Does Surveillance Capitalism Trigger the Financial Performance of Information Technology Firms? A Reflection from FAANG Business Models

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Abstract

This paper maps the idea of surveillance capitalism of FAANG (Facebook, Apple, Amazon, Netflix, and Google), which have capitalised on the behavioural surplus accumulated in their databases and how they utilise this data for future business models. The fundamental research question is how the data-driven models trigger these companies’ future financial performance and ensure sustainable growth. A triangulation approach was used to observe the world of surveillance capitalism through multiple lenses. The relative valuation models were used to substantiate the exponential growth of FAANG companies from 2006 to 2020. Financial indicators like the EPS, ROE, Market Capitalization and ROA were used to capture the growth of FAANG. Our undertaking shows that FAANG earns substantial revenue through data-driven business models catalysing the present companies’ growth. This paper also illuminates the nudging effect created by behaviour-centric advertisements, which results in the brand value appreciation of FAANG. The article can be seen as a novel attempt as it empirically proves that FAANG has grown faster due to the power of surveillance capitalism.

JEL Code: A130; O330: O380: K420

Introduction

Are we under the surveillance of data-driven companies? Are the data privacy laws inadequate to address the marketisation of surveillance data? Are they properly governing our private data of us? Do they have adequate control and explainability over how their systems use data? Do they guarantee that “we will not use X data for Y purpose”? On the reverse side, while addressing these questions, OECD[1] substantiated that big data and data-driven innovations are the key pillars of 21st-century business growth. Data is a significant asset and a powerful weapon for key strategy resulting in the drastic growth of data governance companies (Birch et al., 2021). This was noticed and publicised by the celebrated author and professor at Harvard Business School, Shoshana Zuboff; “our private information has become the currency of a new surveillance economy.” This shakes the confidence and shocks the users of these tech companies. Anderson's (2020) comments are also worth noting, says in the age of surveillance capitalism, technology companies have monetised metadata, usurping individuals’ expectations of privacy and compromising information integrity.

It is noted that once discarded; also, behavioural data has the power that the data-driven companies were rediscovered again as behavioural surplus and reinvented to be deployed in their future business models. Thus, a new market exchange has emerged, not a conversation with users but with companies who understand how to mint money from bets on users’ future behaviour (Zuboff, 2019a). Torbert (2021) says users barter their personal information for unrestricted use of services offered by these companies, which implies users are not the company’s customers, but simply raw material (Zuboff, 2019). The companies are thus trading on the user's behavioural data, and the customers’ privacy is at stake. Privacy is widely considered an inalienable right that contributes to the foundation of a liberal egalitarian society. Still, these data-driven companies often undervalue the confidentiality and security of the users (Allen, 1999). The business models of FAANG represent a new form of accumulation of behavioural data. Google is the pioneer; other companies like Facebook, Apple, Microsoft, Amazon, Alibaba, and numerous firms have also emerged as key players in surveillance capitalism (Zuboff, 2019b). McKinsey’s ranking report shows FAANG has evolved into today’s tech giant and holds top positions among companies based on market capitalisation[2]. Every other tech company that claims to offer personalised services in health, education, retail, and so on are manipulating our behavioural data and exerting some power on the users in the future.

The growth potential of this surveillance capitalism is more influential than managerial capitalism in all senses (Zuboff, 2015). Google's chief economist, Hal Varian (2014), supports this view and asserts that digital technologies can make transactions and interactions observable and controllable in real-time, ultimately lowering transaction costs and production costs, which might be the reason for the dominance of data governance. Furthermore, digitalisation also enables businesses to develop new markets and business models, helps firms expand the scope of their activities, and
allows organisations to become more efficient internally (Adner et al., 2019; Schildt, 2017). Brian Arthur substantiates it in Mckinsey Report (2011)[3], saying digitisation is creating a second economy through a vast, automatic, and invisible change from a physical economy to a digital economy since the Industrial Revolution. Moreover, it is noteworthy to debate the findings of Marwick and Hargittai (2019) say that economic surveillance is the personal harvesting of information posted on social media for advertising purposes.

Extant studies exploring the consequences of surveillance capitalism focus only on its concept. However, scholars worldwide still need to prove that the effect of surveillance capitalism has to be empirically established. Moreover, the impact of surveillance capitalism on the financial performance of tech companies has received scant attention from scholars. At the outset, this paper is a novel attempt because of the following. Firstly, we try to prove the contribution of surveillance capitalism to the exponential growth of FAANG companies. Secondly, Covid-19 forced a shift to Work from home, which has led many organisations to rapidly come to terms with digital technologies, enhancing the competitive edge of these companies that must be tested (Coughlin, 2020). This paper attempts to bridge the research gap by proving that the power of surveillance capitalism of the tech firms employing data governance resources is better when comparing them to their counterparts, using labour-centric resources in their business models.

