Subprime Attention Crisis: Advertising and the Time Bomb at the Heart of the Internet

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Abstract

In 2020, Tim Hwang, a writer, lawyer and technology policy researcher based in New York, published a short book entitled Subprime Attention Crisis: Advertising and the Time Bomb at the Heart of the Internet, which seeks to analyse the issues that are developing around the business model associated with the continued operation of the Internet, at least in its current manifestation, and the weaknesses and potential instability associated with that model. The book is of particular interest because the problems and possible next developments of the "time bomb" are set out in a plausible manner, together with some discussion on possible solutions. In particular, the author makes a credible comparison of the business model of the Internet with the subprime mortgage securities sector, the collapse of which contributed to the Global Financial Crisis in 2008.

Introduction

Subprime Attention Crisis: Advertising and the Time Bomb at the Heart of the Internet(Hwang, 2020 [5]) is published by FSG Originals, the self-publishing arm of Farrar, Strauss and Giroux of New York. It is 164 pages long, of which 23 pages comprise End Notes. This is not a lot of book for the price of $US 15.00, but it is sufficient space for the author, Tim Hwang, to set out and elaborate on his thesis.

Basic thesis

Hwang's basic thesis is essentially as follows:

> The development and expansion of the Internet, and the provision of many of the services and applications that are based on it and provided without charge, depend on funding through online advertising.
> Like all advertising, advertising on the Internet is concerned with buying attention, or at least access to the possibility of attention.
> Massive volumes of Internet advertising are undertaken through programmatic advertising.
> Programmatic advertising involves the almost instantaneous sale of access to attention to advertisers that is targeted to the profile of the Internet user.

Advertisers have limited means of testing whether advertising has occurred or is effective, requiring a high level of trust in the system.
In the case of the Internet, advertising effectiveness is measured in terms of clicks, but this measure is deceptive, not least because click fraud is rife, and so the value that is being ascribed is grossly exaggerated.
All participants seem to have an interest in maximising their returns and this reinforces the current system. The result is a bubble that grows and, like all bubbles, becomes unstable.
There is a substantial risk that the bubble will burst, rather than gracefully deflate, with equally substantial adverse effects for confidence and for the future of the Internet.
The parallels with the financial system and the subprime crisis in the United States are instructive.
This leads to the question of the options that are available to address the issues in advance of the advertising model collapsing dramatically.

Structure

The material that Hwang presents is well structured and logically ordered, and follows the lines of the basic thesis summarised above. However, Hwang takes considerable care to outline the key elements of online financial markets and of the subprime crisis that he considers have most relevance to the Internet advertising crisis. It is his key metaphor throughout – indeed it is more than a metaphor, since the Internet advertising market and the sale of attention are very closely matched, for Hwang, with other financial markets.

The advertising business model

Perhaps Hwang does not have to make the case that the Internet is about advertising. We might well accept that. However, he does make the case very well in his introduction, noting how concentrated is the market for online search and online display advertising. Google, he notes, "controls around 37.2 percent of the overall U.S. digital ad spend" with Facebook "accounting for another 19.6 percent of the U.S. market", which makes the valuation of the market, in 2017, around $110 billion (Hwang, 2020 [5], p. 10).

The key, though, is not the size of the market but the dependence of the platform business models on advertising. Hwang notes that in 2017 advertising constituted 87% of Google's total revenue and 98% of Facebook's total revenue (p. 9).

Hwang offers some interesting insights into exactly how automated programmatic selling of attention takes place on the Internet and the way in which buyers for that opportunity compete in real time for it. The real-time bidding process takes, he says, about one hundred milliseconds, "about a quarter of the time it takes you to blink" (p. 20). In the time between the user clicking on an online site or material, the automated processes profile the user and seek material from competing demand-side platforms, complete the selection, and display the "winning" advertisement.

The development (and acquisition) of software tools to effect large scale, virtually instantaneous, automated placement of online advertisements followed the development of online financial marketplace systems. Hwang provides a useful history of this aspect of the online advertising history, including the acquisition of DoubleClick by Google and Yahoo's acquisition of Right Media, both in 2007 (pp. 34-41).

Commodification of attention

The other important development of commodity and financial markets that is replicated in the online advertising market is standardisation, followed by commodification. Hwang notes that standardisation of quality indices is important for accommodating large numbers of market participants who have no means of individually inspecting the good or services for sale – or, in the case of the Internet, the attention opportunity. For this to work, there has to be reliance and trust in the integrity of the overall market system and in its rules. Hwang notes that standardisation was necessary for stock and produce markets of the 19th century (such as those in Chicago) to develop beyond their physical boundaries and to sustain a range of securities, including trading in futures (p. 46). This could only occur once the system recognised the standardised goods as commodities, and once the integrity of that process was accepted and trusted.

