

Rebuttal Testimony of Prof. Michael D. Whinston

U.S., et al. v. Google LLC

United States District Court for the District of Columbia

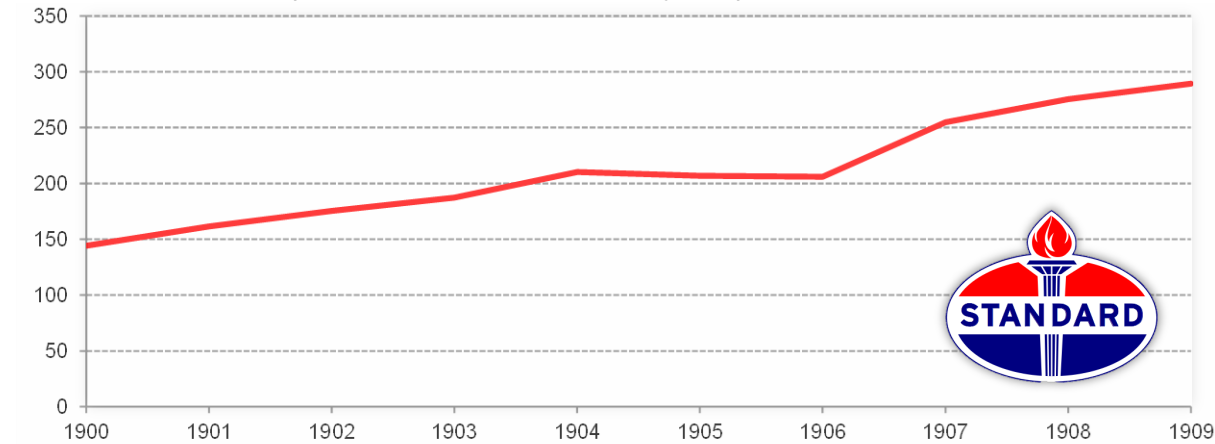
November 16, 2023

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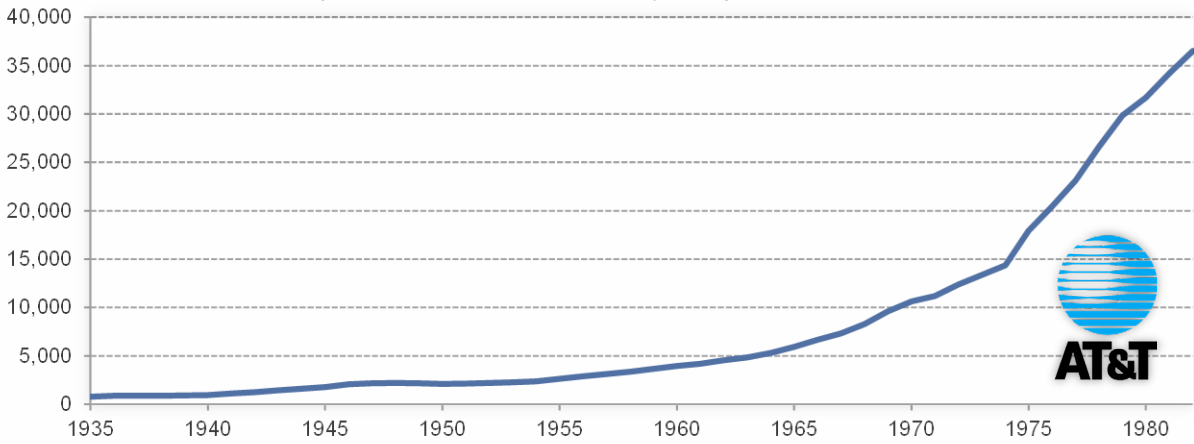
Market Definition & Market Power

Output growth occurs in monopolized markets

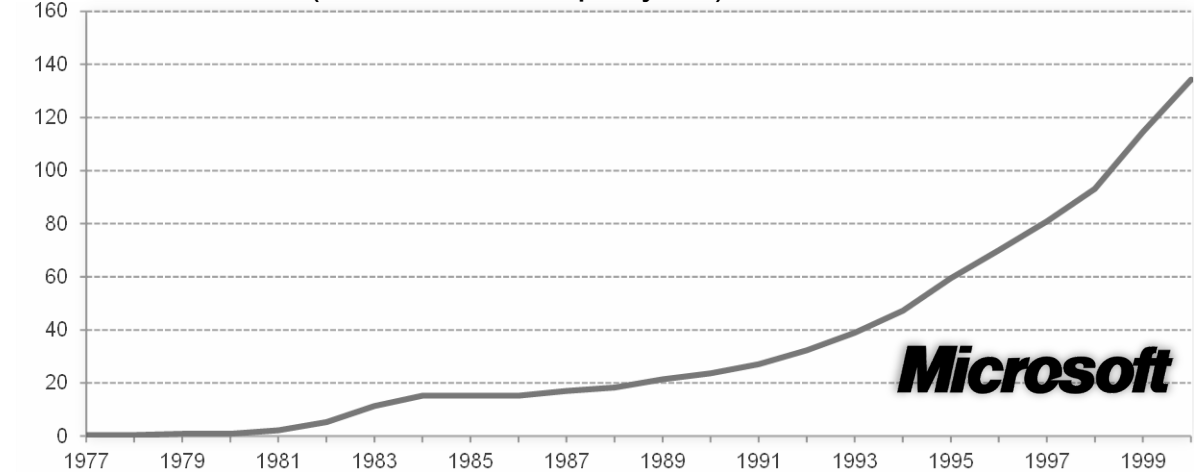
Global Crude Oil Production
(millions of barrels per year), 1900 to 1909