Our findings from the analysis’s quantitative and qualitative outcomes demonstrated that big data acts as an emerging factor of production, determining the success of these companies. We found that the focus of FAANG companies is on promoting predictable outcomes using behavioural surplus with the intention of generating huge profits. However, it is noted that they never mind enduring democratic scrutiny or legal control and data privacy matters. We find that data protection laws need to be more equipped to safeguard citizens in the modern world. For instance, across the globe, according to the Information Technology Act and Rules passed by the nations, no one can claim legal remedies against corporations that mishandle their data unless it can be conclusively proved that the mishandling caused a wrongful loss to the victim (Dowley, 2002).

The remaining part of the paper is articulated in the following ways. The background in which the paper is conveyed in the manuscript. We provide the existing theoretical foundations of surveillance capitalism and data-driven models, research gap and questions. In another section, we introduced the data and methodology. We also describe the results and discussion part; that section deals with the critique of surveillance capitalism and details its challenges. The final sections describe the future research agenda and conclusion.


**Surveillance Capitalism/ Data Governance / Datafication**

Shoshana Zuboff introduced the concept of surveillance capitalism in a seminal paper in 2015. Capitalism is the primary mode of production, distribution, and exchange. Since its actual emergence in the 16th century, capitalism has contributed to the rapid improvement of living standards via the industrial revolution (Lippit, 1997). In 2001, surveillance capitalism emerged as a new business model, when a financial breakdown occurred due to the dot-com bustle and the loss of investor confidence in fledgling companies (Zuboff, 2015). The behavioural surplus can be considered surveillance assets, which are critical raw materials for surveillance customers for the sake of surveillance revenues and generating surveillance capital (Zuboff, 2019).

Weber (1978) states that technology cannot be isolated from economics and society; instead, it is called “economic orientation.” The twentieth century has seen our economy move away from mass production lines in factories to become
progressively more reliant on knowledge. We now see that managerial capitalism has impacted the way to surveillance capitalism or data governance. On the other hand, Surveillance capitalism uses a business model based on the digital world and relies on “big data” to make money. It is noted that Google's early innovations have quickly transitioned to Apple, Amazon, Microsoft, and Facebook. Every organisation is mining, storing, or controlling data, and then using it to manipulate and control the behavioural surplus.

Surveillance capitalism is a market-driven process where the technology giants capture their consumers’ data and use this personal data as a commodity for sale. Surveillance companies argue that it is a part of democratisation and not as a form of social control (Lyon, 2003). Surveillance companies collect and scrutinise people's online behaviours on their platforms through likes, dislikes, shares, searches, social networks, and purchases to produce data that can be further used for commercial purposes. These social interactions are necessary to access material subsistence in the contemporary world, and if we need subsistence, we need these interactions (Venkatesh, 2021). In support of this, Hal Varian (2014) describes the core of the Surveillance business as ‘data extraction and analyses through econometric modelling. However, privacy concerns are ignored by the companies in their new business models using AI, or ML are to be considered seriously.

The surveillance has disturbing implications for the democratic potential of the internet’s interactive capability (Andrejevic, 2002). The data that tech companies use is the product/ outcome of mass internet surveillance. Sametime, it is noted that interactions with popular search engines, social networking apps and other related interfaces are inevitable. Tech companies commoditise people's experiences without their consent and seek to control and direct or behaviour by channelling those experiences through the predictive analytics field (Zuboff, 2019).

Behavioural data is a new class of assets known as ‘surveillance assets’, which is the result of tracking the online behaviour of individuals and using machine learning techniques to create order to create detailed profiles capable of generating highly accurate predictions about the behaviours, interests, preferences, and traits of individuals and groups (Birch et al., 2021). Analyzing the individual's behaviour helps predict mindset, enabling the exploitation of detailed knowledge inferred from user profiles to micro-target personalised offers to maximise the opportunities to make a sale (Yeung, 2018). Aho & Duffield (2020) posits that this has resulted in a new set of power dynamics and logic of accumulation collectively referred to as surveillance capitalism.