The development of standard definitions for online advertising is extremely interesting. Hwang describes the work of the Internet (now Interactive) Advertising Bureau, formed by the industry itself in 1996, to determine standards by which the successful delivery of online advertisements might be verified and measured. One of the standards cited by Hwang is that of the concept of "viewable impression", which determines whether an online advertisement has been successfully delivered:

"To achieve a viewable impression, more than 50 percent of the pixels in an advertisement must occupy the viewable space of a browser page for greater than or equal to one continuous second after the advertising renders" (p. 51).

With commodification the market can be greatly expanded, and Hwang contends that this not only happened with former commodity markets, but with financial and Internet advertising markets as well. The parallels that he draws with financial markets are strong and many. He makes the further point that, although there are major differences between financial securities and online advertising inventory (the latter is not bought and sold, but bought and consumed or used), the failure of markets is ultimately for the same reason, whatever the commodity involved, and that reason is a "crisis of confidence" (p. 55).

Contributors to crises of confidence: market opacity

Hwang argues that market opacity – “the inability to see what is actually happening within a marketplace” (p. 55) – is fundamental to the emergence of a crisis of confidence in any market, and the crisis is usually associated with growing doubts about the value of the assets being traded. He says that:

“in the 2008 [financial] crisis, financial innovation in the form of collateralized debt obligations and complex options pricing algorithms prevented the players from having a clear idea of what was going on. … In the subprime crisis of 2007-2008, packages of shoddy mortgages that were nearly certain to default at unexpectedly high rates were increasingly circulating in the marketplace. Opacity allowed these toxic assets at prices far above what they were actually worth” (pp. 55-6).

It is at this point that Hwang’s thesis needs to be stress tested. What he says about the subprime crisis is now accepted wisdom. There was a collateralisation of debt obligations with the addition of subprime mortgages that were bound to fail at some point in the near future. The “collateralised” securities were then sold well above their realistic weighted value in a market that was opaque and where all the incentives were to keep trading. Once the substantial divergence of real and market values was suspected, then realised, panic set in and confidence across the board collapsed. But, if this is a true indicator of the prospects for the online advertising market, then a number of matters need to be shown: firstly, that there is an equivalence in the online advertising market to the development of toxic assets; secondly, that the revelation of a substantial divergence between market and “real” value is inevitable; thirdly, that the market does not have the capacity to reduce the divergence and restore adequate confidence under its own dynamics; and fourthly, that other business models might not develop at the same time as this dénouement and adjustment are occurring.

Hwang makes use, on a number of occasions, of the words attributed to John Wanamaker that “half the money I spend on advertising is wasted; the trouble is, I don’t know which half”. Assessing the value of particular advertising is a perennial issue, and, as Hwang notes, is equally acute for online advertising, despite the belief that online advertising can be uniquely targeted and that, overall, online advertising is more measurable and, therefore, accountable. However, Hwang argues that “the measurability of the online ad economy is an inch wide and a mile deep” and “the tidal wave of data that has accompanied the development of online advertising provides on an illusion of transparency” (p. 62).

Hwang attributes the “deeply opaque” nature of online advertising to algorithmic trading which blends speed, automation and scale; substantial off-market transactions;[i] [6] and the increasing disintermediation in the market as large advertising platforms such as Google and Facebook displace the traditional market gatekeepers.

Opacity matters in this market, as in others, because it enables expectations of the parties, and particularly of advertisers, to develop and diverge quite separately from the underlying reality. When, and if, the divergence is revealed, market adjustment occurs, and market collapse may result.

Click fraud and other dubious practices

Hwang describes in some detail the click-through measurement that is widely used to assess the impact and immediate efficacy of online advertisements. This measure is the percentage of people viewing the advertisement who subsequently clicked on it. In 1994, Hwang notes, early online banner advertisements had a high click-through rate of around 44%. But by 2018 this had dropped to below 1% on Facebook and less than 0.5% on Google (p. 78). Hwang states that close to 50% of all click-throughs on mobile devices are inadvertent or accidental (“fat finger” clicks) (p. 79). Hwang also cites experimental studies that show a high level of indifference to online advertisements, particularly among younger age groups.

The problem of declining click-through rates, and general and increasing (through age cohorts) indifference, is compounded by the widespread and growing use of ad blocking software. One response has been increased fraud.

Hwang describes click fraud as “a widespread practice that uses automated scripts or armies of paid humans in ‘click farms’ to deliver click-throughs on an ad” (p. 84). Hwang cites an Adobe study in 2018 that estimated that about 28% of website traffic showed ‘non-human signals’, and originated in click farms (p. 84).

Another practice described by Hwang, is ‘domain spoofing’, which involves sale of online space that looks like, but is not, the sought-after high value website the advertiser believes it is. This practice appears to be straight-out fraud but is a contributor to potential collapse of confidence in the integrity of the market.

Inevitability of market failure

How inevitable is failure of the online advertising market? Hwang argues that a bubble (being the diversion of expectations from reality) already exists in the online advertising market, and that its growth is sustained by the same kind of perverse incentives that fed the 2008 subprime mortgage crisis. Online advertising has been successful at the expense of traditional media, which in 2018 accounted, globally, for $273 billion out of a total advertising revenue of $629 billion (p. 98). But these figures also show that there is substantial potential to take more from traditional media. Hwang notes that both the marketing agencies and the marketplaces themselves have strong incentives to continue to oversell the value and price of online advertising inventory, despite evidence of declining value and fraudulent manipulation.

