The consumer data's privacy and monetization in the enterprise dominance life-cycle

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Abstract
This article aims to briefly explain the procedures of processing data and different variations of its utilization. Then, illustrate how this is used by dominant internet companies such as Google, Amazon, and Meta, to obtain sustainable user monetization in their enterprise lifecycle. Further reflecting on the business models of these "superstar" companies, covering search engine, e-commerce, and social media platforms, analyzing the overall trends of the internet. Lastly, linking the above aspects to laws and moral principles, discuss current phonomimes such as data leaks, marginalization, and cyberbullying, concluding about the future of the internet.

Keywords
Social media monetization; Data privacy; AI; Consumer rights; Data processing

Introduction

Through the continuous development of the human economy, businesses begin to wonder if there is a standardized process that could replace redundant human labor, increase mass production possibility and enhance productivity. As we further develop computation power, network transaction speed, and data storage capacity, we can assemble these aspects to facilitate more advanced artificial intelligence – also known as AI. AI represents the "simulation of redundant human intelligence with machines" and can be utilized in a variety of industries.

AI learning circle

The essence of AI technology is its deep learning model, which is constructed by unique algorithms. Models are the "representation of construction and working of some system", and can perform tasks such as analyzing, predicting, and anticipating how changes affect the operation of a certain system. Models can be deterministic, stochastic, static, or dynamic, depending on the variability of input or output variables, and whether it is time-varying or not. Briefly speaking, to create a model under the circumstance that you have a large database, the overall learning process can be divided into three phases, data cleaning, data labeling, and data mining.

Firstly, data cleaning. It is a process needed for "noise" reduction and valid data extraction, which is to sieve inaccurate data including typos and inconsistencies and preprocess the data for further use. This is achieved by human inspection or programming, specifically with techniques using schema-related data transformations, aided with data-set

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characteristics that comprehensive metadata provides.

Secondly, data labeling must occur to categorize data into varying clusters or identify the required to execute a specific topic of learning. This is often carried out through human labor or a clustering algorithm, while its efficiency is enhanced through techniques such as sampling, which is arbitrarily choosing a small data set in the original data set, so the clustering algorithm can be executed on the small sampled set.

Lastly, data mining strives to identify the correlations in existing data using a data-mining algorithm. This process can be divided into two types of learning: feature learning and supervised learning. Feature learning uses a classifier to identify the unique features amongst databases with different modalities. Supervised learning only requires data of a single modality, and strives to find the inner correlation in a single modality of data.

Sometimes, the algorithms applied in the three processes above also have a self-learning system, allowing them to enhance accuracy and productivity automatically.

After the three learning processes above, before an AI goes on the market, two processes must be performed in an iterative, which are supervised training and mistake perfection.

Supervised training fosters the development of a shared representation learning setting, which makes the model modality-variant through the capturing of relationships between a variety of modalities by feature representations. While mistake perfection represents the re-analyzing of more specified data through data mining algorithms.

Utilization

Generally, there are two types of AI, narrow AI, and AGI. Narrow AI is artificial intelligence that is designed to perform a single task exclusively, such as voice assistants and self-driving cars. While AGI, which is the abbreviation for artificial general intelligence, signifies a machine that simulates human-like thinking, is equipped with generalized knowledge, and can apply intelligence to resolve issues in many different fields.

Narrow AI can be divided into 3 sectors based on their functions, which are service AI, tool AI, and motor AI. As their names suggest, service AI such as SIRI or Healthcare AI provides service to consumers. Tool AI such as prediction AI or spam filters is utilized as a tool to help improve the consumer experience. While motor AI is mostly used in manufacturing because it replaces repetitive work done by human labor.

E-commerce AI is also separated into different sectors, B2B AI and B2C AI. In the following paragraph, we will be focusing on the three types of B2C AI, which are recommendation engines, real-time auctions, decision-making AI and buyer agent AI, then, briefly introduce B2B AI.

Recommendation engine (In addition to user portfolio creating engine)

The recommendation engine is a widespread technology applied in multiple eminent apps such as Instagram, YouTube, TikTok, etc. A recommendation engine is applied in personalizing web pages, by suggesting content based on the user's online cookies profile.

A typical example of a user profile may contain user characteristics such as age, gender, hobbies, behavioral patterns, and user preferences. The four most famous recommendation systems are collaborative recommendation, content-based recommendation, social recommendation, and hybrid recommendation. Their method of deducing a user's interest representatively is, referencing to alike user preferences, identifying the user's social relationships, corresponding to the content description, and evaluating past behaviors.

Due to the fickleness of human nature, a user's profile is frequently updated to match user preferences. Subsequently, a recommendation engine can be applied.

Realtime auction

The real-time auction aims to match “the buyer of ad impressions and the associated audiences”. It is often utilized in web server platforms such as Google and Baidu, also known as the real-time advertisement auction bidding system.

At the moment that the user presses the "search" button, small pieces of user information will be transferred to different webpage advertisers. The different advertisers will then bid various amounts of money via unique algorithms. Then, from the price high to low, the web pages will be arranged in different ad slots according to how likely they will be seen by the user.

Decision-Making AI

Decision-making AI focuses on three stages of making a sale: pricing, promotion, and purchasing. Specifically, by estimating the price, recommending the promotional method, and responding to potential purchasers.

Buyer Agent AI

Buyer Agent AI focuses on serving the consumer. It is responsible for introducing the product’s details, to aftersales service.

B2B AI

B2B AI is often engineered by sub-contracting agents, striving to establish a corporative software for communication and administration. This endows B2B AI with the responsibility of constructing and maintaining an integrated supply chain, which significantly decreases the business's inventory and rental costs. Also, it is used to model consumer flow, evaluate employees, manage transactions, and analyze the product. Further, consult narrow AI in decision-making.

