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Digital Advertising Industry

February 15, 2021

Communication Services

Industry Rating — **Overweight**

Investment Thesis

Digital advertising is a high growth industry which has recently been given a boost from the shelter-at-home order due to the Covid-19 pandemic. The companies holding the largest market share, and as such were most able to capitalize on this boost, were: Alphabet, Facebook, Alibaba, Amazon, and Snapchat. These key industry players are expected to continue dominating the market in the years to come, especially as artificial intelligence technology becomes more adept at targeting ads to individual consumers. We believe Facebook and Alphabet are best positioned within this industry, primarily due to their respective dominance in social media and search advertising.

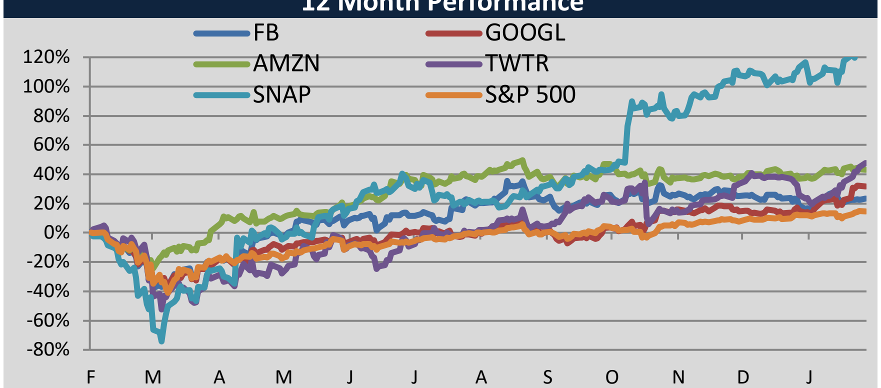
Drivers of Thesis

- The digital advertising industry is expected to grow at a compound annual growth rate of 6.7% per year through 2025. [1]
- Technological progression of artificial intelligence, data collection, and internet connectivity enable advertising firms to target individual consumers in an unprecedented way.
- Increased adoption of mobile advertising in response to a shift in media consumption, with more than 55% of ad spend on mobile platforms. [21]
- Growth of global social media users, where ad spend is expected to grow most quickly at a 7.2% compound annual growth rate. [2]

Risks to Thesis

- Increased regulations surrounding data privacy, data security, and consumer protection could potentially hinder advertisement relevance.
- Ability to build, scale, and maintain the technological infrastructure necessary in providing enhanced digital advertising services.
- Lower levels of internet use and growth, especially in emerging economies.

12 Month Performance

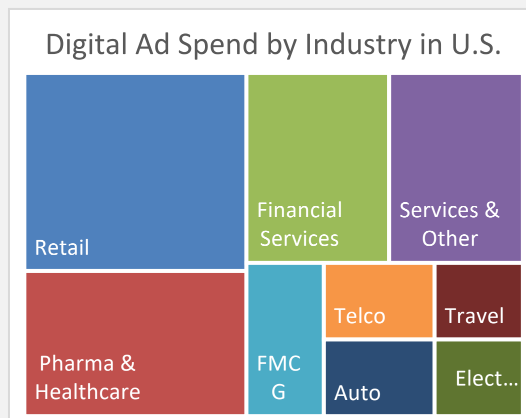


Key Industry Statistics

Top Competitors	Market Cap ($B)
Alphabet (GOOGL)	$1415
Facebook (FB)	$770
Alibaba (BABA)	$725
Amazon (AMZN)	$1651
Snapchat (SNAP)	$93.4

Advertising Revenue	% Total Revenue
Alphabet (GOOGL)	80.5%
Facebook (FB)	97.9%
Alibaba (BABA)	37.6%
Amazon (AMZN)	5.6%
Snapchat (SNAP)	99.5%

Geographic Revenue	% Total Revenue
North America	43.9%
Asia-Pacific	34.0%
Europe	19.1%
Rest of World	3.0%



Source: Statista Digital Market

Industry Description

The digital advertising industry uses the internet to reach consumers through various marketing strategies. Digital advertising is broken down into five segments: search, social media, banner, video, and classifieds. The market makers are Google, Facebook, Alibaba, and Amazon, which capture 65% of ad spend. The U.S. is the largest market within the industry, accounting for more than 1/3 of all spending.[2] The main trend revolutionizing this industry is the shift from desktop to mobile browsing.