Long-Distance Calls for US Common Carriers
(millions of calls per year), 1935 to 1982



Global PC Shipments
(millions of PCs per year), 1977 to 2000



Exploding Output In User Search Belies Plaintiffs' Claims of Monopoly Power

- User search output has more than doubled since 2011.
- Output expansion refutes a claim of monopoly power unless Plaintiffs show output would have grown even faster in the but-for world.
- Plaintiffs have not done so.



DX1108 (Google QueryNav data); DX3245 (StatCounter data)

Google
DXD-29.045

Apple did not have a viable alternative to Google when negotiating the ISA



**Sundar
Pichai**
CEO



- Q.** So, armed with all of this information we've just been talking about, at any point in your discussions in 2016 with Mr. Cook and Mr. Cue, **did you communicate to them that they didn't really have any leverage in negotiating a revenue share percentage because Google was the only viable option?**
- A.** I looked at it with a -- with a set of factors.... Our search usage had grown tremendously, so the deal was working well for us. Users were happy with their experience. It was a competitive dynamic. There was a lot of uncertainty about what Apple would do because Apple tends to, you know, design, control its own experience. . . . **And by the way, yes, I did take what you're saying into account, which was why we didn't pay the share Apple wanted.**

Trial Testimony



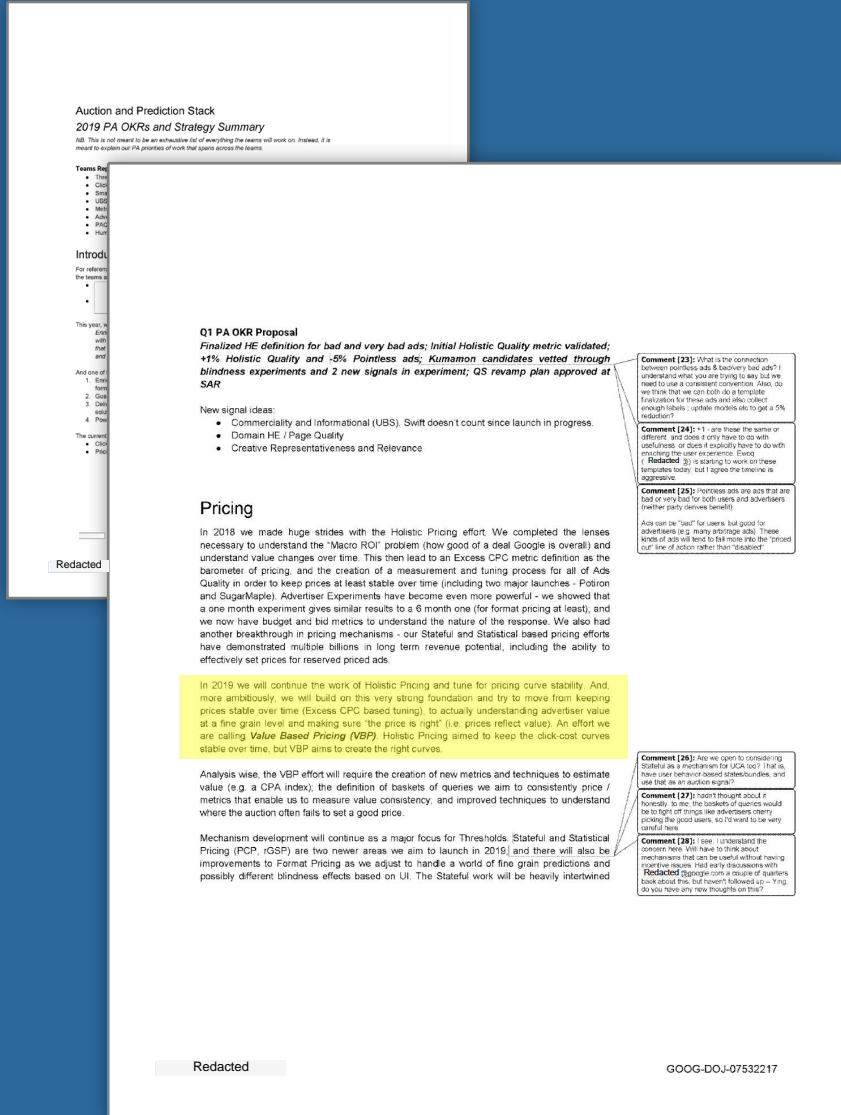
Kevin Murphy

Google Expert
Professor of
Economics, University
of Chicago

A. So the idea that we can infer they had a precise estimate, I think is incorrect, because the deals they were doing weren't conditional on that number being exactly right or even close to right, right? In other words, **there's a lot of headroom between those numbers and what the deal they were doing.**

Trial Testimony

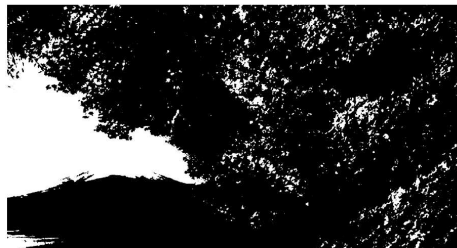
Google aimed to raise prices to extract all advertiser value



In 2019 we will continue the work of Holistic Pricing and tune for pricing curve stability. And, more ambitiously, **we will build on this very strong foundation and try to move from keeping prices stable over time (Excess CPC based tuning), to actually understanding advertiser value at a fine grain level and making sure “the price is right” (i.e. prices reflect value). An effort we are calling *Value Based Pricing (VBP)*.** Holistic Pricing aimed to keep the cost-click curves stable over time, but VBP aims to create the right curves.

2018

Google aimed to set prices “1 penny less than the breaking point”



Slides

- We had follow-up conversations with G/R. Address these questions today.
- Should prices go up
 - Q1: Auction score gap - why is that a problem?
 - If good competition - little gap. Not true in reality. Even on top 4 queries still space there.
 - We have many mechanisms we could use to close that gap - lots of potential there.
 - Why do you think it's poorly priced?
 - Because runner is less than 80% of his score. Not putting a high pricing pressure on him.
 - Redacted@: why would there be a 20% gap if good?