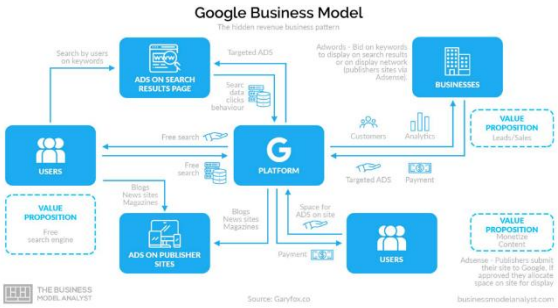
How do these methods accomplish superstar companies?

Google

Founded in 1998, in a garage of Standford University by two undergraduates Sergey Brin and Larry Page, it first took the name “Backrub”, then eventually changed to “Google”, with the mission statement of to “organize the world’s information and make it universally accessible and useful.” It was founded as a search engine, the fundamental gateway of the internet. In 1998, August, Sergey, and Larry received their first investment of one hundred thousand dollars, marking the founding of Google Inc. Then, it was moved into Googleplex, its current headquarters.

Now, Google Inc, which has changed its name to Alphabet, is the world’s biggest technology conglomerate.

Let's take an overview of the profit model and current commercial plan.



After funding, Google was the first to develop an algorithm that helps with ordering the displays of the search results, using methods such as categorizing, and evaluating trusted sources, the corresponding level of keywords, and the frequency that the website is being accessed. This helped Google gain its initial popularity and had a great advantage over different companies in the vertical market. Till today, Google managed to maintain its advantage. In January 2020, Google monopolized 87.4% of the market share of the global search engine.

Expansion and promotion - building an ecosystem

Google further expanded its advantages through the acquisition of Android. Although Google does not interfere with the operation of its system, changing all of the phone's apps into Alphabet services, this had helped Google derivatives gain initial exposure in 2005, a year when over 80% of the phones sold run on the Android system, according to IDC.

In the meantime, Google aims to create an ecosystem by increasing its service coverage. By developing and taking over consumer-based products, Google spent at least $23 billion

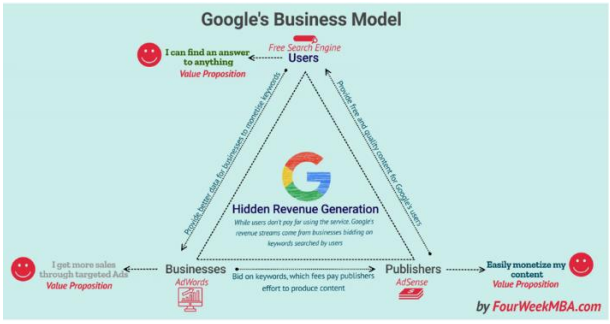
buying 145 companies till 2014, and this number is still steadily increasing.

There is two logic behind Google's derivatives. First, apps such as Google Maps and Gmail are bringing our daily needs such as maps, and letters, onto the internet. Second, products such as VR are creating and fulfilling new wants incubated by the internet. These two tactics allow Google to have a "head start" in entering the market.

But the aspects that allow Google's derivatives to emerge victorious amongst all the other competitors are its wide coverage and convenience. Through allocating conspicuous placement of its ads and purposefully guiding the user flow, Alphabet's wide coverage helps its derivatives gain initial exposure and popularity. On the other hand, the Google "one account for all" policy, where one Google account can access all the different Alphabet derivatives, makes the user experience more convenient.

These features refrain users to stay in their “comfort zones”, thus fostering user behavior. While Google exploits users’ value of data output, to train its logarithm and perfect its user portfolio to give more accurate ad recommendations, making their ad positions more valuable, continuously monetizing from advertisers based on user data. This continuous cycle repeats itself as Google collects more data from expanding different sources, using them to analyze the overall blueprint of markets. Allowing it to continue effectively expanding, leading to more successful takeovers and creations.

The increase in coverage will further stimulate Google’s advertisers to pay higher prices for more exposure, which contributes to Google’s main source of income – advertisement earnings.



In 2017, up to 86% of Google’s revenue came from advertising. Although this exponential increase was affected by the pandemic, Google still achieved an astonishing post-pandemic bounce-back, with its total ad revenue increased by 69% from the last quarter.

Alphabet, Google’s parent company has acquired and developed products such as YouTube and Google Shopping, creating platforms to put Ads on and charge higher prices. Specifically, Google earns advertising income by the CPC model, when users managed to click on a link, then advertisers must pay a fee according to their cost per click.

Google has further expanded its advertising income landscape in two directions, Google Adsense and Google Admob. Google Adsense is a website targeted at advertisement operation, where recommended ads will be presented according to users' portfolio as advertisers pay for the place, time, and consumers it chooses to present to. Meanwhile, Google “Admob makes earning revenue easy with in-app ads”, which aids different application-orientated businesses to attract advertisers, while earning advertising revenue themselves.

These acquisitions are all integral in completing the user monetization cycle, then stimulating its iteration, and doing it again with wider coverage and a more accurate algorithm.

This overall business model allows advertising income to contribute 80% of Google’s revenue in 2019.

Meta

Facebook, now known as Meta, a name of an app and an internet company. It was founded in 2004 by Mark Zuckerberg, Eduardo Saverin, Dustin Moskovitz, and Chris Hughes.

