

**For Information Purposes Only**  
**Meta Platforms, Inc. (formerly “Facebook”)**

	Total Returns			Annualized Returns		
	Meta	S&P 500	Nasdaq	Meta	S&P 500	Nasdaq
2-Year	52%	51%	51%	23%	23%	23%
3-Year	112%	75%	90%	28%	21%	24%
5-Year	286%	103%	132%	31%	15%	18%
Lifetime	1,145%	438%	619%	23%	15%	18%

Notes:

1. Return data from FactSet.
2. Total returns include dividends reinvested.
3. The start date for the return data above is 5/18/2012, which was the day of Meta’s IPO. It has never done a stock-split since IPO.
4. Lifetime end date is as of 7/31/2024.

**Facebook Private Market Valuation vs Market Cap with Dividends as of 7/31/2024**

	Valuation (\$ Million) <sup>1</sup>	MOM	IRR
<b>August 2004 (Angel)</b>	\$5	245,360x	86%
<b>April 2005</b>	\$88	13,746x	64%
<b>April 2006</b>	\$500	2,405x	53%
<b>October 2007</b>	\$1,500	802x	49%
<b>May 2009</b>	\$1,000	1,203x	60%
<b>January 2011</b>	\$5,000	241x	50%
<b>March 2011</b>	\$6,500	185x	48%
<b>May 2012 (IPO)</b>	\$107,122	11x	22%
<b>July 2024</b>	\$1,202,744	-	-

Notes:

1. Money-on-money return is calculated as the market capitalization on July 31<sup>st</sup>, 2024 divided by previous valuations.
2. The IRRs are estimated assuming investors invested and held Meta from the time indicated to July 31<sup>st</sup>, 2024.
3. As of 7/31/2024, Meta’s closing market capitalization was \$1.20 trillion.<sup>2</sup>
4. Due to limited disclosure on the private market deals, the pre-IPO valuations of Meta are derived from news sources, which might not be reliable.
5. In August 2004, Peter Thiel made a \$500,000 angel investment in Facebook for a 10.2% stake in the company and joined Facebook’s board.
6. In April 2005, Accel Partners paid \$12.7 million for a 15 percent stake.
7. In April 2006, investors including Accel, Thiel, Greylock Partners and Meritech raised \$27.5 million, valuing Facebook at \$500 million.
8. In October 2007, Microsoft invested \$240 million in Facebook for a 1.6% stake.
9. In May 2009, Digital Sky Technologies (DST) invested \$200 million for a 2% stake, giving Facebook a valuation of \$10 billion. Yuri Milner from DST stated that they did not value the company based on a P/E basis but rather a long-term curve based on their experience and unique perspective, which he considered different from other investors.<sup>3</sup> Further details of his thought process were not disclosed but he was confident with a \$10 billion valuation at the time of investment in 2009 given Facebook was growing revenue over 70% year-over-year, seeing EBITDA profitable for five quarters, and expected to generate positive cashflow in 2010.
10. In January 2011, Goldman Sachs and DST invested \$500 million in Facebook, valuing the company at \$50 billion.
11. In March 2011, General Atlantic purchased shares from former Facebook employees for a 0.1% stake, valuing the company at \$65 billion.

<sup>1</sup> Estimated valuations from 2005 to 2011 are derived from news. Tracking Facebook’s Valuation.

<https://archive.nytimes.com/dealbook.nytimes.com/2012/02/01/tracking-facebooks-valuation/>; Timeline: Where Facebook Got Its Funding. <https://fortune.com/2011/01/11/timeline-where-facebook-got-its-funding/>; Peter Thiel Sells Most of Remaining Facebook Stake. <https://www.dailymail.co.uk/sciencetech/article-5108547/Peter-Thiel-sells-remaining-Facebook-stake.html>; Valuation of July 2024 ends on 7/31/2024, derived from FactSet.

<sup>2</sup> FactSet.

<sup>3</sup> Facebook Interview Yuri Milner. <https://www.youtube.com/watch?v=FKtJK6PJyJw>

## Mental Model Summary Derived from Meta

1. Facebook's user engagement has been high and increasing. In 2012, the global engagement rate was approximately 59%, meaning 59% of monthly active users use Facebook on a daily basis vs. high 40s% for Twitter. Over the years, this figure has grown steadily, reaching 69% by 2023.

Regionally, the U.S. and Canada stand out as the most engaged markets, with the engagement rate increasing from 70% in 2012 to 75% in 2023, reflecting a particularly high level of daily activity among users. Europe follows a similar pattern, though with slightly lower engagement levels, while the Asia-Pacific, Rest of World, and other regions have shown more gradual but consistent increases over the same period. This trend coincides with the general availability of internet to different regions in the world.<sup>4</sup>

Limited public information shows user engagement at Facebook would be high among social media platforms, driven by activities such as sharing photos, liking or commenting on friends' activities, chatting through messages, etc. For example, in Q3 2014, Daily Active Users-to-Monthly Active Users ratio (DAU/MAU) of Twitter, one of Facebook's widely recognized competitors, was in the low 50% range in its top 5 markets. For its top 10 markets, this figure was slightly lower, and for the top 20 markets, which make up 80% of Twitter's user base, it was in the high 40% range.<sup>5</sup> By 2019, Twitter had a DAU/MAU of 39%.<sup>6</sup>

**The “Like” button, as well as other reaction buttons, allows users to express joy or agreement with photos, notes, and other items shared by their friends on the platform. The “Like” feature became an integral part of the Facebook experience, enabling users to show that they have seen their friends' posts and could relate with them without needing to leave a comment.** In addition, Facebook's social plugins allow users to see what their friends like on third-party websites and share content to Facebook with one click.<sup>7</sup> A simple "Like" signals interest, shares it with friends, and helps Facebook's algorithm recommend similar content, boosting engagement. Facebook Pages, used by celebrities, brands, and businesses to connect with users, have played a key role in its growth,<sup>8</sup> as exemplified by Michael Jackson's Page growing from 7 million followers in 2009 to over 69 million by August 2024.<sup>9</sup>

The company developed a complex algorithm that factors in the number of reactions a post receives, influencing its prominence in a user's feed.<sup>10</sup> For example, posts that receive many likes are more likely to appear higher in a user's feed.

2. Facebook had already established itself as the largest social network platform at the time of IPO in terms of active users, 10x+ larger than its closest competitors (Friendster, Myspace, etc.), with authentic real user identities. At the time of its IPO, Meta had 901 million monthly active users (MAUs),<sup>11</sup> representing a CAGR of approximately 155% from 1 million MAUs in 2004, the first year it was launched. By the end of 2023, the company had reached 3.1 billion MAUs,<sup>12</sup> marking an 11% CAGR since the IPO and a 53% CAGR since 2004.

In 2023, Meta's total monthly users of its Family of Apps, including Facebook, Instagram, Messenger, and WhatsApp, reached 3.98 billion, with DAU/MAU ratio of 80%, indicating highly engaging users on a daily basis.

Friendster, a pioneer in social media platform, peaked at 115 million users in 2011, primarily in Asia, compared to Facebook's 845 million users in 2011. However, the company was sold to MOL Global, one of Asia's largest internet companies, in 2009, and ultimately shut down in 2015.<sup>13</sup> Friendster's focus on rapid expansion and external

<sup>4</sup> Individuals using the Internet (% of population) - United States, World, Canada, European Union. World Bank.

<https://data.worldbank.org/indicator/IT.NET.USER.ZS?end=2021&locations=US-1W-CA-EU&start=2004>

<sup>5</sup> Twitter Q3 2014 Earnings Call. 10/27/2014.

<sup>6</sup> Twitter Q4 2018 Earnings. 2/7/2019.

<sup>7</sup> Facebook Prospectus 2012.

<sup>8</sup> Michael Jackson Is Facebook's Most Popular. CNN.

<https://edition.cnn.com/2009/TECH/07/07/michael.jackson.popular.facebook/index.html>

<sup>9</sup> Michael Jackson Facebook Page. [https://www.facebook.com/michaeljackson?locale=en\\_GB](https://www.facebook.com/michaeljackson?locale=en_GB)

<sup>10</sup> Facebook Adding 'Reactions' Buttons to Its Response Options. <https://www.registercitizen.com/news/article/Facebook-adding-Reactions-buttons-to-its-11978720.php>

<sup>11</sup> As of 3/31/2012. Facebook Prospectus 2012.

<sup>12</sup> Meta Annual Report 2023.

<sup>13</sup> Why Facebook Triumphed Over All Other Social Networks. <https://www.forbes.com/sites/gilpress/2018/04/08/why-facebook-triumphed-over-all-other-social-networks/>

competition, rather than addressing the platform's core issues, such as user experience, led to the company's downfall.<sup>14</sup>

In 2011, News Corp sold MySpace, another pioneer in social media platform and Facebook's competitor at early stage, to Specific Media for a rumored \$35 million, a fraction of the \$580 million paid in 2005.<sup>15</sup> By February 2011, MySpace's user base had dwindled to 63 million, losing 50 million users in just a year.<sup>16</sup> Meanwhile, Facebook had grown to over 600 million users by 2010. MySpace's failure was primarily due to its loss of focus on user experience and content, a lack of support from its parent company, misaligned interests with the parent company, and an unstable management team.

Unlike MySpace, Facebook adopts an open architecture for building its platform. **While Facebook focused on building its platform and allowing outside developers to create new applications, MySpace attempted to do everything in-house, from instant messaging and classifieds to video and music players, and even virtual karaoke.** Chris DeWolfe, MySpace's co-founder, indicates that, although some of these initiatives had real business potential, the lack of focus and resources led to buggy products that made the site slow and difficult to navigate. A former MySpace employee noted that testing, measuring, and iterating was never part of the company's culture, resulting in a poor user experience.<sup>17</sup> A former CEO of Friendster also stated that many features that MySpace developed were not necessary.<sup>18</sup>

**Facebook's exponential growth in user base is primarily as a result of strong network effects.** Some economists and researchers also have shown that digital platforms such as Facebook primarily benefit from direct network effects, **where the value of the service increases as more users join.** **In the context of social media, this means that the more friends you have on Facebook, the more likely you are to join as well as to attract additional friends through your existing connections.**<sup>19</sup> Moreover, Facebook's real-name policy adds an extra layer of trust, ensuring that users can be confident that the people they interact with within their network are genuine and authentic.<sup>20</sup>

**As Facebook's user base expands, the network effects tend to intensify, enhancing the platform's efficiency and service level as more users join. The interesting content generated by both users and developers, at theoretically little cost to the company, further drives its growth. Facebook then monetizes these interactions by delivering targeted advertising and collecting fees.**

Scholars also found that many technology industries exhibit winner-take-all characteristics, including social media companies.<sup>21</sup> **As the network of Facebook continues to grow, the network effect is potentially reinforced by a few factors and potentially leads to a winner-take-all situation.** First, the more people use it, the stronger the brand is going to be as it widely spreads across the world and becomes a habit for many users. Second, because of its popularity, many Facebook users already have many connections attached to their Facebook accounts such as real-life friends and new acquaintances, family members and colleagues, organizations they belong to, and third-party accounts such as news sources and music playlists, all discourage switching.<sup>22</sup> In addition, in order to switch to a new social platform to replace Facebook, either a user needs to persuade many of his friends and colleagues to switch with him, or many of his friends would need to have already switched to a new platform.

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<sup>14</sup> How to Kill a Great Idea. <https://smartcomputing123.wordpress.com/2013/01/09/how-to-kill-a-great-idea/>

<sup>15</sup> News Corp. sells Myspace to Specific Media.

[https://money.cnn.com/2011/06/29/technology/myspace\\_layoffs/index.htm?hpt=te\\_bn2](https://money.cnn.com/2011/06/29/technology/myspace_layoffs/index.htm?hpt=te_bn2)

<sup>16</sup> Myspace Loses Millions of Users in A Few Weeks. BBC. <https://www.bbc.com/news/newsbeat-12862139>

<sup>17</sup> The Rise and Inglorious Fall of Myspace. Bloomberg.

<https://web.archive.org/web/20191202173130/https://www.bloomberg.com/news/articles/2011-06-22/the-rise-and-inglorious-fall-of-myspace>

<sup>18</sup> The Rise and Inglorious Fall of Myspace. Bloomberg.

<https://web.archive.org/web/20191202173130/https://www.bloomberg.com/news/articles/2011-06-22/the-rise-and-inglorious-fall-of-myspace>

<sup>19</sup> What Are Network Effects? Harvard Business School. <https://online.hbs.edu/blog/post/what-are-network-effects>

<sup>20</sup> Facebook - Anonymity On The Internet Has To Go Away. CBS News. <https://www.cbsnews.com/news/facebook-anonymity-on-the-internet-has-to-go-away/>

<sup>21</sup> Digital Dominance: The Power of Google, Amazon, Facebook, and Apple. Martin Moore and Damian Tambini.

<sup>22</sup> Why Tech Markets Are Winner-Take-All. <https://blogs.lse.ac.uk/medialse/2018/06/14/why-tech-markets-are-winner-take-all/>

Furthermore, as Facebook continued to grow, many third-party websites began allowing users to sign in using their Facebook accounts, eliminating the need to create and remember different usernames and passwords for each site.<sup>23</sup> Facebook users can log in to countless other websites and applications, such as The Wall Street Journal, Spotify, and Yelp, as well as other popular websites that people browse regularly, using their Facebook accounts. This arrangement is mutually beneficial such that third-party sites simplify their user onboarding process by reducing the effort of users entering usernames, passwords, and other personal information, while Facebook embeds itself throughout the broader Internet ecosystem, expanding its influence and reach.

3. **Avoiding Facebook's tracking is nearly impossible, even for those who do not use the platform.<sup>24</sup> Facebook collects data from both users and non-users through third-party apps and websites that use its advertising pixel or social plugins. This data collection occurs regardless of whether someone is a registered user of Facebook.** For non-users who visit sites with Facebook plugins, Facebook cannot monetize through targeted ads but may still attempt to reach them with its own ads and make them become Facebook users. For Facebook users who never post on the platform, Facebook can still profile them based on their browsing history, IP addresses, browser type, and device software. **This data is used to tailor content and ads to their preferences. For example, if a user visits many sports websites that use Facebook services, they might see sports-related content in their News Feed, even if they never post about sports.<sup>25</sup>**

The immense volume of data generated by these users is an invaluable asset, providing the company with deep analytical insights into user demographics, social networks, political stances, life events, preferences in food, hobbies, entertainment, and the digital devices they use.<sup>26</sup> Facebook uses the data to fine-tune its algorithms and better serve users according to their preferences.

As users engage more with Meta's services, the company's understanding of their profiles deepens, enabling it to offer more effective advertising services to marketers. Meta reinvests the revenue generated from these ads into hiring talent and expanding data centers, further enhancing its algorithms. This cycle creates a positive feedback loop: better algorithms lead to more engaging content, which attracts more user interaction, driving further data collection and refinement, eventually turning into advertising revenue.

4. **Meta's advertising business depends heavily on selling advertising services to businesses and advertisers who target Facebook users based on detailed demographic and profile data. In 2011, 85% of the company's revenue came from advertising with a significantly large total addressable market.** By 2023, advertising revenue accounted for 98% of total revenue.

**Facebook's global market share at the end of 2010 was approximately 0.4% of the overall market and 2.9% of the online advertising segment.<sup>27</sup> Global advertising was expected to grow at a 5% CAGR by 2014, with the internet channel expected to grow at a 15% CAGR, significantly faster than the overall market, potentially benefiting Facebook as a digital advertiser.**

In addition, since Facebook was founded, the global population using the internet has grown rapidly. According to data from the World Bank and the International Telecommunication Union (ITU), the world's population increased from nearly 6.5 billion in 2004 to 8.0 billion in 2023,<sup>28</sup> reflecting a 1% CAGR. In contrast, the number of people using the internet grew significantly from 0.9 billion to 5.4 billion<sup>29</sup> over the same period, representing a 10% CAGR. During this

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<sup>23</sup> Facebook Prospectus 2012.

<sup>24</sup> This Is How Facebook Collects Data on You Even If You Don't Have An Account.

<https://www.vox.com/2018/4/20/17254312/facebook-shadow-profiles-data-collection-non-users-mark-zuckerberg>. Facebook Collects Data Even When You're Not on Facebook. CNBC. <https://www.cnbc.com/2018/04/16/facebook-collects-data-even-when-youre-not-on-facebook.html>

<sup>25</sup> Facebook Collects Data Even When You're Not on Facebook. CNBC. <https://www.cnbc.com/2018/04/16/facebook-collects-data-even-when-youre-not-on-facebook.html>

<sup>26</sup> Facebook Algorithms and Personal Data. Pew Research Center. <https://www.pewresearch.org/internet/2019/01/16/facebook-algorithms-and-personal-data/>

<sup>27</sup> Quadrennial Events to Help Ad Market Grow in 2012 Despite Economic Troubles.

<https://zenithoptimedia.blogspot.com/2011/12/quadrennial-events-to-help-ad-market.html>

<sup>28</sup> World Population. World Bank Group.

<https://data.worldbank.org/indicator/SP.POP.TOTL?end=2023&locations=1W&start=2000&view=chart>

<sup>29</sup> Individuals Using the Internet (% of Population). World Bank.