Over time, the tech giant's growth is evidenced by data and surveillance power. However, there is an apparent contradiction between the security and privacy of big data and the widespread use of big data (Jain et al., 2016). Sorescu (2017) suggests that big data has the inner skill to provide more opportunities to update business models and create new ones. However, academic research is yet to offer any guidance in this area. Our study aims to confirm how data-driven companies could grow faster by using big data that contains people's behaviour. Many social networking sites turned out to be advertising behemoths by taking undue advantage of the behavioural surplus left behind by the users of these online platforms. Thus, data governance companies enjoy superiority over conventional companies. Additionally, noteworthy to be debatable, machine learning algorithms are widely applied to capture massive volumes of digital data, unfolding the transformations in cultures of consumption and production.

The Success Mantra Of Surveillance Capitalists

In the United States especially, the output and productivity of surveillance capitalists using data-driven business models are 5 to 6 per cent higher than expected, given those firms’ having other investments in ICTs (Brynjolfsson et al., 2011). There is evidence that, on average, 14 per cent of labour productivity increased due to the usage of quality data by the companies in their business models. However, the study by Barua et al. (2013) reports a cross-country difference in the labour productivity aspects using data-driven business models. Therefore, the increased productivity due to data usage gradually improves the financial performance of the data-governance companies.
Digital personal data plays a crucial role in the contemporary economics of companies. It forms a new asset class and leads to big tech firms’ emergence and dominance, such as Apple, Microsoft, Amazon, Google/Alphabet, and Facebook (Birch et al., 2021). Adopting innovative digital technologies using big data, such as robotic automation, cloud computing, artificial intelligence, machine learning, deep learning, the internet of things and 5G technology, has significantly promoted the IT sector's growth (Henry-Nickie et al., 2019).

The strategy of data-governance companies is to focus on behavioural surplus as surveillance assets that can be used as the raw material for surveillance customers to generate surveillance revenue (Zuboff, 2019). Big data plays a significant economic role in enhancing the productivity and competitiveness of companies and establishing a substantial economic surplus for consumers (Manyika et al., 2011). Organisations began to capture, create, and use data in increasingly diverse ways to transform their operations and management and alter the economies and societies in which they operate (Raguseo, 2018). Surveillance capitalism has the instrumentation power to combine predictive patterns with desired outcomes (Henry-Nickie et al., 2019). It works through the instrumentation of the digital milieu and institutionalisation of digital instruments to feed on, and even shape, every aspect of every human’s experience (Zuboff, 2019). Instrumentation power has contributed to market domination and corporate gains and has also led to increased authoritarian state power (Atmanagara et al., 2019).

Data Governance Models

How is data governance helpful for value creation? The surveillance capitalist uses data-driven business models that allow the company to learn more from its user base. The existing user communities’ data sets have a strong potential for attracting other users. The data governance models so far in usage by the tech companies are illustrated in Fig. 1.

The data-sharing pools are based on technical architecture, such as data-sharing platforms and application programming interfaces facilitating the centralised data exchange among business enterprises (Micheli et al., 2020). However, Ho & Chuang (2019) says that data cooperatives distribute rights or access to data among actors and enable a decentralised data-governance approach where data subjects voluntarily pool data to create a shared pool for mutual benefits. The data cooperatives are characterised by high reciprocity since “all parties are stakeholders and are equally affected and bound by the governing rules they discuss, negotiate and then agree upon.” However, public data trusts refer to a data governance model in which a public actor accesses, aggregates and uses data about its citizens, including data held by commercial entities. Micheli et al. (2020) establish the significance of the trust model in data governance. However, the personal data sovereignty model seeks to address the opportunities to access, share and use personal data. Application Programming Interfaces (API) and Software Development Kits (SDK) facilitate the development and integration of programmatic advertising models that mediate the social media ecosystem (Van der Vlist & Helmond, 2021).

How Does A Data-driven Business Model Run?

OECD (2018) reports the modus operandi of the business models run by data-driven companies, such as the customers providing data while interacting with the FAANG companies’ websites or apps. The interaction may be active when users create a profile, save items of interest for future reference, or make a purchase. The surveillance may also be passive such as when users browse the website or authorise the company to access their browser histories. It may also be possible for the company to access information via other websites or apps open simultaneously. Such datasets act as a behavioural surplus, and their value is an essential aspect of the future business model of these companies.

How Is Information Ruling The World?
Shapiro et al. (1998) observe that Information is costly to produce but cheap to reproduce. Additionally, economists say that the production of information goods involves high fixed costs but low marginal costs. Furthermore, the cost of producing the first copy of information good may be substantial, but the cost of reproducing or modifying or manipulating additional documents is negligible. In this technological era, data matters in decision-making rather than economic principles. What is happening in the global economy now? The information rules explain the economic concepts needed to navigate the evolving network economy rather than other traditional factors of production. Varian (2014) suggests and warns the economists who deal with big data. He says the researchers in machine learning have developed ways to deal with large datasets; however, the economists in machine learning would be well advised to invest in learning those datasets well before analysing them. This might be due to the uncertainty and errors in forecasting with the AI, ML and DL-based predictions. In this context, rechecking the data scenario is an essential task for the academician to focus on how to guide a data-driven society.

