What if Amazon, Alphabet-Google, Tesla, Facebook, Apple and Netflix are lying and faking their stock values?

- "Influencers" online can buy all of the fake viewers and pretend purchases they want from Chinese and Russian click-farms and troll factories. We all know that Elon Musk buys massive troll posts to hype himself up. Maybe the big techs are all just a sham!

- Traffic and purchase brokers are hired to fake Tesla, Google and NY Times traffic

- Tesla cooks-the-books and partners with Google to hype the stock that Google bosses own!

In research by Helen Coster and Neha Malara, third parties have discovered that big tech companies lie, manipulate, inflate and Flash-Boy hype their values.

For those obsessed with who is winning the video streaming wars, one metric matters: subscriber growth. But Netflix Inc and now Walt Disney Co - with its November launch of Disney+ - typically release that figure quarterly, leaving outsiders to guess at subscriber growth in any way they can.

A cottage industry of companies has sprung up to fill that vacuum. Firms like Apptopia, Sensor Tower and App Annie, born years ago to track how many people download mobile apps, are now playing a bigger role in the streaming war that kicks into gear this year as AT&T Inc's WarnerMedia and Comcast Corp -owned NBCUniversal launch new services.

These firms sell mobile download data they arrive at by applying algorithmic magic to publicly available data and data from other apps. The process is propriety, they say, and opaque to outsiders.

The resulting figures - which are approximations of mobile downloads, not the new subscribers the companies disclose - do not correlate exactly with subscriber growth, but are influential.

Third-party data is widely reported in the press, including in Reuters stories. Bloomberg offers Apptopia's mobile data to its clients. The data is also cited in research from Wall Street firms including Credit Suisse, Bank of America and Wells Fargo - sometimes as a worthwhile indication of performance, and other times dismissively.

The data moves markets: On Nov. 26, shortly after Apptopia released data indicating that Disney+ was averaging nearly a million new subscribers a day – a report that was covered widely in the press – Disney shares rose 2.3% to $153.43, setting a new record high.

To survey how often these firms get it right, Reuters reviewed eight quarters of data from Netflix, and the same amount of data from two of the third-party app measurement firms. It found that Sensor Tower's past eight quarters' of Netflix mobile download data has directionally if not precisely mirrored Netflix global paid membership growth. Apptopia download data mirrored it directionally in all but two quarters. (Graphic: https://tmsnrt.rs/34qdgDV)

Even so, the data is controversial: critics say these firms do a poor job of tracking how many people drop a streaming service, and as such, should not be viewed as a proxy for growth.

"If we had based our conclusions on app download data, we'd be very incorrect about what Netflix is doing and everything in any given quarter," said MoffettNathanson analyst Michael Nathanson, who said his firm had used Apptopia and Sensor Tower, but no longer does so.

Netflix did not respond to requests for comment. Disney and App Annie declined to comment.

Executives from Sensor Tower and Apptopia emphasize that the data reflects trends, not precise growth.

"The reason people like and trust the mobile data is that mobile gets the most screen time -- it's indicative of how people are living their lives," says Adam Blacker, a vice president at Apptopia. "What we're doing is nailing the trends and the percentage swings."

Recent quarters of Netflix mobile download data from Apptopia and Sensor Tower, while directionally mostly correct, have been off in notable ways. Apptopia recorded negative download growth for Netflix in the second and fourth quarters of 2019 -- compared to the 22% and 20% global paid membership growth the company reported, respectively. In the third quarter of 2019, Apptopia reported single-digit growth compared with an increase of 21% reported by Netflix.

"We're not going to be right 100% of the time," says Blacker about those quarters. "We're not going to tell you to trade on download data."

Sensor Tower reported single-digit global mobile app install growth for Netflix in the second and fourth quarters of 2019, compared with growth of 22% and 20%, respectively, reported by Netflix.

"We're only looking at mobile," said Randy Nelson, head of mobile insights at Sensor Tower. "We only capture that first time install - it could be someone downloading on their phone; could be someone who's been a Netflix subscriber for a while but never put it on their phone. That and the fact our figures are estimates is it will never be 1 to 1."

Despite that limitation, the data may become more ubiquitous as new streaming services launch.

"I think everyone's looking for an edge on subscribers," says Nathanson. "These stocks trade on subscribers."