Initially, the Facebook app was a copy of Friendster, an open social media app that has a target market in people in Silicon Valley. Facebook, as so-called Facebook.com, launches in February 2004. It was targeted at students in Harvard, then quickly got popular amongst all college and high school students under its influence on many other campuses.

Now, Meta has developed into a multi-dimensional company, investing in many "unicorn companies" including Oculus and Instagram, which has 2.89 billion monthly active users during the second quarter of 2021. Meta company has 3.51 billion people using at least one of the company's essential products every month, making it the most influential social media company. In the paragraphs below, I will briefly introduce Meta's concepts, business model, and application of a variety of technology.

Earning model

Although Facebook is free of charge, according to the Facebook revenue form in FY2020, its total revenue was $86.0 billion, with an income of $22.9 billion.

There are two factors contributing to this high income, which are, low cost and high revenue. Due to the specialty of an internet company, Facebook has a relatively low maintenance cost, which results in a high-profit margin of 33.9%. The secret to Facebook's high revenue is its unique profit models. Although many modern-day internet companies try to copy this model, Facebook is the only few that succeeded.

The three most common reasons why people use social media are to maintain a relationship with their friends, fulfilling social needs; follow trendsetters, follow our instinct of cultural conformity and embrace the halo effect; send and interact under posts to present their lives, and satisfy performance desires. As introduced above, Facebook's initial group of users were Ivy League students, who are considered to be "role models". They acted as the primitive trendsetters, and "helped" to incept initial user flow. This phenomenon is then emphasized by the network effect when as more people use the platform, more potential consumers will be attracted. Therefore, these consist of the basic structure of Facebook's user flow, consisting of both trend leaders and followers. As the social network of each offline will eventually be transferred to this platform. This tremendous user flow attracts advertisers. According to Facebook's data in 2020, more than 80% of Facebook's revenue comes from website advertisements, consisting of 84.2 billion dollars.

Sustainable monetization

After obtaining the initial capital aggregation, Facebook sustains this advertisement model of earning from two different perspectives: Increasing user adherence and building an ecosystem – the Metaverse.

Increase user adherence

The first step of increasing user adherence is to maximize the fulfillment of their needs, to maximize attraction.

The precursors of modern social media were designed to improve communication. In the 80s and early 90s, the initial intention of social media was to value the purpose of reducing isolation while using an electronic device by connecting everyone to communicate. It has been argued that BBS, an abbreviation of Bulletin Board System, and AOL, meaning America Online were the precursors of modern social media, they are web-serves, containing many member-created communities, sharing ideas in the format of blogs, mainly using words.

Then, in the early 20s, with the development of Friendster, LinkedIn, and Myspace, the methods of communication were not only limited to text but also solemnly included music files and photos, stimulating your auditory and sensory senses, Facebook was also born at this age.

Then, through the launching of the Facebook API, where an aggregation of different third-

party apps can enter, and run on Facebook's platform, which eventually facilitates the founding of the Facebook App Store. - The multi-service business model inspired Facebook to enable ads in 2006 and to develop the Facebook universe we are familiar with now.

Along with the development of Instagram, the new trend of photo communication and short-video communication was fostered. As stated above, users' main incentive to use social media is to communicate, which includes a bilateral process of showing and seeing. Through the brief history of the development of social media, it is not hard to see that more auditorily stimulating content was being produced to fulfill users' eagerness to show and view. Maximizing the fulfillment of their needs, "glamor" the applications with enough attraction, making a solid foundation for the next step – extending the user's screen time.

The next step is to extend the time that users use this application, to further sustain the user flow. Meta hash successfully manipulated our addiction by both improving their algorithm and manipulated our addiction by both improving their algorithm and our relationship with “friends” (other online accounts).

From the technological perspective, Meta will collect the data generated from its different derivatives and create a user portfolio according to the method we stated above. The recommendation engine will suggest more intriguing content to the user with the completion of the user portfolio. Ultimately, this fosters user habit, sustaining the user flow.

To further strengthen the user's screen time, also to speed up the monetization cycle, social media continuously encourages the production of more visually appealing and more frequently dopamine-stimulating content; from text to audio, pictures, and videos; from 1D to 2D; seducing you to flip for longer. So that your brain's mesocortical, mesolimbic, and nigrostriatal pathways will connect the social media stimuli with the positive dopamine feedback, dragging you further “down the road”.

Meta is also tactful in enhancing our relationship-related emotions.

As the number of followers and subscribers grows, and the number of friends using Meta’s platform increases, Meta “kidnaps” users into their comfort zone, since the algorithm will only recommend things that you will like, while the instantaneous dopamine feedback and the sense of mystery propel users to keep flipping.

Analyzing from a phycological perspective, we can see that capitalists are always using the interlinking and self-repeating processes mentioned above. Initially attract users by providing a more convenient method to continue relationships with their friends, knowing more about each other by constructing your personalized profile page, enhancing user's emotions by generating the "like" button to achieve social validation, increasing the possibility of communication by adding individual chat function, and adding more auditorily stimulative methods of posting to better "package" yourself and view others. This process not only satisfies your prying desires but also fulfills our successful communication and social validation. These aspects ultimately provide you with more frequent, intense feedback, giving you "sugar rushes" to further attract you into this trap wrapped in "candy wrappers”.

These actions were proven to be successful because according to statistics, in the US, an adult wastes an average of 2-4 hours each day on their devices, hours that could have been used to contribute to improving themselves and building their country.

But when you finally realized the company's tactics and wanted to delete the application. The usage of your "acquisitions" that you have, such as relationships -friends, followers, and subscribers- liked and collected posts to restrain you from leaving. This self-repetitive cycle intensifies itself due to the network effect, resulting in monopoly and sustainable user monetization.