EXECUTIVE SUMMARY

The digital advertising industry has performed very strongly over the past 10 years, and maintains a promising outlook over the next five years. The digitalization of our world is far from complete, and the continued growth in internet users around the world will fuel growth within this industry for years to come. Furthermore, the technological progression of artificial intelligence, data collection, and internet connectivity have enabled advertising firms to target individual consumers in an unprecedented way, making advertisements more relevant and engaging.

Positive growth prospects within this industry include an increasing amount of time spent on mobile phones, strong growth potential in emerging markets, and efficient monetization of user data.

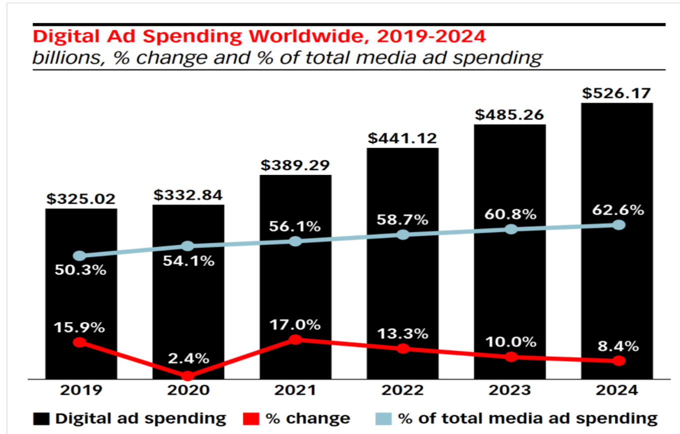
Risks associated with this industry include an increasing regulatory pressure on the largest firms, particularly Facebook and Google, over how user data is manipulated toward driving profit. Likewise, user migration to firms with less intrusive data policies is another key risk facing the industry's key players. Lastly, the ability to scale and maintain the technological platforms necessary to provide enhanced digital advertisement will prove challenging.

We find that there are more positive than negatives within the industry, and that these positives outweigh the negatives. As such, we recommend an overweight rating for the digital advertising industry.

INDUSTRY DESCRIPTION

We live in an increasingly digital world, and this trend toward digitization is leaching into almost every aspect of our lives. At first, this trend caused unease for many of us, some of whom were concerned that human beings were being permanently reduced to engineered products and mere cogs in the social machine. [4] However, we have now become assimilated with this advanced technology. We rely on it to perform the basic tasks of everyday life and entrust it with our most personal data. Technology plays an integral role in our lives, and digital advertising is one of the ways technology can be monetized.

The number of internet users in the past 15 years has increased roughly four-fold. This massive increase has created an opportunity, capitalized on by early pioneers such as Google and Facebook, to change how products are marketed to consumers. Since the first digital ad banner in October of 1994, which read: "have you ever clicked your mouse HERE? YOU WILL" [5]; digital advertising has grown rapidly and now accounts for more than 54% of ad spending, as shown below.



Source: eMarketer – Global Digital Ad Spending Q2 2020

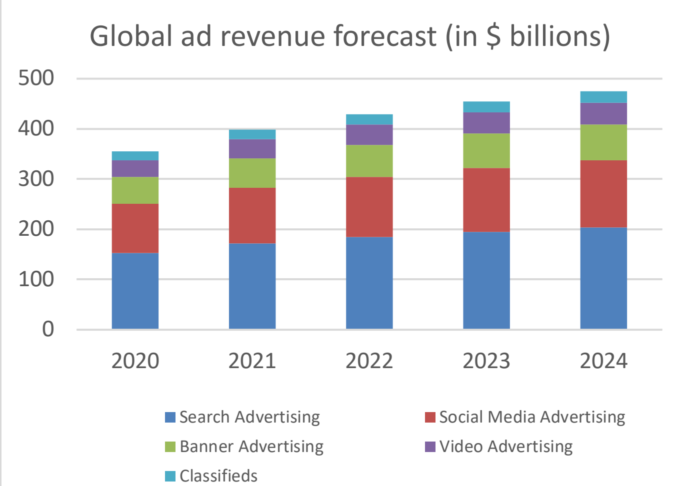
Digital Ad Spending Geographically

Digital ad spending is not geographically uniform. The U.S. is the largest market, accounting for one-third of all spending. This has resulted in market saturation within the United States. The silver lining to this problem is that the two other large markets, China and Europe, still only account 22.3% and 19.2% of total digital ad spend, respectively. These markets are far from saturated, and offer good growth prospects for years to come. Specifically, we expect to see strong growth in the European and Asia-Pacific markets in the near-term.