[https://data.worldbank.org/indicator/IT.NET.USER.ZS?end=2022&most\\_recent\\_value\\_desc=true&start=2000](https://data.worldbank.org/indicator/IT.NET.USER.ZS?end=2022&most_recent_value_desc=true&start=2000); World Population Using Internet Facts and Figures 2023. ITU. <https://www.itu.int/itu-d/reports/statistics/2023/10/10/ff23-internet-use/>

time, Facebook's monthly active users grew from 1 million in 2004 to nearly 3.1 billion in 2023, increasing its penetration from nearly 0% to 57% of the global internet-using population.

Advertisers pay Meta based on the number of impressions or user actions, such as clicks, that their ads generate.<sup>30</sup> Facebook's user base has grown significantly, from over 900 million monthly active users (MAUs) at the time of its IPO in 2012 to over 3 billion in 2023. Engagement has also increased, with 69% of monthly active users logging in daily in 2023, up from 59% in 2012. As Facebook's user base expands, the network effects tend to intensify, enhancing the platform's efficiency and service level as more users join. The interesting content generated by both users and developers, at theoretically little cost to the company, further drives its growth. Facebook then monetizes these interactions by delivering targeted advertising and collecting fees. This model is highly scalable, with costs remaining relatively low, primarily involving the expansion of data centers and servers.<sup>31</sup> At the time of IPO, Facebook's ROIC and ROCE were 53% and 66%, respectively, significantly higher than U.S. companies that typically have a near 10% ROIC over the long term.<sup>32</sup> Furthermore, continuous research and development investments are crucial for fine-tuning algorithms to generate engaging content that attracts individual users and better targets them for advertising.

Advertisers can target specific demographics based on the massive data Facebook collects, including age, location, gender, education, work history, and interests. This capability allows advertisers to reach highly relevant audiences, from millions of users for global brands to just hundreds for local businesses. For example, Procter & Gamble's advertising campaign for Secret deodorant on Facebook led to a 9% increase in U.S. sales within 26 weeks. Due to the authentic identities of Facebook users and the real interests they share, the platform has achieved higher accuracy rates in ad targeting compared to the industry average. A Nielsen report in 2011 highlighted that Facebook achieved 95% accuracy for broadly targeted campaigns and 90% for narrowly targeted ones, compared to industry averages of 72% and 35%, respectively.<sup>33</sup>

The verification feature on Facebook Pages adds credibility to high-profile accounts, potentially enhancing the trustworthiness of the account pages, especially for public figures such as elite athletes. As of August 2024, Cristiano Ronaldo's Page boasts over 170 million followers. Ronaldo's Facebook Page was created in 2009, and in 2014, he became the first athlete to reach 100 million fans.<sup>34</sup> During this period, his posts received an estimated 232 million Likes and nearly 10 million comments. Such influence not only attracts new users but also offers immense commercial value. For example, in 2016, Nike signed a \$1 billion lifetime deal with Ronaldo due to his substantial social media influence.<sup>35</sup> Forbes, citing a third-party analytics platform in sports sponsorship in social and digital media, estimated that Ronaldo's social media presence, consisting 262 million fans, including 120 million followers on Facebook and 92 million from Instagram, was worth \$474 million in media value for Nike in 2016 alone.<sup>36</sup> Brands such as Nike and Adidas leverage this popularity by purchasing Facebook ads to target audiences with shared interests.

At the time of IPO, Ben & Jerry's, a well-known American company that manufactures ice cream, stated that it had 3.4 million fans on its Facebook Page had 244 million friends in their networks, significantly helping the company to engage in a large-scale conversation and get feedback.<sup>37</sup> In addition, every dollar spent on Facebook returned three dollars in incremental sales.<sup>38</sup>

Facebook is also advantageous to advertisers compared to traditional media channels such as TV. During 2011 and 2012, a 30-second TV commercial targeting an audience aged 18 and older during prime time in the U.S. had an

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<sup>30</sup> Meta Annual Report 2023.

<sup>31</sup> Digital Dominance: The Power of Google, Amazon, Facebook, and Apple. Martin Moore and Damian Tambini.

<sup>32</sup> A long-term look at ROIC. McKinsey. <https://www.mckinsey.com/capabilities/strategy-and-corporate-finance/our-insights/a-long-term-look-at-roic>

<sup>33</sup> Facebook Prospectus 2012.

<sup>34</sup> Cristiano Ronaldo Is First Athlete With 100 Million Facebook Fans.

<https://www.forbes.com/sites/kurtbadenhausen/2014/10/14/cristiano-ronaldo-is-first-athlete-with-100-million-facebook-fans/>

<sup>35</sup> Ronaldo's \$1 Billion Nike Deal Could Be The Future of Social Media Marketing. <https://www.businessinsider.com/ronaldos-1-billion-nike-deal-could-be-the-future-of-social-media-marketing-2017-3>

<sup>36</sup> Ronaldo's \$1 Billion Nike Deal Could Be The Future of Social Media Marketing. <https://www.businessinsider.com/ronaldos-1-billion-nike-deal-could-be-the-future-of-social-media-marketing-2017-3>

<sup>37</sup> Facebook IPO Roadshow Video. May 2012. <https://www.youtube.com/watch?v=wA81tRwvoPs&t=1006s>

<sup>38</sup> Facebook IPO Roadshow Video. May 2012. <https://www.youtube.com/watch?v=wA81tRwvoPs&t=1006s>

average cost per thousand impressions (CPM) of \$19.48 for broadcast TV and \$10.61 for cable TV<sup>39</sup>, nearly 65 times and 35 times, respectively, that of Facebook's CPM. Advertisements on Facebook can theoretically remain on the screen for an extended period, allowing the target audience to view them in detail if they desire, whereas on TV, viewers, either targeted or not, might miss the advertisement and cannot go back to it, even if they want to, if they do not pay attention.

**5. Usage of social media is addictive and induces negative mental health issues from addiction and social comparison.**

Researchers have found that social media users, particularly teenagers and young adults, may exhibit addiction-like behaviors similar to those seen in substance abuse.<sup>40</sup> These users often experience psychological and physical symptoms due to excessive internet, gaming, and social networking use. Studies also indicate that the urge to stay updated on social networks is difficult to resist, with the craving intensifying the more one tries to resist it.<sup>41</sup>

Social media also encourages both upward and downward social comparisons, affecting self-perception. Upward comparisons, where individuals compare themselves to those they see as superior, can lower self-esteem, while downward comparisons, where they compare themselves to those they view as inferior, can boost self-esteem. Social media amplifies these comparisons due to its vast and curated content, making it difficult to avoid comparing oneself to others. On platforms such as Facebook, users may compare themselves based on likes or comments on posts, impacting their self-esteem either positively or negatively, whereas on Instagram, users might compare their body figures and lifestyles with other users.

**6. At the time of its IPO, Facebook had already begun monetizing its large user base by providing advertising services, with a \$4.84 run rate on ARPU.** From 2009 to 2023, Facebook's ARPU grew from \$3.08 to \$44.60, representing a 21% CAGR. During the same period, its monthly active users grew from 360 million to nearly 3.1 billion, a 17% CAGR. The difference in these CAGRs suggests that Facebook has been monetizing at a much faster pace than its user growth, potentially implying higher demand from advertisers. This could be attributed to Facebook's increasing sophistication in understanding its users, enabling it to provide advertisers with more accurate user profiles for targeted advertising.

**7. Founder-led, owner management team.** The management team of Facebook was expected to hold 26% of Class A shares and 61% of Class B shares, which have the same share count with different voting power. Class A shares were estimated to account for 30% of the company's total shares of common stock to be outstanding after IPO.

The IPO dramatically increased the wealth of Facebook's top executives. With Facebook's shares priced at \$38 each, Zuckerberg's stake in the company was projected to be worth over \$19 billion. Sheryl Sandberg, the company's then Chief Operating Officer, was expected to have a net worth of nearly \$1.6 billion.

**After the IPO, Zuckerberg was expected to have 57.5% of voting power, of which 31% from his own shares while the remaining 27.5% from certain shareholders such as the executive team through voting agreements.<sup>42</sup>**

**8. Facebook has strategically acquired other companies, such as Instagram and WhatsApp, to neutralize competition and integrate their products with Facebook's offerings.** Mark Zuckerberg believed that there were network effects around social products and only a limited number of social mechanics that could be invented. Once a specific social mechanic was established, it would be difficult for others to compete without offering something entirely different. He viewed such acquisitions as a way to buy Facebook time before any other company could achieve a similar scale.<sup>43</sup>

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<sup>39</sup> Average CPM for US Primetime TV Upfront Ads, Broadcast vs. Cable, 2008-2020. EMARKETER.

<https://www.emarketer.com/chart/230277/average-cpm-us-primetime-tv-upfront-ads-broadcast-vs-cable-2008-2020>

<sup>40</sup> Facebook Generation Suffer Information Withdrawal Syndrome.

<https://www.telegraph.co.uk/technology/news/8235302/Facebook-generation-suffer-information-withdrawal-syndrome.html>

<sup>41</sup> Facebook and Twitter More Addictive Than Tobacco and Alcohol.

<https://web.archive.org/web/20120202180847/http://www.telegraph.co.uk/health/healthnews/9054243/Facebook-and-Twitter-more-addictive-than-tobacco-and-alcohol.html>

<sup>42</sup> Facebook Prospectus 2012.

<sup>43</sup> Exhibit A – Facebook Documents, Online Platforms and Market Power. House Committee on the Judiciary. <https://democrats-judiciary.house.gov/online-platforms-and-market-power/>

At the time of IPO in 2012, Facebook had already initiated its acquisition of Instagram, with 27 million users and a dozen employees only two years since its founding, valuing approximately \$1 billion. This was Facebook's largest deal at the time of IPO, despite Instagram being only two years old and not generating any revenue.<sup>44</sup> At the time of acquisition, Facebook was the largest mobile app in the U.S. by share of time spent, accounting for 23% of the total time users spent on mobile apps, while Instagram, at that time, accounted for 3%, with no other apps coming close to these figures combined.<sup>45</sup>

Although at the time of acquisition Mark Zuckerberg stated that the acquisition was intended to complement Facebook by incorporating Instagram's features and learning from its experience to build similar capabilities for Facebook, as well as to help Instagram grow by leveraging Facebook's engineering resources and infrastructure,<sup>46</sup> in 2020, internal emails from Facebook disclosed by U.S. congress during an antitrust investigation revealed that Facebook's decision to acquire Instagram was indeed driven, in part, by a desire to fend off competition.<sup>47</sup>

In 2014, Facebook acquired WhatsApp for a total consideration of approximately \$19 billion.<sup>48</sup> Despite generating \$10.2 million in revenue in 2013, WhatsApp had a net loss of \$138.1 million.<sup>49</sup> Facebook's internal emails, disclosed during a congressional hearing in 2020, revealed that, Facebook saw WhatsApp's rapid growth as a result of its role as a Short Message Service (SMS) replacement and recognized that WhatsApp had a higher penetration rate among mobile users than Facebook.<sup>50</sup> Facebook believed that acquiring WhatsApp would help expand its global reach, particularly in emerging markets where WhatsApp was more popular than Facebook Messenger.<sup>51</sup>

9. **Valuation seems high at the time of IPO. Facebook was trading at 164x.** In a scenario analysis, we observe if at the time of the IPO, if someone believed that ARPU could grow at a 15% CAGR, similar to the expected growth on the global advertising expense, over the next 5 years while the MAUs could grow at a 10% CAGR, coupled with an expansion of the net margin to 25% by the end of year 5, the P/E ratio would drop to 30x driven off the resulting 40% CAGR on earnings.

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<sup>44</sup> Instagram Sells For \$1 Billion, Despite No Revenue. <https://www.npr.org/2012/04/10/150372288/instagram-sells-for-1-billion-despite-no-revenue>

<sup>45</sup> Facebook Vaults Ahead of Google Maps to Finish 2012 as #1 U.S. Mobile App. <https://www.comscore.com/Insights/Blog/Facebook-Vaults-Ahead-of-Google-Maps-to-Finish-2012-as-number-1-US-Mobile-App>

<sup>46</sup> Facebook to Acquire Instagram. <https://about.fb.com/news/2012/04/facebook-to-acquire-instagram/>

<sup>47</sup> Exhibit A – Facebook Documents, Online Platforms and Market Power. House Committee on the Judiciary. <https://democrats-judiciary.house.gov/online-platforms-and-market-power/>

<sup>48</sup> Facebook to Acquire WhatsApp. <https://investor.fb.com/investor-news/press-release-details/2014/Facebook-to-Acquire-WhatsApp/default.aspx>

<sup>49</sup> WhatsApp Financial Statements 2012 and 2013.

<sup>50</sup> Exhibit B – Facebook Documents, Online Platforms and Market Power. House Committee on the Judiciary. <https://democrats-judiciary.house.gov/online-platforms-and-market-power/>

<sup>51</sup> Document 324-2. FEDERAL TRADE COMMISSION v. META PLATFORMS, INC.

[https://www.courtlistener.com/docket/18735353/federal-trade-commission-v-facebook-inc/?filed\\_after=&filed\\_before=&entry\\_gte=&entry\\_lte=&order\\_by=desc#entry-324](https://www.courtlistener.com/docket/18735353/federal-trade-commission-v-facebook-inc/?filed_after=&filed_before=&entry_gte=&entry_lte=&order_by=desc#entry-324)

**Figure 1: Valuation Metrics**

Metric	Amount (\$ Million)	Multiple / Ratio Analysis
Market Cap	\$ 107,122	-
Enterprise Value	\$ 103,212	25.56x EV/Sales; 33.64x EV/Gross Profit
Cash	\$ 3,910	3.65% of Market Cap
LTD, STD, & Current Portion of LTD	\$ 0	-\$3,910M of Net Cash
-	-	-1.83X Net Debt/EBITDA
Working Capital (inc. Cash)	\$ 3,655	3.41% of Mkt Cap
Net Working Capital (ex Cash and STD)	\$ (255)	-0.24% of Mkt Cap
Total Equity Value	\$ 5,272	20.32x Price/Book Value
Tangible Book Value	\$ 5,083	21.07x Price/Tangible BV
Gross Profit	\$ 3,068	75.98% Gross Profit Margin
SG&A	\$ 835	20.68% SG&A/Revenue
R&D	\$ 484	11.99% R&D/Revenue
EBITDA	\$ 2,131	48.43x EV/EBITDA
Capex	\$ 906	84.25x EV/(EBITDA-CAPEX)
Shareholders Earnings	\$ 652	164.30x P/E
Levered FCF	\$ 516	207.60x Price/Levered FCF
Unlevered FCF	\$ 564	183.00x EV/Unlevered FCF
Owner's Earnings	\$ 102	1,050.21x Price/OE
-	-	1,011.88x EV/OE
ROIC	53.1%	-
ROCE (inc. intangible assets)	66.0%	-
1-Yr. Sales CAGR	88.0%	-
1-Yr. CAGR of Shareholders Earnings	79.6%	-
3-Yr. Sales CAGR	139.0%	-
3-Yr. CAGR of Shareholders Earnings	N/A	Net loss prior to 2010
Number of Monthly Active User (MAU)	901	As of March 2012
1-Yr. MAU CAGR	33%	680 million MAU in March 2011 <sup>52</sup>
3-Yr. MAU CAGR	66%	197 million MAU in March 2009
Number of Daily Active User (DAU)	526	As of March 2012
1-Yr. DAU CAGR	41%	372 million DAU in March 2011
3-Yr. DAU CAGR	79%	92 million DAU in March 2009
DAU/MAU	58%	55% in March 2011; 47% in March 2009

Notes:

1. Market capitalization at the time of IPO is calculated as the issuing price times fully diluted shares. Facebook's common stocks were issued at a price of \$38 per share.<sup>53</sup> The company expected the total number of Class A and Class B (equal shares with different voting power) common stock to be outstanding 2,138,085,037 shares. The company's shares could be potentially diluted with employee's options, equity plans, and common stock issuable upon completion of acquisition of Instagram, to a total of 2,818,994,047 shares.
2. EV = market cap on 5/18/2012 + STD (as of 03/31/2012) + LTD (as of 03/31/2012) – Cash (as of 03/31/2012). The company had no debt at the time of IPO.
3. Sales and profit data are last-twelve-month as of 3/31/2012.
4. Sales and Net Income CAGR is calculated from FY2009 to FY2011.
5. Facebook calculated its FCF as Operating Cash Flow – CAPX – Capital Lease Payment. The company considers capital lease an important part of property and equipment to support its business, regardless the financing method.<sup>54</sup>
6. Levered FCF is calculated as CFO-CAPX-Payment on Capital Lease. The company considers capital lease an important part of property and equipment to support its business, regardless the financing method.<sup>55</sup> Unlevered FCF is calculated as Levered FCF+Net Interest Expense.

<sup>52</sup> Facebook Prospectus 2012

<sup>53</sup> Facebook Announces Pricing of Initial Public Offering. <https://investor.fb.com/investor-news/press-release-details/2012/Facebook-Announces-Pricing-of-Initial-Public-Offering/default.aspx>

<sup>54</sup> Facebook Prospectus 2012.

<sup>55</sup> Facebook Prospectus 2012.