 - Redacted@: one way to phrase this is that under perfect prices, 1 penny less than the breaking point is the right amount. The advertiser is currently paying at least 20% less than their willingness to pay.
 - Redacted@: you want to charge right under their willingness to pay
 - Redacted@: LTV takes into account the whole ecosystem. It could be that the value is the same - experience is a lot better. The decision we made with the gap is the value goes to the advertisers.
 - Price based on the value of that ad. Lots of other advertisers competing. GY moves 70% of headroom towards that curve
 - Redacted@: aren't we giving incentives through discounts though?
 - Yes. All we're saying is current system does not enable to charge price close to the value.

• Agenda:

- Do we want to raise prices?
- Is it ok to raise prices?
- How we would roll-out?

■ Why do you think it's poorly priced?

- Because runner is less than 80% of his score. Not putting a high pricing pressure on him.
- Redacted@: why would there be a 20% gap if good?
- Redacted@: one way to phrase this is that under perfect prices, 1 penny less than the breaking point is the right amount. The advertiser is currently paying at least 20% less than their willingness to pay.

2017

Dr. Israel agrees that Google raises prices when it improves quality



Mark Israel, PhD
Google Expert
Compass Lexecon

- A. So a lot of what the auction quality guys are doing is they're in a separate room making the auction work better, making that number one click-through rate go up. And that's having the effect, without any adjustment, of pushing CPC down. Prices are going down in response to that quality improvement. **So lots of the discussions you see in Google documents are just grappling with that: We want to improve ad quality, but as a profit maximizing firm, we don't want that to drive our prices down, that doesn't make sense to us. So they're trying to deal with that.**

...

- A. Google is a profit maximizing firm. **You want it to have incentives to make it pCTR better. You need some mechanism to deal with this issue, which is the general one I talked about with knobs.** Which is if pCTR gets better, you can end up driving the price way down. They're not raising the price from \$1.30, they're implementing the better pCTR, but at least offsetting this effect.

Trial Testimony

Advertiser actions depend on “what their options are”



Mark Israel, PhD
Google Expert
Compass Lexecon

- Q.** But my point is, sir, is that in considering whether they raise prices or whether they're going to launch an ads quality increase, there's no discussion of what competitors are doing, just in this paragraph that you cited; is that correct?
- A.** Not in this paragraph. There's lots and lots of consideration, in fact, on the part we can't see on the screen about how advertisers will react.
- Q.** How advertisers will react?
- A.** **Advertiser reactions are where competition comes in because advertisers react given what their options are.**

Trial Testimony

The overall room for pricing - from a response angle - looks similar to what we measured last year. Advertisers actions are now better understood.

