From: Hal Varian @google.com]
Sent: 5/29/2020 11:46:31 PM

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To: Daniel Russell Redacted @google.com]

Subject: Re: READ ME FIRST

I think that everyone would have to agree that both data and analysis are important. Is there a way to quantify that.

None of the startups I've talked to said their problem was lack of data; all of the startups I've talked to have said that their problem was lack of data analysts. But that's an anecdote, not data

On Fri, May 29, 2020 at 4:18 PM Daniel Russell < Redacted @google.com > wrote: Hi Hal - I'll take a look at your slides tomorrow. (Quick scan: Very interesting!)

The data quality effect IS real. Peter Norvig has his own version of this story that's fairly interesting. But the algorithmic tweaks (and data tweaks) as you point out, are also a big part of the story.

I admit that I'm not too keen on talking to regulators, but will do it if you think it's useful for the greater good. (And if you think I can do it effectively.)

Will get back to you tomorrow.

-- Dan

On Fri, May 29, 2020 at 1:06 PM Hal Varian < a google.com wrote:

Sent you some follow ups which you can peruse at your leisure,

Meanwhile, I'm very interested in the stats you shared about

URL typos, etc. I attach the article version of the slides I sent you earlier. Could you take a look at the Britny part and see if you agree with what I said?

One of the topics that comes up constantly is the "data network effect" which argues that

high quality => more users => more data => more analysis => high quality

Though this is more or less right, 1) it applies to every business, 2) the "more analysis" should really be "more and better analysis".

Much of Google's improvement over the years has been due to thousands of people such as yourself identifying tweaks that have added up to Google as it is today.

This is a little too sophisticated for journalists and regulators to recognize. They believe that if we just handed Bing a billion long-tail queries, they would magically become a lot better.

We've been doing a number of presentations to regulators on this topic. See my presentation <u>here</u>. I wonder if you would be willing to do a Meeting with them on how improving quality depends more on the algorithmic improvements (tweaks) than on the big data per se.

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If you are willing to do this, let me know and we can set something up. A lot would be stories like the URL-typos and this would be highly secure, so you can speak freely on these matters.

Happy to work with you on this.

Daniel M. Russell

Google Search Quality & User Happiness

Check out my new book: The Joy of Search (MIT Press, Winter, 2019)