5 powerful tech companies now make up 18% of the stock market — here's why this could be a bad thing

Brian Sozzi
Editor-at-Large
Yahoo Finance

We are here to say that yes, there is life outside of investing in Apple, Microsoft, Amazon, Google and Facebook. Unfortunately, most investors don't agree — and it could end badly for them at some point.

Those five powerful tech companies now comprise a hearty 18% of the S&P 500's market cap, points out Goldman Sachs strategist David Kostin. That has put the S&P 500 in an unwelcome category: the dot com bubble. In 2000, Kostin notes, Microsoft, Cisco, General Electric, Intel and ExxonMobil also made up 18% of the S&P 500's market cap. Obviously that didn't end too well back in 2000 for the simplest of reasons.

Investors were too concentrated in tech and cyclicals such as Microsoft and GE during a time when the market turned rapidly risk off and economic growth slowed sharply. The lack of diversification bit investors in the rear, plain and simple.

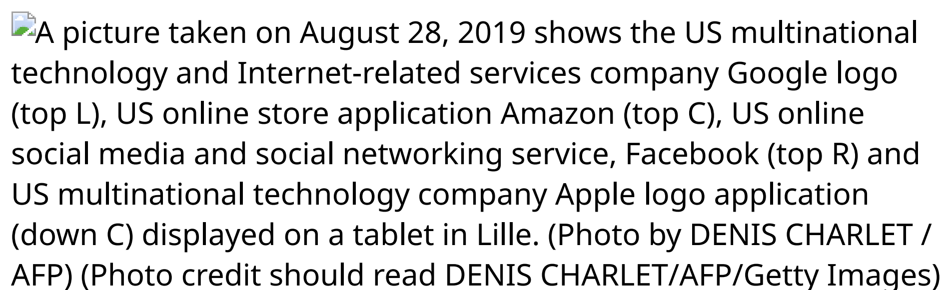
Kostin is a little more hopeful investors won't be burned this time around, however.

For one, valuations on the aforementioned big cap tech companies are more appropriate relative to the top five market cap names in 2000. In other words, tech

valuations could be justified given their recent and projected growth rates in sales and profits.

Apple, Microsoft, Amazon, Google and Facebook trade at a forward price-to-earnings multiple of 30 times versus a healthy 14% expected sales growth rate. Back in 2000, Microsoft, Cisco, General Electric, Intel and ExxonMobil traded on a rich 47 times price-to-earnings multiple… realized sales turned out diving 7%.

“In order to avoid repeating the share price collapse experienced by their predecessors, today’s market cap leaders will need to at least meet – and preferably exceed – current consensus growth expectations. This time, expectations seem more achievable based on recent results and management guidance,” Kostin says.



A picture taken on August 28, 2019 shows the US multinational technology and Internet-related services company Google logo (top L), US online store application Amazon (top C), US online social media and social networking service, Facebook (top R) and US multinational technology company Apple logo application (down C) displayed on a tablet in Lille. (Photo by DENIS CHARLET / AFP) (Photo credit should read DENIS CHARLET/AFP/Getty Images)

In the meantime, today’s big cap leaders remain aggressive in reinvesting in their business to drive future profits. That suggests, according to Kostin, valuations could prove sustainable.

The collective three-year growth investment ratio (measured by Goldman as growth in capital expenditures and R&D spending as a share of cash flow from operations) for today’s S&P 500 top five equals 48% vs. 21% for the broader index, Kostin’s data shows. In contrast, the five largest stocks in March 2000 invested less of their cash flow back into their businesses than the rest of the index (26% vs. 34%).

Despite Kostin’s compelling data, being too bullish on five big cap tech stocks right now seems folly.

First, not all of the companies are performing at their very best — Microsoft is fresh off another mind-blowing quarter, Facebook not so much. Investors don’t have to own both names, they could be more scrutinizing. Further, privacy concerns and antitrust investigations will likely be major headwinds over the next decade for Amazon, Google

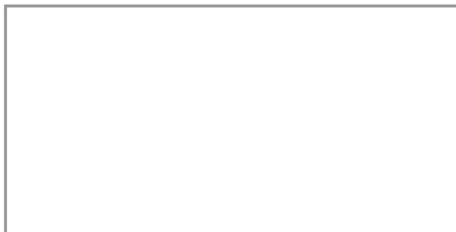
and Facebook. At some point those issues could come to a head and trigger a re-rating in all three names.