Building an ecosystem

After initial capital aggregation, Meta company consecutively bought many profitable unicorn companies of different product orientations, such as Instagram in 2012, WhatsApp in 2014, and Oculus in 2014. Then, Meta was devoted to developing its own subsidiary companies such as Workplace, Portal, Portal+, and Novi.

This expansion model significantly benefited from Meta's interconnected account policies. With one account, you can access all Meta derivatives. This acts like a user flow guide, making you cast the fame and entertaining experiences in another derivative to the one you are trying to access. Enhancing the user experience by conveniently transferring friends and subscriber information cross-platforms, while mega-data such as user portfolio is also transferred which helps platforms cultivate user habit and enhance their adhesiveness. Simultaneously, data collected from user internet footprint will also contribute to the perfecting of user portfolio, leading to more suitable content recommended by recommendation engines, and better-improving user experiences. This also forms an iteration, explaining the healthy development of the Facebook company.

The specialty of Meta's universe's big coverage and account interconnection allows the concept of "metaverse" to be introduced and built. "Metaverse", where your daily lives such as greeting friends, and attending meetings, are all based on the internet, turning a 2D virtual world of the internet, into the 3D world of multi-sensory reality. This action allows Meta products to further permeate into our lives, constructing an interconnected Meta universe, linking both the internet and reality.

The immersion experience will further foster existing users' habits, enhance user adherence and extend screen time, possibly, attracting new users too. These points contribute to a more sustainable and increasing quantity of user flow. This increases the number of users along with their possibility of coming over adverts, advancing the platform's attraction to advertisers. This forms a capital closed cycle, achieving sustainable user monetization.

Amazon

Amazon was founded on July 5th, 1994, as an e-commerce website with minimal coverage of selling books. But Jeff Bezos, as the company's founder, always had the vision of explosive growth and e-commerce domination through building “an everything store”. This vision is further reflected in the company name of Amazon, named after the world’s largest river.

It is analyzed that over the initial month of Amazon's emergence, Amazon had already sold books to people across 50 states and in 45 different countries. Proving the demand of the e-commerce market and the success of this business model. Amazon further expanded its scope of business, providing both tangible products-toys, electronics- and intangible goods-renting cloud infrastructure, data storage, and computational power to online businesses- But this transition was not as smooth. The books sold before were items that are easy to store and ship, while more fragile items such as electronics are prone to break. Thus, in the late 90s, there was great chaos in Amazon's headquarters due to the new category of "kitchen" being introduced, while knives without protection cases are being transported, becoming an inventory organizational issue. But by building "more than 175 fulfillment centers around the world”, and through the application of innovative technologies such as the usage of parachutes, airlines, and self-driving vehicles, Amazon was able to have a competitive advantage of fast delivery

Also, in 1991, Amazon started auction as a feature, willing to compete with its emerging competitor, eBay, by re-attracting its original user base and promoting it as an additional feature. Although its consumer terminal users were satisfied because of its $250 anti-fraud guarantee, many merchants were upset since the bidding was low for expensive objects, thus auction proved a great failure.

But Amazon was successful in expanding the scope of its business, by building relationships with more retailers, aiming at niche market users and users of all age groups. which is proved by Amazon's astonishing statistics of earning $4722 per second and increasing consumer bases. This is achieved either by more commonly, Amazon being the middleman and helping to allocate retailers resources, or being the supplier to selling the products themselves, significantly lowering the inventory costs, although some "best seller" product was kept in stalk, lowering consumer waiting time and transportation costs. To further attract users, Amazon also has discounts during the holiday season, corresponding with its company slogan, "Spend less, smile more".

Currently, Amazon's e-commerce income takes over 77% of its net income of $322 billion from June 2019 to 2020. Amazon's e-commerce income is broken into 3 parts. Online stores, third-party selling services, and partially, subscription services. Amazon utilizes the real-time auction technique we talked about in the frontal paragraphs of this passage and further specified this so prime items and items that paid for certain keywords will be displayed at the top of the search list, having a higher possibility to be viewed by the consumer. Amazon's Prime program, which originally was a consumer loyalty program, which eliminates shipping fees, has expanded its business scope further into services including Video, Reading, and Music, further fostering their internet-al coverage and also increasing consumer adhesiveness by fostering behavior, binding them to Amazon's website.

Amazon further diversifies its service into web services, physical stores, and other categories such as co-branding products. For example, Amazon web services, also known as AWS were founded in 2006, they tightly grasp the business opportunity at the start of the "internet age", by providing newly founded, capital-lacking businesses with cheaper cloud infrastructure. Only ten years later, this side business has grown to gain more than 30% of the market, leading ahead of Microsoft, IBM, and Google combined, and has grown rapidly since the booming of the internet age. According to statistics in the fourth quarter of 2019, AWS consists of more than half of Amazon's operating income. Now, along with the arrival of 5G technology, Amazon also provides cutting-edge storage, transaction, and computing for mobile devices, assisting modern-day internet companies with lower latency to deploy higher-capacity devices. Amazon further achieves user monetization by seeping into our life, combining both offline and online business models. This is shown by Amazon's acquisition of Whole Foods in 2017. Whole Food was founded in 1980 and quickly occupied the market due to its USP (unique selling point) of organic merchandise. But as more competitive businesses quickly entered this vertical market, challenging its USP into a market norm, thus in 2016, Whole Foods sales decreased by 2.5 percent, and in the following year by 1.5 percent. After the CEO of Whole Foods John Mackey agreed to the take-over, Amazon quickly changed Whole Foods's operating system. Firstly, minimizing management complexities by centralizing its suppliers and quality checks to WFM headquarters. Secondly, improving consumer adhesiveness and consumer loyalty by bringing in the Prime program. Thirdly, expanding public exposure and stimulating the amount of daily active users by cooperating with Seven-Eleven, piloting Amazon's original user base into new programs. Fourthly, making buying groceries more convenient by exploiting an online framework, and reducing operating costs by reducing amount of in-store employees. Referring to Amazon's e-commerce operational experiences, the smooth linkage between an online purchase and delivery was made, and this business is especially stimulated by the pandemic since quarantine rules caused a sudden demand increase in delivery businesses.