**Theoretical Model**

The financial performance of companies can be analysed from different perspectives. The strategic value drivers adopted by the companies may influence their future performance. The impact of strategic value drivers can be measured through financial performance indicators. Therefore, if an economic value driver is positively affected by a strategic value driver, it will also positively impact cash flow and firm value (Petersen et al., 2017). The FAANG companies have used various data-driven business models acting as strategic value drivers. The valuers generally adopt three models for companies' valuation: relative valuation, discounted cash flow method, and contingent valuation suggested by Damodaran (2012).

Strong theoretical arguments support the relative valuation methods for valuing companies. Financial ratios calculated from financial data are essential parameters to evaluate company performance. Based on the literature, accounting-based performance indicators, return on assets (ROA) and return on equity (ROE), are widely used financial ratios by investors to measure firm profitability (Masa'deh, 2015). The research of Huang et al. (2011), Jiao (2011), and Johnson et al. (2005) discovered the existence of the positive influence of stock returns on corporate value. The higher the stock prices, the higher the corporate value of an organisation. Another essential criterion used for evaluating public companies is their market capitalisation. The purpose is to maximise the value of companies so that their owners will become more prosperous or affluent. The market capitalisation of companies reflects their market value at a particular time. It is calculated by multiplying the company's shares issued by the current market price (usually the price at "closing" for a particular day on the stock market). Ivashkovskaya and Stevanova (2011) argued that the primary goal of a company could be achieved by increasing its financial performance of a company through an integrated approach based on the corporate financial architecture. Thus, earnings per share, market capitalisation, return on equity, and return on assets are good indicators of these companies' financial performance, which prove their dominance through data that has become a prime dependent variable.

Tech platforms like websites, apps, e-commerce websites, and social networking apps aim to capture users' mindsets, beliefs, attitudes, and thoughts. The tech giants capture and effectively use these data through their innovative business models. Moreover, tech companies benefit significantly from the behavioural data collected. This aspect has been covered by many published studies using qualitative methods. Prior studies have yet to be able to confirm how data-driven companies have been able to grow at a faster pace than other companies. This research addresses the superiority of data-governance companies over managerial governance companies. This is justified using various financial growth measures such as EPS, ROA, ROE, and market capitalisation. The authors have touched on “surveillance capitalism” through its theoretical foundations. However, the power of surveillance capitalism or significant data effects on the dramatic growth of tech companies is to be empirically proven.
Cramer, J. J. (2006) grouped only Facebook, Amazon, Netflix, and Google in the original list of FANG companies. Later, in 2017, Apple was also added to the list, reflecting the growing contributions of its internet services (iCloud, Siri, Apple Music, and Apple Pay) to its revenues. Therefore, the acronym became FAANG by the year 2017. Recently, Facebook rebranded itself and is now called Meta Platform. A popular suggestion on Twitter for the new tech-related heavyweight acronym is MAANG, in which FAANG’s “F” has been substituted with “M” (Singh & Warrick, 2021).

FAANG companies are the dominant players in surveillance capitalism. Hence, only these companies were chosen for the study. Zuboff (2019) points out that the growth of FAANG companies is due to the data-governance models. So, we decided the best method to do this research is to have a detailed analysis of the FAANG companies and reveal the power of surveillance capitalism. We use relative valuation methods to capture the effect of surveillance capitalism in the FAANG companies. Damodaran (2005) suggests that in relative valuation, how much to pay for an asset is assessed by looking at what others are paying for ‘comparable’ purchases, which is scaled to a standard metric that they all share (earnings, revenues, and subscribers). A company’s value is compared to its competitors or industry peers to assess its financial worth. We used the most famous relative valuation models, such as EPS, ROA, ROE, and market capitalisation, to assess FAANG business models.

A mixed-method or a triangulation approach suggested by Tashakkori & Creswell (2007) has been used to incorporate both quantitative and qualitative data. This enables us to qualitatively understand the complex phenomena of surveillance capitalism and explain the phenomena through numbers, charts, and fundamental statistical analyses. In a multi-method approach, Rossman and Wilson (1994) hold the potential qualitative and quantitative data collection and analysis methods to see the world of surveillance capitalism through multiple lenses. The relative valuation models constitute the basis of the quest to find the cause of the exponential growth of FAANG companies from 2006 to 2020. Strong financial position and profitability indicators like EPS, ROE, market capitalisation, and ROA have been used to capture the growth of these companies. Brand-value ranking of these FAANG companies and the other toppers in the list have been meaningfully employed in the analysis. Brand valuation measure encompasses both the financial and customers’ perspectives and enables the assessment of the strength of the companies incorporating different perspectives. We also performed a SWOT analysis of the FAANG model to support the quantitative insights.