Remember the lessons of 2000, folks.

Ron Amram has been in the brand marketing business for about 20 years. In the 2000s he was media director for Sprint's prepaid cellular group, mainly figuring out where the carrier should spend its ad dollars—print, outdoor, digital, or broadcast. TV was always at the top of the pyramid. A TV campaign was like "the Air Force," Amram says. "You wanted to get your message out, you did carpet bombing." But TV wasn't cheap, nor did it solve "that age-old question: Half of my marketing is working, half of it is not, and I don't know which half."

About 10 years ago, not long after Google went public and Yahoo! was still worth upward of $50 billion, attitudes shifted. Digital search and display ads had the potential to reach TV-size audiences at a fraction of the price. "People thought it was going to change everything," Amram says.

The euphoria escalated again around 2010 with the arrival of programmatic advertising, a typically banal industry term for what is, essentially, automation. The ideal programmatic transaction works like this: A user clicks on a website and suddenly her Internet address and browsing history are packaged and whisked off to an auction site, where software, on behalf of advertisers, scrutinizes her profile (or an anonymized version of it) and determines whether to bid to place an ad next to that article. Ford Motor could pay to put its ads on websites for car buffs, or, with the help of cookies, track car buffs wherever they may be online. Ford might want to target males age 25-40 for pickup-truck ads, or, better yet, anybody in that age group who's even read about pickups in the past six months.



That's a stunningly attractive proposition to advertisers: surgical strikes on a carpet bombing scale. Ominous for privacy advocates, sure, but nirvana for agencies,

publishers, and advertisers. At long last, they'd know where every last dollar went and whether it did its job.

Amram is at Heineken USA now, where the annual ad budget is in the $150 million range. In 2013 the company replaced its old stubby bottles with a fashionably long-necked version that supposedly keeps the beer cold longer. "We had a healthy investment in TV, local media, and digital," he says. "We thought digital would come close and compete with television in terms of effectiveness."

Late that year he and a half-dozen or so colleagues gathered in a New York conference room for a presentation on the performance of the online ads. They were stunned. Digital's return on investment was around 2 to 1, a $2 increase in revenue for every $1 of ad spending, compared with at least 6 to 1 for TV. The most startling finding: Only 20 percent of the campaign's "ad impressions"—ads that appear on a computer or smartphone screen—were even seen by actual people.

"The room basically stopped," Amram recalls. The team was concerned about their jobs; someone asked, "Can they do that? Is it legal?" But mostly it was disbelief and outrage. "It was like we'd been throwing our money to the mob," Amram says. "As an advertiser we were paying for eyeballs and thought that we were buying views. But in the digital world, you're just paying for the ad to be served, and there's no guarantee who will see it, or whether a human will see it at all."

Bot Prevalence by Browser Age

Source: *The Bot Baseline: Fraud In Digital Advertising* by White Ops, Inc.

Increasingly, digital ad viewers aren't human. A study done last year in conjunction with the Association of National Advertisers embedded billions of digital ads with code designed to determine who or what was seeing them. Eleven percent of display ads and almost a quarter of video ads were "viewed" by software, not people. According to the ANA study, which was conducted by the security firm White Ops and is titled *The Bot Baseline: Fraud In Digital Advertising*, fake traffic will cost advertisers $6.3 billion this year.

One ad tracked in the study was a video spot for Chrysler that ran last year on Saveur.tv, a site based on the food and travel lifestyle magazine. Only 2 percent of the ad views registered as human, according to a person who was briefed on data provided to the study's participants. Chrysler, which doesn't dispute the data, ceased buying ads on the site once it became aware of the "fraudulent activity," says Eileen Wunderlich, the automaker's spokeswoman. White Ops, which left out the names of the advertiser and website in its published study, declined to comment. Executives at Bonnier, the publishing company behind Saveur.tv, say they screen every impression and that the White Ops study looked at 5,700 ads, a very small number. They also say there are multiple methods for detecting nonhuman traffic, and that there's no single standard used by the industry. "We weren't aware of any problem or complaint. If it had been brought to our attention we would have fixed it," says Perri Dorset, a Bonnier spokeswoman.