Conclusion

Deep thought-similarities

One of the similarities between all of the companies that I analyzed above is that they profit through linking c-terminal consumers and producers. This may seem like a flawless action, benefiting the company, producers, and consumers. It is also an action that suggests

inclusivity and diversity, which are keywords of the Internet Era.

But the harsh reality is, after companies have gained trust from both C-side producers and customers, they started to abuse users' dependency. This is especially true in e-commerce, while a variant version of the phenomenon occurs in social networks and search engines. On the producer side, AI tools are used as capital slaves for adjusting the prices for placing advertisements by predicting AI's estimates of price elasticity; painstakingly developed algorithms manipulating information source by real-time auction; while some apps are becoming like shareware, "a software that is available free of charge", but you have to pay to explore more features, and for your information to be seen. While on the consumer side, you are likely to be subjected to data discrimination, where the prices you got charged are more expensive than others; privacy invasion, where you talked about something with a friend, and it suddenly appears as a suggested link. Internet companies continuously try to submerge into more market segments, using tactful methods to force you on using their service, thus monopolizing the consumer flow.

This is especially contrary because users come to this platform because of their good reputation, but instead, companies use their conventional tricks. By first fostering user behavior then finding or taking over products of a slightly different orientation, usually going towards the daily usage, or increasing coverage of a similar field to create a closed cycle, then guiding their original user flow to new programs, using algorithms to collect information then recommend contents that they may like, to gain money or data from both the user side and producer side. By dumping more auditorily appealing content at an increased frequency, the internet giants imperceptibly kidnap you in their comfort zone and strangulate you deeper and deeper.

What will the internet giants do after we reach peak social, how will they compete and how will this affect us?

Problems associated

Privacy invasion

The internet purports to "interconnect", to promote international informational transfer, cultural influence, and cross-national communication. But one of the fundamental laws of communication is “Privacy”.

Every time we register a new account or enter a new website, we are forced to permit a long list of contracts or enable cookies. But when we think for ourselves and do not permit any clause in that contract consisting of fancy words and implicit meanings, we will be not allowed to use any of their services. User privacy, our basic right, is deprived forcefully. Although companies promise that our data will only be collected on this singular platform, and only be used in content recommendation and profile building. News reports have been bombarding me with controversial information. From 2018, when Facebook exposed 87 million users' data to Cambridge Analytics; till 2021 when multiple international airlines such as Singapore Airlines and Air New Zealand, had serious consumer data breaches. Facebook's 2012 experiment that found both Google and Amazon have the potential application of devices that identifies our mood through listening to our voices, or eavesdropping; till 2016 when revelations about Russian hackers interfering with presidential election results. It makes me wonder if there is more "behind the scenes" if users know how to protect themselves and what to use to protect themselves when privacy settings could not be turned on.

If there is a problem, then we will seek a solution. Because of the relatively short time of rapid development of the internet, online laws and regulations are now forming. If more detailed regulations about user privacy protection including clauses such as company can't deny service if user open privacy settings and setting basic boundaries for online privacy rights can be further promoted, this problem will be better resolved.

Discrimination – end-user consumers and businesses in e-commerce

While users are completely transparent to companies, the relationship between company and user seems "foggier". The human economics system has developed based on credit, bonded by the trust between people. The invention of the internet should allow information to be spread more conveniently, so that the communication barrier between companies and users will be minimalized, striving to achieve information symmetry.

But some companies are purposefully "regenerating" an information gap between users, obscuring the user-business transparency. The application of AI technology, which analyses your psychological behavior, then set different prices for you and your friends according to your price elasticity, maximizing profit and promotion. To achieve this purpose, some services, content, and product producers also fabricate fake images, buy fake likes, and comments, and sell, to attract consumers.

This is data deception and discrimination!

My question is, how company and user transparency can be maintained? Also, how will false advertising be controlled? According to the laws in the United States, "Any person, partnership, or corporation who violates any provision of section 52(a) of this title shall, if the use of the commodity advertised may be injurious to health because of results from such use under the conditions prescribed in the advertisement thereof, or under such conditions as are customary or usual, or if such violation is with intent to defraud or mislead, be guilty of a misdemeanor, and upon conviction shall be punished by a fine of not more than $5,000 or by imprisonment for not more than six months, or by both such fine and imprisonment", while "section 52(a)" specifies "By United States mails, or in or having an effect upon commerce, by any means, for the purpose of inducing, or which is likely to induce, directly or indirectly the purchase of food, drugs, devices, services, or cosmetics.

By any means, for the purpose of inducing, or which is likely to induce, directly or indirectly, the purchase in or having an effect upon commerce, of food, drugs, devices, services, or cosmetics." those people will be punished. But how can this law be measured on the internet, and whether will it has an inverse impact in the reality-based society remains a mystery.

Discrimination – end-user consumers in social media

Discrimination does not only exist at the back of the blinds; it also brings us to another more known topic of cyberbullying. Cyberbullying can be defined as the "use of communications technology to harm, threaten, or otherwise victimize another person", including sexual assaults, appearance discrimination, racism, and more harmful actions.

