ICLE International Center for Law & Economics

June 27, 2018

VIA EMAIL

The Honorable Chuck Grassley, Chairman
Senate Committee on the Judiciary

The Honorable Dianne Feinstein, Ranking Member
Senate Committee on the Judiciary

The Honorable Michael S. Lee, Chairman
Subcommittee on Antitrust, Competition Policy and Consumer Rights

The Honorable Amy Klobuchar, Ranking Member
Subcommittee on Antitrust, Competition Policy and Consumer Rights

Re: Proposed T-Mobile/Sprint Merger

Dear Senators Grassley, Feinstein, Lee, and Klobuchar,

We are a group of eight scholars of antitrust law and economics affiliated with the International Center for Law & Economics, a nonprofit, nonpartisan policy research center based in Portland, OR. Without taking a position on the merits of the proposed T-Mobile/Sprint merger, this letter provides a brief explication of our views on some of the important economic issues involved in the transaction's antitrust review.

At the highest level, and as discussed in more detail below, we believe that an appropriate concern for consumer welfare in the regulatory review of the transaction demands that the Federal Communications Commission ("FCC") and the Department of Justice ("DOJ") account for the dynamic, fast-moving nature of competition in the markets affected by the merger. Above all, this means that the agencies should shun the mechanical application of obsolete market-share and concentration presumptions that could wrongly condemn the merger.

Modern antitrust principles, sound economics, and the public interest dictate that an analysis of the proposed merger incorporate these foundational precepts:

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1. The resolute avoidance of a presumption of illegality based upon purely static market shares and measures of industry concentration;
2. The rigorous consideration of the effect of the merger on the dynamic competition that has long characterized the telecommunications industry; and
3. The careful assessment of the long-term benefits of the deal to consumers and the economy as a whole.

These principles are particularly appropriate here given the clear importance to the parties' decision to merge of their interest in launching a competitive, national 5G network. If successful, the deal could create a combined T-Mobile and Sprint that is a stronger competitor to AT&T and Verizon, which, in turn, could spur increased investment competition in the market. Realizing those objectives — which could result in enormous benefit to consumers and enhance competition in the wireless communications and broadband markets — will take time, and the process will entail business model disruption, corporate reorganization, experimentation, and significant investment.

It is crucial to ensuring that the claimed consumer benefits of this process can be realized that the proposed merger not be thwarted by regulators inappropriately focused on short-term, static effects.

I. Analysis of the T-Mobile/Sprint merger should rely upon rigorous economic analysis, not outdated structural thinking

In their recent letter to Assistant Attorney General Delrahim and Chairman Pai, a group of senators led by Senator Klobuchar raised the spectre of "reducing the number of wireless carriers from four to three" as a predominant concern with the deal.[1] The letter cites former FCC Chairman Tom Wheeler's assertion in 2014 (in response to the companies' previous attempt to merge) that "[f]our national wireless providers are good for American consumers,"[2] as well as former Assistant Attorney General Bill Baer's anticipatory public statement of opposition to the 2014 proposed merger: "[I]t's going to be hard for someone to make a persuasive case that reducing four

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[1] Sen. Amy Klobuchar, *et al.*, Letter to Assistant Attorney General Makan Delrahim and FCC Chairman Ajit Pai (May 7, 2018), *available at* http://bit.ly/2Kr4cVB.

[2] *Id.*

firms to three is actually going to improve competition for the benefit of American consumers."

But it must be noted that there is (and was) no rigorous economic support for these claims. Instead, the assertions are based on a simple inference of competitive effects from the overall structure of the market, and the unsupported assumption that an increase in concentration can mean only a reduction in competition. The problem, of course, is that no such inference can be made: "[I]t is presumptuous to conclude… that markets populated by fewer firms perform less well or offer competition that is less intense."[3]

Excessive reliance on obsolete, market-share-based analysis to evaluate the proposed merger would be tantamount to a rejection of modern antitrust principles and the economic learning that undergirds them. Put simply: market share and industry concentration are poor predictors of competitive effects.[4] As a result, analysis that relies primarily upon structural considerations is likely to lead to decisions that *reduce* rather than *promote* consumer welfare and the public interest.

Instead, the FCC and the DOJ should undertake a fact-specific analysis that incorporates the three basic, guiding principles noted above and described in more detail below.

A. Antitrust review of the merger must avoid the simplistic inference of competitive effects from market structure

In contrast to Chairman Wheeler's and AAG Baer's successful efforts to thwart a Sprint/T-Mobile merger in 2014 before it even got off the ground,[5] the current FCC

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[3] Harold Demsetz, *The Intensity and Dimensionality of Competition*, in HAROLD DEMSETZ, THE ECONOMICS OF THE BUSINESS FIRM: SEVEN CRITICAL COMMENTARIES 137, 140-41 (1995).