Analysis

Left: Total | Right: Google.com, top slot, non-nav, non-BC

Dotted line: duration of GammaYellow

Confidential

Confidential stickage on overall. Convergence confirms, on these slices and for that treatment, that 6 weeks might be enough. Now looking into contribution of various slices (S/M/L) and explaining the BC response (too noisy to make anything out, a long standing issue)

2018

The relevant markets are consistent with the circle principle



Ad Side

I Strongly Agree With Professor Whinston's Factor #2: Audience Overlap

- For two ads to be substitutes for one another, they must allow advertisers to reach overlapping audiences.
- This factor trumps the others in important ways:
 - Role in purchase journey: Without audience overlap, different ads will affect *different* purchase journeys, limiting substitutability.
 - Effective targeting: Without audience overlap, different ads will target *different* individuals, limiting substitutability.

Google
DXD-29.089

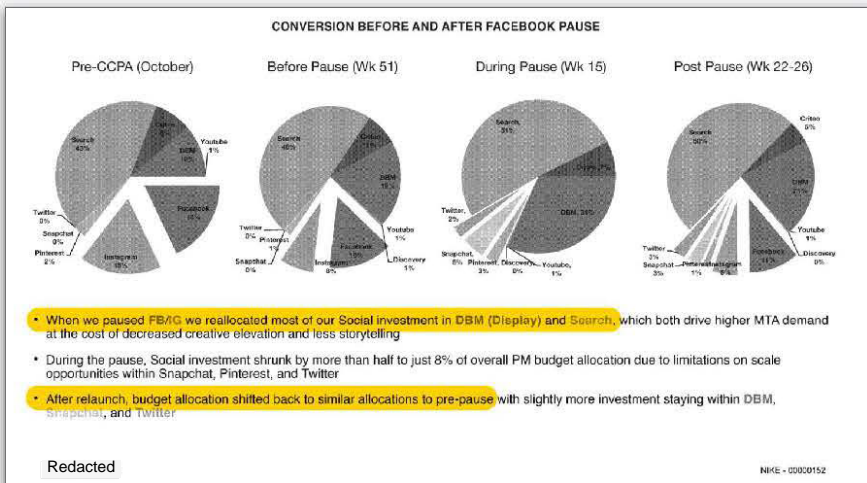
Slide 89, Demonstrative Deck of Dr. Israel

Dr. Israel's analysis of the Nike Facebook boycott is flawed

Ad Side

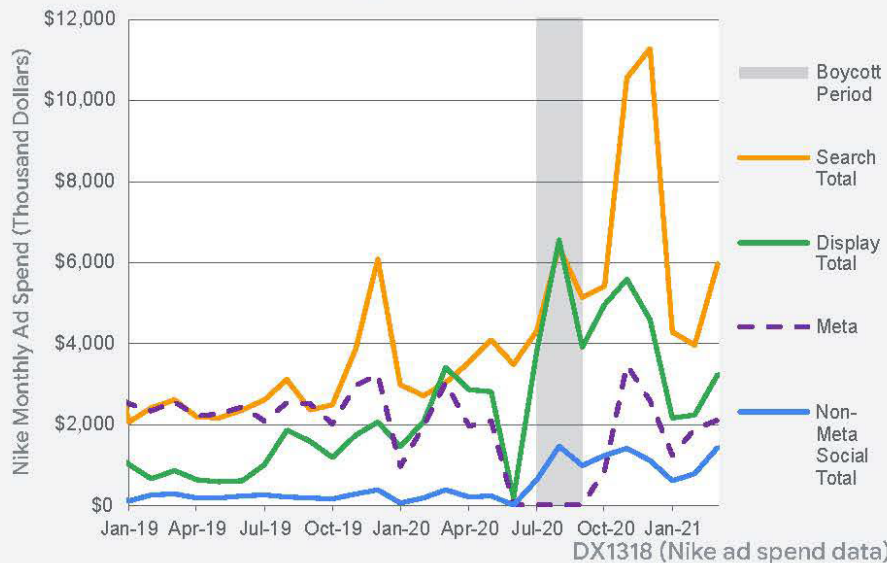
Empirical Analysis Demonstrates Substitution: Nike Shifted From Social Ads to Search Ads During the Meta Boycott

- During the boycott, Nike “reallocated” – substituted – search ads for ads on Meta.
- After the boycott, Nike “shifted back” to earlier allocations and search ad spending fell.
- Thus, ads on Google and Meta are economic substitutes.