Fake traffic has become a commodity. There's malware for generating it and brokers who sell it. Some companies pay for it intentionally, some accidentally, and some prefer not to ask where their traffic comes from. It's given rise to an industry of countermeasures, which inspire counter-countermeasures. "It's like a game of whack-a-mole," says Fernando Arriola, vice president for media and integration at ConAgra Foods. Consumers, meanwhile, to the extent they pay attention to targeted ads at all, hate them: The top paid iPhone app on Apple's App Store is an ad blocker.

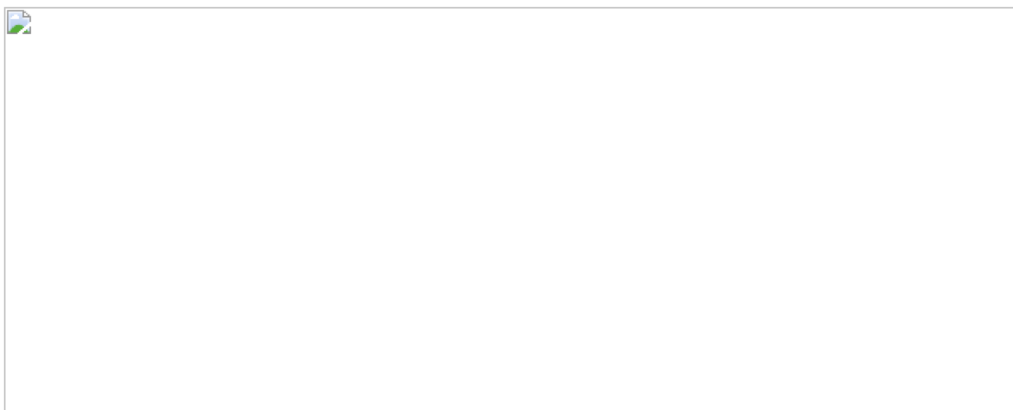
"I can think of nothing that has done more harm to the Internet than ad tech," says Bob Hoffman, a veteran ad executive, industry critic, and author of the blog the Ad Contrarian. "It interferes with everything we try to do on the Web. It has cheapened and debased advertising and spawned criminal empires." Most ridiculous of all, he adds, is that advertisers are further away than ever from solving the old which-part-of-

my-budget-is-working problem. “Nobody knows the exact number,” Hoffman says, “but probably about 50 percent of what you’re spending online is being stolen from you.”

Bonnier is a 211-year-old Swedish media conglomerate. Like a lot of traditional publishing companies, it has struggled in its transition to the Internet era. Generating digital revenue to offset declines in the print business is paramount, and video ads are particularly lucrative. Last year the company began to build videocentric sites for *Saveur* and several of its other titles, including *Outdoor Life*, *Working Mother*, and *Popular Science*.

About half of Saveur.tv’s home page is taken up by a player that automatically plays videos with simple kitchen tips. In early September, the spots (How to Stir a Cocktail, Step One: “Hold the spoon between pointer and middle finger ...”), were preceded by ads from Snapple and Mrs. Meyer’s household cleaning products.

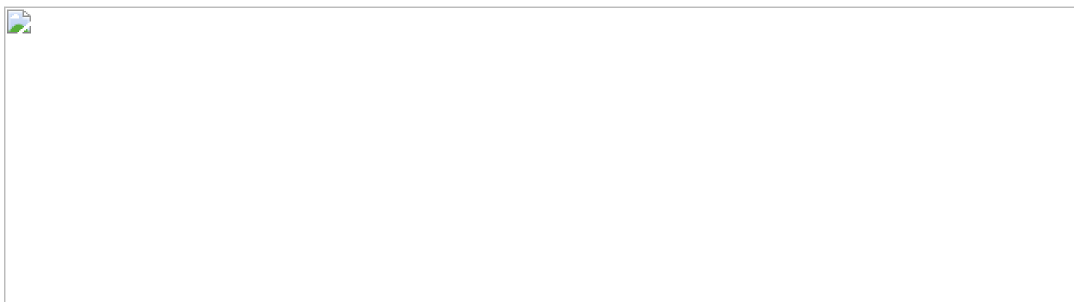
The challenge for Bonnier was building an audience. That can be done organically—by coming up with lots of content, promoting it until people start watching, persuading advertisers to buy in. Or there’s a modern shortcut: Buy traffic. Which doesn’t necessarily mean fake it. Publishers often pay to redirect human users from somewhere else on the Internet to their own sites, and companies such as Taboola and Outbrain specialize in managing this kind of traffic. Website A hires Taboola, which pays Website B to put “content from around the Web” boxes at the bottom of its pages. Viewers, enticed by headlines like “37 Things You Didn’t Know About Scarlett Johansson,” click on a box and are redirected to Website A. But redirects are also expensive. In practice, only 2 percent of people on a site click on these boxes, and Website A has to compensate Website B handsomely for giving up precious visitors.