[4] *See, e.g.*, Luke M. Froeb, Former Director, Fed. Trade Comm'n Bureau of Econ., *From Theory to Praxis: Quantitative Methods in Merger Control*, at 6 (Oct. 30, 2014), https://www.ftc.gov/sites/default/files/documents/public_statements/theory-praxis-quantitative-methods-merger-control/041030como.pdf.

[5] Brendan Sasso, *The Obama Administration Is on T-Mobile's Porch With a Shotgun*, THE ATLANTIC (Feb. 3, 2014), https://www.theatlantic.com/politics/archive/2014/02/the-obama-administration-is-on-t-mobiles-porch-with-a-shotgun/457281/ ("Regulators have a message for Sprint and T-Mobile: Don't even think about it."); Brian Fung, *Why regulators are the big winners in the failed Sprint-T-Mobile deal*, THE WASHINGTON POST (Aug. 6, 2014), https://www.washingtonpost.com/news/the-switch/wp/2014/08/06/why-regulators-are-the-big-winners-in-the-failed-sprint-t-mobile-deal ("Merger talks between Sprint and T-Mobile

and DOJ leadership have made clear that they will not pre-judge the proposed deal without first evaluating the actual market evidence.[6] In doing so, we urge that they decline to place undue reliance on crude structural measures that offer little insight into the deal's effect on incentives to compete, particularly in dynamic, technology-based industries.

One such measure is the Herfindahl-Hirschman Index ("HHI") — a "simplistic calculation that measures market shares and the arithmetic change in market concentration a transaction would yield,"[7] and decidedly *not* an analytical tool capable of evaluating a market's competitiveness. Indeed, the FCC itself has noted that "[m]arket share data are the beginning, not the end, of the competitive analysis."[8]

This conclusion is bolstered by a substantial consensus that HHI is particularly inapt for measuring competitive effects in dynamic markets, where investment and innovation competition are paramount: Among other things, we have little *ex-ante* idea what level of concentration is commensurate with optimal outcomes.[9]

— which were never formally announced — have reportedly collapsed under the weight of regulatory scrutiny.").

[6] *See* Recode Staff, *Full Transcript: FCC Chairman Ajit Pai on Recode Decode*, RECODE (May 5, 2017), https://www.recode.net/2017/5/5/15560150/transcript-fcc-chairman-ajit-pai-net-neutrality-merger-recode-decode ("Look, I don't take a preexisting view as to what the optimal market structure is. I don't think any regulator who embraces regulatory humility and intellectual honesty about economics can say whether three or four or five is the optimal number.") (emphasis added); David McLaughlin & Scott Moritz, *Antitrust Chief Discusses Sprint, Doesn't Close Door on Deal*, BLOOMBERG (June 1, 2018), https://www.bloomberg.com/news/articles/2018-06-01/antitrust-chief-discusses-sprint-doesn-t-close-door-on-deal ("I don't think there's any magical number that I'm smart enough to glean about any single market.").

[7] Larry Downes & Geoffrey A. Manne, *The FCC's Unstructured Role in Transaction Reviews*, CPI ANTITRUST CHRONICLE (Oct. 2012(1)) at 5, *available at* https://laweconcenter.org/wp-content/uploads/2012/10/SSRN-id2163169.pdf.

[8] Memorandum Opinion and Order, *In the Matter of Applications of AT&T Wireless Services, Inc. and Cingular Wireless Corporation for Consent to Transfer Control of Licenses and Authorizations*, WT Docket No. 04-70 (Oct. 22, 2004), at ¶ 96.

[9] *See, e.g.*, Michael L. Katz & Howard A. Shelanski, *Mergers and Innovation*, 74 ANTITRUST L.J. 1, 22 (2007) ("[T]he literature addressing how market structure affects innovation (and vice versa) in the end reveals an ambiguous relationship in which factors unrelated to competition play an important role."); J. Gregory Sidak & David F. Teece, *Dynamic Competition in Antitrust Law*, 5 J. COMPETITION L. & ECON. 581, 588 (2009) ("[D]espite 50 years of research, economists do not appear to have found much evidence that market concentration has a statistically significant impact on innovation."); Carl Shapiro, *Competition and Innovation: Did Arrow Hit the Bull's Eye?*, in THE RATE AND DIRECTION OF INVENTIVE ACTIVITY REVISITED