DX3238.036

Nike Monthly Advertising Spend Across
Advertising Channels, 2019-2021



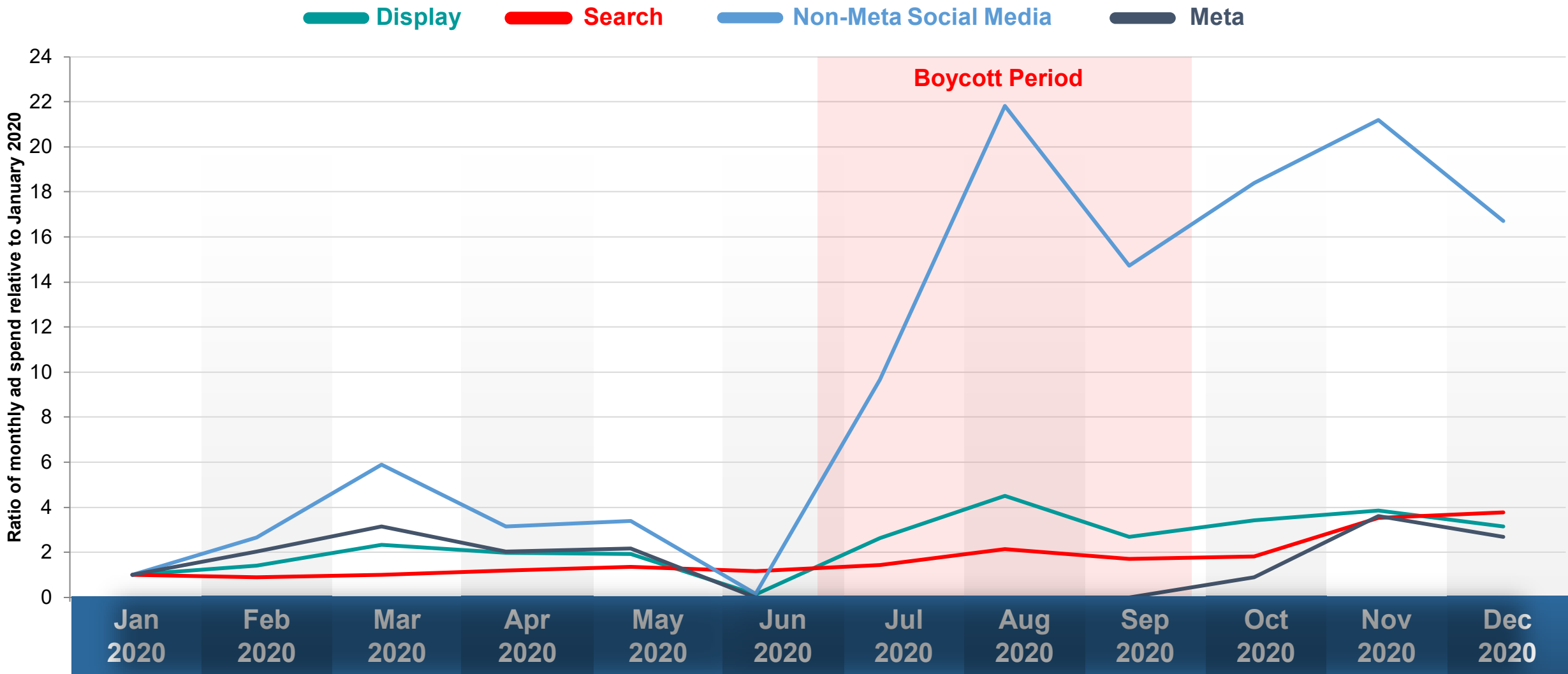
Google

DXD-29.083

Slide 83, Demonstrative Deck of Dr. Israel

Nike substituted largely to social and display ads, *not* search ads

Nike's monthly digital ad spend by format relative to spend in January 2020





Mark Israel, PhD
Google Expert
Compass Lexecon

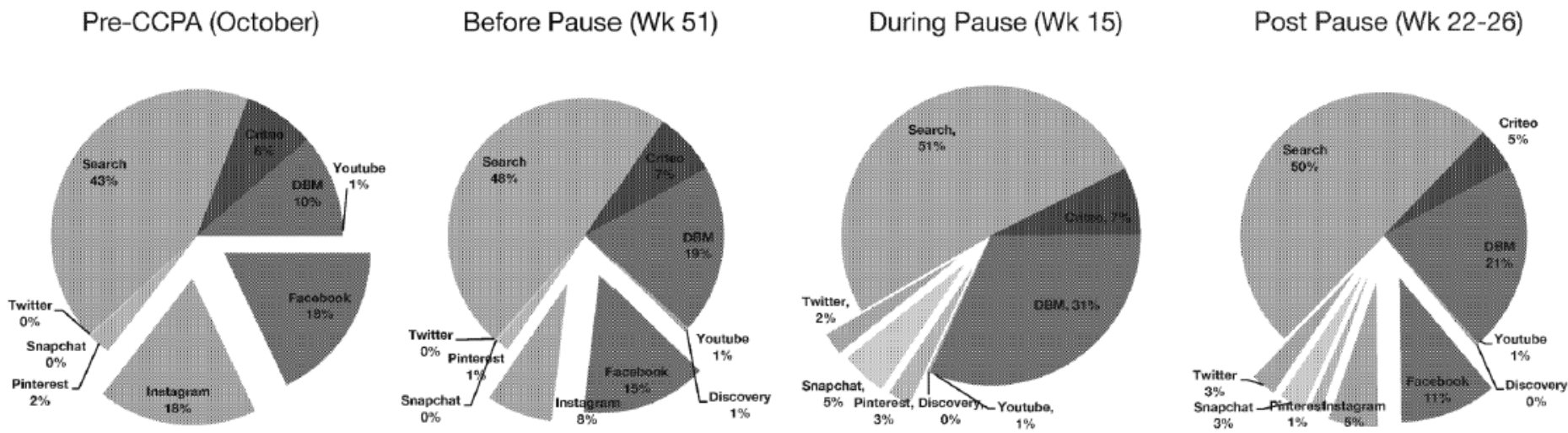
Q. And [your Nike study is] not a measure of elasticity of Facebook ads?

A. I agree with that. It's a measure of cross elasticity; given that [Nike] left, how did it divide up.

Trial Testimony

Nike substituted largely to social and display ads, *not* search ads

CONVERSION BEFORE AND AFTER FACEBOOK PAUSE



- When we paused FB/IG we reallocated most of our Social investment in DBM (Display) and Search, which both drive higher MTA demand at the cost of decreased creative elevation and less storytelling
- During the pause, Social investment shrunk by more than half to just 8% of overall PM budget allocation due to limitations on scale opportunities within Snapchat, Pinterest, and Twitter
- After relaunch, budget allocation shifted back to similar allocations to pre-pause with slightly more investment staying within DBM, Snapchat, and Twitter

Redacted

NIKE - 00000152

2021




The Importance of Defaults

Prof. Murphy's estimates of default effects are incorrect