7. ROIC is calculated  $EBIT * (1 - \text{Effective Tax Rate})$  divided by  $\text{Total Asset} - \text{Cash} - \text{Non-interest Bearing Current Liabilities}$ . Capital lease is not considered an interest-bearing liability.
8. Components of ROCE are  $EBIT = \$1,749$ ; Goodwill impairment = SEK 0; Current Asset (ex. Cash) =  $\$4,694 - \$3,910 = \$784$ ; Current Liabilities (ex. STD) =  $\$1,039 - \$0 = \$1,039$ ; NFA =  $\$1,855$ ; Operating Leases =  $\$945$ ; Intangible Assets (ex. Goodwill) =  $\$107$ .
9. For ROCE, we included intangible assets (ex. goodwill) because, as a social media company, intangible assets such as patents and technology are vital to the business model. We also included operating leases, which are similar to capital leases, including offices and data center facilities that are essential to the company's operations.

## Company Overview

Meta Platforms, formerly known as Facebook, is a world-leading social media company headquartered in California. The company is renowned for its suite of social media platforms that connect billions of users around the world, including Facebook, Instagram, Messenger, and WhatsApp. Meta's core mission is to make the world more open and connected,<sup>56</sup> through the company's social media services that enable users to share experiences, stay connected with friends and family, discover new interests, and engage with businesses. Meta's business model is heavily reliant on advertising revenue generated from its Family of Apps and web, where businesses and advertisers can effectively reach and engage with their target audiences based on Meta's analytic data from billions of users. Despite the company's exploration of emerging technologies such as Virtual Reality and generative AI, its foundation remains deeply rooted in its successful and expansive social media ecosystem.

Mark Zuckerberg, along with his roommates,<sup>57</sup> launched thefacebook.com in February 2004 while he was an undergraduate at Harvard University, though he later dropped out to focus on the project. Even before attending Harvard in 2002, Zuckerberg was known as "a programming prodigy."<sup>58</sup> His interest in computer programming began at a young age, leading his parents to hire a software developer as his tutor when he was just eleven years old. Shortly after, Zuckerberg started taking a graduate-level computer course every Thursday night at nearby Mercy College.

Before creating Facebook, Zuckerberg had already developed a few social-networking websites during his time at Harvard. These included CourseMatch, which allowed students to list their classes, and FaceMash, a platform where users could rate people's attractiveness, a project he later described as a prank. Some facts were later fictionalized into Hollywood movies.<sup>59</sup>

After about a week of coding, Zuckerberg launched thefacebook.com, named after the student directory distributed at colleges commonly known as a "face book"<sup>60</sup> in the beginning of February 2004. The site quickly gained traction, with over 650 students registering within the first week.<sup>61</sup> Initially, the platform was designed as a directory to connect Harvard students, as Figure 2-1 and Figure 2-2 show, featuring extensive profile options, such as pictures and personal and academic information,<sup>62</sup> that allowed users to search for others in their courses and social organizations. Zuckerberg explained his motivation by saying, "everyone's been talking a lot about a universal face book within Harvard. I think it's kind of silly that it would take the University a couple of years to get around to it. I can do it better than they can, and I can do it in a week." And so, he did. In addition, the website initially restricted access only to individuals with a Harvard email address, requiring them to use their real names when uploading their pictures and personal information, which helped ensure the authenticity of users' identities.<sup>63</sup> Facebook has maintained its real-name policy since its inception, believing

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<sup>56</sup> Facebook Prospectus 2012.

<sup>57</sup> Timeline: Looking back at 20 years of Facebook and CEO Mark Zuckerberg. <https://abc7.com/facebook-20-year-anniversary-mark-zuckerberg-meta/14383883/>

<sup>58</sup> The Face of Facebook. <https://www.newyorker.com/magazine/2010/09/20/the-face-of-facebook>

<sup>59</sup> This Is The True Story of How Mark Zuckerberg Founded Facebook. <https://www.businessinsider.com/the-true-story-of-how-mark-zuckerberg-founded-facebook-2016-2>; Mark Zuckerberg Interview With Axel Springer CEO Mathias Döpfner. <https://www.businessinsider.com/mark-zuckerberg-interview-with-axel-springer-ceo-mathias-doepfner-2016-2>

<sup>60</sup> Facebook Turns 20 How The Social Media Giant Grew to 3 Billion Users. <https://www.aljazeera.com/news/2024/2/4/facebook-turns-20-how-the-social-media-giant-grew-to-3-billion-users>

<sup>61</sup> Hundreds Register for New Facebook Website. <https://www.thecrimson.com/article/2004/2/9/hundreds-register-for-new-facebook-website/>

<sup>62</sup> Hundreds Register for New Facebook Website. <https://www.thecrimson.com/article/2004/2/9/hundreds-register-for-new-facebook-website/>

<sup>63</sup> Hundreds Register for New Facebook Website. <https://www.thecrimson.com/article/2004/2/9/hundreds-register-for-new-facebook-website/>; The Only 8 Features Facebook Had When It Launched In 2004. <https://www.businessinsider.com/facebook-s-first-8-features-from-2004-2014-8>

that "people behave a lot better when they have their real names down."<sup>64</sup> As a result, Facebook gained so much rapid popularity that just four months after its launch, by June 2004, it was available to about 30 colleges with 150,000 users<sup>65</sup> such as Stanford, Columbia, and Yale.<sup>66</sup>

Figure 2-1: Facebook Interface in 2004<sup>67</sup>



<sup>64</sup> Facebook - Anonymity On The Internet Has To Go Away. CBS News. <https://www.cbsnews.com/news/facebook-anonymity-on-the-internet-has-to-go-away/>

<sup>65</sup> Case Study: Facebook – The First Ten Years. Harvard Business School.

<sup>66</sup> Timeline: Looking back at 20 years of Facebook and CEO Mark Zuckerberg. <https://abc7.com/facebook-20-year-anniversary-mark-zuckerberg-meta/14383883/>

<sup>67</sup> Facebook Turns 20 How The Social Media Giant Grew to 3 Billion Users. <https://www.aljazeera.com/news/2024/2/4/facebook-turns-20-how-the-social-media-giant-grew-to-3-billion-users>

Figure 2-2: Mark Zuckerberg's Profile in 2005<sup>68</sup>

Note:

1. Original image provided by Meta for Education. Picture quality is enhanced by the author. Some information is blurred on the original picture.

In addition to its extensive user profiles, Facebook was innovative at the time for allowing users to search for other students in their classes, not only to form study groups but also to potentially build friendships. As one user noted, "if you're in a class where you don't know anyone and want to ask somebody for help, this is a way to find out the names of people in that class."<sup>69</sup> The website also featured robust privacy options, with Mark Zuckerberg being mindful of the backlash over FaceMash, a website that Zuckerberg created at Harvard in 2003 that was shut down for violating student privacy by publicly sharing their pictures that were intended to be shared just with a few friends for advice.<sup>70</sup> These options allowed users to control who could view their information, such as restricting searches so that only friends or friends of friends could find them, thereby preserving privacy within a closed circle.

Zuckerberg eventually dropped out of Harvard in his sophomore year to continue developing Facebook, which soon expanded beyond the university setting. Initially, access was restricted to users with email addresses ending in ".edu," ".com," ".org," ".gov," or ".mil,"<sup>71</sup> creating value from a sense of scarcity as discussed in Robert Cialdini's *Influence*. However, since about one-third of Facebook's college users had already graduated and were connecting with people outside of their schools and workplaces, Zuckerberg decided to open Facebook to the public in September 2006, responding to increasing demand from millions outside the network.

By the time of its IPO on May 18, 2012, eight years after its initial launch, Facebook had become one of the world's leading social media platforms, generating nearly \$4 billion in revenue, with 56% coming from the U.S. and the rest from international markets.<sup>72</sup> Advertising accounted for nearly 85% of this revenue, with the remainder coming from payment

<sup>68</sup> Mark Zuckerberg Facebook Profile 2005. <https://www.facebook.com/photo?fbid=10155817410460272&set=a.344591650271>

<sup>69</sup> Hundreds Register for New Facebook Website. <https://www.thecrimson.com/article/2004/2/9/hundreds-register-for-new-facebook-website/>

<sup>70</sup> FaceMash Creator Survives Ad Board. <https://www.thecrimson.com/article/2003/11/19/facemash-creator-survives-ad-board-the/>

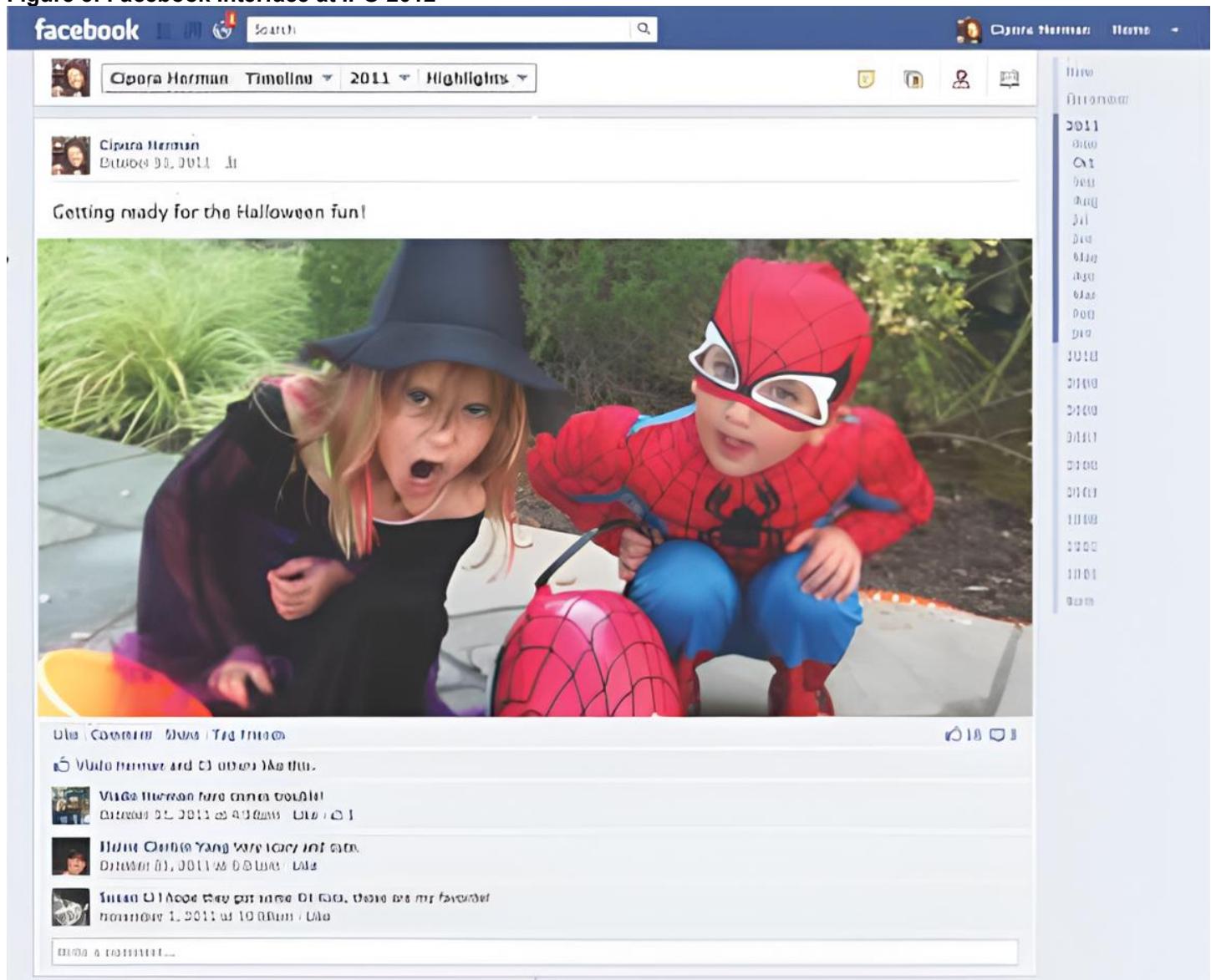
<sup>71</sup> Facebook Expansion Enables More People to Connect with Friends in a Trusted Environment.

<https://web.archive.org/web/20181226015312/https://newsroom.fb.com/news/2006/09/facebook-expansion-enables-more-people-to-connect-with-friends-in-a-trusted-environment/>

<sup>72</sup> Facebook Prospectus 2012.

processing and other sources. During an interview in 2016,<sup>73</sup> Mark Zuckerberg recalled that when he first launched Facebook, he did not think about building it into something big. Instead, he was just happy to see Facebook connect the Harvard community, imagining that someone else might connect the world, but not Facebook.

Figure 3: Facebook Interface at IPO 2012<sup>74</sup>



Note:

1. Original image provided in Facebook's IPO document. Picture quality is enhanced by the author. Some information is blurred on the original picture.

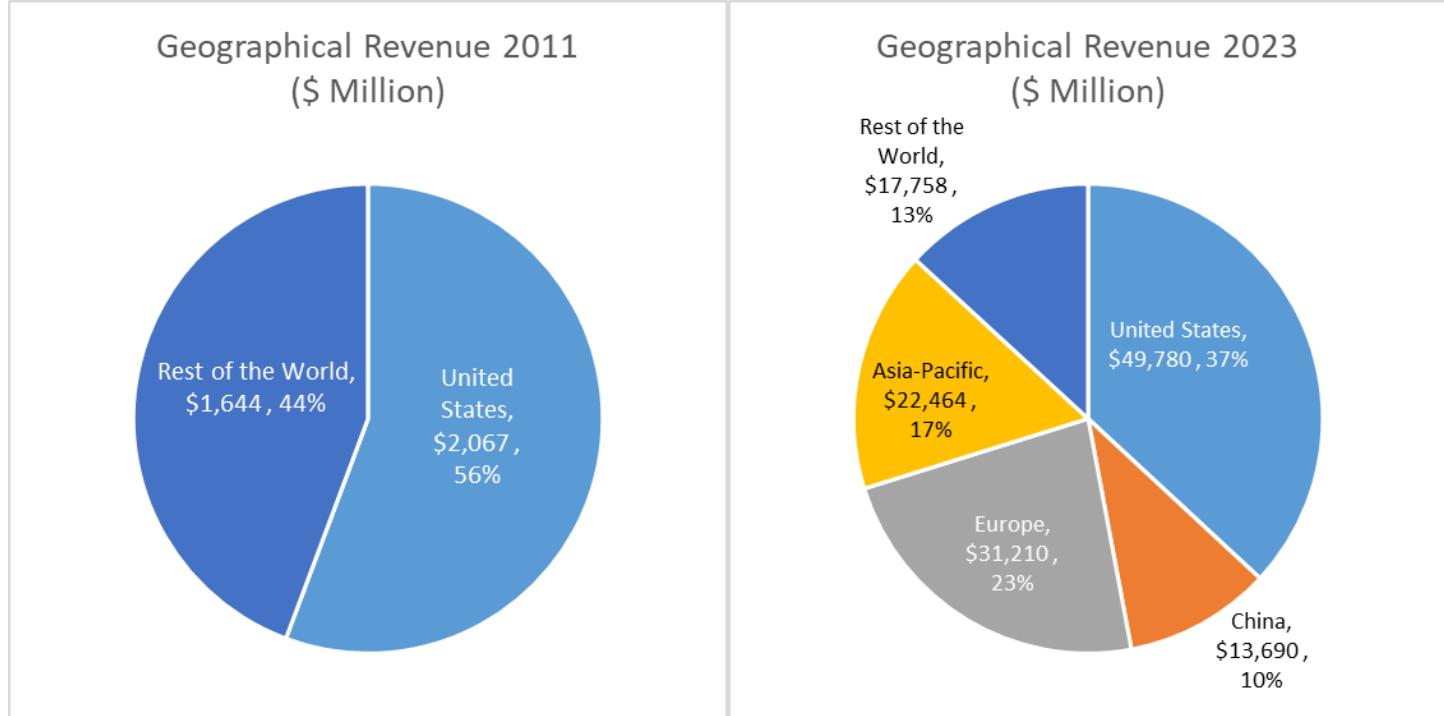
By the end of 2023, Meta, as the company was renamed in 2021, achieved nearly \$135 billion in revenue,<sup>75</sup> with 37% from the U.S. and nearly 98% of total revenue generated from advertising, as Figure 4 shows.

<sup>73</sup> Mark Zuckerberg Interview With Axel Springer CEO Mathias Döpfner. <https://www.businessinsider.com/mark-zuckerberg-interview-with-axel-springer-ceo-mathias-doepfner-2016-2>

<sup>74</sup> Facebook prospectus 2012.

<sup>75</sup> Meta Annual Report 2023.