Deputy Assistant Attorney General for the Antitrust Division, Donald G. Kempf, made this point well in a separate statement issued with the final report of the Antitrust Modernization Commission:

> [T]he Merger Guidelines have rested on the erroneous notion that increasing concentration leads to decreasing competition. That may be true when two firms merge to monopoly. Short of that, however, most increases in concentration lead to an increase in competition, not a decrease. The reason for that, of course, is that the concentration-increasing mergers result in cost-saving efficiencies that enable the combined firms to lower prices, increase quality and improve service. That is why opposition to such mergers usually comes from the combining firms' competitors, not from their customers.[10]

The agencies themselves have warned against the mechanical application of structural measures of concentration to infer likely competitive effects. In particular, the *Horizontal Merger Guidelines* developed by the antitrust agencies state:

> The purpose of these [HHI] thresholds is not to provide a rigid screen to separate competitively benign mergers from anticompetitive ones, although high levels of concentration do raise concerns. Rather, they provide one way to identify some mergers unlikely to raise competitive concerns and some others for which it is particularly important to examine whether other competitive factors confirm, reinforce, or counteract the potentially harmful effects of increased concentration.[11]

361, 367 (Josh Lerner & Scott Stern eds., 2012) ("So, let me be clear: nothing in this chapter should be read to question the proposition that the overall relationship between product market structure and innovation is complex. The relationship between firm size and innovation is also complex."); Douglas H. Ginsburg & Joshua D. Wright, *Dynamic Analysis and the Limits of Antitrust Institutions*, 78 ANTITRUST L.J. 1, 4 (2012) ("To this day, however, the complex relationship between static product market competition and the incentive to innovate is not well understood.... [E]conomic theory does not support a confident conclusion as to which antitrust policies will elicit a higher rate of innovation.").

[10] ANTITRUST MODERNIZATION COMM'N, REPORT AND RECOMMENDATIONS, SEPARATE STATEMENT OF COMM'R KEMPF, at 429 (Apr. 2, 2007), *available at* https://govinfo.library.unt.edu/amc/report_recommendation/separate_statements.pdf.

[11] DEP'T OF JUSTICE & FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES 19 (Aug. 19, 2010) [hereinafter *Horizontal Merger Guidelines*].

Thus, "[t]he measurement of market shares and market concentration is not an end in itself, but is useful to the extent it illuminates the merger's likely competitive effects."[12]

And the DOJ has *explicitly* warned against inferring competitive effects from concentration measures in broadband markets, in particular:

> We do not find it especially helpful to define some abstract notion of whether or not broadband markets are "competitive." Such a dichotomy makes little sense in the presence of large economies of scale, which preclude having many small suppliers and thus often lead to oligopolistic market structures. The operative question in competition policy is whether there are policy levers that can be used to produce superior outcomes, not whether the market resembles the textbook model of perfect competition.[13]

A mechanical "four-to-three" structural analysis would be especially inappropriate here in light of empirical analysis in the wireless sector that shows that concentration is not a reliable predictor of either the health of competition or of consumer welfare.

As shown in the graph below, as concentration in the industry increased, wireless communications prices to consumers *decreased* — precisely the opposite of what a concentration-based approach would predict.

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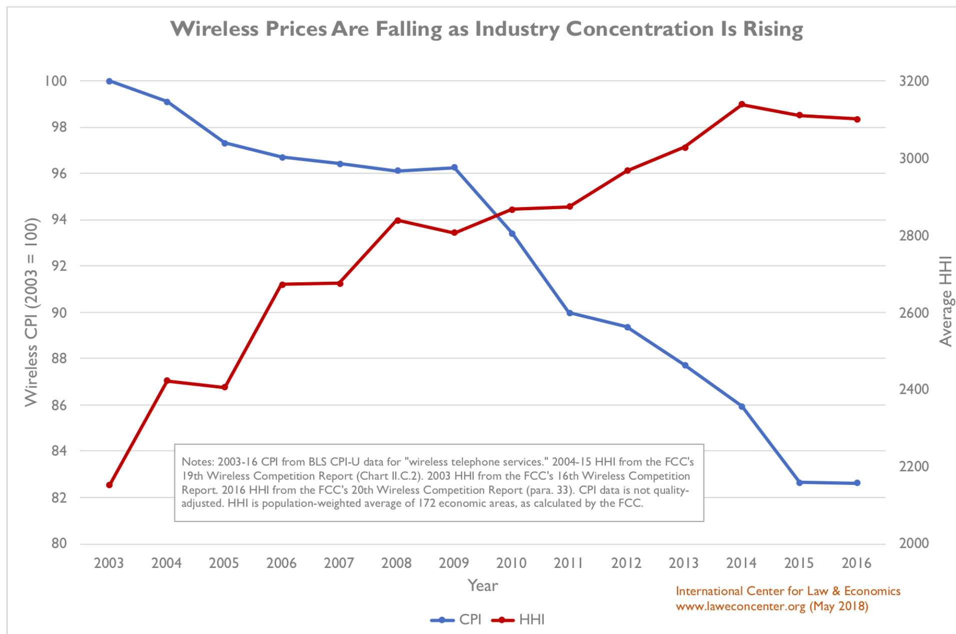
[12] *Id.* at 7. *See also id.* ("The Agencies' analysis need not start with market definition. Some of the analytical tools used by the Agencies to assess competitive effects do not rely on market definition, although evaluation of competitive alternatives available to customers is always necessary at some point in the analysis."); Carl Shapiro, *The 2010 Horizontal Merger Guidelines: From Hedgehog to Fox in Forty Years*, 77 ANTITRUST L.J. 701, 722 (2010) ("[E]conomic theory relates unilateral price effects with differentiated products more directly to diversion ratios and margins than to the combined market share of the merging firms.").

