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The Cost of 'Free' Websites and Advertising Driven Information Flow: How chatbots are threatening the ad revenue of online publishing platforms

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Large Language Model (LLM) Chatbots have received significant attention in the last year. According to Deloitte Insights, the worldwide conversational AI market, which encompasses chatbots and intelligent virtual assistants, is projected to experience a compound annual growth rate (CAGR) of 22% from 2020 to 2025, anticipated to reach nearly $14 billion by 2025 (Deloitte Insights). For many users, chatbots feel like their first direct encounter with the realm of artificial intelligence, wrapped in an interface that amplifies its futuristic allure. This has created high expectations and hyperbolic concerns. While LLM chatbots are very powerful, sober discussion of their actual abilities and potential harm is necessary.

Several genuine concerns have received significant attention: worries from teachers about students cheating or taking shortcuts; questions of fair use of training data both images and text scraped from the internet; unease about white-collar jobs becoming automated. One particular concern, which this paper focuses on, has received less attention. It is not unique to chatbots or entirely new, but will be exacerbated by Chatbots in the coming years and warrants discussion.

In particular, this paper will analyze how the rise of chatbots challenges the revenue models of "free" websites and writers/journalists. By enabling users to access content directly without the need to visit websites, they bypass the traditional flow of ad revenue and source of writers' compensation. Consequently, the lines between advertising and information become blurred, as both now require payment for prominence on chatbot platforms. This paper will analyze the implications of this trend and suggests that government regulation will be required to reallocate chatbot revenue and ensure competition among defaults. Finally, as chatbots become increasingly capable and popular, it will be necessary to reevaluate how information is monetized and generate public awareness of the true cost of 'free' websites.

How 'Free' Websites Make Money

Traditional revenue models of "free" websites operate through the following symbiosis between users, advertisers, and publishers:
1. Users seeking information visit publisher's websites and view ads.
2. Advertisers pay publishers for ad views, seeking visibility and exposure to the website's audience.
3. Publishers generate revenue from advertisers and use a portion of it to compensate writers for their work.
4. Writers provide content to publishers, contributing to the website's information and attracting users.

This cyclical model relies on the exchange of user attention and engagement with advertisements, which in turn supports the funding of content creation and maintenance of the website (Investopedia).

It is important to note that even before chatbots, the landscape of online publishing had witnessed significant shifts that were beginning to disrupt the traditional revenue model of "free" websites. In particular, the increasing concern regarding data privacy has brought about a decline in ad personalization and subsequent ad revenue.

Due to recent *data privacy concerns*, initiatives like Apple's Ask to Track (ATT) implemented in late 2020, which allows users to opt out of cross-application data sharing by apps have empowered users to be more mindful of their data, prompting a reevaluation of targeted advertising strategies. By October 2021, ATT had reportedly cost Snapchat, Facebook, Twitter, and Youtube around $9.85B (Roth). Data privacy concerns may serve as a good jumping off point for larger conversations about the true costs of 'free' websites. If people are beginning to care more about their digital privacy, they should know their 'free' services may begin seeking other means of generating revenue (ie. subscription models). Maybe the public would be willing to pay for such services if it means maintaining their privacy and preserving the integrity of their information.

In part because these online platforms are realizing the value of their data, they have begun *shutting down or restricting use of their APIs* by many major platforms has intensified the challenge (McGowern). While some argue that this move is driven by concerns over privacy and security, there are instances, such as Reddit's introduction of a subscription plan for their API, that raise questions about these motives. The limitation on API access and utilization is particularly concerning as it affects stakeholders including independent researchers, NGOs, and private developers. APIs serve as a vital resource for these entities to enhance accountability, foster innovation, and build upon the services provided by online platforms. The restrictions imposed on APIs disrupt this collaborative process and hinder the development of valuable applications and tools. As the value of data continues to grow, finding a balance between safeguarding privacy and enabling meaningful access to APIs becomes crucial to ensure a thriving and inclusive digital ecosystem.