Digital Ad Segments

Within the industry, digital advertising can be broken down into five segments: search, social media, banner, video, and classifieds. Search advertising is currently the largest of the five segments, accounting for 42.9% of the worldwide digital advertising market. [3] However, social media advertising is the second largest segment and the fastest growing with a projected 7.2% CAGR.

The market makers that dominate the digital advertising space include Google, Facebook, and Amazon. In total, these three firms capture approximately 70% of digital ad spend. The market dominance of these three firms is likely to continue, especially for Google. We see social media ad spend diversifying due to new and increasingly popular entrants such Pinterest (PINS).



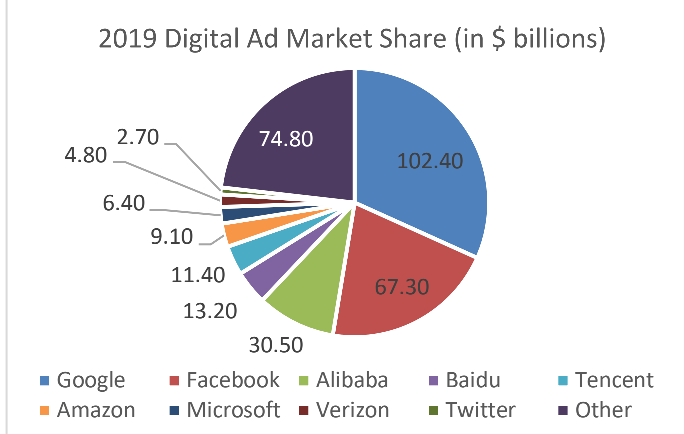
Source: Statista Digital Ad Report 2020

MARKETS AND COMPETITION

The digital advertising industry is filled with large companies that vie for viewer attention and interaction. But not all of these firms operate in the same segments, and thus are not in direct competition with one another. For instance, Google is hugely successful in the search advertising segment. In a recent survey taken November 2020, "93% of participants indicated they used Google as their search engine." [8] This market dominance is also enjoyed by Facebook, which controls an estimated 80% of market share in social media advertising. [9] Other notable participants include Alibaba, Amazon, Snapchat, Twitter, and Pinterest.

Growth in the search and social media advertising segments is expected to grow strongly for the next five years. The market dominance of these companies is expected moving forward, especially Google and Facebook. This is largely because smaller companies do not have access to as much user data and cannot advertise as effectively.

Below, the graphic shows the breakdown of digital ad revenues among the 9 largest competitors. As mentioned above, Google and Facebook exhibit duopoly-type dominance within this industry. It is also important to note that both Baidu and Tencent are large players within the digital ad market, but they derive their revenue almost exclusively from China. Thus, they are not heavily active in the global digital ad market and have not been included in our analysis.



Source: eMarketer 2019 Market Share

Peer Comparison

The companies we have chosen to focus on for peer comparison occupy various segments within the digital advertising industry. Together, these 7 companies account for a large market share of the search, social media, video, and banner advertising segments. Below, three metrics have been used to examine the competing companies. These three ratios have been chosen due to their prevalence in relative valuation analysis.

Company	NFY P/E	EV/EBITDA	Net Margin
Google	30.41x	24.34x	22.1%
Facebook	23.99x	18.57x	33.9%
Snapchat	-	-	-37.7%
Pinterest	101.29x	-	-7.6%
Twitter	82.25x	107.82x	-36.1%
Alibaba	25.87x	32.34x	24.8%
Amazon	68.45x	34.29x	5.5%

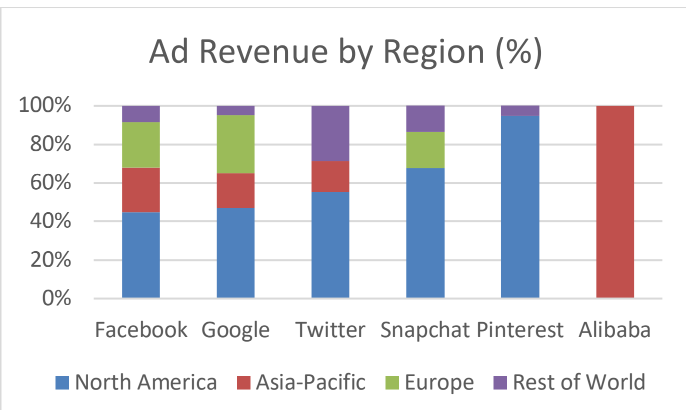
Source: FactSet

Relative valuation often looks at forward price-to-earnings ratios and enterprise value-to-EBITDA ratios to gauge how comparable companies are trading within their given industry. We see that of the comparable companies, Facebook and Alibaba are currently trading at a discount on a P/E basis. Similarly, we see that Facebook and Google are trading at a discount on a EV/EBITDA basis. This is likely due to their heavy reliance on advertising revenues, with Google and Facebook deriving 80.5% and 97.9% of their revenues from advertising.