Market evidence—including Windows and Mozilla Firefox—shows that a “weaker rival” would obtain **between 15% and 20%** of queries as the default even using a “coverage” approach

Slide 65, Demonstrative Deck of Prof. Murphy

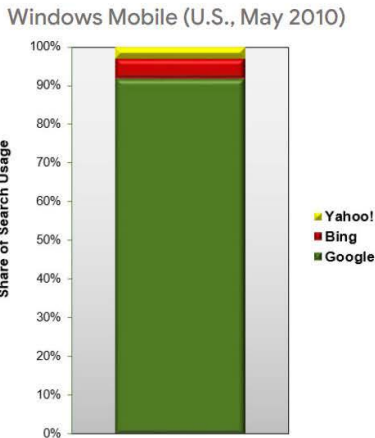
Google, Microsoft, and Apple all recognized significant default effects

	Mobile	Desktop
 Google	Redacted	Redacted
 Microsoft	Redacted	Redacted
 Apple		Redacted

Prof. Murphy's claim that default effects on mobile are small is flawed and unreliable

Evidence from Windows Mobile

- “60% of New Bing Mobile users churn within 1 week . . . 15% of New users churn after trialing the product in at least 2 different weeks . . . [only] 7% become Regular” (Sept. 2010)
- Winston's [redacted] share of Bing on Windows Phones in 2016 (a year before such devices were discontinued) reflects self-selection
 - Windows Phones made up only 0.4% of smartphone shipments

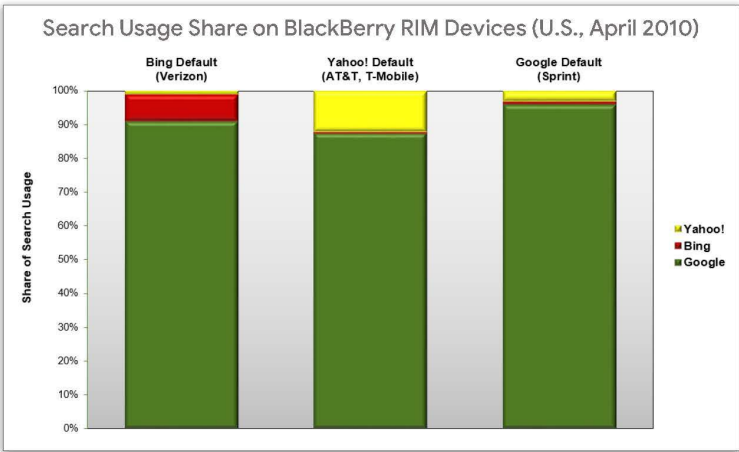


Murphy Opening Report ¶ 103; DX0439 at .008 and .019; UPXD104 at 15; DX1233

Google
DXD-37.058

Slide 58, Demonstrative Deck of Prof. Murphy

Evidence from BlackBerry RIM



Murphy Opening Report ¶¶ 104, 105; Murphy Reply Report ¶ 260; DX0439 at .010

Google
DXD-37.059

Slide 59, Demonstrative Deck of Prof. Murphy

Prof. Murphy's claim that default effects on mobile are small is flawed and unreliable