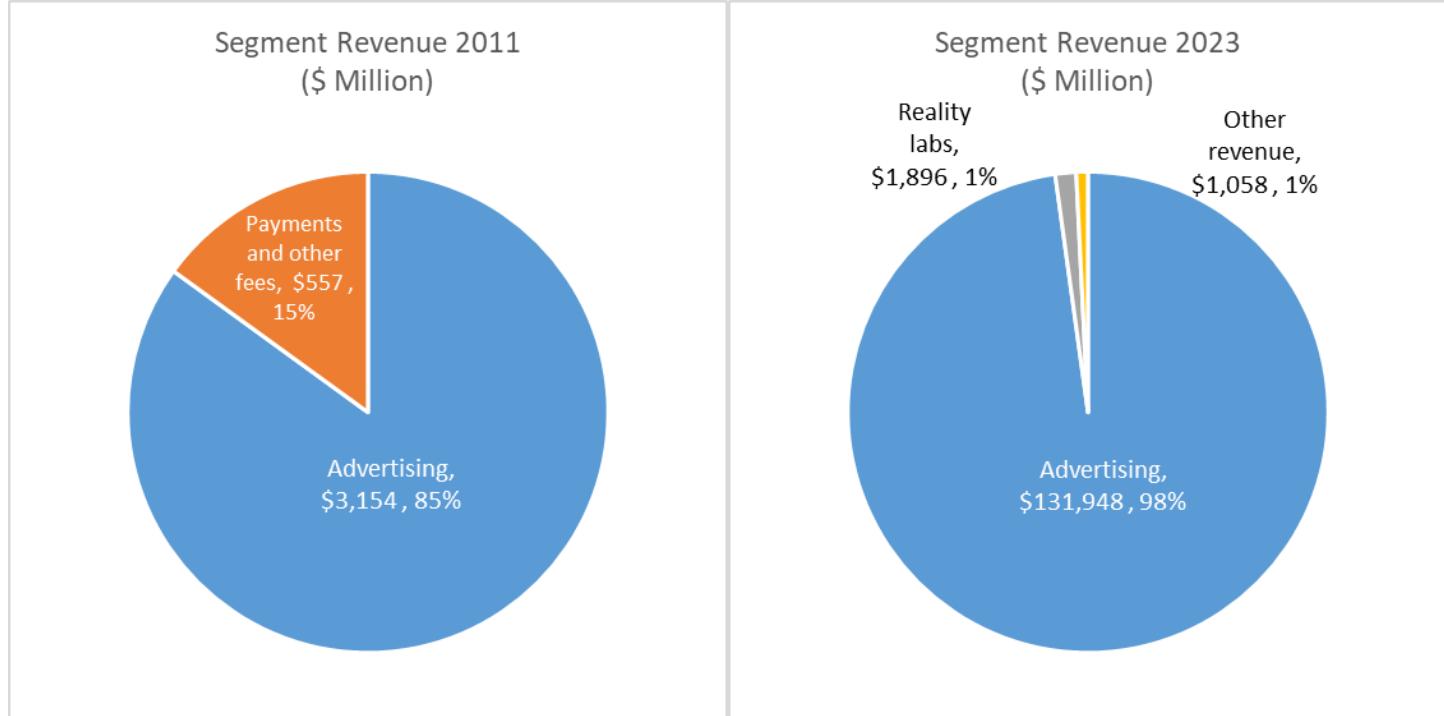
Figure 4-1: Meta Geographical Revenue 2011 vs. 2023



Note:

1. Most social networking services are not available in China due to internet censorship. China revenue comes from resellers serving advertisers based in China.<sup>76</sup>

Figure 4-2: Meta Segment Revenue 2011 vs. 2023



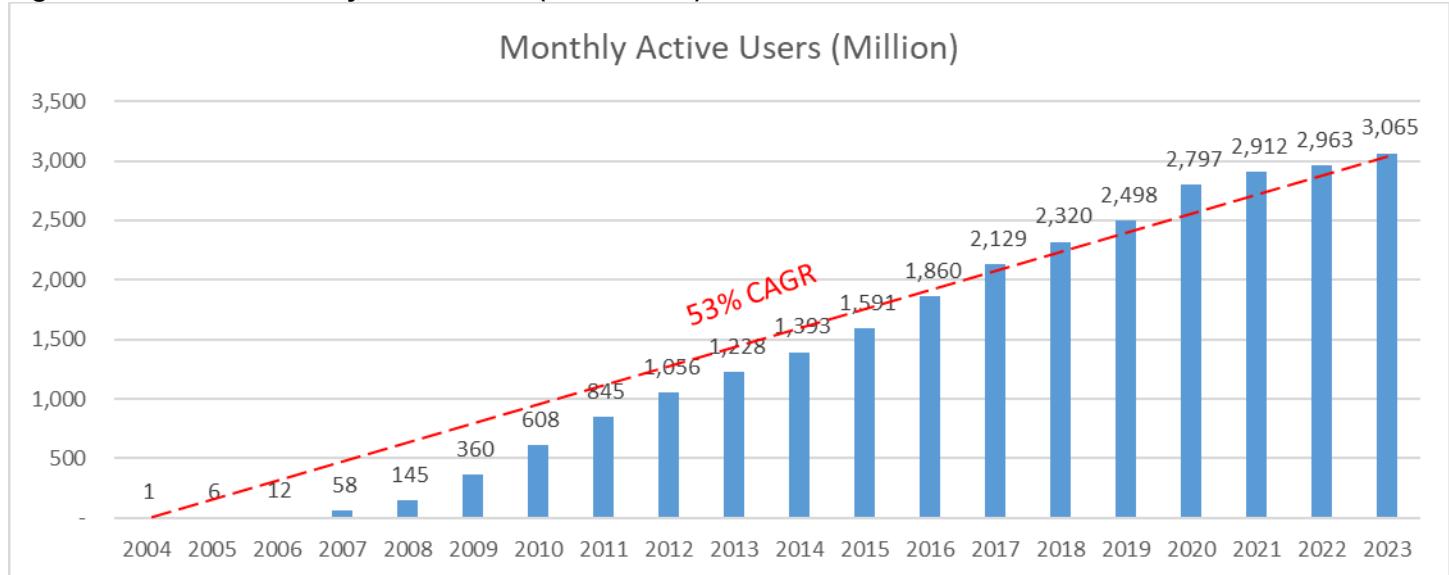
Meta generates its advertising revenue by displaying ads on its social media platforms, including both its website and apps. Advertisers pay for these ad placements either directly or through advertising agencies, which the company does not disclose a detailed breakdown for, based on the number of impressions delivered or the number of clicks by users.<sup>77</sup>

<sup>76</sup> Meta Annual Report 2023.

<sup>77</sup> Facebook Prospectus 2012.

Consequently, active users have always been the cornerstone of the company's growth. At the time of its IPO, Meta had 901 million monthly active users (MAUs),<sup>78</sup> representing a CAGR of approximately 155% from 1 million MAUs in 2004. By the end of 2023, the company had reached 3.1 billion MAUs,<sup>79</sup> marking an 11% CAGR since the IPO and a 53% CAGR since 2004.

**Figure 5: Facebook Monthly Active Users (2004 – 2023)**



Notes:

1. Meta defines a monthly active user as a registered Facebook user who logged in and visited Facebook through its website or a mobile device, or took an action to share content or activity with his or her Facebook friends or connections via a third-party website that is integrated with Facebook, in the last 30 days as of the date of measurement.
2. The company defines a daily active user as a registered Facebook user who logged in and visited Facebook through its website or a mobile device, or took an action to share content or activity with his or her Facebook friends or connections via a third-party website that is integrated with Facebook, on a given day.
3. Monthly active users (MAU) and daily active users (DAU) do not include users of Instagram or WhatsApp unless they would otherwise qualify as such users.<sup>80</sup>

In 2023, Facebook's user base far surpasses that of any other social platform in the world. Among the top five largest platforms, which include instant messaging apps and video streaming services, three belong to the Meta family: Facebook, Instagram, and WhatsApp.<sup>81</sup>

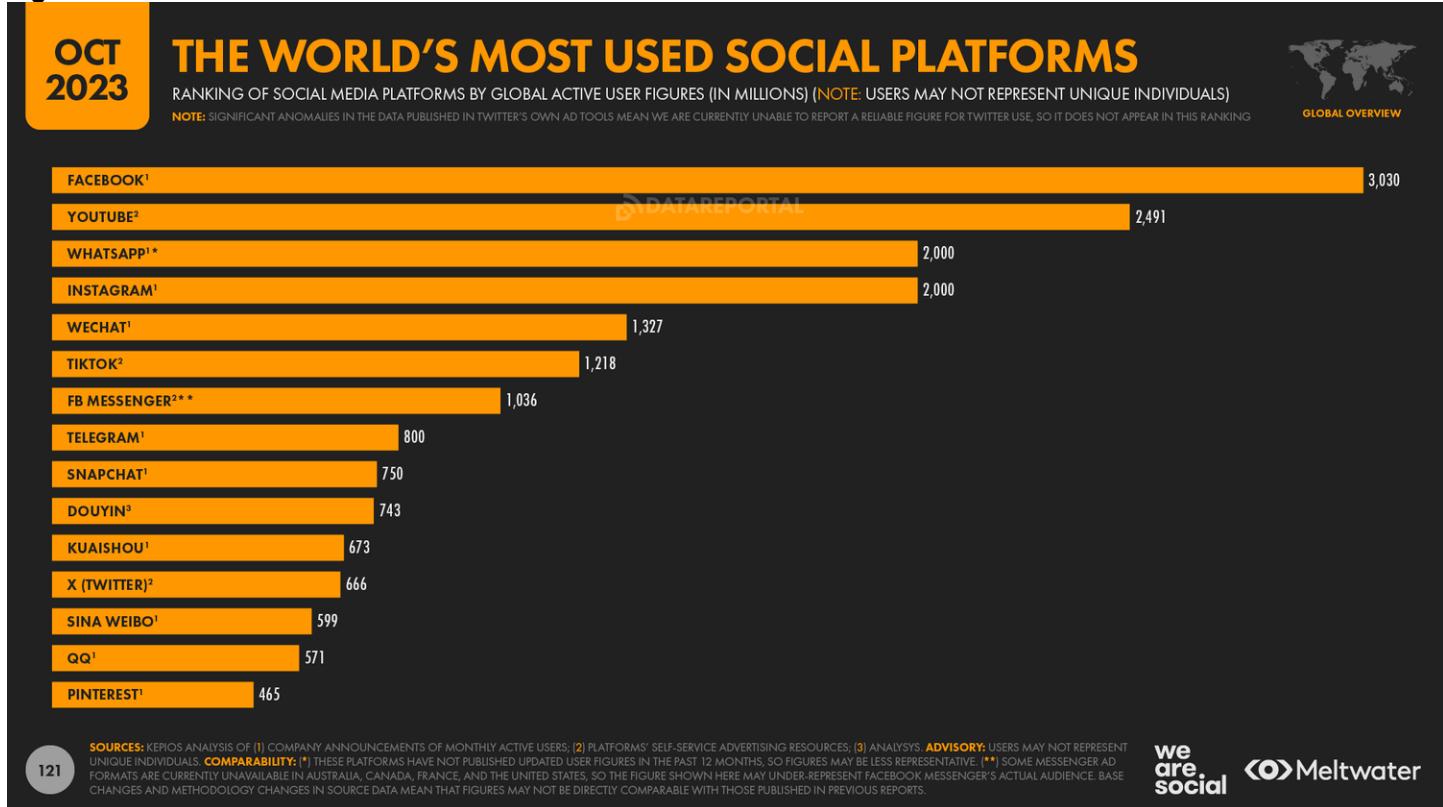
<sup>78</sup> As of 3/31/2012. Facebook Prospectus 2012.

<sup>79</sup> Meta Annual Report 2023.

<sup>80</sup> Facebook/Meta Annual Reports.

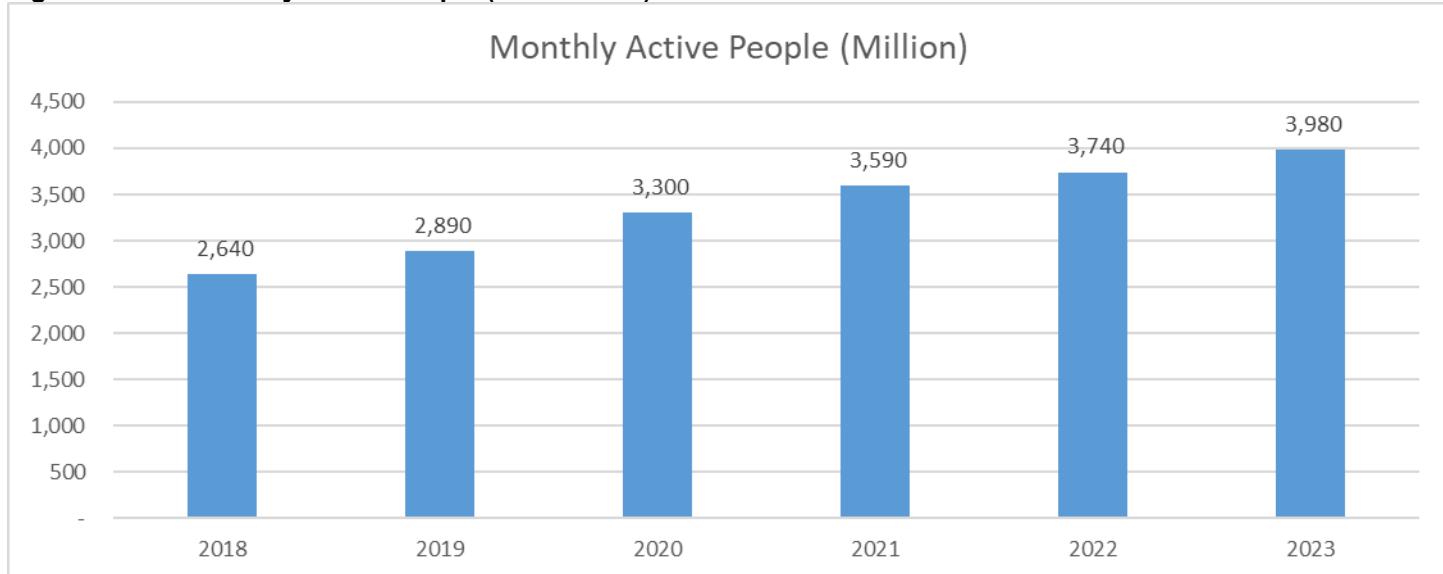
<sup>81</sup> Digital 2023 October Global Statshot Report. <https://datareportal.com/reports/digital-2023-october-global-statshot>

Figure 6: The World's Most Used Social Platforms



Meta's Monthly Active People (MAP) metric, which the company began reporting in 2019, reflects the broader user base across its Family of Apps, including Instagram, Messenger, and WhatsApp, in addition to Facebook. Between 2018 and 2023, MAP grew from 2.64 billion to 3.89 billion, representing a CAGR of 8.5%. In comparison, Facebook's Monthly Active Users (MAU) increased from 2.3 billion to 3.1 billion over the same period, with a CAGR of 5.7%. The difference between these two growth rates suggests that Meta's apps other than Facebook have been a bit more successful in attracting new users, although the company does not disclose the user overlap among its apps.

Figure 7: Meta Monthly Active People (2018 – 2023)

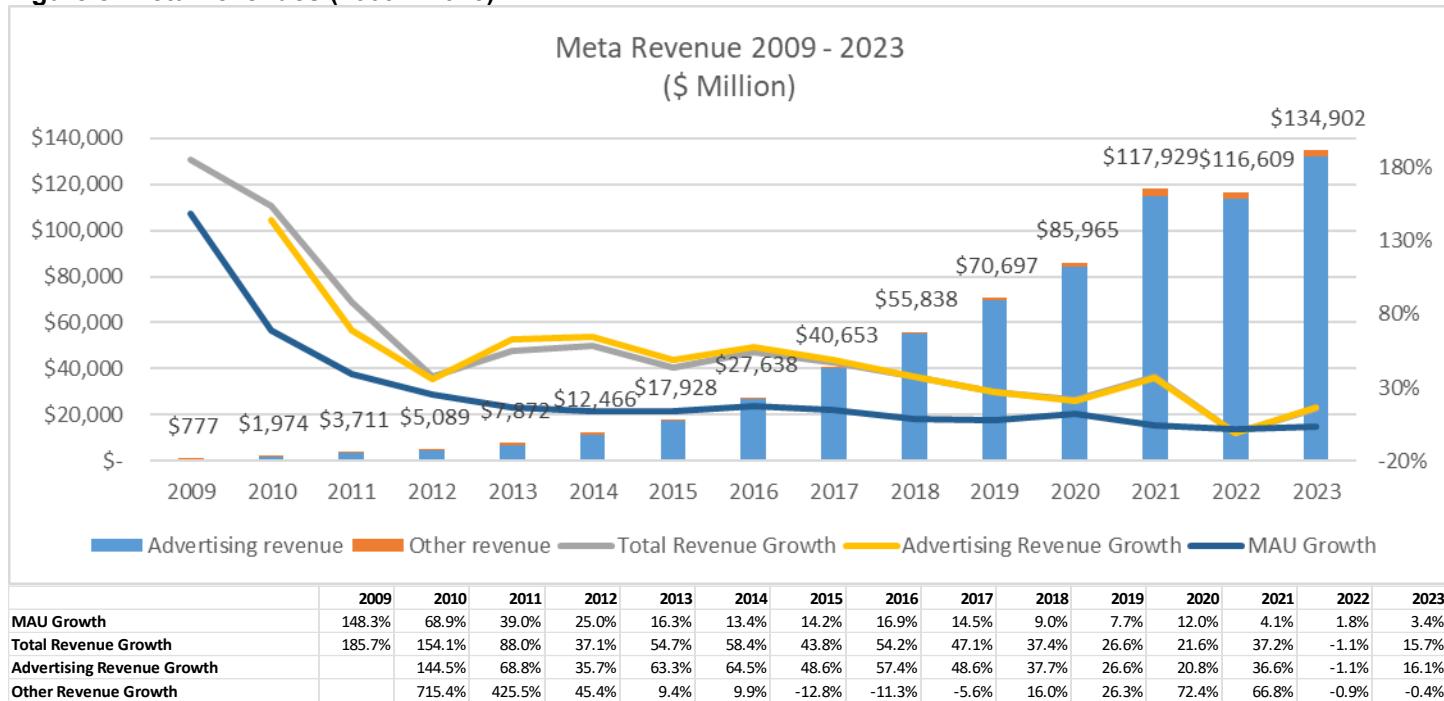


Notes:

1. Meta defines a monthly active person as a registered and logged-in user of one or more Meta's products such as Facebook, Instagram, Messenger, and/or WhatsApp who visited at least one of these products through a mobile device application or using a web or mobile browser in the last 30 days as of the date of measurement.
2. Meta began disclosing Monthly Active People in 2019.