Less ethical methods are cheaper. Pop-ups—those tiny browser windows that you ignore, click to close, or never see—are one way to inflate visitor numbers. As soon as that window appears on your computer, you're counted as someone who's seen the ads. An even more cost-effective technique—and as a rule of thumb, fake is always cheaper—is an ad bot, malware that surreptitiously takes over someone else's computer and creates a virtual browser. This virtual browser, invisible to the computer's owner, visits websites, scrolls through pages, and clicks links. No one is viewing the pages, of course; it's just the malware. But unless the bot is detected, it's counted as a view by traffic-measuring services. A botnet, with thousands of hijacked computers working in concert, can create a massive "audience" very quickly.

All a budding media mogul—whether a website operator or a traffic supplier—has to do to make money is arbitrage: Buy low, sell high. The art is making the fake traffic look real, often by sprucing up websites with just enough content to make them appear authentic. Programmatic ad-buying systems don't necessarily differentiate between real users and bots, or between websites with fresh, original work, and Potemkin sites camouflaged with stock photos and cut-and-paste articles.

Bonnier wasn't that audacious. But even its own executives say the content on the video sites was unlikely to create and sustain much of an audience on its own. So they turned to several different traffic brokers—or audience networks, to use the industry euphemism. Sean Holzman, Bonnier's chief digital revenue officer, described the practice as normal for big-time publishers, especially those rolling out new products, because advertisers won't bother with sites that don't already have an audience. "It was a test, a way to prime the pump and see if we could build these sites at this price point," he says. "You usually have to keep buying some traffic, because the audience you're getting isn't as sticky."



It's also common for publishers not to tell their advertisers when they're buying traffic, and in most cases, Bonnier didn't. When advertisers asked, says spokeswoman Dorset, the company was open about its buying traffic. Holzman says there was no intent to deceive anyone. The company hired security firms, he adds, including DoubleVerify, to vet the sites for bots and was assured they were buying real human visitors. But he says they weren't paying top dollar for their traffic. Among audience networks, he says,

“there are some you might call Toyotas, others we’d consider Mercedes. We were priced at the Toyota level.”

The traffic market is unregulated, and sellers range from unimpeachable to adequate to downright sleazy; price is part of the market’s code. The cheap stuff is very easy to find. On LinkedIn there’s a forum called “Buying & Selling TRAFFIC,” where 1,000 “visitors” can be had for $1. Legit traffic is a lot more expensive. Taboola, for example, charges publishers from 20¢ to 90¢ per visitor for video content, targeted to a U.S. audience on desktops only. A publisher like Bonnier can sell a video ad for 1¢ to 1.2¢ per view in a programmatic auction, which is how the company sold most ads on its video sites. If Bonnier had gone with Taboola, it might be losing 19¢ per view or more.

Soon after it started buying traffic, Bonnier’s numbers began to jump. In the summer of 2014, several of the video sites had almost zero visitors, according to ComScore. By December, Saveur.tv had 6 million monthly visitors and WorkingMotherTV.com, 4 million, according to site data provided by Bonnier. In May traffic surged again: 9 million for Saveur.tv; 5 million for WorkingMotherTV.com. The numbers didn’t pass muster with at least one big ad firm: SiteScout, which aggregates and lists ad space for sale from more than 68,000 websites, says it blocks several of these new Bonnier sites for “excessive nonhuman traffic.” Bonnier says it doesn’t work directly with SiteScout and was unaware its video properties had been blocked.

(Bloomberg.com, which like *Bloomberg Businessweek* is owned by Bloomberg LP, reported 24.2 million unique visitors in the U.S. in August, according to ComScore. The site purchases between 1 percent and 2 percent of its traffic from Taboola and Outbrain. “In the past, we have engaged with a few other vendors,” says global head of digital Paul Maya, “but we weren’t confident in the quality of the audience, despite assurances from the vendor, and canceled those deals.”)