Cyberbullying is mostly caused by the interaction between users, which was initially set with the purpose of increasing the rate of successful social interaction through positive responses, stimulating users' dopamine bursts. While the thumbs up/thumbs down, comment functions allow malicious comments to gain direct exposure to the victim, and his/her friend groups, having an impactful influence. In the US, about 37% of teenagers, ages ranging from 12 to 17 have been bullied online, (one in every three) while 30% have experienced repeated cyberbullying. The freedom and anonymity of social media allow users to intentionally spread malicious comments, while the wide range of conversations that they can access and the wide range of users who can see their comment emphasizes the harmful effects done to the victim. Currently, the amount of legislation about social media bullying regulation is few and far between. While the anonymity of the internet only makes the methods of prevention harder and harder to apply.

With the popularization of social media and chatting media, more and more people will be affected, I wonder if the internet giants will, how will the internet giants manage this phenomenon while it doesn't significantly affect their income, and their specific methods used to achieve a free but safe internet society.

Extension

In 2018, Berners-Lee, who is considered the inventor of the World Wide Web said that "We demonstrated that the Web had failed instead of served humanity, as it was supposed to have done, and failed in many places," and two of the places of identification is the "anti-human" phenomenon in marginalization and centralization. Technology doesn't have a right or wrong, but it's the people who built upon it that decide its specialty. Berners-Lee also envisioned that the internet could become a "destroyer of worlds" if it is treated by malicious people. The statement is more solidified by the current trend of the internet giants, extending their businesses into reality. For example, Google is building VR cameras, cars, and interconnected homes; while Facebook changes its name to meta, signifying metaverse; and Amazon itself is a primitive trial of linking an internet-based platform with reality.

Although many actions are made to make the internet into a safe place, are they enough, will they function or they are just capital puppets for time to tell?

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References

1. *11 facts about cyberbullying*. DoSomething.org. (n.d.). Retrieved January 2, 2022, from https://www.dosomething.org/us/facts/11-facts-about-cyber-bullying
2. 37, 2 Y. (n.d.). *CN*. Amazon. Retrieved January 2, 2022, from https://aws.amazon.com/cn/campaigns/aws-cloudserver/?sc_channel=PS&sc_campaign=acquisition_CN&sc_publisher=google&sc_category=pc&sc_medium=Google_%E5%93%81%E7%89%8C%E9%80%9A%E7%94%A8_%E6%9C%8D%E5%8A%A1%E5%99%A8_b&sc_content=%E6%9C%8D%E5%8A%A1%E5%99%A8&sc_detail=amazon+web+server&sc_segment=2021092300381&sc_matchtype=exact&sc_country=CN
3. *6 innovations from Amazon to strengthen their logistics reach*. Bring. (n.d.). Retrieved January 2, 2022, from https://www.bringg.com/blog/logistics/6-ways-amazon-strengthening-logistics-reach/
4. 8, A. N. D., N, A., says: L. S., & says: A. N. (2021, December 8). *Amazon statistics (seller, FBA, and product) that'll surprise you !!* SellerApp. Retrieved January 2, 2022, from https://www.sellerapp.com/blog/amazon-seller-statistics/#:~:text=%20Here%20is%20a%20list%20of%20Amazon%20FBA,group%20of%2027%20to%2044%20years.%20More%20
5. Adams, E. (2021, July 12). *Data breaches 2021 Australia*. CyberCloud Consulting. Retrieved January 2, 2022, from https://www.cybercloud.com.au/blog/major-australian-data-breaches-for-2021-so-far?campaignid=14226907654&adgroupid=126601535438&network=g&device=c&gclid=Cj0KCQiA-qGNBhD3ARIsAO_o7ynISvxURumhEuAtqKth-4zRv6EOkl_cC51H_8hzH9iauwHCa5torf8aAl67EALw_wcB
6. *Alphabet announces first quarter 2021 results*. (n.d.). Retrieved January 2, 2022, from https://abc.xyz/investor/static/pdf/2021Q1_alphabet_earnings_release.pdf
7. Ang, C. (2020, October 14). *Visualized: A breakdown of Amazon's revenue model*. Visual Capitalist. Retrieved January 2, 2022, from https://www.visualcapitalist.com/amazon-revenue-model-2020/
8. Ang, C. (2020, October 14). *Visualized: A breakdown of Amazon's revenue model*. Visual Capitalist. Retrieved January 2, 2022, from https://www.visualcapitalist.com/amazon-revenue-model-2020/
9. Beattie, A. (2021, September 21). *The story behind Google's success*. Investopedia.

Retrieved January 2, 2022, from https://www.investopedia.com/articles/personal-finance/042415/story-behind-googles-success.asp