Meta's business depends heavily, almost exclusively, on selling advertising services to businesses and advertisers who target Facebook users based on detailed demographic and profile data. Over the years, this approach has created a strong correlation between the company's revenue and the growth of its user base, as shown in Figure 8. As Meta's user base expands, particularly its monthly active users (MAU), the advertising revenue also tends to increase. This correlation highlights how crucial user growth and the size of its user base is for Meta's long term financial success. Although there have been fluctuations in both advertising revenue growth and MAU growth rates, the overall trend underscores the company's reliance on a growing user base to drive its revenue, especially through advertising. Other revenue sources remain relatively minor in comparison, further emphasizing Meta's dependence on its advertising model.

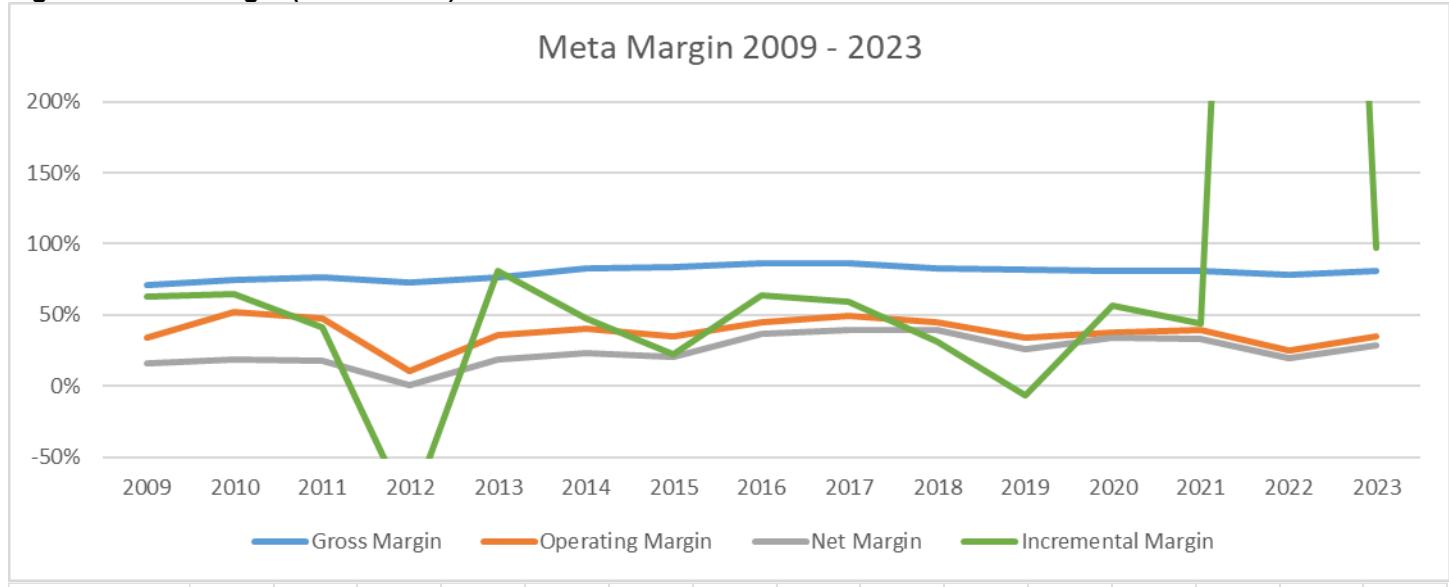
**Figure 8: Meta Revenues (2009 – 2023)**



In 2014, Meta's monthly active users (MAUs) reached nearly 1.4 billion, as illustrated in Figure 5. This substantial user base contributed to the expansion of the company's gross margin to 83%. It has consistently maintained a gross margin level of above 80% in most years since then. This high gross margin reflects the efficiency of Meta's business model, where revenue growth does not significantly increase variable costs. **Advertisers purchase Meta's digital advertising services, which primarily depend on fixed costs such as data centers, server equipment, energy, and bandwidth.**

Because of its large and continually expanding user base, Meta has been able to sustain this high gross margin, providing the company with substantial financial flexibility. This high level of gross margin potentially allows Meta to invest in key areas such as R&D to further grow its user base and enhance its algorithms for more effective advertising targeting. Furthermore, such profitability level potentially enables the company to allocate resources toward marketing as well, which can help attract more advertisers by offering improved services and strategic promotions. These investments not only support Meta's ongoing growth but also reinforce its competitive edge in the digital advertising space.

Figure 9: Meta Margin (2009 – 2023)



Notes:

1. Net margin is calculated as shareholder earnings divided by total revenue.
2. The operating margin in 2012 declined primarily due to a significant rise in total costs and expenses, driven by substantial increases in share-based compensation and the related payroll tax expenses for restricted stock units (RSU). \$1.13 billion was attributed to the recognition of share-based compensation and related payroll tax expenses related to RSUs granted prior to January 1, 2011 (Pre-2011 RSUs) triggered by the completion of Facebook's IPO in May 2012.<sup>82</sup> In addition, the company expected an average withholding tax of 45% for the restricted stock units.<sup>83</sup> Had these expenses not been incurred, the adjusted operating margin was estimated to be 33%, and the net margin at 13%.
3. Incremental margin refers to incremental operating margin.

<sup>82</sup> Facebook Annual Report 2012.

<sup>83</sup> Facebook Prospectus 2012.

**Figure 10: Meta Income Statement (2007 – 2023)**

(\$ Million)	2007	2008	2009	2010	2011	2012	2013	2014	2015
Advertising revenue			\$ 764	\$ 1,868	\$ 3,154	\$ 4,279	\$ 6,986	\$ 11,492	\$ 17,079
Other revenue			\$ 13	\$ 106	\$ 557	\$ 810	\$ 886	\$ 974	\$ 849
<b>Total revenue</b>	<b>\$ 153</b>	<b>\$ 272</b>	<b>\$ 777</b>	<b>\$ 1,974</b>	<b>\$ 3,711</b>	<b>\$ 5,089</b>	<b>\$ 7,872</b>	<b>\$ 12,466</b>	<b>\$ 17,928</b>
YoY Growth			77.8%	185.7%	154.1%	88.0%	37.1%	54.7%	58.4%
<b>Cost of revenue</b>	<b>\$ 41</b>	<b>\$ 124</b>	<b>\$ 223</b>	<b>\$ 493</b>	<b>\$ 860</b>	<b>\$ 1,364</b>	<b>\$ 1,875</b>	<b>\$ 2,153</b>	<b>\$ 2,867</b>
<b>Gross income</b>	<b>\$ 112</b>	<b>\$ 148</b>	<b>\$ 554</b>	<b>\$ 1,481</b>	<b>\$ 2,851</b>	<b>\$ 3,725</b>	<b>\$ 5,997</b>	<b>\$ 10,313</b>	<b>\$ 15,061</b>
Gross Margin	73.2%	54.4%	71.3%	75.0%	76.8%	73.2%	76.2%	82.7%	84.0%
Marketing and sales	\$ 32	\$ 76	\$ 115	\$ 184	\$ 427	\$ 896	\$ 997	\$ 1,680	\$ 2,725
Research and development	\$ 81	\$ 47	\$ 87	\$ 144	\$ 388	\$ 1,399	\$ 1,415	\$ 2,666	\$ 4,816
General and administrative	\$ 123	\$ 80	\$ 90	\$ 121	\$ 280	\$ 892	\$ 781	\$ 973	\$ 1,295
Operating income	\$ (124)	\$ (55)	\$ 262	\$ 1,032	\$ 1,756	\$ 538	\$ 2,804	\$ 4,994	\$ 6,225
Operating Margin	-81.0%	-20.2%	33.7%	52.3%	47.3%	10.6%	35.6%	40.1%	34.7%
Interest expense (income)			\$ 10	\$ 22	\$ 42	\$ 37	\$ 37	\$ (4)	\$ (29)
Other income (expense), net			\$ 2	\$ (2)	\$ (19)	\$ (7)	\$ (13)	\$ (88)	\$ (60)
Income before tax	\$ (135)	\$ (56)	\$ 254	\$ 1,008	\$ 1,695	\$ 494	\$ 2,754	\$ 4,910	\$ 6,194
Income tax	\$ 3	\$ -	\$ 25	\$ 402	\$ 695	\$ 441	\$ 1,254	\$ 1,970	\$ 2,506
Net income	\$ (138)	\$ (56)	\$ 229	\$ 606	\$ 1,000	\$ 53	\$ 1,500	\$ 2,940	\$ 3,688
Net income attributable to participating securities	\$ -	\$ -	\$ 107	\$ 234	\$ 332	\$ 21	\$ 9	\$ 15	\$ 19
Net income attributable to shareholders	\$ (138)	\$ (56)	\$ 122	\$ 372	\$ 668	\$ 32	\$ 1,491	\$ 2,925	\$ 3,669
(\$ Million)	2016	2017	2018	2019	2020	2021	2022	2023	
Advertising revenue	\$ 26,885	\$ 39,942	\$ 55,013	\$ 69,655	\$ 84,169	\$ 114,934	\$ 113,642	\$ 131,948	
Other revenue	\$ 753	\$ 711	\$ 825	\$ 1,042	\$ 1,796	\$ 2,995	\$ 2,967	\$ 2,954	
<b>Total revenue</b>	<b>\$ 27,638</b>	<b>\$ 40,653</b>	<b>\$ 55,838</b>	<b>\$ 70,697</b>	<b>\$ 85,965</b>	<b>\$ 117,929</b>	<b>\$ 116,609</b>	<b>\$ 134,902</b>	
YoY Growth	54.2%	47.1%	37.4%	26.6%	21.6%	37.2%	-1.1%	15.7%	
<b>Cost of revenue</b>	<b>\$ 3,789</b>	<b>\$ 5,454</b>	<b>\$ 9,355</b>	<b>\$ 12,770</b>	<b>\$ 16,692</b>	<b>\$ 22,649</b>	<b>\$ 25,249</b>	<b>\$ 25,959</b>	
<b>Gross income</b>	<b>\$ 23,849</b>	<b>\$ 35,199</b>	<b>\$ 46,483</b>	<b>\$ 57,927</b>	<b>\$ 69,273</b>	<b>\$ 95,280</b>	<b>\$ 91,360</b>	<b>\$ 108,943</b>	
Gross Margin	86.3%	86.6%	83.2%	81.9%	80.6%	80.8%	78.3%	80.8%	
Marketing and sales	\$ 3,772	\$ 4,725	\$ 7,846	\$ 9,876	\$ 11,591	\$ 14,043	\$ 15,262	\$ 12,301	
Research and development	\$ 5,919	\$ 7,754	\$ 10,273	\$ 13,600	\$ 18,447	\$ 24,655	\$ 35,338	\$ 38,483	
General and administrative	\$ 1,731	\$ 2,517	\$ 3,451	\$ 10,465	\$ 6,564	\$ 9,829	\$ 11,816	\$ 11,408	
Operating income	\$ 12,427	\$ 20,203	\$ 24,913	\$ 23,986	\$ 32,671	\$ 46,753	\$ 28,944	\$ 46,751	
Operating Margin	45.0%	49.7%	44.6%	33.9%	38.0%	39.6%	24.8%	34.7%	
Interest expense (income)	\$ (166)	\$ (392)	\$ (652)	\$ (904)	\$ (672)	\$ (461)	\$ (276)	\$ (1,193)	
Other income (expense), net	\$ (75)	\$ (1)	\$ (204)	\$ (78)	\$ (163)	\$ 70	\$ (401)	\$ (516)	
Income before tax	\$ 12,518	\$ 20,594	\$ 25,361	\$ 24,812	\$ 33,180	\$ 47,284	\$ 28,819	\$ 47,428	
Income tax	\$ 2,301	\$ 4,660	\$ 3,249	\$ 6,327	\$ 4,034	\$ 7,914	\$ 5,619	\$ 8,330	
Net income	\$ 10,217	\$ 15,934	\$ 22,112	\$ 18,485	\$ 29,146	\$ 39,370	\$ 23,200	\$ 39,098	
Net income attributable to participating securities	\$ 29	\$ 14	\$ 1	\$ -	\$ -	\$ -	\$ -	\$ -	
Net income attributable to shareholders	\$ 10,188	\$ 15,920	\$ 22,111	\$ 18,485	\$ 29,146	\$ 39,370	\$ 23,200	\$ 39,098	

Note:

1. The operating income in 2012 declined significantly from 2011 primarily due to a significant rise in total costs and expenses, driven by substantial increases in share-based compensation and the related payroll tax expenses for restricted stock units (RSU). \$1.13 billion was attributed to the recognition of share-based compensation and related payroll tax expenses related to RSUs granted prior to January 1, 2011 (Pre-2011 RSUs) triggered by the completion of Facebook's IPO in May 2012.<sup>84</sup>

<sup>84</sup> Facebook Annual Report 2012.

Figure 11: Meta Balance Sheet (2010 – 2023)