Finally, the *online publisher environment itself has undergone significant transformations*. The revenue-generating potential of traditional direct reporting and written pieces has waned, giving way to alternative content formats. Commentaries, social media posts, attention-grabbing headlines, and pay-to-play through Google News and Apple's news app have gained prominence as revenue drivers. This shift in content preferences has altered the landscape for publishers, necessitating adaptations to survive in the evolving digital realm. Online 'new media' is exploring alternative revenue models, such as subscriptions, to sustain independent writers and journalists. These platforms rely on a devoted community of readers or listeners who directly fund the content creators. However, the subscription model means deviating from the established ideological preferences of subscribers could lead to lost revenue, creating different niche ideological echo chambers. In addition, achieving visibility remains a challenge for these

ventures as they often rely on larger platforms like YouTube or Substack to reach a wider audience. Finally, the information produced by these independent writers can still be scraped by chatbots, allowing users to access and utilize the content without proper credit or compensation for the original creators.

Enter Chatbots

Chatbots disrupt this revenue model by allowing users direct access to information without clicking on its source.

1. Users can seek and access information directly from the chatbot without clicking on the online publishing website and viewing advertisements.
2. Advertisers, realizing users are not clicking on publisher websites, pay chatbots directly to display advertisements or emphasize their service in conversations.
3. Publishers are forced to pay to have their content emphasized or to be the integrated default (more on what this means in the next section) of the chatbot, crowding out their revenue to pay writers.
4. Writers are paid less or are fired; fewer writers will be responsible for more content, possibly aided by these very same LLMs to quickly generate articles to appear under catchy headlines.

This shift empowers chatbot platforms to have greater control over the monetization process, potentially leading to the consolidation of revenue and data in the hands of a few dominant entities. This monopolization of revenue, data, and information flow blurs the lines between advertising and information dissemination as both will require a pay-to-play to be shown and emphasized by chatbots.

With the rise of chatbots, there is a possibility of a decrease in content competition. Success in the online publishing world will be determined less by the quality of the content (ie. journalistic accuracy, primacy of information, etc.) and more by the publisher's ability to pay-to-play. This, along with less revenue to pay writers will make LLMs an attractive option to assist in generating content. The trend of fewer writers being responsible for a larger volume of content is already on the rise. This shift is evident in the declining employment numbers in US newsrooms, as reported by Pew Research. Between the years 2008 and 2021, there was a significant 26% decrease in newsroom employment in the United States (Pew Research). As a result, chatbot companies will be able to make ideological decisions regarding which publishers to emphasize and pay for content and which to force out of business. Consequently, the flow of information can become influenced by commercial interests, raising concerns about the impartiality and transparency of content dissemination.

As chatbots become more dominant in the information landscape, they also possess the potential to become profitable data brokers, accumulating intimate knowledge of users' needs and desires. This raises concerns about the subtle influence and advertising capabilities of

chatbots, blurring the lines between information/news providers and advertisers. To users, the distinction between an advertisement and information goes away when chatbots answer their questions with consideration of their advertisers' wishes. Companies are already using chatbots to handle customer service and complaint resolution, many of which are powered by the same companies like DialogueFlow by Google and Amazon Lex. Consumer retail spending via chatbots is expected to jump to $142 billion by 2024, up from $2.8 billion in 2019 (Insider Intelligence). This is exemplified by how chatbots are being used increasingly in healthcare for scheduling appointments, checking symptoms, and even responding to medical questions (Gupta). According to estimates from Insider Intelligence, the implementation of AI and chatbots has the potential to automate approximately 73% of administrative tasks in the healthcare industry. It is easy to see how drug manufacturers could 'advertise' through these chatbots without users even realizing they are being manipulated.

While some may be skeptical of these downstream impacts of chatbots on the traditional revenue models, it is worth noting that a similar transformation has already unfolded with the ascent of search engines like Google. The next section of this paper will delve into the specific example of Google's rise and shed light on how such a transformation has already begun, establishing a plausible foundation for the disruptive potential of chatbots.