The comparison with the 2008 subprime mortgage market collapse works to a certain extent. There are undoubtedly parallels, as Hwang repeatedly notes, but there are also important differences. In response to substantial levels of investment funding seeking safe haven in the housing market, property developers and their financiers were encouraged to lend to more and more people, including those with no ability to repay their mortgage loans. It was inevitable that these mortgages would fail and that the property glut would result in sharp price declines. This would most probably not have had global financial consequences, because the quality of the subprime mortgages would have been readily recognised and they would have been traded directly on the security markets suitably marked down from the outset. However, the securitisation process employed involved mixing of subprime mortgages with more highly rated securities. This extended the toxicity throughout the whole of the financial system, and also the extent of the collapse in confidence when it came.

A constant throughout the period leading to 2008 and 2009 was the inevitability that subprime mortgages would fail. The impact of that failure may not have been fully foreseeable. Hwang has not made a solid case that the market for online attention will fail as inevitably or as quickly or with anything like the same widespread impact. In fairness, he talks in terms of probabilities, rather than inevitability. He has made the case for there being serious flaws in the online advertising market, and that there is a bubble because of the discrepancy between expectations, market values and reality. In terms of how it will end, however, he favours scenarios with higher dramatic value: “Bubbles pop, of course. And when they do, it’s loud” (p. 111).

Healing or Restorative Capacity of Online Advertising Market

The model of market bubbles that Hwang adopts is that the bubbles grow and then become unstable, partly because market operators have incentives to keep going. Eventually, dénouement occurs, participants seek to get out with some residual value, prices rapidly drop and panic sets in. Why not just let this scenario play out?

Hwang argues that, if online advertising markets collapse, the journalism and media that are sustained on that revenue would be imperilled, and that such a collapse would have adverse effects across the online economy, including on the free services that are based ultimately on advertising (p. 120). These consequences are not elaborated by Hwang, and sound less than dire. The Internet will survive, and the business model will change, possibly even for the better.

Hwang argues for a controlled implosion, bringing forward the demolition of the current business model before the bubble gets bigger and potentially more dangerous. Essentially, he wants a regulatory agency, of the kind that undertake research into and regulate other markets. He calls his preferred agency the National Bureau of Advertising Research (NBAR), analogous to the existing American National Bureau of Economic Research. He believes that it is possible that the NBAR would have natural allies and support from the advertisers themselves, including very large corporates. On top of thorough and well-publicised research, Hwang sees the benefit of a disclosure regime of the kind that has operated in securities markets since the 1930s, with substantial penalties for non-compliance.

Building or Strengthening Other Business Models

One might be forgiven for being sceptical whether the United States of the 2020s has the governmental robustness and cohesion to undertake market reforms that are required, and to emulate the New Deal reforms of the 1930s. The rescue and stimulus programs in 2009 and the years following the global financial crisis are not the kind of approaches required to control the powering down of the online advertising market.

Shining a continuing and strong light on the market and its practices, aided by authoritative research, may have positive effects, including allowing opportunities for other business models, less based on advertising revenues, to develop more widely in the online word. Walled gardens, much favoured as a business model, at least for discussion purposes, in the 1990s and early 2010s, may make a comeback. Subscription services may develop in the absence of free, or apparently free, alternatives. Many serious journals and news media now serve paying subscribers, especially since their print versions have declined or been withdrawn.

Conclusion

Hwang has outlined some fundamental problems and issues with the online advertising market and also the potential for those problems to grow to crisis proportions. His book is strongest in describing the problems and drawing strong parallels with issues that have bedevilled other markets, particularly financial markets and the development of the subprime mortgage crisis that led to the 2008 collapse and subsequent global financial crisis.

For this reviewer, the book is weakest in describing the manner and extent of the problems that will or may result from the bubble in the online advertising market bursting. Although serious enough, the consequences do not seem to be dire and do not find a parallel with the decade-long aftermath of the global financial crisis. In particular, Hwang has not demonstrated that the online advertising market would not develop alternative business models, including alternative advertising business models. Clearly these recuperative powers might be assisted substantially by authoritative research and disclosure regimes, but in the end the adaptive capacity of the market itself may be much stronger than Hwang assumes.

I recommend this book to the attention of all those interested in the way these markets work and their shortcomings. It is a very illuminating effort on the author’s part.

Reference

Hwang, T. (2020). *Subprime Attention Crisis: Advertising and the Time Bomb at the Heart of the Internet*, FSGO/Logic, Farrar, Straus and Giroux, New York

i [7] Hwang calls these transactions “dark pools” and notes that they constitute a large part, 14%, of equity trading in the United States. The proportion is much higher with online advertising, 45% of all money spent in 2018 being in non-public marketplace transactions (p. 66).

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