- No market participants relied on these numbers when estimating the impact of defaults
- These estimates do not make economic sense

Google's exclusive defaults foreclose 33-50% of the general search services market

Foreclosure is the share of the market that is "tied up" by Google's exclusive contracts

The **50%** is the share of US queries covered by Google's exclusive contracts

The **33%** captures the lower-bound proportion of people who will not change their default

- There are no plausible investments rivals can make to win these people

Prof. Murphy's foreclosure estimate is misguided



Kevin Murphy
Google Expert
Professor of
Economics, University
of Chicago

Q. Okay. So you are not offering a foreclosure number based on the test you describe in Slide 64?

A. I don't think there's any foreclosure so I would say **foreclosure is zero** in this case. So I wouldn't offer a foreclosure number.

Trial Testimony

Competition for the Contract

Competition for the contract does not prevent competitive harm

- A dominant firm and distributor can find it worthwhile to enter contracts that harm competition—**competition is a public good**
- When bidding for an exclusive contract, a dominant firm can use the **monopoly profits** it protects to make sure it wins
- When there is a dominant firm, competition for **exclusives** can make competition less intense

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Mozilla wanted to “level the playing field in search,” but could not do it alone

Why YAHOO!	
Users	Opportunity to innovate features and services that are customized for Firefox users
Mission Alignment	An agent for change Independence from Google Opportunity to level the playing field in search
Financial Security	High guarantee 5-year term Diversifies sustainability projects Projected growth of market share

Why <u>not</u> Google	
Users	-
Mission Alignment	Does not promote competition for search Supports the continued dominance of Google Dependency on Google
Financial Security	No revenue guarantee Need product and business focus to succeed Revenue share could drop below projections
Downside Risk	No opportunity to grow share Mozilla must change to focus on search volume / performance No guarantee

- An agent for change
- Independence from Google
- Opportunity to level the playing field in search

- Does not promote competition for search
- Supports the continued dominance of Google
- Dependency on Google

2014

Competition for the contract does not prevent competitive harm

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A dominant firm will outbid rivals for exclusives to maintain its dominance



Satya Nadella
CEO
Microsoft



A. . . . right now, there is basically status quo, right; **the dominant player in search is paying a lot of money to maintain that share position.**