(\$ Million)	2010	2011	2012	2013	2014	2015	2016
<b>Cash and cash equivalents</b>	\$ 1,785	\$ 1,512	\$ 2,384	\$ 3,323	\$ 4,315	\$ 4,907	\$ 8,903
<b>Marketable securities</b>	\$ -	\$ 2,396	\$ 7,242	\$ 8,126	\$ 6,884	\$ 13,527	\$ 20,546
<b>Accounts receivable</b>	\$ 373	\$ 547	\$ 719	\$ 1,109	\$ 1,678	\$ 2,559	\$ 3,993
<b>Other current assets</b>	\$ 88	\$ 149	\$ 922	\$ 512	\$ 793	\$ 659	\$ 959
<b>Total current assets</b>	<b>\$ 2,246</b>	<b>\$ 4,604</b>	<b>\$ 11,267</b>	<b>\$ 13,070</b>	<b>\$ 13,670</b>	<b>\$ 21,652</b>	<b>\$ 34,401</b>
<b>Property and equipment</b>	\$ 574	\$ 1,475	\$ 2,391	\$ 2,882	\$ 3,967	\$ 5,687	\$ 8,591
<b>Operating lease right-of-use assets</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Goodwill and intangible assets</b>	\$ 96	\$ 162	\$ 1,388	\$ 1,722	\$ 21,910	\$ 21,272	\$ 20,657
<i>Intangible assets</i>	\$ 59	\$ 80	\$ 801	\$ 883	\$ 3,929	\$ 3,246	\$ 2,535
<b>Other assets</b>	\$ 74	\$ 90	\$ 57	\$ 221	\$ 637	\$ 796	\$ 1,312
<b>Total assets</b>	<b>\$ 2,990</b>	<b>\$ 6,331</b>	<b>\$ 15,103</b>	<b>\$ 17,895</b>	<b>\$ 40,184</b>	<b>\$ 49,407</b>	<b>\$ 64,961</b>
<b>Accounts payable</b>	\$ 29	\$ 63	\$ 65	\$ 87	\$ 176	\$ 196	\$ 302
<b>Platform partners payable</b>	\$ 75	\$ 171	\$ 169	\$ 181	\$ 202	\$ 217	\$ 280
<b>Current portion of capital/operating lease obligations</b>	\$ 106	\$ 279	\$ 365	\$ 239	\$ 114	\$ 7	\$ -
<b>Other current liabilities</b>	\$ 179	\$ 386	\$ 453	\$ 593	\$ 932	\$ 1,505	\$ 2,293
<b>Current liabilities</b>	<b>\$ 389</b>	<b>\$ 899</b>	<b>\$ 1,052</b>	<b>\$ 1,100</b>	<b>\$ 1,424</b>	<b>\$ 1,925</b>	<b>\$ 2,875</b>
<b>Capital/operating lease obligations</b>	\$ 117	\$ 398	\$ 491	\$ 237	\$ 119	\$ 107	\$ -
<b>Long-term debt</b>	\$ 250	\$ -	\$ 1,500	\$ -	\$ -	\$ -	\$ -
<b>Other liabilities</b>	\$ 72	\$ 135	\$ 305	\$ 1,088	\$ 2,545	\$ 3,157	\$ 2,892
<b>Total liabilities</b>	<b>\$ 828</b>	<b>\$ 1,432</b>	<b>\$ 3,348</b>	<b>\$ 2,425</b>	<b>\$ 4,088</b>	<b>\$ 5,189</b>	<b>\$ 5,767</b>
<b>Total shareholders' equity</b>	<b>\$ 2,162</b>	<b>\$ 4,899</b>	<b>\$ 11,755</b>	<b>\$ 15,470</b>	<b>\$ 36,096</b>	<b>\$ 44,218</b>	<b>\$ 59,194</b>
<b>Total liabilities and shareholders equity</b>	<b>\$ 2,990</b>	<b>\$ 6,331</b>	<b>\$ 15,103</b>	<b>\$ 17,895</b>	<b>\$ 40,184</b>	<b>\$ 49,407</b>	<b>\$ 64,961</b>
(\$ Million)	2017	2018	2019	2020	2021	2022	2023
<b>Cash and cash equivalents</b>	\$ 8,079	\$ 10,019	\$ 19,079	\$ 17,576	\$ 16,601	\$ 14,681	\$ 41,862
<b>Marketable securities</b>	\$ 33,632	\$ 31,095	\$ 35,776	\$ 44,378	\$ 31,397	\$ 26,057	\$ 23,541
<b>Accounts receivable</b>	\$ 5,832	\$ 7,587	\$ 9,518	\$ 11,335	\$ 14,039	\$ 13,466	\$ 16,169
<b>Other current assets</b>	\$ 1,020	\$ 1,779	\$ 1,852	\$ 2,381	\$ 4,629	\$ 5,345	\$ 3,793
<b>Total current assets</b>	<b>\$ 48,563</b>	<b>\$ 50,480</b>	<b>\$ 66,225</b>	<b>\$ 75,670</b>	<b>\$ 66,666</b>	<b>\$ 59,549</b>	<b>\$ 85,365</b>
<b>Property and equipment</b>	\$ 13,721	\$ 24,683	\$ 35,323	\$ 45,633	\$ 57,809	\$ 79,518	\$ 96,587
<b>Operating lease right-of-use assets</b>	\$ -	\$ -	\$ 9,460	\$ 9,348	\$ 12,155	\$ 12,673	\$ 13,294
<b>Goodwill and intangible assets</b>	\$ 20,105	\$ 19,595	\$ 19,609	\$ 19,673	\$ 19,831	\$ 21,203	\$ 21,442
<i>Intangible assets</i>	\$ 1,884	\$ 1,294	\$ 894	\$ 623	\$ 634	\$ 897	\$ 788
<b>Other assets</b>	\$ 2,135	\$ 2,576	\$ 2,759	\$ 8,992	\$ 9,526	\$ 12,784	\$ 12,935
<b>Total assets</b>	<b>\$ 84,524</b>	<b>\$ 97,334</b>	<b>\$ 133,376</b>	<b>\$ 159,316</b>	<b>\$ 165,987</b>	<b>\$ 185,727</b>	<b>\$ 229,623</b>
<b>Accounts payable</b>	\$ 380	\$ 820	\$ 1,363	\$ 1,331	\$ 4,083	\$ 4,990	\$ 4,849
<b>Platform partners payable</b>	\$ 390	\$ 541	\$ 886	\$ 1,093	\$ 1,052	\$ 1,117	\$ 863
<b>Current portion of capital/operating lease obligations</b>	\$ -	\$ -	\$ 800	\$ 1,023	\$ 1,127	\$ 1,367	\$ 1,623
<b>Other current liabilities</b>	\$ 2,990	\$ 5,656	\$ 12,004	\$ 11,534	\$ 14,873	\$ 19,552	\$ 24,625
<b>Current liabilities</b>	<b>\$ 3,760</b>	<b>\$ 7,017</b>	<b>\$ 15,053</b>	<b>\$ 14,981</b>	<b>\$ 21,135</b>	<b>\$ 27,026</b>	<b>\$ 31,960</b>
<b>Capital/operating lease obligations</b>	\$ -	\$ -	\$ 9,524	\$ 9,631	\$ 12,746	\$ 15,301	\$ 17,226
<b>Long-term debt</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 9,923	\$ 18,385
<b>Other liabilities</b>	\$ 6,417	\$ 6,190	\$ 7,745	\$ 6,414	\$ 7,227	\$ 7,764	\$ 8,884
<b>Total liabilities</b>	<b>\$ 10,177</b>	<b>\$ 13,207</b>	<b>\$ 32,322</b>	<b>\$ 31,026</b>	<b>\$ 41,108</b>	<b>\$ 60,014</b>	<b>\$ 76,455</b>
<b>Total shareholders' equity</b>	<b>\$ 74,347</b>	<b>\$ 84,127</b>	<b>\$ 101,054</b>	<b>\$ 128,290</b>	<b>\$ 124,879</b>	<b>\$ 125,713</b>	<b>\$ 153,168</b>
<b>Total liabilities and shareholders equity</b>	<b>\$ 84,524</b>	<b>\$ 97,334</b>	<b>\$ 133,376</b>	<b>\$ 159,316</b>	<b>\$ 165,987</b>	<b>\$ 185,727</b>	<b>\$ 229,623</b>

## Investment Attributes at the Time of Investment

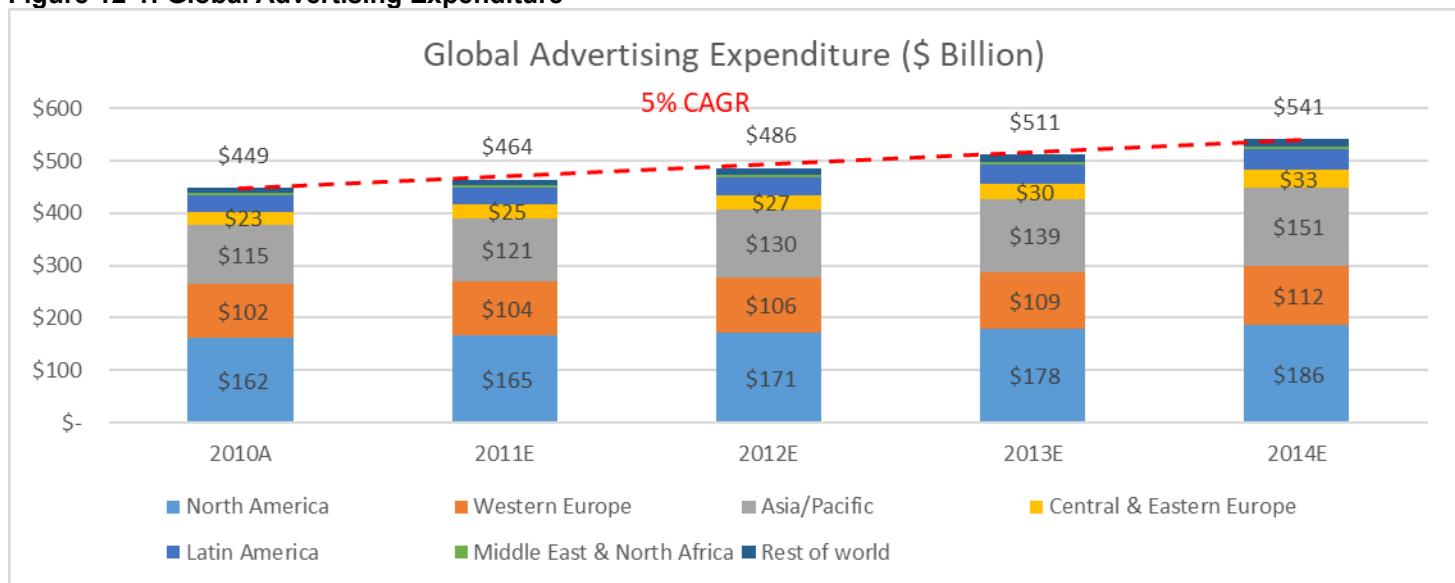
### A. Large Total Addressable Market, Low Penetration Rate, Increasing Monthly Active Users, Increasing Daily Active Users, Increasing Engagement.

As an internet-based company, Facebook has the potential to expand its social media reach to virtually every corner in the world with internet access, thereby attracting advertisers eager to target users who match their desired customer profiles.

At the time of Facebook's IPO, several surveys were available to estimate its total addressable market. According to the company's filing, an IDC report from August 2011 indicated that global advertising spending in 2010 totaled \$588 billion, with online advertising accounting for \$68 billion of that amount.<sup>85</sup> This means that Facebook's \$1.87 billion in 2010 advertising revenue represented 0.3% of the global advertising market and 2.8% of the online segment.

Another report, as Figure 12-1 shows, published in December 2011 by ZenithOptimedia,<sup>86</sup> a global media agency network, estimated that global advertising expenditure across major media channels, including newspapers, magazines, television, radio, cinema, outdoor, and internet, totaled \$449 billion in 2010, with the internet channel contributing \$64 billion. This suggests that Facebook's global market share at the end of 2010 was approximately 0.4% of the overall market and 2.9% of the online advertising segment. The report also projected that global advertising would grow at a 5% CAGR by 2014, with the internet channel expected to grow at a 15% CAGR, as Figure 12-2 shows, significantly faster than the overall market, potentially benefiting Facebook as a digital advertiser.

Figure 12-1: Global Advertising Expenditure<sup>87</sup>



Note:

1. Global advertising expenditure in this report includes major media channels, newspapers, magazines, television, radio, cinema, outdoor, and internet.

<sup>85</sup> Facebook Prospectus 2012.

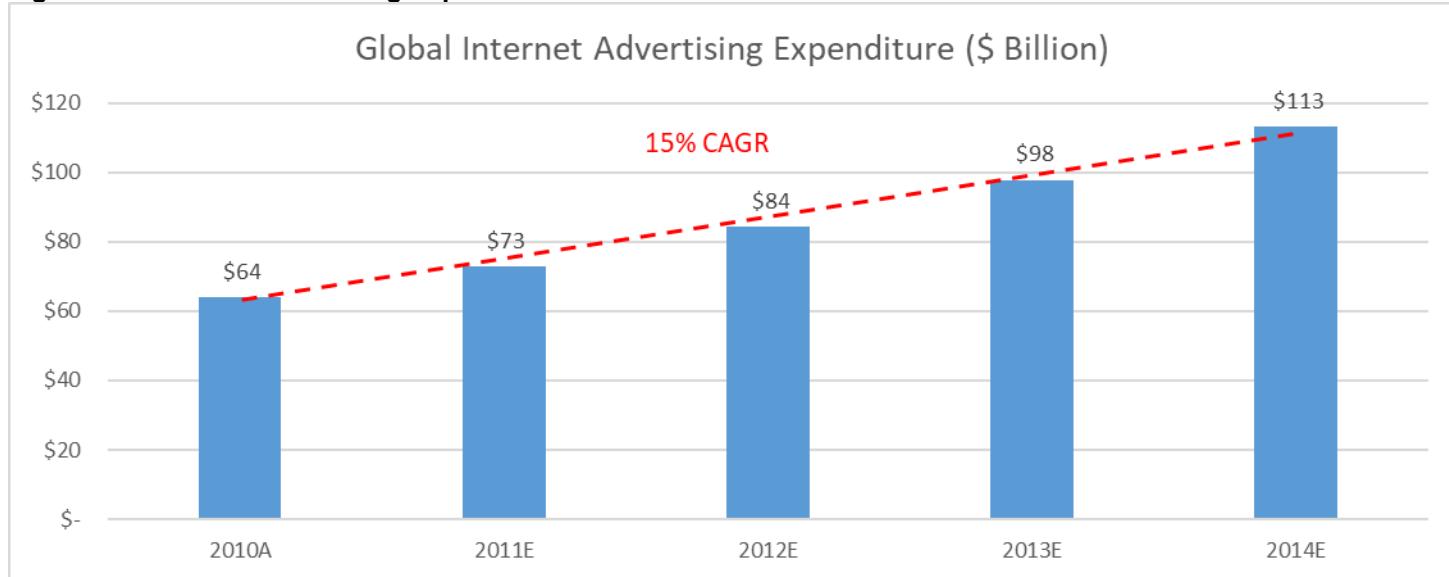
<sup>86</sup> Quadrennial Events to Help Ad Market Grow in 2012 Despite Economic Troubles.

<https://zenithoptimedia.blogspot.com/2011/12/quadrennial-events-to-help-ad-market.html>

<sup>87</sup> Quadrennial Events to Help Ad Market Grow in 2012 Despite Economic Troubles.

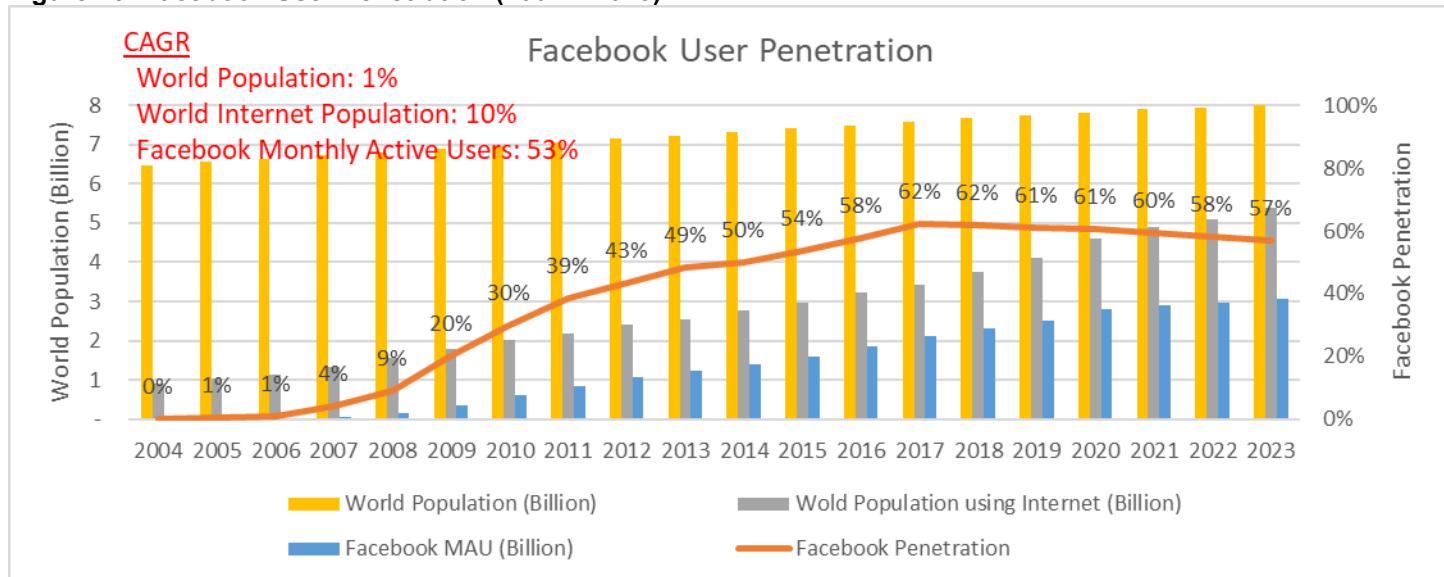
<https://zenithoptimedia.blogspot.com/2011/12/quadrennial-events-to-help-ad-market.html>

**Figure 12-2: Global Advertising Expenditure – Internet**



Since Facebook was founded, the global population using the internet has grown rapidly. According to data from the World Bank and the International Telecommunication Union (ITU), as Figure 13 shows, the world's population increased from nearly 6.5 billion in 2004 to 8.0 billion in 2023,<sup>88</sup> reflecting a 1% CAGR. In contrast, the number of people using the internet grew significantly from 0.9 billion to 5.4 billion<sup>89</sup> over the same period, representing a 10% CAGR. During this time, Facebook's monthly active users grew from 1 million in 2004 to nearly 3.1 billion in 2023, increasing its penetration from nearly 0% to 57% of the global internet-using population.

**Figure 13: Facebook User Penetration (2004 – 2023)**



Notes:

1. Meta defines a monthly active user as a registered Facebook user who logged in and visited Facebook through its website or a mobile device, or took an action to share content or activity with his or her Facebook friends or connections via a third-party website that is integrated with Facebook, in the last 30 days as of the date of measurement.

<sup>88</sup> World Population. World Bank Group.

<https://data.worldbank.org/indicator/SP.POP.TOTL?end=2023&locations=1W&start=2000&view=chart>

<sup>89</sup> Individuals Using the Internet (% of Population). World Bank.