Heavy reliance on advertising revenue comes at a cost. Poor diversification of revenue streams means that these companies are more prone to industry specific headwinds.

Thus, it is best to compare specific companies within each segment to get an understanding of how a company is trading. For example, Twitter and Facebook are similar companies since both derive almost all of their revenue from advertising. We see that Twitter is trading at a premium when compared with Facebook, which makes sense given that Facebook dominates the social media landscape. However, if we were to compare Google to Amazon we would not get as accurate a comparison. This is because Amazon has a variety of revenue streams and can compensate for any digital advertising-specific headwinds. For these reasons, we choose to primarily focus on Facebook, Google, Twitter, Snapchat, Pinterest and Alibaba in our remaining analysis.

Examining revenue by region, we see that Google and Facebook are the most diversified in their geographical revenue streams. This is very beneficial for maintaining and growing market share, given that the U.S. market is saturated and most growth potential lies outside the U.S. We expect Facebook and Google to continue gaining international market share in the years to come, and expect to see the other companies follow suit.



Source: 10-K's of Individual Companies (see ref 13-18)

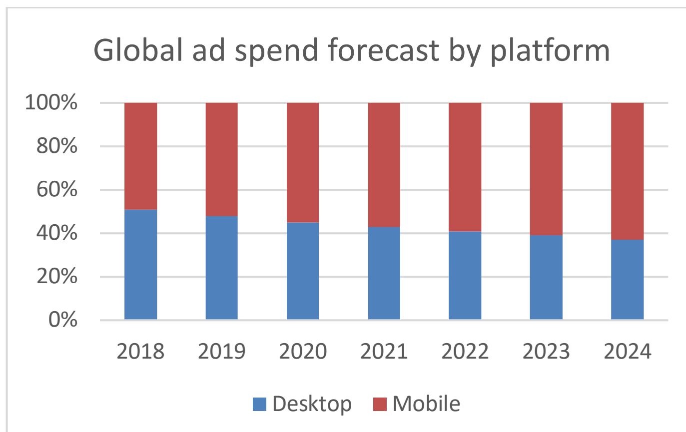
DIGITAL TRENDS

The adoption of mobile phone technology has completely changed how we receive information. We are no longer tethered by a cord plugged into an outlet; we can browse from anywhere, and at any time, with our own miniature computer. This trend has enabled digital advertising to gain market share more quickly, and allowed the key market makers to capture a greater amount of ad spend. It has also enabled apps to track user behavior on other apps, allowing for more personalized and targeted ads. We believe the firms that are most efficient at capitalizing on these trends will achieve higher profitability.

Mobile Advertising

On average, adults in the U.S. spent 226 minutes (3.75 hours) per day using apps or the web on their smartphone for the first quarter of 2020.[6] This trend toward mobile browsing creates a tremendous opportunity for digital advertisers to connect with potential customers. Furthermore, this mobile trend is likely here to stay due to the convenience it provides.

The graph below depicts forecasted, and historical, global ad spend for both mobile and desktop platforms. Mobile ad spend is quickly becoming the de facto method of advertising, which makes sense given that individuals spend large amounts of time on their smartphones. It is also important to note that mobile ad blocker user growth has not yet become profound in the U.S. or Europe, with just 7% of mobile browsers blocking ads.[7] This type of user penetration is much more effective when compared with desktop advertising. The companies that are best able to implement a mobile ad strategy are poised for success.



Source: Statista Digital Advertising Report 2020

Omnichannel Marketing

Nowadays, individuals spend an exorbitant amount of time on their smartphones, both in apps and browsing. This has created the unique opportunity of tracking user behavior across platforms, allowing for a more tailored user experience. Omnichannel marketing takes advantage of this data collection; it knows what you view on one app and can target certain products to you on another app. While this technology is nowhere near perfect, many firms are becoming more adept at how they use it and in turn growing their market share.

The firms that are in a position to gain noticeable market share from this data collection are Google and Facebook. Google is technologically diversified, and has the ability to track users among its many platforms: YouTube, Gmail, Google Chrome, Google Maps, and Google Search. Similarly, Facebook has the ability to track users on Facebook, Facebook Messenger, WhatsApp, and Instagram. This enables both Facebook and Google to target ads on their many platforms based on user data collected on their other platforms.