The data set was drawn from multiple databases, including the S&P 500 index, Yahoo Finance, Macro Trends, companiesmarketcap.com, Forbes, Statista, and corporate websites of FAANG companies from 2006 to 2020. All the figures in the analysis are reported in USD denominations for uniformity. A brand's value is the expected net present value of future cash flows accruing to a firm due to its brand and brand valuation, a composite measure used to examine the growth and trends of FAANG companies. There is a direct link between brand strength and future cash flows that drive enterprise value (Borkovsky et al., 2017). Therefore, we include an inter-and intra-wise comparison of FAANG brands using the Forbes data set. The data on brand value estimations of FAANG were captured from the website of Forbes.

**Faang’s Growth Position In S&p 500**

Facebook, Amazon, Apple, Netflix, and Google benefited from the dual macro trends around the internet and mobile adoption of the last two decades, especially during the Covid-19 regime (Pisal, 2021). Investors who bet on this trend were rewarded handsomely as the FAANG stocks outperformed all the major market indices with super-flow returns. Figure 2 depicts the growth of FAANG companies in terms of the returns derived from the S&P 500; their performance is exponential against the market performance. The question is whether the exponential growth of this FAANG performance in the S&P 500 is due to surveillance capitalism. This question can be answered through further analysis.
Valuation Of Faang Through Relative Valuation Models

Over the last decade, FAANG stocks outperformed (see table 1 and Fig. 2) by reporting superior earnings per share, return on assets, equity, and market capitalisation. Among the FAANG stocks, Google is known for its phenomenal growth compared to other brands, with a 1.7 times increase in share price in FY 2016–2020. Google’s annual revenue has multiplied almost 30 times since 2005, with significant income from advertisement-allied business models. Most of Google’s multibillion-dollar revenue comes from its proprietary advertising service and Google Ads. However, Google never acknowledges the sale of in-house data in their business model but facilitates the whole process by making data available through a valuable tool of advertisement-allied business models. The excess revenue of google might be due to Google deployed Real-Time Bidding (RTB), i.e., advertising inventory bought and sold on a per-impression basis, via instantaneous programmatic auction, through a formalised stock exchange.

Relative Valuation Of Faang Business Model—eps

FAANG companies have outplayed other tech companies in the last few decades in terms of EPS, ROA, and ROE, resulting in a significant enhancement of the market capitalisation of FAANG companies. Google LLC reported the highest EPS, i.e., $58.61 per share, followed by Amazon Inc. with $41.83 in the FY 2020–21. The lowest EPS score reported by Apple Inc. in the FY 2020–21 may be due to their late entry into the list of surveillance capitalists.

Netflix Inc. reported the highest percentage of growth in EPS over the last five years, i.e., the shares appreciated by 1323 percent, followed by Amazon Inc. with 754 percent and the lowest growth in EPS was reported by Apple Inc.: 58 percent. In the year 2020–21, Netflix Inc. reported the highest increase in EPS, with almost 258 per cent, followed by Apple Inc. with 147 percent.

Relative Valuation Of Faang Business Model—roe

A significant performance in terms of ROE among the FAANG companies is reported in table 1. Apple Inc.’s ROE has appreciated substantially over the last five years, from 36 per cent in 2016–17 to 87 per cent in 2020–21. The next best performer in terms of ROE is Netflix: 7 per cent to 25 per cent, followed by Amazon (12 per cent to 23 percent), Facebook (17 percent to 23 percent), and Google (14 percent to 18 percent).

Relative Valuation Of Faang Model—roa

An increasing trend in FAANG ROA was highly palpable from 2016 to 2021. The highest was reported by Apple Inc. (19 to 22 percent in FY 2016–2020). It is apparent from the table that the following best performers are Facebook (19 to 21 percent), Google (14 to 15 percent), Amazon (5 to 8 percent), and the lowest ROA was Netflix (from 27 per cent to 12 percent), as exhibited in Table 3.

Relative Valuation Of Faang Model—market Capitalisation

Interestingly, Apple was the first surveillance capitalist to have crossed the trillion mark in market capitalisation in 2019–2020. Nevertheless, Amazon and Google crossed the trillion mark in 2020–21. Facebook and Netflix have not crossed the
trillion mark (see Table 3 and Fig. 3).