10. Bhasin, H., Loki, Washington, D. T., Mark, & Ronald. (2020, December 15). *Top Amazon competitors*. Marketing91. Retrieved January 2, 2022, from https://www.marketing91.com/amazon-competitors/
11. Breese, J. S., Heckerman, D., & Kadie, C. (n.d.). Empirical Analysis of Predictive Algorithms for Collaborative Filtering.
12. Brooker, K., & Newcomb, K. M. and P. (2018, July 1). *"I was devastated": The man who created the World Wide Web has some regrets*. Vanity Fair. Retrieved January 2, 2022, from https://www.vanityfair.com/news/2018/07/the-man-who-created-the-world-wide-web-has-some-regrets
13. Brooker, K., & Newcomb, K. M. and P. (2018, July 1). *"I was devastated": The man who created the World Wide Web has some regrets*. Vanity Fair. Retrieved January 2, 2022, from https://www.vanityfair.com/news/2018/07/the-man-who-created-the-world-wide-web-has-some-regrets
14. Buchanan, B. G. (2006). A (Very) Brief History of Artificial Intelligence.
15. Cakir, O., & Aras, M. E. (2012). A recommendation engine using Association rules. *Procedia - Social and Behavioral Sciences*, *62*, 452–456. https://doi.org/10.1016/j.sbspro.2012.09.074
16. Cao, F., & Liang, J. (2011). A data labeling method for Clustering Categorical Data. *Expert Systems with Applications*, *38*(3), 2381–2385. https://doi.org/10.1016/j.eswa.2010.08.026
17. Chen, J. V., Su, B.-chiuan, & Widjaja, A. E. (2016). Facebook C2C Social Commerce: A study of online impulse buying. *Decision Support Systems*, *83*, 57–69. https://doi.org/10.1016/j.dss.2015.12.008
18. Chung, H. M., & Gray, P. (1999). Special section: Data mining. *Journal of Management Information Systems*, *16*(1), 11–16. https://doi.org/10.1080/07421222.1999.11518231
19. Clinton, H. R., Shubham Tripathi, L. G., & Valerie J. Karplus, M. G. M. (2019, June 13). *Internet freedom and human rights*. Issues in Science and Technology. Retrieved January 2, 2022, from https://issues.org/clinton/
20. CNBCJosh. (2014, August 19). *Google's Best and Worst Acquisitions*. CNBC. Retrieved January 2, 2022, from https://www.cnbc.com/2014/08/19/googles-best-and-worst-acquisitions.html
21. Contributor, T. T. (2017, April 15). *What is Data Discrimination (data censorship)? - definition from whatis.com*. WhatIs.com. Retrieved January 2, 2022, from https://whatis.techtarget.com/definition/data-discrimination
22. Contributor, T. T. (2017, April 15). *What is Data Discrimination (data censorship)? - definition from whatis.com*. WhatIs.com. Retrieved January 2, 2022, from https://whatis.techtarget.com/definition/data-discrimination
23. CSP Daily News. (2018, October 30). *7-Eleven, and Amazon teaming up on Locker System*. CSP Daily News. Retrieved January 2, 2022, from https://www.cspdailynews.com/technology services/7-eleven-amazon-teaming-locker-system
24. *Cyberbulling sexual harassment - southern illinois university*. (n.d.). Retrieved January 2, 2022, from https://equity.siu.edu/_common/documents/resources/cyberbulling-sexual-harassment.pdf
25. Encyclopædia Britannica, inc. (n.d.). *Amazon.com*. Encyclopædia Britannica. Retrieved January 2, 2022, from https://www.britannica.com/topic/Amazoncom
26. Encyclopædia Britannica, inc. (n.d.). *Amazon.com*. Encyclopædia Britannica. Retrieved January 2, 2022, from https://www.britannica.com/topic/Amazoncom

27. Encyclopædia Britannica, inc. (n.d.). *LinkedIn*. Encyclopædia Britannica. Retrieved January 2, 2022, from https://www.britannica.com/topic/LinkedIn
28. *The evolution of social media: How did it begin and where could it go next?* Maryville Online. (2021, March 3). Retrieved January 2, 2022, from https://online.maryville.edu/blog/evolution-social-media/
29. Gina Acosta Executive Editor. (2021, December 6). *Amazon Expands 7-Eleven Partnership*. Retail Leader. Retrieved January 2, 2022, from https://retailleader.com/amazon-expands-7-eleven-partnership
30. Gonzalvez-Cabañas, J. C., & Mochón, F. (2016). Operating an advertising programmatic buying platform: A case study. *International Journal of Interactive Multimedia and Artificial Intelligence*, *3*(6), 6. https://doi.org/10.9781/ijimai.2016.361
31. Gunasundari, R., & Prakash, S. (2019). A Survey on Recommender systems used for User Service Rating in Social Network.
32. Hartmans, A. (2021, July 2). *Jeff Bezos originally wanted to name Amazon 'Cadabra,' and 14 other little-known facts about the early days of the e-commerce giant*. Business Insider. Retrieved January 2, 2022, from https://www.businessinsider.com/jeff-bezos-amazon-history-facts-2017-4
33. Hartmans, A. (2021, July 2). *Jeff Bezos originally wanted to name Amazon 'Cadabra,' and 14 other little-known facts about the early days of the e-commerce giant*. Business Insider. Retrieved January 2, 2022, from https://www.businessinsider.com/jeff-bezos-amazon-history-facts-2017-4
34. Hartmans, A. (2021, July 2). *Jeff Bezos originally wanted to name Amazon 'Cadabra,' and 14 other little-known facts about the early days of the e-commerce giant*. Business Insider. Retrieved January 2, 2022, from https://www.businessinsider.com/jeff-bezos-amazon-history-facts-2017-4#bezos-liked-to-move-incredibly-fast-which-often-created-chaos-especially-in-amazons-distribution-centers-8
35. Hoos, B. (2021, December 10). *Council post: The psychology of influencer marketing*. Forbes. Retrieved January 2, 2022, from https://www.forbes.com/sites/forbesagencycouncil/2019/08/22/the-psychology-of-influencer-marketing/?sh=66b11725e1be
36. Hung-Leng Chen, Kun-Ta Chuang, & Ming-Syan Chen. (2008). On data labeling for Clustering Categorical Data. *IEEE Transactions on Knowledge and Data Engineering*, *20*(11), 1458–1472. https://doi.org/10.1109/tkde.2008.81
37. Investopedia. (n.d.). *Alternative investments*. Investopedia. Retrieved January 2, 2022, from https://www.investopedia.com/terms/a/artificial-intelligence-ai.asp
38. jenn_elias. (2021, July 28). *Google Advertising Revenue rises 69% from last year*. CNBC. Retrieved January 2, 2022, from https://www.cnbc.com/2021/07/27/alphabet-googl-earnings-q2-2021.html
39. Johnston, M. (2021, May 19). *6 companies owned by Google (alphabet)*. Investopedia. Retrieved January 2, 2022, from https://www.investopedia.com/investing/companies-owned-by-google/
40. Lapowsky, I. (2018, April 4). *Facebook exposed 87 million users to Cambridge Analytica*. Wired. Retrieved January 2, 2022, from https://www.wired.com/story/facebook-exposed-87-million-users-to-cambridge-analytica/
41. Laurenshirsch. (2018, June 15). *A year after Amazon announced its acquisition of Whole Foods, here's where we stand*. CNBC. Retrieved January 2, 2022, from https://www.cnbc.com/2018/06/15/a-year-after-amazon-announced-whole-foods-deal-heres-where-we-stand.html
42. Legal Information Institute. (n.d.). *15 U.S. Code § 54 - false advertisements; penalties*. Legal Information Institute. Retrieved January 2, 2022, from