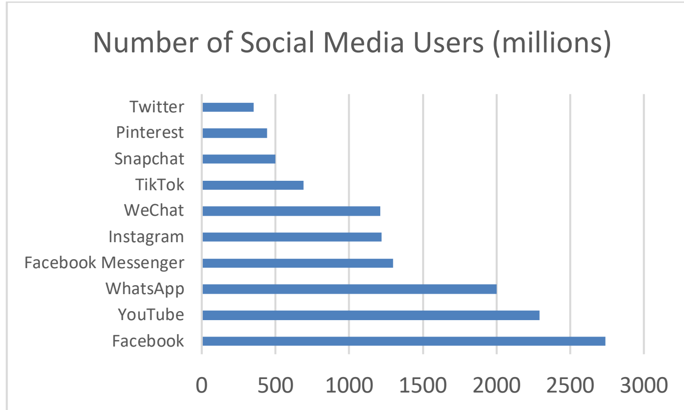
But why does this matter? According to a survey by Infosys, 86% of consumers say that personalization has some impact on what they purchase and one quarter indicate it significantly influences buying decisions.[10] So let me ask you, who would you rather advertise with: Someone like Facebook that can create a personalized ad experience and help you grow your revenue, or someone that shoots your ad out into the digital world and hopes for the best?

Social Media Presence

The past decade has seen explosive growth in social media usage. In 2010, fewer than 1 billion people were signed on. That number has since more than tripled.[11] And where the people go, the businesses follow. As people have flocked to social media sites, en masse, businesses have increased their social media presence to connect with customers in a customized and personal way.

This increased presence has benefited a select few companies that have developed their social media niche: Facebook, Google, Snapchat, Pinterest, and Twitter (note: WeChat is dominant in the Asian market, but less so elsewhere). This is evidenced in the graph below, which can be used as an estimate for how dominant each company is within the social media advertising space. Over the past year, TikTok (owned by ByteDance) has gained a tremendous amount of market share and must be monitored accordingly. Similarly, Pinterest has seen tremendous user growth in recent years.

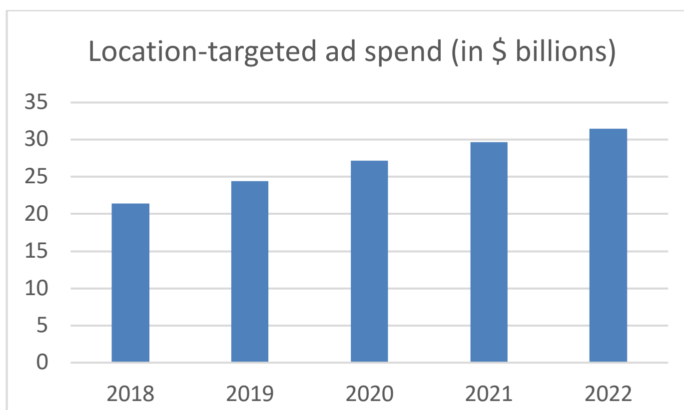
Social media is currently the second largest digital advertising revenue segment, and is growing most quickly with a projected CAGR of 7.2%. They also maintain the highest mobile share of digital advertising,[12] setting them up to capture industry growth for years to come. We believe the most important drivers of future growth in this segment will stem from continued brand development, data



Source: Statista – most popular social network 01/2021

Location-based Advertisement

The most recent development within the digital advertising field is using mobile phone location to provide relevant advertisements. This type of advertising has proliferated due to the wide acceptance of mobile device technology, which can track user geographical movements. Location-based advertising provides the most relevant advertising based on region, and especially enhances business visibility to individuals unfamiliar with the location (tourists). Below, location-targeted ad spend growth is expected at 10.1% 2-year forward CAGR.



Source: Statista - Location Targeted Mobile Ad Spend

Search Advertisement

Once the de facto method of digital advertisement, search advertisement has slowly lost market share to social media ad spend. This method of advertisement involves companies paying to have their brand promoted based on specific key words, so as to get more visibility among browsers. The main market maker within this space is Google, which processes 93% of search requests. However, Verizon media (which owns Yahoo!) and Microsoft (which owns the Bing) also process a small amount of web searches. Google's dominance within this segment has provided large revenues, and is expected to provide strong revenues over the next five years.