[13] *Ex Parte* Submission of the United States Department of Justice, *In the Matter of Economic Issues in Broadband Competition*, GN Docket 09-51 (Jan. 4, 2010).



The fact is that economists know very little about the relationship between market structure, competition, and innovation.[14] The rapidly evolving wireless telecommunications market is exactly the type of industry where market shares, HHI, and structural presumptions are not capable of predicting competitive effects and, thus, of specifying optimal policy choices.

B. Antitrust review of the merger must consider dynamic competition and pricing

Market-share-based criticisms of the merger ignore or misrepresent the history and competitive dynamics of the wireless industry and offer an unsupportable basis for assessing the merger. Claims that "the competition eliminated by the merger would likely result in higher prices, less choice, lower quality, and slower innovation — to

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[14] *See, e.g.*, Richard Gilbert, *Looking for Mr. Schumpeter: Where Are We in the Competition-Innovation Debate?*, in INNOVATION POLICY AND THE ECONOMY (VOL. 6) 159, 206 (Adam B. Jaffe, Josh Lerner & Scott Stern eds., 2006) ("There is little evidence that there is an optimal degree of competition to promote R&D. Empirical studies that use market concentration as a proxy for competition fail to reach a robust conclusion about the relationship between market concentration and R&D when differences in industry characteristics, technological opportunities, and appropriability are taken into account.").

the detriment of U.S. wireless subscribers"[15] are simply out of touch with the market realities and the history of dramatic consumer benefits arising from investment and innovation in the industry.

David Evans, in his declaration accompanying the parties' public interest statement submitted to the FCC, lays out the extent and rate of investment and innovation in the wireless industry.[16] As Evans catalogues in significant detail, the telecommunications industry has gone through technological developments from 1G to the current 4G standards, with each successive generation bringing significant — and often unanticipated — applications to the benefit of consumers.[17]

As Evans further documents, to maintain a competitive edge during times of transition, carriers have continually made long-term investments in their networks, in several cases through mergers.[18] Regardless of short-term concentration metrics, the history of the industry shows distinctly that investment produces innovation which, in turn, stimulates even more investment. Without it, firms struggle to maintain competitiveness in the rapidly evolving technological environment.[19] As Evans notes:

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[15] Diana L. Moss, *Why the Proposed Sprint-T-Mobile Merger Should be DOA at the DOJ*, AM. ANTITRUST INST. (Jun. 5, 2018) at 1, *available at* http://www.antitrustinstitute.org/sites/default/files/AAI_Sprint-T-Mobile_Comm_6.5.18.pdf.

[16] Application of T-Mobile US, Inc. and Sprint Corporation for Consent to Transfer Control of Licenses and Authorization, WT Docket No. 18-197, Declaration of David S. Evans at § IV (June 18, 2018) [hereinafter *Evans Declaration*].

[17] *Id.* at § II.

[18] *Id.* at § IV.

[19] *See, e.g.*, *As Unlimited Data Takes Center Stage, T-Mobile Widens Speed Gap Between the Network Built for Unlimited … and Everyone Else*, T-MOBILE BLOG (Apr. 21, 2017) ("This [reduced speed] is what happens when you unleash unlimited data on a network that wasn't built to handle it."), https://www.t-mobile.com/content/t-mobile/corporate/news/articles/2017/04/tmobile-widens-lte-speed-gap-over-verizon-att-unlimited-plans.html.