https://www.law.cornell.edu/uscode/text/15/54
43. Lilley, S., Grodzinsky, F. S., & Gumbus, A. (2012). Revealing the commercialized and compliant Facebook User. *Journal of Information, Communication, and Ethics in Society*, *10*(2), 82–92. https://doi.org/10.1108/14779961211226994
44. Maria, A. (n.d.). Miller, R. (2016, July 2). *How AWS came to be*. TechCrunch. Retrieved January 2, 2022, from https://techcrunch.com/2016/07/02/andy-jassys-brief-history-of-the-genesis-of-aws/
45. National Women's Law Center. (n.d.). Cyberbullying and Sexual Harassment: FAQs About Cyberbullying and Title IX.
46. Ngiam, J., Khosla, A., Kim, M., Nam, J., Lee, H., & Ng, A. Y. (n.d.). Niu, X., McCalla, G., & Vassileva, J. (2003). Purpose-based user modeling in a Multi-agent Portfolio Management System. *User Modeling 2003*, 398–402. https://doi.org/10.1007/3-540-44963-9_56
47. Nover, S. (n.d.). *Why Facebook decided to change its name*. Quartz. Retrieved January 2, 2022, from https://qz.com/2081663/why-facebook-changed-its-name-to-meta/
48. Park, J. S., & Sandhu, R. (2000). Secure cookies on the web. *IEEE Internet Computing*, *4*(4), 36–44. https://doi.org/10.1109/4236.865085
49. Patchin, J. W., says, R., Reney, says: J. W. P., Patchin, J. W., says, S. M., & Mohapatra, S. (2020, October 16). *2019 cyberbullying data*. Cyberbullying Research Center. Retrieved January 2, 2022, from https://cyberbullying.org/2019-cyberbullying-data
50. Pereira, D. (2021, July 18). *Google business model*. Business Model Analyst. Retrieved January 2, 2022, from https://businessmodelanalyst.com/google-business-model/
51. Pereira, D. (2021, July 18). *Google business model*. Business Model Analyst. Retrieved January 2, 2022, from https://businessmodelanalyst.com/google-business-model/#What_is_the_Google_business_model
52. Prasad, B. (2003). Puschmann, T. (2017). Shah, S. (2016, May 14). *The history of Social Media*. Digital Trends. Retrieved January 2, 2022, from https://www.digitaltrends.com/features/the-history-of-social-networking/
53. Staff, A. A. (2021, August 19). *Why Amazon warehouses are called fulfillment cent*ers? UK About Amazon. Retrieved January 2, 2022, from https://www.aboutamazon.co.uk/amazon-fulfilment/our-fulfilment-centres/why-amazon-warehouses-are-called-fulfilment-centers
54. Statt, N. (2019, December 4). *The rise, disappearance, and retirement of Google co-founders Larry Page and Sergey Brin*. The Verge. Retrieved January 2, 2022, from https://www.theverge.com/2019/12/4/20994361/google-alphabet-larry-page-sergey-brin-sundar-pichai-co-founders-ceo-timeline
55. Stevenson, S. (2021, June 28). *It's finally clear why Amazon bought Whole Foods*. Slate Magazine. Retrieved January 2, 2022, from https://slate.com/business/2021/06/why-amazon-bought-whole-foods-groceries-online.html
56. Tan, X. Y. (2011). TASENTE, T., Ciacu, N., & Sandu, M. (2012). Technical Committee. (2018). *2018 International Conference on Machine Learning and Data Engineering (ICMLDE)*. https://doi.org/10.1109/icmlde.2018.00009
57. Webb, G. I., Pazzani, M. J., & Billsus, D. (2001). Wells, J. (2020, May 14). *Whole Foods continues to open online-only 'dark' stores*. Grocery Dive. Retrieved January 2, 2022, from https://www.grocerydive.com/news/whole-foods-continues-to-open-online-only-dark-stores/577954/
58. *What is a hidden revenue business model? Google's business ...* (n.d.). Retrieved January 2, 2022, from

https://fourweekmba.com/hidden-revenue-model-google/

59. Yuan, Y., Wang, F., Li, J., & Qin, R. (2014). A survey on real-time bidding advertising. *Proceedings of 2014 IEEE International Conference on Service Operations and Logistics, and Informatics*. https://doi.org/10.1109/soli.2014.6960761