We believe this type of advertising will remain popular for years to come, but will grow more slowly when compared to social media ad spend. This is in large part due to the stigma that surrounds search ads. People are hesitant to click on links with which they are unfamiliar, and this behavior is unlikely to change in the future. Another reason to believe growth with slow is due to market maturity in the search ad segment.

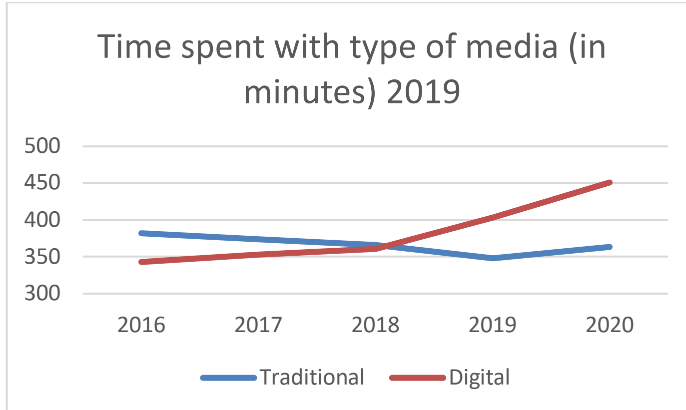
CUSTOMER GROWTH PROSPECTS

Strong customer growth is integral to maintaining strong digital advertising market share. Whether it is Google or Facebook maintaining and growing its user base among its various platforms, these firms must have a large audience to receive large amounts of advertising revenue. We see two primary drivers of customer growth in the years to come: higher screen times among digital users and international growth.

Higher Screen Times

On average, adults in the U.S. spent 3.75 hours browsing or in apps on their smartphone. [20] Furthermore, total screen time among all digital devices increased to 7.5 hours in the U.S. during the pandemic. [20] These higher screen times have directly translated into higher revenues for firms within the digital advertising space. Screen times are expected to continue trending higher as we enmesh ourselves more fully with the digital world. We believe the companies that are most advantaged by this trend are social media advertisers. Facebook, Twitter, Snapchat, and Pinterest are all poised to continue growing ad revenues as a result of our digital appetites.

The graph below shows the trend in time spent with traditional media versus digital media in the U.S. The term "traditional media" refers to media such as television, radio, newspapers, and magazines. This trend toward greater digitalization is likely here to stay, and will continue growing rapidly both the U.S. and abroad. This large increase in screen time provides digital advertising firms with the opportunity to reach an audience that numbers in the billions, and take full advantage of monetizing this trend.



Source: eMarketer – Time spent with type of media

International Growth

High growth can only be sustained for a finite period of time before a market becomes saturated, at which point new methods must be adopted to shake things up. This especially applies to the digital advertising industry, where the U.S. market is currently saturated. The good news is that markets outside the U.S., with the exception of China, provide good opportunities for continued growth.

Digital advertising spending accounts for only a little more than half of all advertising spending globally, suggesting a large amount of future growth. The firms poised to take advantage of international growth are primarily the smaller social media companies: Twitter, Snapchat, and Pinterest. These firms have little to no international presence, and can grow their bottom line through international expansion. We expect to see all firms within the industry expand international to sustain growth, including Google and Facebook.

RISKS TO GROWTH

The primary risks facing the digital advertising industry are federal regulation and cyber threats. The companies within this industry have access to large amounts of user data, and federal policies for how this data may be used have not been fully established. This has helped companies target advertisements in an unprecedented way, but has also made many users (and federal regulators) uncomfortable. Another key issue is the threat of cyber-attacks, which have become more prevalent and can expose large amounts of user data. These two issues must be closely monitored in the coming months and years, and any changes to federal policy should be noted.

Federal Regulation

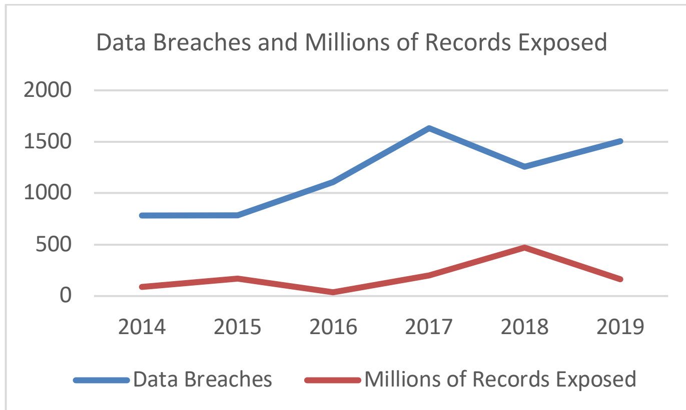
The prospect of tighter federal regulations is currently gripping the digital advertising industry. The recent attacks on the U.S. capitol have cast a new light on the power of social media, and which regulations should be in place to keep this power in check. The U.S. government has long let companies such as Facebook, Google, and Amazon operate largely unperturbed, in part due to the evolving nature of their business and the lack of understanding surrounding how they collect and use data. This may not continue to be the case, as the federal government is gaining a deeper understanding of the influence these companies can have in everything from elections to human social behavior.