[https://data.worldbank.org/indicator/IT.NET.USER.ZS?end=2022&most\\_recent\\_value\\_desc=true&start=2000](https://data.worldbank.org/indicator/IT.NET.USER.ZS?end=2022&most_recent_value_desc=true&start=2000); World Population Using Internet Facts and Figures 2023. ITU. <https://www.itu.int/itu-d/reports/statistics/2023/10/10/ff23-internet-use/>

2. Monthly active users (MAU) do not include users of Instagram or WhatsApp unless they would otherwise qualify as such users.<sup>90</sup>

A large portion of Facebook users access the platform via mobile devices like smartphones and tablets. According to data released by the company, the percentage of Facebook users on mobile devices rose from 28% of total monthly active users in 2009 to over 90% by 2015, though such data has not been disclosed since then. The company states that substantially all of its daily and monthly active users access Facebook on mobile devices.<sup>91</sup> This trend coincides with the rise of the modern touchscreen smartphone era, often linked to the launch of the first iPhone in 2007.<sup>92</sup> During this period, global smartphone shipments soared from an estimated 174 million units in 2009 to over 1.4 billion units in 2015, as Figure 14-2 shows, reflecting a CAGR of nearly 42%. Facebook attributes the rapid growth of its mobile user base to both the increased adoption of mobile devices by consumers and the company's efforts to optimize its products for mobile platforms.<sup>93</sup>

Research has shown that users of social media platforms such as Facebook and Twitter may exhibit addiction patterns similar to those seen in substance abuse. A 2011 research conducted at the University of Maryland shows that nearly four out of five students experience significant mental and physical distress, including panic, confusion, and a sense of isolation, when forced to disconnect from technology such as mobile phones and social networking sites for an entire day.<sup>94</sup> Participants in this study reported symptoms commonly associated with smokers attempting to quit,<sup>95</sup> with some describing their experience similar to going "cold turkey" from a hard drug habit, while others described it as being on a diet. This condition has been termed "Information Deprivation Disorder."

The research highlights that both psychological and physical symptoms are observed among teenagers and young adults who excessively use the internet, computer games, and social networking sites.<sup>96</sup> Although most people eventually develop coping mechanisms to handle the absence of such technologies, the majority initially struggle, experiencing withdrawal symptoms. Furthermore, the study has found that college students across the globe, including those in Britain, America, and China, openly admit to being addicted to modern technology, particularly mobile phones and social networking platforms like Facebook and Twitter.<sup>97</sup>

The study also found that most students who participated in the study were unable to go a full 24 hours without media, including social media.<sup>98</sup> One of the students said the overwhelming cravings were "itching like a crackhead".<sup>99</sup> Although 21% of young people, aged between 17 and 23, recognized the benefits of unplugging from all media, including social networking sites, for 24 hours, one in five reported experiencing withdrawal symptoms similar to those associated with addiction, while more than one in ten admitted to feeling confused and like a failure.

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<sup>90</sup> Facebook/Meta Annual Reports.

<sup>91</sup> Facebook Annual Report 2016.

<sup>92</sup> Have We Passed The Peak of The Smartphone Era. <https://www.weforum.org/agenda/2021/08/smartphone-growth-peak-5g-apple-samsung-iphone-tech/>

<sup>93</sup> Facebook Prospectus 2012.

<sup>94</sup> Student 'Addiction' to Technology 'Similar to Drug Cravings', Study Finds.

<https://www.telegraph.co.uk/technology/news/8436831/Student-addiction-to-technology-similar-to-drug-cravings-study-finds.html>; A Day Without Media – Research conducted by ICMPA and students at the Phillip Merrill College of Journalism, University of Maryland, College Park, US. <https://withoutmedia.wordpress.com/>

<sup>95</sup> Facebook Generation Suffer Information Withdrawal Syndrome.

<https://www.telegraph.co.uk/technology/news/8235302/Facebook-generation-suffer-information-withdrawal-syndrome.html>

<sup>96</sup> Facebook Generation Suffer Information Withdrawal Syndrome.

<https://www.telegraph.co.uk/technology/news/8235302/Facebook-generation-suffer-information-withdrawal-syndrome.html>

<sup>97</sup> Facebook Generation Suffer Information Withdrawal Syndrome.

<https://www.telegraph.co.uk/technology/news/8235302/Facebook-generation-suffer-information-withdrawal-syndrome.html>

<sup>98</sup> Student 'Addiction' to Technology 'Similar to Drug Cravings', Study Finds.

<https://www.telegraph.co.uk/technology/news/8436831/Student-addiction-to-technology-similar-to-drug-cravings-study-finds.html>; The World Unplugged. <https://theworldunplugged.wordpress.com/>

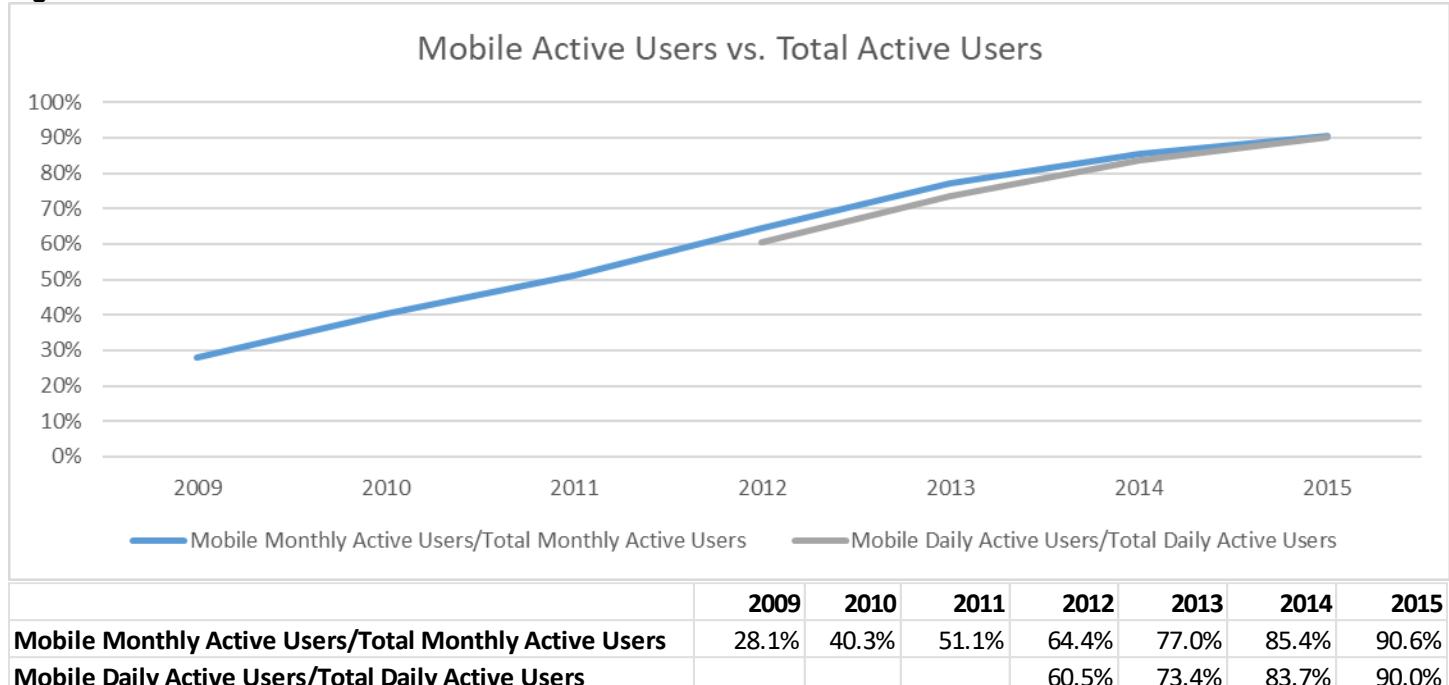
<sup>99</sup> Student 'Addiction' to Technology 'Similar to Drug Cravings', Study Finds.

<https://www.telegraph.co.uk/technology/news/8436831/Student-addiction-to-technology-similar-to-drug-cravings-study-finds.html>

In addition, researchers from the University of Chicago Booth School of Business found in their studies that resisting the urge to check social networking sites for updates is more challenging than turning down a drink.<sup>100</sup> Not only is the urge to stay updated on social networks the hardest to resist, but the more frequently and recently one resists, the stronger the craving becomes the next time.

A notable example of the anxiety caused by being disconnected from social media occurred during Facebook's outage in 2014. On August 1, 2014, Facebook experienced a 30-minute outage due to a server error. The Los Angeles County Sheriff's Department received numerous phone calls from distressed users. Sergeant Burton Brink even tweeted, "Facebook is not a Law Enforcement issue, please don't call us about it being down, we don't know when FB will be back up!"<sup>101</sup> While this incident does not directly indicate addiction to Facebook, it does illustrate the level of panic some users experience when they are unable to access the platform, to the extent that they feel compelled to call emergency services for help.

**Figure 14-1: Mobile Active Users vs. Total Active Users**



Note:

1. The company defines a mobile monthly active user as a user who accessed Facebook via a mobile app or via mobile-optimized versions of its website such as m.facebook.com, whether on a mobile phone or tablet such as the iPad, during the period of measurement.<sup>102</sup>

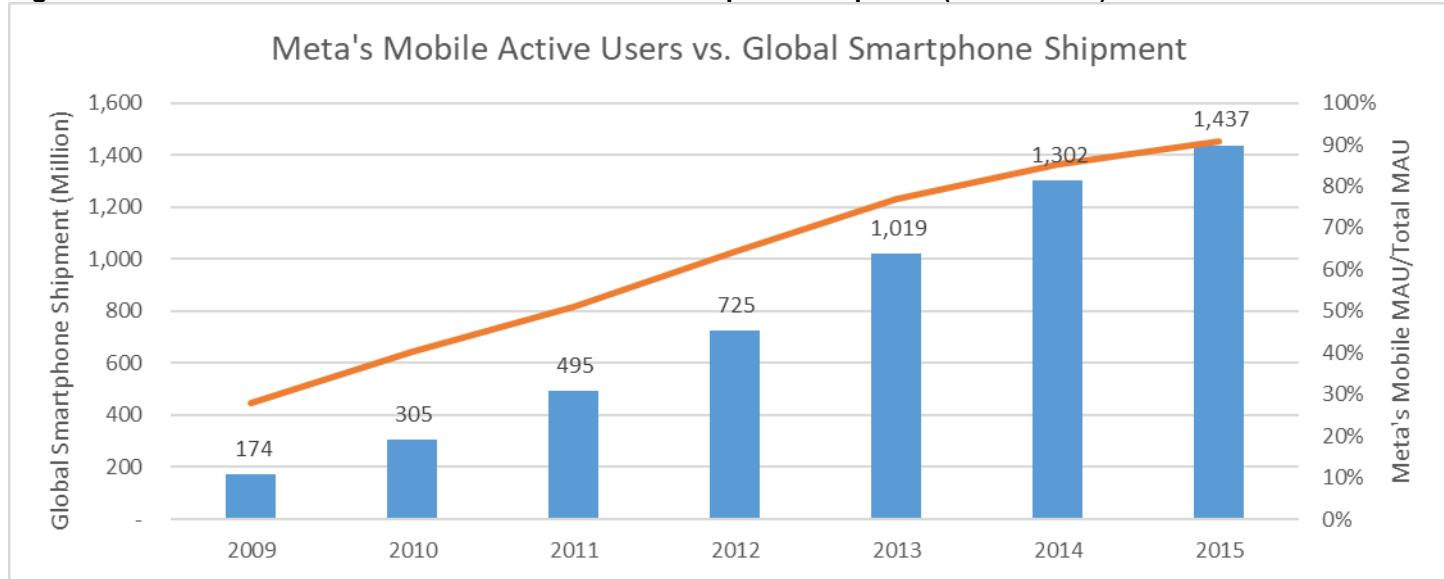
<sup>100</sup> Facebook and Twitter More Addictive Than Tobacco and Alcohol.

<https://web.archive.org/web/2012020180847/http://www.telegraph.co.uk/health/healthnews/9054243/Facebook-and-Twitter-more-addictive-than-tobacco-and-alcohol.html>

<sup>101</sup> People Apparently Called the Police Because Facebook Went Down. Time. <https://time.com/3071049/facebook-down-police/>

<sup>102</sup> Facebook Prospectus 2012.

Figure 14-2: Meta's Mobile Active Users vs. Global Smartphone Shipment (2009 – 2015)<sup>103</sup>



Notes:

1. We use the ratio of mobile monthly active users-to-total monthly active users as a proxy to estimate the proportion of monthly active users who access Facebook via mobile devices compared to the company's overall user base. It's important to note that these two groups are not mutually exclusive; a user who accesses Facebook on a mobile device could also use the website to browse the platform.
2. Monthly active users (MAU) and daily active users (DAU) do not include users of Instagram or WhatsApp unless they would otherwise qualify as such users.<sup>104</sup>

## B. Expansion Strategy – Acquiring Active Users Virally

One of the key reasons for Facebook's global expansion can be attributed to Mark Zuckerberg's personal characteristics. Zuckerberg has been passionate about coding since he was a teenager and continues to pursue it as a hobby and a challenge, even after becoming a billionaire and leading the world's largest social media platform.<sup>105</sup> He created Facebook, as well as other smaller projects like CourseMatch, because he personally needed them at the time and there were no alternatives available. He never imagined Facebook would grow to the scale it has today. Looking back on Facebook's development, Zuckerberg has observed that others might not have created something similar due to various doubt such as thinking, "Oh, that's just for young people," "It might work in the U.S., but not globally," or "Sure, people are using it, but it will never make any money."<sup>106</sup> Despite these potential obstacles, Zuckerberg simply went ahead and built it.

The interface of Facebook website evolved considerably over the years of Facebook's development. When users browse the profile page of themselves and their friends, they could see the activities such as posts and sharing and interact with each other under different content posted on their boards, named as Wall, Timeline, News Feed at different stage with improving experiences. As Figure 15-1 and Figure 15-2 show, in 2006, Facebook rolled out Mini Feed and later News Feed features so that users could share their activities on Facebook page in a simple and direct design and see their friends' as well such as their plans to attend event, shared photos, and seeing their friends to befriend with other friends on Facebook. Users could share those activities as well to potentially spread them to more friends. Four months after launching News Feed, Facebook users on average spent 30% more time on the websites, indicating more engaged users.<sup>107</sup> Facebook's active users also grew from 12 million in 2006 to 58 million in 2007.

<sup>103</sup> IDC Data cited in Guidance for the Assessment of Material - Application to Smartphones. JRC Technical Report, European Commission.

<sup>104</sup> Facebook/Meta Annual Reports.

<sup>105</sup> Mark Zuckerberg Interview With Axel Springer CEO Mathias Döpfner. <https://www.businessinsider.com/mark-zuckerberg-interview-with-axel-springer-ceo-mathias-doepfner-2016-2>

<sup>106</sup> Mark Zuckerberg Interview With Axel Springer CEO Mathias Döpfner. <https://www.businessinsider.com/mark-zuckerberg-interview-with-axel-springer-ceo-mathias-doepfner-2016-2>

<sup>107</sup> Case Study: Facebook – The First Ten Years. Harvard Business School.

In 2008, Facebook introduced a new version of its website with a new page design with tabs and the “Wall”, as Figure 15-3 shows. Similar to the previous News Feed, Wall allowed users to see updates related to them as well as their friends. In addition, it also allowed users to post directly on their Wall such as statuses, photos, links, etc. so that their friends could interact with them directly through comments and likes. In 2008, Facebook users were at 145 million, compared to 58 million in 2007.

In 2009, as Figure 15-4 shows, Facebook, for the first time, allowed users to post their content beyond their circle of friends. The company added a privacy option for users to choose to whom they would like to share their individual posts such as friends only, friends and networks, and the public.

In later years, Facebook kept evolving its News Feeds features under user profile pages with different designs and arrangements, while the functions remained similar and served the purpose of allowing users to interact with other people in or out of their circles. As Figure 15-5 shows, the pages seem to be designed in a simpler and cleaner way for users to interact with each other more quickly and intuitively.

Figure 15-1: Facebook Mini Feed 2006<sup>108</sup>

Search

My Profile edit  
My Friends  
My Photos  
My Shares  
My Notes  
My Groups  
My Events  
My Messages  
My Account  
My Privacy

**Wayne's Profile**



View More Photos of Wayne (1,211)  
Read Notes by Wayne (8)  
View All Wayne's Friends  
Send Wayne a Message  
View Message History  
Poke Him!  
Report this Person  
Remove from Friends

**▼ Status**  
Wayne is online now.

**► Mutual Friends (89)**

**► Friends in Other Networks**

**▼ Posted Items**  
1 posted item. See All

Video: YouTube – A Picture a Day Parody  
7:44am Oct 24

**▼ Groups**  
30 of 37 groups. See All  
Lsjumb • Paloma 01-02

**Wayne**  
Facebook  
Stanford Alum '05  
Homestead High '01  
Google  
Silicon Valley, CA

**Share +**

**▼ Mini-Feed**  
Displaying 10 stories. See All

**Today**

Wayne plans to attend Fetterman's Belated Birthday Bash.

Wayne posted a video.  
**YouTube – A Picture a Day Parody**  
A parody of all those 'a picture each day' videos you see everywhere :)  
<http://youtube.com/watch?v=PV6...>

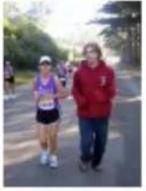
Wayne's comment:  
pretty creative video...



**Yesterday**

Wayne plans to attend Facebook Halloween Costume Contest.

Wayne added new photos.



Added to:  
**Autumn '06 – 25 Photos**

**October 24**

Wayne and Leah Pearlman are now friends.

Carolyn mentioned Wayne in her note **The Creator Giveth, and the Creator Taketh Away....**

Carolyn mentioned Wayne in her note **wayne took that photo.**

Wayne and Kasey are now friends.