Featured in Bloomberg Businessweek, Sept. 24, 2015. Subscribe now.

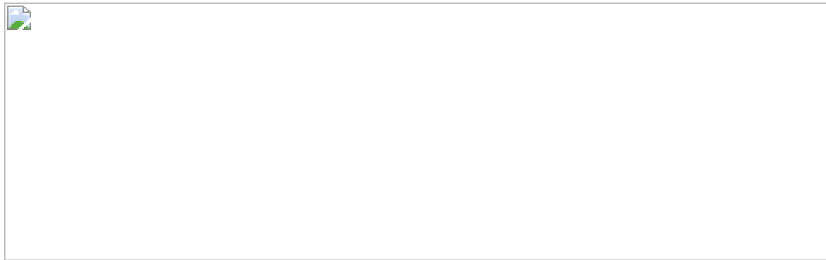
Bonnier declined to reveal its traffic suppliers, but an analysis by SimilarWeb, a traffic-analysis firm, shows most of it arrived from a handful of identical-looking sites with names like Omnaling.com and Connect5364. com, each describing itself as “an advertising network technology domain.” Essentially the domains work like fire hoses, pumping traffic anywhere on the Internet. They’re registered anonymously but have shared computer addresses with other sites, including one called Daniel-Yomtobian.com. Daniel Yomtobian is the chief executive officer of a traffic supplier in Sherman Oaks, Calif., called Advertise.com.

When reached by phone, Yomtobian is gregarious and friendly. He describes Advertise.com as an ad network that sells more than 300 million page visits each month to companies that want to boost their traffic. Among his customers is Bonnier,

which, he says, mainly purchased his cheapest-possible traffic, including "tab-unders." Say you're watching a movie on Netflix. A tab-under opens up another window beneath the one playing the movie. You may never see that new window, which displays an Advertise.com customer's website, but Advertise.com's customer still generates another page view. Repeat a few thousand times, and you build traffic numbers.

"I've found Advertise.com selling every type of worthless traffic I am able to detect," says Benjamin Edelman, a Harvard Business School professor who researches the digital economy. "And doing so persistently, for months and indeed, years."

Yomtobian allows that tab-unders are "low-quality traffic" and that Bonnier complained about that. But he says his firm checks the traffic of its supplying partners for bots and sends only real humans to the Bonnier websites. "We would never deliver traffic that we don't think is real," he says. Yomtobian also disputes Edelman's claims that Advertise.com's traffic is worthless. After all, people sometimes do see tab-unders and click on them. "There is a huge distinction," he says, "between worthless traffic and low-quality traffic."



You've probably never visited MyTopFace.com. It's a cosmetics advice site that sells ad slots for anywhere from 73¢ to $10 per 1,000 views, with video ads fetching far more money than display ads, according to SiteScout. As of early September, the top story on MyTopFace, an article with an accompanying video called "Smokey Eye Makeup—Kim Kardashian Look," was at least 5 months old. Stale content seems like the worst way to attract readers, but if the readers are bots, it doesn't matter. So MyTopFace could have made as much as $9 for every 1,000 visitors, assuming it kept costs close to zero and was able to acquire traffic at a rate of $1 per 1,000. MyTopFace ran ads from companies and brands such as American Express and Hebrew National hot dogs.

After more than a dozen e-mails and phone calls, the operator of MyTopFace agreed to meet with *Bloomberg Businessweek*. He's 28, lives in Brooklyn, and introduces himself as Boris Boris (although a number of his network's sites are registered under other names). On a warm September afternoon, he shows up at a trendy Flatbush Avenue cafe with his wife and their 1-month-old son in tow. He's wearing a pair of brown, tortoiseshell glasses and sports a goatee with a waxed, handlebar mustache.

Boris says he was born in eastern Ukraine and made it to the U.S. when a Russian-owned business in New York heard about his Internet marketing skills through the émigré grapevine and got him a temporary visa. After a few months of fine-tuning, he helped a Brooklyn meat processor's website vault to the top of Google searches. "They were happy, and I knew I could stay," Boris says. "And I knew that I could find success in the USA, too."