Table 1

Financial performance of FAANG companies

<table>
<thead>
<tr>
<th>Finance Parameter</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPS ($)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facebook Inc.</td>
<td>10.1</td>
<td>6.4</td>
<td>7.6</td>
<td>5.4</td>
<td>3.5</td>
</tr>
<tr>
<td>Amazon Inc.</td>
<td>41.8</td>
<td>23.0</td>
<td>20.1</td>
<td>16.2</td>
<td>13.7</td>
</tr>
<tr>
<td>Netflix Inc.</td>
<td>6.3</td>
<td>5.3</td>
<td>3.8</td>
<td>1.3</td>
<td>0.4</td>
</tr>
<tr>
<td>Alphabet Inc.</td>
<td>58.6</td>
<td>40.2</td>
<td>43.7</td>
<td>18.0</td>
<td>27.0</td>
</tr>
<tr>
<td>Apple Inc.</td>
<td>3.3</td>
<td>3.0</td>
<td>3.0</td>
<td>2.3</td>
<td>2.1</td>
</tr>
</tbody>
</table>

Note: This table shows Earnings per Share, Market Capitalization, Return on Equity and Return on Asset of FAANG over five years from 2016 to 2021. We can see tremendous growth in the selected financial measures.

Swot Analysis Of Faang Companies

Identifying and examining companies’ existing resources, both internally and externally, help companies in their strategic planning for future ventures. SWOT figures out the trends and patterns having either positive or negative impacts on the business (Namugenyi et al., 2019). The SWOT analysis has been performed by incorporating the variables explored from the past literature that focused on surveillance capitalists’ strengths, weaknesses, opportunities, and threats. SWOT analysis is a strategic instrument that helps identify the strengths, weaknesses, opportunities, and threats related to a particular project or planning faced by a sector, organisation, or company (Gao & Peng, 2011). Figure 4 represents the SWOT analysis of the FAANG business.

Faang’s Position—a Brand Value Assessment

Over the last two years, Apple Inc. has emerged as a significant player and has been ranked first with a brand valuation of almost 241.2 B USD, which is nearly 5.23 times the valuation of McDonald’s, which occupies the tenth position in the 2020 World’s Most Valuable Brands, published by Forbes. It is interesting to note that Apple Inc. reported a brand value appreciation of 17 per cent. Still, the biggest gainers were Netflix (at the 25th position in the list) with 72 per cent appreciation, followed by Chanel (42 per cent), Amazon (40 per cent), and Microsoft (30 per cent). Facebook occupied the list of value losers with 21 per cent and Wells Fargo with 16 per cent. All FAANG companies except Facebook
outperformed all other companies regarding financial performance and brand building. It was noted that the brand value appreciations of FAANG can be correlated with the data-governance variables (Table 2).

<Table 2>

<table>
<thead>
<tr>
<th></th>
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<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Apple</td>
<td>Technology</td>
<td>$200.196B</td>
<td>$241.2B</td>
<td>1</td>
<td>17%</td>
</tr>
<tr>
<td>2</td>
<td>Google</td>
<td>Technology</td>
<td>$137.7B</td>
<td>$207.2B</td>
<td>2</td>
<td>24%</td>
</tr>
<tr>
<td>3</td>
<td>Microsoft</td>
<td>Technology</td>
<td>$114.03B</td>
<td>$162.9B</td>
<td>3</td>
<td>30%</td>
</tr>
<tr>
<td>4</td>
<td>Amazon</td>
<td>Technology</td>
<td>$81.24B</td>
<td>$135.4B</td>
<td>4</td>
<td>40%</td>
</tr>
<tr>
<td>5</td>
<td>Facebook</td>
<td>Technology</td>
<td>$85.063B</td>
<td>$70.3B</td>
<td>5</td>
<td>-21%</td>
</tr>
<tr>
<td>6</td>
<td>Coca-Cola</td>
<td>Beverages</td>
<td>$38.604B</td>
<td>$64.4B</td>
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<td>9%</td>
</tr>
<tr>
<td>7</td>
<td>Disney</td>
<td>Leisure</td>
<td>$30.266B</td>
<td>$61.3B</td>
<td>7</td>
<td>18%</td>
</tr>
<tr>
<td>8</td>
<td>Samsung</td>
<td>Technology</td>
<td>$32.92B</td>
<td>$50.4B</td>
<td>8</td>
<td>-5%</td>
</tr>
<tr>
<td>9</td>
<td>Louis Vuitton</td>
<td>Luxury</td>
<td>$37.76B</td>
<td>$47.2B</td>
<td>9</td>
<td>20%</td>
</tr>
<tr>
<td>10</td>
<td>McDonald’s</td>
<td>Restaurants</td>
<td>$43.795B</td>
<td>$46.1B</td>
<td>10</td>
<td>5%</td>
</tr>
</tbody>
</table>

Note: This table displays the brand valuation of the top ten corporations from Forbes’ 2020 World’s Most Valuable Brands to identify the FAANG performance. We have adapted the 2020 World’s Most Valuable Brands data, Forbes.com.