As we brace for the impact of stricter U.S. government regulations in the digital advertising industry, we can look to foreign regulation to gain insight into the effects of U.S. government regulation. The General Data Protection Regulation's primary aim is to give individuals control over their personal data.[19] This has created further challenges for firms such as Google and Facebook to monetize their services in Europe. Furthermore, the average revenue per user is much lower in Europe when compared with the U.S.[14] This may be due to increased privacy laws that directly decrease the effectiveness of company advertising. We expect to see tighter regulations around the globe, and for this to cut into the average revenue per user growth.

On North American shores, one law that was recently passed is the California Consumer Privacy Act. This law is aimed at giving consumers more control over the personal information that businesses collect about them.[19] We expect similar laws to be passed in other states across the U.S., and that the Federal government will consider stricter regulations. We are sure that these measures will have an impact on the effectiveness of targeted advertising and firm revenue for those firms whose revenues are heavily concentrated in advertising. The firms best positioned to deal with increased regulation will adapt quickly and capture market share from the firms that are slower to adapt.

Cyber Threats

The threat of cyber-attacks has increased in the past 15 years, peaking in 2017. Cyber-security plays a large role in public trust of companies, especially digital advertising companies. We entrust our personal data with Facebook, Google, Twitter, Snapchat, and Pinterest, and in turn expect them to protect this data effectively. However, this trust is sometimes misplaced and these companies experience data breaches, exposing our data to cyber-criminals. These digital advertising firms must adapt to the changing cyber-threat environment in order to maintain public trust and ensure personal data is secure. The prevalence of cyber threats can be seen in the chart below, and indicates the full impact a data breach can have. We believe the companies best positioned to deal with the evolving cyber threat landscape are the firms that employ the most sophisticated technologies: Google and Facebook.



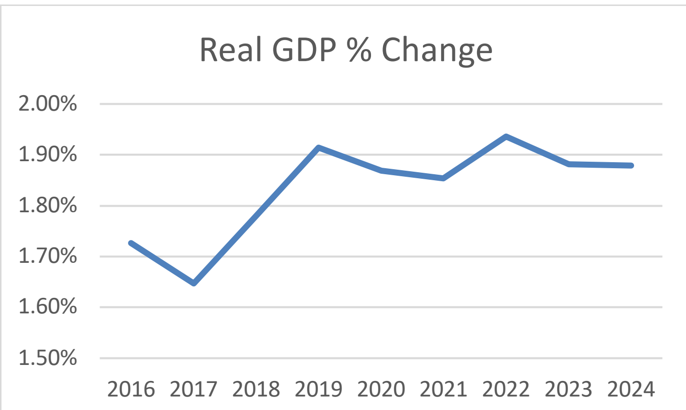
Source: Statista – Annual Number of Data Breaches

ECONOMIC OUTLOOK

Digital advertising spending is strongly correlated with how well the economy is functioning. If we are in a high growth economic cycle, individuals have more disposable income and firms can monetize this through digital advertising. However, in a low growth economy firms generally cut back advertising spending before other essential spending within a business. This can lead to higher highs and lower lows for a poorly diversified company within this industry. We will look at how economic indicators such as GDP, consumer confidence, inflation, and exchange rate risk can affect the digital advertising industry.