> Because competition among carriers centers on network capacity and performance, and particularly on relative capacity and performance compared with rivals, carriers typically react quickly to rivals' investments by increasing their own investments. A carrier's decision to invest in its network therefore tends to spur industry-wide improvements in network quality.[20]

The consumer benefits of this cycle of innovation and competitive investment manifest not only in the form of higher-quality, advanced networks and applications, but consistently lower prices for both telephony (as shown above) and data, as well.[21] The Evans Declaration (as summarized in the table excerpted below)[22] amasses persuasive evidence that prior network investments in next generation technologies, of the type that the parties claim this deal will facilitate, have led to consistent and significant declines in mobile data prices.

Table 8
Average Price per GB of Mobile Data for U.S. Smartphone Users
2010 – 2017

Year	Smartphone Mobile Data Revenue ($ Millions)	Smartphone Mobile Data Traffic (PB)	Data ARPU	Data Traffic per Smartphone User (GB/Month)	Price per GB of Smartphone Mobile Data
2010	$13,778.4	281	$17.01	0.3	$49.07
2011	$26,032.8	672	$20.06	0.5	$38.75
2012	$39,197.1	1,277	$21.71	0.7	$30.70
2013	$58,646.5	2,310	$25.85	1.0	$25.39
2014	$77,853.4	4,884	$29.67	1.9	$15.94
2015	$83,026.4	7,661	$27.89	2.6	$10.84
2016	$99,006.0	12,262	$30.71	3.8	$8.07
2017	$105,321.5	16,901	$32.19	5.2	$6.23
Source: Exhibit 5A.					

The agencies' analysis of the transaction's likely effect must assess and account for this type of dynamic investment competition and its consequences. Simple market share statistics fail to do so.

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[20] *Evans Declaration* at ¶ 174.

[21] *Id.* at § II.C.

[22] *Id.* at 41.

C. Antitrust review of the merger must consider the merger's long-term competitive effects

Moreover, because the time horizon necessary to commercialize the fruits of ongoing innovation and network investments is so long, the DOJ and FCC should consider the merger's competitive effects over a longer term than the artificial two-year time period that the DOJ often uses. Important technological changes that benefit consumers often occur over a longer time horizon. Arbitrarily truncating the time period analyzed is likely to introduce erroneous predictions of the merger's likely effect on consumers and the public interest.

The parties' primary rationale for the proposed merger is the combination of their complementary spectrum for a faster, better 5G network. But the full extent of the consumer benefits from that network roll-out would take time to fully materialize. As FCC Chairman Ajit Pai has recognized:

> 5G promises exponential growth.... It could enable mobile broadband consumers to download 4K movies in seconds. It could enable cooperative collision avoidance for cars. It could enable remote robotic surgery. *And those are just a few of the things we can already foresee. History tells us that there will be transformative 5G applications that we can't yet conceive*.[23]

If the DOJ and the FCC artificially limit their analysis to the short term, they would miss the opportunity to fully analyze the transaction's competitive effects and broader impact on the public interest. This could, quite obviously, lead to a costly undercounting of the likely benefits of the transaction, much to the detriment of consumers.

Similarly, the price effects described above are particularly pronounced when considering the longer-term trends. As with the more-qualitative effects, limiting analysis of the merger's price effects to a short time horizon would under-weight the extent of consumer benefits from lower prices, as well.

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[23] Ajit Pai, Chairman, Fed. Commc'n Comm'n, Remarks at the Institute for Policy Innovation's Hatton W. Sumners Distinguished Lecture Series (Sept. 7, 2017) (emphasis added), *available at* https://www.fcc.gov/document/chairman-pai-remarks-institute-policy-innovation-event.

Ultimately, the principles described above must be tested against the facts and evidence. But the DOJ and the FCC should take special care not to blithely follow an outdated, concentration-based framework that fails to reflect the importance of dynamic investment competition and thus fails to account for what are sure to be the bulk of the merger's likely consumer benefits. To their credit, the current heads of the DOJ and FCC appear to recognize this danger, having made clear that they will approach decision-making with humility and without predetermined views of how the market should be structured.[24] This is appropriate. Conducting a rigorous, fact-specific analysis of the deal — rather than imposing outdated and economically unsound presumptions based upon a politically preferred market structure — will far more accurately assess the consumer benefits that the transaction is likely to engender and will thus better promote the public interest.

Respectfully submitted,

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(*cont.*)

[24] *See supra* note 6.

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