et al.*, Case No. 06C-3337

In support of Robert Willig, developed economic and econometric evidence related to class certification, and assisted in preparation of expert reports on behalf of the Defendants *In the Matter of Fleischman v. Albany Medical Center et al.*, 1:06-cv-00765

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Workers, Wages, and Mergers: A Back-to-Basics Guide (with Allan Shampine, Kelly Fayne, and Dan Ambar), *Antitrust Magazine Online*, June 2022

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2019 Class Action Conference, Establishing the existence of a class by surveys and statistics, March 29, 2019, Haifa, Israel

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EXHIBIT 2

MATERIALS RELIED UPON

EXHIBIT 2: MATERIALS RELIED UPON

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