GDP Expectations

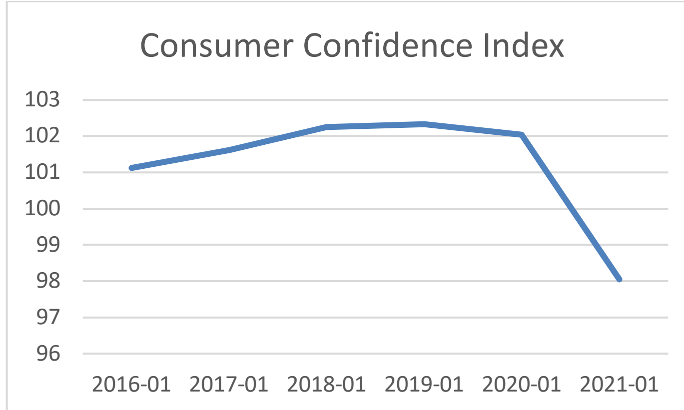
We are expecting to see real GDP growth maintain stable levels for the coming four years, with real GDP 2021 growth of approximately 1.85%. Prior to the Covid-19 pandemic, many economist were optimistic about future GDP growth. However, much of this optimism has died away and we expect a delayed economic recovery. This will have a negative impact on the digital advertising industry, whose companies rely on businesses purchasing advertising space on their platforms. However, the industry should remain less affected due to the increase in remote work and the increase in screen time associated with it. As such, we see this balance out with a stable real GDP growth, and as such are not worried with lower growth in the coming years. Below, the percent change in real GDP from 2016-2024 is presented.



Source: FRED – Real Potential Gross Domestic Product

Consumer Confidence

We find consumer confidence to be an accurate indicator of digital advertising industry performance. This is because high consumer confidence is inextricably linked to higher advertising spending by firms that want to capture positive consumer sentiment. These companies in turn purchase advertising space with one of the many popular advertising firms: Google, Facebook, and Twitter, which drives profit and growth. Below, the consumer confidence index readings for the first month of every year since 2016 are presented. There was a steep drop-off in consumer confidence due to Covid-19, but this is expected to recover in full. Furthermore, this drop off is less of a concern for digital advertising, since this industry has significantly benefited from the pandemic. We are slightly concerned about an economic downturn in the coming year, since this is a leading indicator and has not recovered to historical averages.



Source: OECD – Cosumer Confidence Index

Exchange Rate Risk

Many companies within this industry have international operations. This opens companies to significant foreign exchange risk, especially in less developed countries that have a more volatile currency. However, these undeveloped countries are a crucial part of many growth strategies, so this exchange risk must be hedged effectively. Companies that are able to effectively hedge this risk will be able to increase market share in growing economies, and in turn increase total market share within the industry. We see Google and Facebook as well poised to continue dominating international market share, but Pinterest and Twitter as potential candidates for vast international growth.

Inflation Risk

Our biggest worry right now is inflation. The Fed is slowly bringing interest rates back up to 2%, but this is still well below the historical average. Furthermore, the money supply is increasing due to Covid-19 relief bills. This is setting the stage for hyper-inflation in years to come, and this inflation could hurt technology companies that rely on highly skilled workers who are compensated fairly. These technology firms are also headquartered in expensive cities around the U.S., which have a high cost of living. We believe this must be monitored for future consideration of firm positioning within the industry. Any drastic changes in inflation could have adverse effects on the digital ad industry as a whole, and must be examined accordingly. The Fed's action against inflation should also be monitored, as they have the ability to control inflation levels in the United States. Inflation levels in Europe and abroad should also be monitored to ensure there is no geographical risk.

INDUSTRY POSITIVES

- Digital advertising revenue still only account for a small majority of total advertising revenue, leaving large room for growth
- Data collection methods and artificial intelligence are paving the way for more personalized advertisements, ultimately increasing ad effectiveness
- Screen time among users is increasing globally, and especially in the U.S., leading to strong growth opportunities in the heavily digital age

INDUSTRY NEGATIVES

- Tighter federal regulation of data usage by the biggest firms within the industry, leading to less targeted ads
- Slower growth within the U.S. digital ad market, making international growth expansion (where there are tighter restrictions) necessary

KEYS TO MONITOR

- Federal regulation of data usage in the United States, which is the largest digital advertising market
- Inflation levels in the coming months and years
- Industry growth in emerging markets, particularly Europe and the Asia-Pacific (excluding China)
- Is other part of pie chart for marking share growing or shrinking? In other words, are the big players getting bigger or are smaller players gaining market share?
- Few industries have the ability to infiltrate potential new markets as quickly or efficiently as digital advertising. The only necessity is a user base, and much of this comes with brand recognition. As such, exploiting less saturated international markets is most feasible for companies such as Facebook and Google.
- Deep fakes
- Reduce text in thesis
- Is 6.7% CAGR coming from organic growth, or traditional advertising moving to digital platform
- What kind of demographics are more accepting of digital ads
- Will there ever be a stage of information overload?
- What is the target population of each company? Do they differ
- Take questions and apply graphs to help with answering. Also have a paper with where graphs are to help find them easier

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DISCLAIMER