You're launching a website. Problem: Advertisers won't talk to you because your site has no audience. Solution: Buy an audience! How? Depends on what you're willing to

spend.

by Dorothy Gambrell

But Boris saw that the real opportunities in Web advertising lay elsewhere. In less than five years, he's built a minipublishing empire, Boris Media Group, largely through the acquisition of cheap—and, often, fake—traffic. Along with MyTopFace, his portfolio

includes several low-maintenance properties, such as MaryBoo.com, which offers health and beauty tips to pregnant women. Boris's LinkedIn profile says his sites combine to reach more than 10 million viewers daily, which would get him in four days what the *Los Angeles Times* gets in a month.

Boris's traffic number is difficult to verify—he declined to provide a full list of his websites. But for much of the summer, MyTopFace offered from 30,000 to 100,000 ad impressions for sale each day, according to SiteScout.

During the interview, he freely admits he buys many of the visitors to his websites. He spends about $50,000 per year buying high-quality traffic for MyTopFace from Facebook (nothing nefarious there—you create an account for your business and then pay Facebook to advertise in people's news feeds). And then he spends another $50,000 or so on cheap traffic whose origins he isn't as sure about. Facebook traffic is real people, and costs about 100 times more per visitor than the mysterious cheap traffic.

Bloomberg Businessweek asked two traffic-fraud-detection firms to assess recent traffic to MyTopFace; they agreed on the condition that their names not be used. One found that 94 percent of 30,000 visitors were bots; the other put the bot traffic at 74 percent. Boris didn't dispute the findings or appear at all concerned. "If I can buy some traffic and it gets accepted, why not?" he says. And if advertisers don't like it, he adds, "they should go buy somewhere else. They want to pay only a little and get a lot of traffic and results. If they want all human traffic, they should go direct to the publisher and pay more."

In a later e-mail, he explains his business differently. "Our network doesn't buy traffic, we buy advertising that brings us traffic," Boris writes. His operation uses antibot filters, he adds, and any advertiser that does find bot traffic can refuse to pay for it. In any case, fraud would be impossible, he says.

One prominent source of Boris's advertising revenue is Myspace. The once-dominant social network's new owner, the ad-tech firm Viant, relaunched it in 2013 with a focus on video. It has invested in Myspace exclusives, as well as custom-made video players that other sites can embed, much like YouTube's.

When visitors went to MyTopFace.com last summer, a Myspace player would pop up in the bottom right-hand corner of the screen. First, an ad would show, followed by the editorial content—a 15-second video of a guy driving a car at night.

The guy-driving-at-night video, called *Hitboy*, was one of several put together by a Myspace employee to serve as placeholders, according to Viant. They appear whenever Myspace blocks a site from showing its actual video content. That might happen, say, if

the site violates Myspace's terms or conditions or if Myspace loses the rights to show a video that had been featured.

But the placeholders are still preceded by ads. Kozy Shack pudding, Chevrolet, Unilever, and various Procter & Gamble brands such as Tampax and Always have all paid for the privilege. Boris says the checks he cashed came through an affiliate program where Viant splits ad revenue with publishers who showed its players.

Viant's executives say they have an affiliate program, but they've never heard of Boris or MyTopFace.com. They declined to name a single company that participates in the program. Boris says he put the Myspace players on his sites after being contacted by a middleman, whom he won't name. "My balls will be cut off," he says.

Ad slots on MyTopFace.com run anywhere from 73¢ to $10 per 1,000 views.

Chris Vanderhook, Viant's chief operating officer, says the company has technology that checks for nonhuman traffic. "If a website has 80 or 90 percent bot traffic, then yes, we will try to remove this site from any ad rotation," he says. Yet Boris's MyTopFace, which, again, according to the estimates provided to *Bloomberg Businessweek*, had between 74 percent and 94 percent nonhuman traffic, hasn't been cut off. Vanderhook says that must mean Viant's software sees some value to it. If a website has a Myspace player showing ads, he says, "we deemed that it was still quality enough to auction off."