Critique Of Surveillance Capitalism

The surveillance capitalists have developed their unique profitable business models and significantly augmented their revenue and profitability. Nevertheless, they are also severely criticised. They have prospered immensely from these operations, as many companies are interested in gambling over our future behaviour (Zuboff, 2019). The negative societal implications, such as biases in algorithmic decision-making, nudging and manipulation, and privacy violations, are increasingly highlighted by past researchers ((Hendrickson & Galston, 2019); Kitchin, 2017; Taylor, 2017). The role of Facebook in the 2016 U.S. election and the appropriation of WhatsApp messenger in the recent elections in Brazil vouch for the manipulative power that comes with the ability to create personal profiles and distribute targeted political propaganda via social media platforms (Landwehr et al., 2019).

Although its consequences are hazardous, surveillance capitalism and its unique power production are untamed by law (Zuboff, 2019). The harvesting of data about people, organisations, and things and their transformation into a form of capital is often described as a process of “accumulation by dispossession,” a pervasive loss of rights buttressed by predatory practices and legal violence (Fourcade & Kluttz, 2020). Cinnamon (2017) studied the social injustice of surveillance capitalism based on the normative principle that they prevent parity of participation in social life. The present economy is experiencing an asymmetry of power concentrated among a few technology and telecommunication companies, resulting in de-facto quasi-data monopolies (Micheli et al., 2020).

Challenges Faced By The Surveillance Companies

The FAANG companies face severe criticism from the public as there is increasing awareness regarding their data breaches and surveillance policies. The Cambridge Analytica-Facebook scam revealed the darkest sides of data
breaches and behaviour manipulation by social media platforms. The high-profile data breach involving collecting the personal data of 87 million Facebook users for Donald Trump's presidential campaign showed the inability of these tech companies to protect their user data from misuse (Big Tech Threats: Making Sense of the Backlash against Online Platforms).

Data protection regulations are becoming stringent, threatening the existing business models of these tech firms. According to UNCTAD, 128 out of 194 countries already have legislation, and 19 countries have drafted legislation to protect their people's data and privacy. Meanwhile, 37 countries need more regulatory support in privacy matters, and ten countries disclosed something regarding the same (see Table 3). The European Union's General Data Protection Regulation requires companies to be more accountable to people whose data have been collected and impose punishments if they fail to comply with these regulations (Consumers International, 2019). Governments worldwide attempt to overhaul the surveillance-based business models and protect individuals from corporate human rights abuses through data protection laws and regulations. Table 3 shows the Status of data privacy regulation[5].

<table>
<thead>
<tr>
<th>Regulation of Data Privacy</th>
<th>Implementation Status in Percentage across the World (Out of 194 UNCTAD Member Countries)</th>
<th>Number of Countries with Data Privacy Regulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legislation</td>
<td>66</td>
<td>128</td>
</tr>
<tr>
<td>Draft legislation</td>
<td>16</td>
<td>19</td>
</tr>
<tr>
<td>No legislation</td>
<td>19</td>
<td>37</td>
</tr>
<tr>
<td>No data available</td>
<td>5</td>
<td>10</td>
</tr>
</tbody>
</table>


Due to these emerging privacy regulations at a global level, alternative business models are gaining attention, including those that grant users an option to choose monetary payment for social media usage, which may adversely affect low-income groups (Sindermann et al., 2020). However, the current scenario exerts inherent pressure on social media users to accept the extraction and usage of personal data as they offer their services free of cost.


Future Research Agenda

Though authors have written a few theoretical and conceptual articles in sociology and anthropology, studies that empirically prove the reasons for the dominance of data-governance companies have yet to be made available. Further empirical studies are required to establish the effect of surveillance capitalism on growth prospects. The present research has focused on the impact of surveillance capitalism on the financial performance of only the FAANG companies. Further research could assess whether the same is applicable in the case of data-driven companies other than FAANG. Comparing the implications of surveillance capitalism across several countries would be interesting. This research work has only superficially covered the regulations imposed on surveillance capitalists.
Further investigation and experimentation into the regulatory aspects are strongly recommended. New legislative frameworks for surveillance capitalism promulgated by different countries also can be studied. Moreover, research can be done on the regional analysis of the challenges of surveillance capitalism because of the data privacy regulations being implemented worldwide.