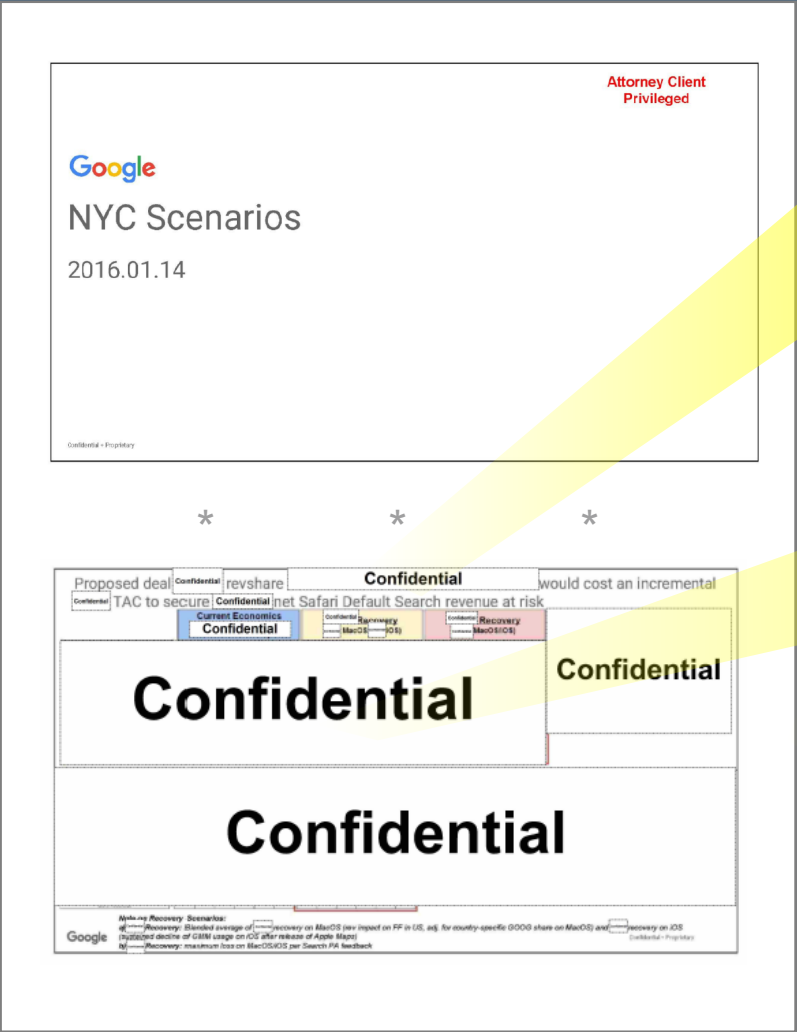
Trial Testimony

Competition for the contract does not prevent competitive harm

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- When bidding for an exclusive contract, a dominant firm can use the **monopoly profits** it protects to make sure it wins
- **When there is a dominant firm, competition for exclusives can make competition less intense**

Procompetitive Justifications

Google did not consider the claimed procompetitive benefits in its analysis of the Apple deal



Current Economics
Redacted




Redacted Recovery
(Redacted MacOS/Redacted iOS)

Redacted

Redacted

2016

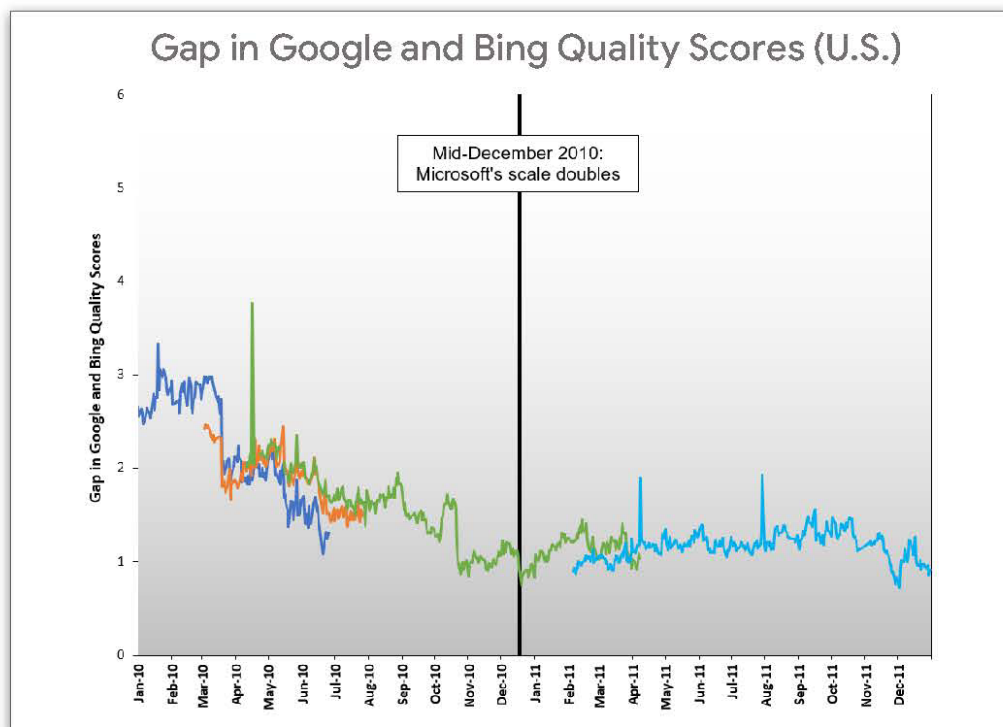
Prof. Murphy's claims about the Android agreements are unpersuasive

-  Contracts enhance competition between Android and iOS
-  Contracts ensure consistent out-of-the-box Android experience
-  MADA barter leads to lower-priced Android phones

Investment Incentives

Prof. Murphy's assessment of the Microsoft/Yahoo deal is misleading

Microsoft's Syndication Deal Doubled Its Scale in December 2010, But This Did Not Lead to a Material Improvement in Bing's Relative Quality



Bing's relative quality plateaued after **Microsoft's** scale doubled—the opposite of what Winston's theory predicts

Winston erroneously claimed **Bing's** October 2010 quality increase resulted from a doubling of scale from syndication; but **Bing** quality increases in 2010 predate the increase in scale and highlight the importance of other initiatives and improvements for search quality

Winston Opening Report Figure 201; Murphy Rebuttal Report ¶¶ 217, 221-224; Murphy Reply Report ¶ 278

Google
DXD-37.124

Slide 124, Demonstrative Deck of Prof. Murphy

Bing's quality increased after its syndication deal with Yahoo

Bing Precision Scores in the United States, February 2011 to October 2012



1. “Do the challenged agreements harm competition in search?”
2. “If the challenged agreements harm competition, are there (i) offsetting procompetitive efficiencies that (ii) outweigh any competitive harm?”