Myspace's placeholder videos appeared on about 100 websites in August, according to Telemetry, a fraud-detection firm. If anything, some of the sites are even more creative than MyTopFace. Take RealMovieTrailers.com. The site lists a nonexistent address in New York as its headquarters. The phone number doesn't work. Image searches of its designers' headshots reveal they're stock photos, reused hundreds of times around the Internet. The photo of one designer, Roland Henry, also shows up on a Moroccan travel site as an ecstatic customer named Mohammed Hijazi. Another, Henry Gardner, is on an erectile-dysfunction-treatment page, where he's an unnamed customer declaring it's "the absolute best." The identity of RealMovieTrailers' actual operators isn't clear; the site's address is registered anonymously, and no one responded to an e-mail sent to an address listed on the site.

In September, after *Bloomberg Businessweek* asked Viant about its content, Myspace players began showing non-placeholder videos. But if the counters embedded in the players are accurate, those placeholders are some of the most watched clips in Internet history. *Hitboy* has amassed 690 million views. Even bigger is *Surfing*, which looks like someone butt-dialed a video: five seconds of black screen with some muffled background noise. According to the Myspace counter, *Surfing* has been viewed 1.5

billion times. That would make it bigger than any YouTube video in history—with the exception of *Gangnam Style*.

Programmatic advertising has become such a tangle of data firms, marketing firms, strategy firms, and ad tech companies that it can be hard even for the biggest brands to keep track of it all. Three years ago executives at Kellogg started to notice that spots for Cheez-It, Pop-Tarts, and Special K were running on sketchy websites, hidden in pop-under windows, or compressed into screens as tiny as a single pixel. Others were displayed on sites where much of the "audience" was bots. "It turns out I'm buying from this guy down the street who opens up his coat and says, 'Hey, you want to buy some ads?' " says Jim Kiszka, the food company's senior manager for digital strategy.

The situation became more infuriating when Kellogg tried to get a simple breakdown: How much was each part of the labyrinthine digital-ad process costing? Answers were impossible to come by. Kellogg asked for itemized bills from the various ad agencies and data companies it hired, but they all refused. "It wasn't a smoking gun," Kiszka says. "It was more like a detective story where you had to piece together the evidence. And it was clear that in a system with that little transparency, there was bound to be problems."

In response, Kellogg's in-house ad department assumed control of its contracts with publishers and ad platforms such as Google and Yahoo, removing the agencies from the process. Kellogg started using software that alerted it when ads ran on suspect sites and refused to do business with any sites that wouldn't allow third-party validators to screen for bad traffic. Kiszka says the company has seen a 50 percent to 75 percent drop in bot traffic and a significant jump in its return on investment in advertising for Raisin Bran and Corn Flakes.

Bot Traffic by Domain Category

Source: *The Bot Baseline: Fraud In Digital Advertising* by White Ops, Inc.

Ad fraud may eventually turn into a manageable nuisance like shoplifting, something that companies learn to control without ever eradicating. Advertisers generally see lower levels of fraudulent traffic by dealing directly with publishers rather than using programmatic exchanges. Of course, that also means missing out on the scale that automation provides. Sites such as Facebook, with its billion-plus users, are relatively bot-free, if expensive, places to run an ad. Earlier this year, Facebook said advertisers would have to pay only when their ads are actually seen by humans.

There’s also the possibility that the multitudes of smaller ad tech players will get serious about sanitizing their traffic. Walter Knapp, CEO of Sovrn Holdings, a programmatic exchange, says he was as alarmed as anyone at the rise of ad fraud. He decided it was a matter of survival. “There are 2,000 ad tech companies, and there is maybe room for 20,” he says. “I looked around and said, ‘This is bulls---.’ ”

About 18 months ago, he set to figuring out how much of his inventory—ad spaces for sale—was fake. The answer mortified him: “Two-thirds was either fraud or suspicious,” he says. He decided to remove all of it. “That’s $30 million in revenue, which is not insignificant.” Sovrn’s business eventually returned to, and then surpassed, where it was with the bad inventory. Knapp says his company had a scary few months, though, and he keeps part of a molar on his desk as a memento. “I was clenching it so hard, I cracked it in half,” he says.

He dismisses the idea that it’s hard to tell genuine traffic from fake. “The whole thing about throwing your hands in the air and saying, ‘I don’t know, maybe it’s real, maybe it’s not real,’ ” he says. “You can absolutely find out.” He sees it the way Supreme Court Justice Potter Stewart saw smut. “How can you tell it’s porn? You know it when you see it,” Knapp says. “Like, go to the website, man.”

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