**Discussion; Limitations & Conclusion**

Surveillance capitalism provides a considerable amount of data and analytics to serve customers better in future. These data would be the saviours of FAANG business models, in which the more you personalise, the companies will obtain the higher score in terms of data. These data-driven brands emotionally connect with the consumers, resulting in the brand value appreciation of FAANG businesses. This study has set out a foundation of research on the influence of surveillance capitalism on the financial performance of FAANG companies.

Varian (2014), Chief Economist, Google Inc., California, and Emeritus Professor of Economics, University of California, opined that the economic transactions of companies and data associated with these transactions collected by the companies could be manipulated and analysed for future business models. The behavioural data is reconceptualised and used for psychological micro-targeting in advertisements, which nudges the consumers towards targeted behaviours. The results of this study are consistent with the observations of the Google economist. The findings of this study also agree with that of Gu and Lev (2001) and Reimsbach (2013). They asserted that intangible assets that generate competitive advantages positively correlate to the firm's market value. There is empirical evidence for this assumption in the U.S. capital market found by Reimsbach.

The most prominent finding from the analysis is that user data that capitalises on the behavioural surplus is an invisible asset that provides a market appreciation for these FAANG companies. Though the global economy is passing through tough times due to Covid-19, FAANG companies have thrived, and their business has grown and earned vast profits compared to other companies (Hobbs, 2020). The valuation estimates show that the reason for high growth is surveillance capitalism. The financial performance of FAANG companies supports the hypothesis that surveillance capitalist firms have a growth rate higher than that of the managerial capitalist firms in the world. The market capitalisation of FAANG companies has soared significantly, with Apple reported to be a noteworthy player with the highest market capitalisation, followed by Google, Netflix, Amazon, and Facebook. Apple and Google reported the highest returns on assets and equity among the FAANG companies. These results represent an emerging trend to bank on data and increase the company's earnings and the shareholders' wealth.

Birch et al. (2021) attempted to study ‘users’ and ‘user engagement’ as assets using performative measurement, governance, and valuation of user metrics without addressing the issues relating to ownership and control rights of personal data. The benefits of surveillance capitalism are proved through financial performance. The dominant position gained by FAANG companies gives them significant advantages over competitors and undue influence over democracy, fundamental rights, societies, and the economy. Shreds of evidence have been intense; In late 2020, the US government initiated legal suits against two Big Tech rms Google and Facebook, to pursue anticompetitive strategies to undermine competition in online search and online advertising markets.

Recently there have been regulatory enactments to counteract the tech giants' actions. For example, the Australian Competition and Consumer Commission has enacted regulations to require firms like Google and Facebook to be responsible for news media content accessed through their digital ecosystems. The Canadian Federal Government introduced a Digital Charter Implementation Act 2020 to extend data protection and privacy rights. The European Commission (EC) has also proposed a two-pronged Digital Services Act 2020 and Digital Market Act 2020 to address growing concerns with Big Tech companies.
There are limitations to this study. First, we could not utilise the large data sets because of the need for more data to explore the relationship between how much data each of these companies collects and how they use it. This is because of the need for more data unavailable in the databases to connect the volume of data and revenue. Second, the services and products of the FAANG companies vary with each other. For instance, manufacturing/hardware plays a more prominent role in Apple than on Facebook (meta). To sum up, with Flonk’s (2021) comment, surveillance capitalism is thought-provoking and serves as food for thought for generations, whether scholars, policymakers, or users. Here in this study, we find that the financial performance of FAANG companies reflects the use of data as their major factor of production, which remain hidden in their disclosures. We foresee the future of data-driven companies relying entirely on the prospects of big data, thus instigating the need to materialise it in its financial statements.

References


**Figures**

![Data Governance Models](image-url)

*Figure 1*

*Data-governance models*
Figure 2

Comparative Performance of FAANG in the S&P 500 indices.

Note: The diagram shows the comparative performance of FAANG and S&P 500. It also offers the exponential individual performance of Facebook, Amazon, Apple, Netflix, and Google in the S&P 500.

Figure 3


Note: Market capitalisation, ROE, ROA, and EPS capture the effect of surveillance capitalism on financial performance.
Figure 4

SWOT Analysis of FAANG Business

Note: A SWOT based on the authors’ readings and previous literature observations using mind space. The SWOT has been done using the reflections of past literature and reports of FAANG companies.