Search Engines and Integrated Defaults

Search engines, such as Google, have played a significant role in shaping the problem of integrated defaults, making it challenging for new market entrants to gain traction. As these search engines became the go-to platforms for users, their integrated default services became the norm. Even if other service providers offer superior experiences, they struggle to gain visibility and attract users due to the dominance of integrated defaults. As a result, users may not always receive the best services available because the lack of competition limits the options presented to them.

Various sectors have been affected by this issue. For instance, established websites that have long been relied upon in the travel industry, such as TripAdvisor and Yelp, have faced significant challenges in competing with Google's own default review service. When users search for restaurants, hotels, and other related information, Google's default review service is prominently displayed, overshadowing the visibility of other platforms. When the DOJ levied an anti-trust lawsuit against Google, the Trip Advisor CEO railed against Google's 'dominance in internet gatekeeping' (Mody). On the other hand, movie review sites like Rotten Tomatoes and IMDB, through their inclusion as integrated defaults have become the norm for users looking for movie information, creating difficulty for new market entrants. Another example is information dashboards; Google emphasized NYT Covid-19 dashboard for users seeking information on cases and deaths.

Result prioritization is another aspect influenced by integrated defaults. Along with prioritizing results in search, Google News, for example, allows publishers to pay for more

frequent visibility on its platform, disadvantaging smaller players who cannot afford such promotions. It also allows Google to shape user ideologies and push publishers in a particular ideological direction through inclusion or exclusion of their content.

Chatbots will create a whole new set of integrated defaults, but they are more insidious than traditional search engines for a few reasons. First, chatbots possess the ability to serve as comprehensive information sources, eliminating the appearance of competition by providing users with a singular, all-in-one tool for their needs. This seamless integration can lead to a monopolistic effect, where users rely solely on chatbots without considering alternative sources. Moreover, chatbots have the potential to become highly profitable data brokers, gaining intimate knowledge of users' deepest needs and desires and selling this knowledge to advertisers. This depth of understanding enables chatbots to collect valuable data and insights, positioning them as key players in the realm of data brokerage. By leveraging this information, chatbots can further shape their services and tailor recommendations to individuals, potentially reinforcing their status as dominant information providers. However, the most insidious aspect of chatbots lies in their ability to subtly influence and advertise to users without their awareness. The integration of advertising and promotional content within chatbot interactions blurs the lines between information providers and advertisers. Consider a user seeking information on the best tools for a project, not realizing the chatbot's answer may be influenced by advertisers. Users may unknowingly be exposed to sponsored content or influenced by persuasive messaging, creating a potential ethical dilemma regarding the transparency of information dissemination.

Policy Implications

The role of government: Government regulation will be required to allocate some chatbot revenue to publishers and writers; we cannot allow these firms to set their own rules given the strong incentives toward insidious outcomes related to monopolization of data and information flow, clandestine advertising, and public awareness. A notable example of government regulation is seen in Canada, legislation requiring social media companies to compensate news media firms for shared content led to Facebook blacking out all user sharing of news media, highlighting how the power of large tech monopolies can exceed government actions, especially when taken unilaterally (Shakil, The Canadian Press). Achieving effective regulation in the chatbot industry will require a multilateral approach involving multiple countries that collectively represent substantial portions of the user base.

Competition Among Defaults: Chatbots will likely lead to a new set of default services that are integrated onto the platform. Part of the revenue sharing regulation needs to go into how to ensure competition and compensate losers in a way that leads to best user outcomes.

The cost of 'free' websites: Increasing public awareness and discussion of the tradeoffs between privacy, advertising, and free access to information is necessary to resolve this issue. Australia has been taking steps by considering the registration of Google Ads, and although Facebook has expressed potential shifts towards a subscription model for its free services, this

transition may be deemed acceptable in the pursuit of fair compensation for content creators (Kaye, Karp). There may be instances in which the subscription model proves to be a successful approach, particularly for niche content that is unlikely to generate politically salient echo chambers. In general, the public needs to decide the extent to which free websites, personalization of services, and targeted advertising is worth the costs of data privacy and advertisement driven information flow.

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