<sup>108</sup> Facebook Then And Now. CNET. <https://www.cnet.com/pictures/facebook-then-and-now-pictures/8/>

Figure 15-2: Facebook News Feed 2006

Search

My Profile edit  
My Friends  
My Photos  
My Notes  
My Groups  
My Events  
My Messages  
My Account  
My Privacy

# facebook

Welcome Matt!

## News Feed

**Sponsored: iTunes is the Shit!** 4:00pm  
Boy howdy it is! I thought it was so damn cool i couln't fdafdfad feediken eidhtoen djierfnf idfjeif  


**Athalie Laguerre and Meredith Chin commented on the note tab** energy: an anomaly in my life. 3:59pm

**Carrie Peterson joined the group** Marvel: Ultimate Alliance – The World's Largest Army of Super Heroes. 3:39pm

**Payam Imani added new photos.** 3:30pm Share Save

**Gotham City: Chicago** – 58 photos by Payam Imani  
Location: Chicago, IL  
In this album: Payam Imani

**Steve Wickenkamp created a group.** 2:59pm  
  
**Jesus is more important than politics**  
Election 2006 – Campaign Issue  
Info: When we lose focus of what really matters, we are  
... [see more](#)

**Iosue Salazar commented on the note (No Title).** 2:50pm

### Requests

1 group invitation

### My Status

Keep your friends updated on your current status.



### Shared with You

**ShowBizSpy – Movies**  
From Eddie Lim

**Microsoft launches the Zune!** – Engadget  
From Soleio

**Drew Hamlin**  
From Soleio

### Birthdays

see all

Today's Birthdays  
Kyle Foote

October 7th Birthdays  
Joe Silberschmidt  
Alisha Roeder  
Nick Amosson

October 8th Birthdays  
Dave Cahill

October 9th Birthdays  
Lindsey Bennett  
Christopher Bernhardt  
Bramwell Tripp  
Chris Olson

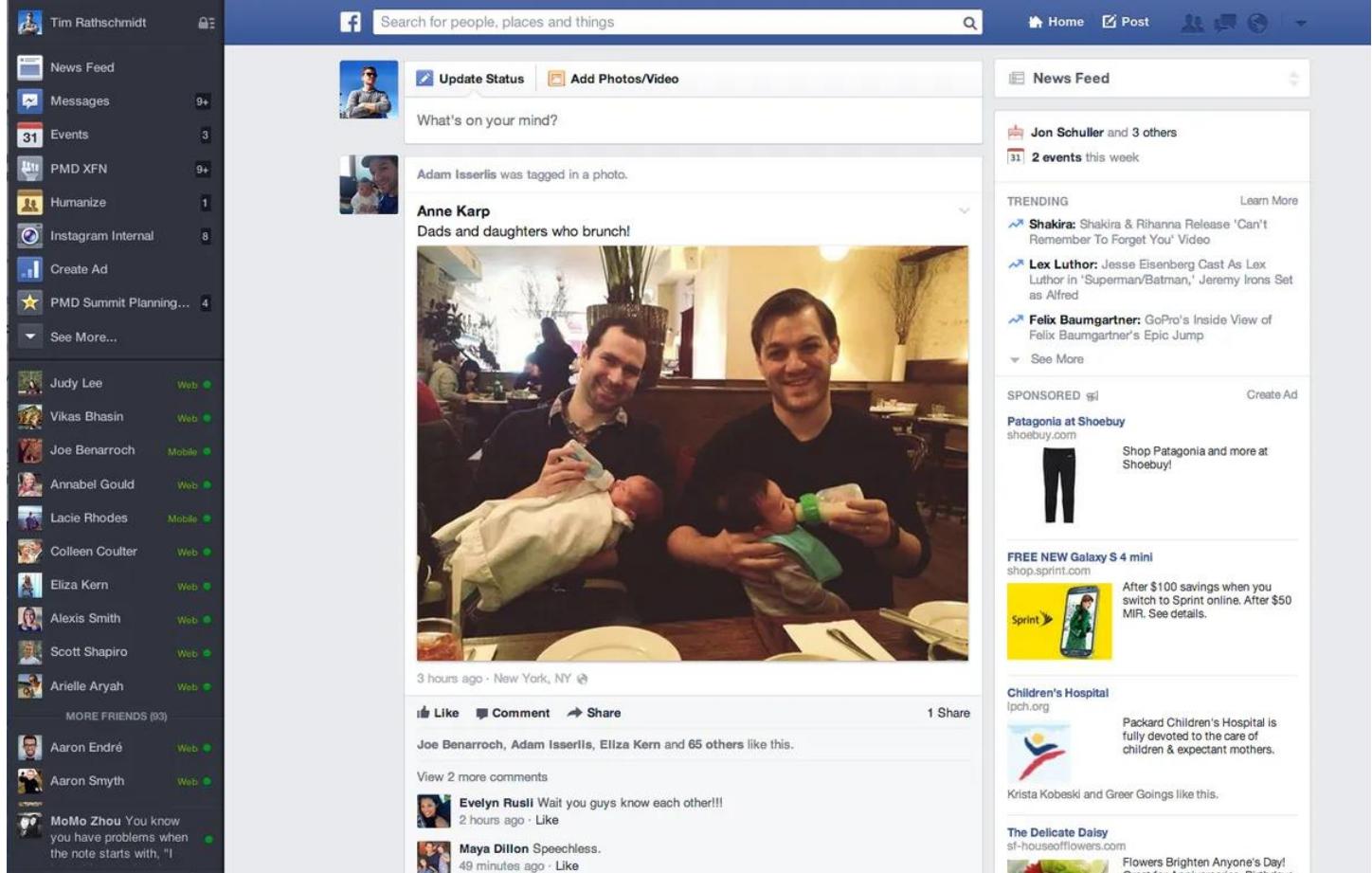
Figure 15-3: Facebook Wall 2008

The screenshot shows the Facebook Wall interface for a user named Christina Holsberry. At the top, there is a navigation bar with links for Home, Profile, Friends, and Inbox. On the right side of the top bar, there are links for Soleio, Settings, and Logout, along with a search bar. The main content area features a large profile picture of Christina Holsberry. Below the picture, there are links to View Photos of Christina (1,132), View Videos of Christina (19), Send Christina a Message, and Poke Christina. A text box contains the message: "no i will not change my profile picture". To the right of the profile picture, there is a status update from Christina: "Christina Holsberry is catching up. on Sunday". Below this, there are tabs for Wall, Info, Photos, and Boxes. A "Post" button is located in the top right corner of the post area. The post area contains a text input field with the placeholder "Write something..." and a "Post" button. Below the input field, there are links for All Posts, Posts by Christina, Posts by Others, and Wall-to-Wall. A message from Christina on January 4th is shown: "Christina scheduled a gift for Monica Walsh's birthday. 9:59am" and "Happy New Year Bday Monica!!". A small graphic of a Christmas tree is next to the message. Below this, there is a comment: "Add Comment – Like – This gift is not yet visible to Monica." On January 4th, Christina gave a public gift to Rebecca Sawyer at 6:37pm. On January 5th, Christina commented on Erin Janzer's photo at 6:18pm. Below these posts, there are more updates: "Christina is catching up. 5:50pm – Comment – Like" and "Christina is now friends with Ceci Korock. 4:55pm – Comment – Like". On January 2nd, Christina wrote: "Christina is bye bye tahoe. 10:55am – Comment – Like". A message from Kyoko Kaneda at 1:57pm reads: "i can't believe i ran into you at suppenkuche! it was so good to see you! i wish we had been able to have our meal, but hopefully next time!" On the right side of the page, there are advertisements for "Advertise", "Get \$100 in Advertising", "THE VISA BUSINESS NETWORK", and "Avocado Fan Page". There is also a "What's cooking?" section with a "SU" logo.

Figure 15-4: Facebook Wall for Public

The screenshot shows Mark Zuckerberg's Facebook profile page. At the top, there is a large profile picture of Mark. Below it, a menu bar with tabs: Wall, Info, Photos, Notes, and Boxes. The 'Wall' tab is selected. To the right of the menu, there are links for Mark Zuckerberg, Settings, Logout, and a search bar. On the left, there is a sidebar with links for View Photos of Mark (541), View Videos of Mark (14), Send Mark a Message, Poke Mark, and Subscribe via SMS. Below that is an 'Information' section with details about his networks (Facebook, Harvard Alum, San Francisco, CA), birthday (May 14, 1984), and current city (Palo Alto, CA). Under 'Mutual Friends', it says 287 friends in common and a 'See All' link. The main content area shows a post from Priscilla Chan with a photo of her and Mark. Below that is a post from Robert Scoble with three photos of people in an office. A 'New Privacy Control' pop-up box is visible, explaining how to choose who can see posts. To the right, there are ads for 'Scuba Diving Vacations' (with an image of a diver and sharks) and 'Hard Drive Imaging?' (with an image of a hard drive and text about independent Windows imaging). At the bottom right, there is a link for 'Wedding Card Box'.

Figure 15-5: Facebook News Feed 2013



At the time of its IPO in 2012, Facebook had already amassed over 900 million monthly active users. **A key milestone in its growth was the introduction of the “Like” button with a thumb-up icon in 2009**,<sup>109</sup> which allowed users to express joy or agreement for photos, notes, and other items shared by their friends on the platform. This feature became an integral part of the Facebook experience, enabling users to show that they have seen their friends’ posts and could relate with them without needing to leave a comment. In 2010, Facebook extended the functionality of the “Like” button by transforming it into a social plugin that could be easily integrated into any website with a single line of HTML code.<sup>110</sup> This allowed developers to add a “Like” button to anywhere of content on their site,<sup>111</sup> showing Facebook users what their friends had liked and recommended. Additionally, it enabled users to share content from third-party websites directly to Facebook with just one click.<sup>112</sup> By clicking “Like” on a post, users could signal their enjoyment of the content, making it visible to their friends and notifying the person who posted it. This interaction also helped Facebook’s algorithm to show users other content they might find interesting,<sup>113</sup> thereby increasing user engagement and platform stickiness. By February 2011, some 2.5 million websites had already added Facebook’s “Like” button on their pages that allowed users to like blog posts, news articles, product listings, etc.<sup>114</sup>

At the end of 2014, Facebook accumulated nearly 1.4 billion monthly active users. Building on the success of the “Like” button, Facebook introduced a set of new “Reaction” buttons in 2015, including “Love,” “Angry,” “Sad,” “Haha,” “Wow,” and

<sup>109</sup> Facebook Activates “Like” Button. [https://techcrunch.com/2009/02/09/facebook-activates-like-button-friendfeed-tires-of-sincere-flattery/?guccounter=1&guce\\_referrer=aHR0cHM6Ly9lbi53aWtpcGVkaWEub3JnLw&guce\\_referrer\\_sig=AQAAAECAGb9L1N4H6rl-wYNgdSQ84892q1SC81sObukLVDOFG0vVEHWcfkZkEcXuHYPXwpTpWoz7NP5Lc0w8tYQhE1W4z0fxDH3X2IuIRUIOCId93gyrKj8USys8CIRDbgebt2iA2byHBNyC1sThbNFcXsfMACw45UpK56HHe](https://techcrunch.com/2009/02/09/facebook-activates-like-button-friendfeed-tires-of-sincere-flattery/?guccounter=1&guce_referrer=aHR0cHM6Ly9lbi53aWtpcGVkaWEub3JnLw&guce_referrer_sig=AQAAAECAGb9L1N4H6rl-wYNgdSQ84892q1SC81sObukLVDOFG0vVEHWcfkZkEcXuHYPXwpTpWoz7NP5Lc0w8tYQhE1W4z0fxDH3X2IuIRUIOCId93gyrKj8USys8CIRDbgebt2iA2byHBNyC1sThbNFcXsfMACw45UpK56HHe)

<sup>110</sup> Facebook Prospectus 2012.

<sup>111</sup> Facebook To Release A “Like” Button For the Whole Darn Internet. <https://techcrunch.com/2010/03/25/facebook-to-release-a-like-button-for-the-whole-darn-internet/>

<sup>112</sup> Facebook Prospectus 2012.

<sup>113</sup> Like and React to Posts. <https://www.facebook.com/help/1624177224568554/>

<sup>114</sup> Facebook’s Web of Frenemies. The Wall Street Journal. 2/15/2011.

<https://www.wsj.com/articles/SB10001424052748704593604576141350618351030>

“Yay.” The company thinks that these reactions were designed to have universal appeal and be easily understood by users around the world.<sup>115</sup> According to Chris Cox, Facebook’s Chief Product Officer, the company developed these reactions by studying the most common and universal comments and reactions across the platform, then crafting a user experience that was both elegant and fun.<sup>116</sup>

These additional reaction buttons not only allowed users to communicate their emotions more accurately but also helped Facebook better understand their content preferences in a more granular perspective. The company developed a complex algorithm that factors in the number of reactions a post receives, influencing its prominence in a user’s feed.<sup>117</sup> For example, posts that receive many likes are more likely to appear higher in a user’s feed. Facebook’s goal is to prioritize content that it believes users will find most interesting, which often means showing more positive posts over those that evoke sadness or anger. The reaction buttons are available for all posts, whether from individual users, groups, or brands. Notably, Facebook does not allow company pages to block users from reacting with the “Angry” button. This potentially increases the validity perceived by some users on content posted on Facebook. The company uses “Angry” reactions as a signal to evaluate and rank content, reducing the visibility of posts that could contribute to negative experiences on the platform. If a post receives many “Angry” reactions, it is less likely to be shown to other users.<sup>118</sup>

**In addition to analyzing users’ reactions, Facebook’s algorithm is also tuned to consider the amount of time users spend on different posts. The platform recognizes that some users may not always react to posts, especially in cases of serious or sensitive content.<sup>119</sup> Rather than merely measuring time spent on a post, Facebook’s algorithm compares the time a user spends on a particular post to the time spent on other posts, accounting for individual differences such as reading speed and internet connection speed.**

Facebook’s algorithm distributes content to users through four basic steps designed to determine what content is most relevant and engaging to individual users.<sup>120</sup> These steps are applied to every story, across all of a user’s connections, every time they open Facebook:

1. Inventory: What content has been posted by friends and publishers? This step compiles a set of posts shared by friends and pages that the user follows. Depending on which pages users are viewing, different kinds of posts will be pushed.
2. Signals: Who posted this story? This step considers hundreds of thousands of signals, such as who posted the story and when it was posted. It also takes into account the viewing environment, including the time of day and the speed of the user’s internet connection.
3. Predictions: How likely is the user to engage with this post such as commenting? This step predicts a user’s likelihood to comment, spend time reading, watch videos, or find the post informative.
4. Score: How interested will people be in this post? This step calculates the likelihood that users will click, spend time with the post, like, comment, share, or visit a low-quality webpage. The algorithm will make its best guess on how meaningful it believes users will find the posts are.

The more users engage with content on Facebook, using features like the “Like,” “Love,” and “Angry” buttons, the more sophisticated Facebook’s understanding of their preferences becomes. Facebook is an open platform with a communicated top priority of building useful and engaging products that aim to help users connect with friends, discover and learn about what’s happening in the world, and express themselves.<sup>121</sup> On Facebook, users can stay connected with friends, family, and colleagues by sharing major life events, uploading photos, congratulating friends on new jobs, or simply staying in touch through messages and chats. They can also stay informed about what’s happening around them and in the world through the News Feed, which includes updates from friends and family, as well as reactions to posts

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<sup>115</sup> Facebook Adds 'Reactions' to Like Button Feature. CNN. <https://money.cnn.com/2015/10/08/technology/facebook-reactions-ireland-spain/>

<sup>116</sup> Facebook Adds 'Reactions' to Like Button Feature. CNN. <https://money.cnn.com/2015/10/08/technology/facebook-reactions-ireland-spain/>

<sup>117</sup> Facebook Adding ‘Reactions’ Buttons to Its Response Options. <https://www.registercitizen.com/news/article/Facebook-adding-Reactions-buttons-to-its-11978720.php>

<sup>118</sup> Like and React to Posts. <https://www.facebook.com/help/1624177224568554/>

<sup>119</sup> Facebook News Feed Algorithm to Measure How Long You Look at Specific Posts. <https://www.cbc.ca/news/trending/facebook-news-feed-algorithm-to-measure-how-long-you-look-at-specific-posts-1.3114225>

<sup>120</sup> How Facebook Distributes Content. <https://www.facebook.com/business/help/718033381901819?id=208060977200861>

<sup>121</sup> Facebook Prospectus 2012.

from publishers that friends have shared, and conversations in the comments on videos and articles. However, users have total control over what they share on Facebook and can choose who sees their content, whether it's all friends, a select group, the public, or just themselves.<sup>122</sup> This level of control allows users to curate their online experience, giving them a sense of security and ownership and freedom to share their thoughts within a personalized, controlled environment. Mark Zuckerberg once stated that "people have information they don't want to share with everyone. If you give people very tight control over what information they are sharing or who they are sharing with, they will actually share more. One example is that one-third of our users share their cell phone numbers on the site."<sup>123</sup>

In addition to being a social platform for users, Facebook is also open to developers, offering application programming interfaces (APIs) and other development tools to build social apps on the platform or to integrate their websites with Facebook. By the time of its IPO, Facebook already had over nine million apps and websites integrated with it. For instance, in 2011, The Washington Post launched The Washington Post Social Reader on Facebook, providing personalized news based on users' reading habits and allowing them to see what their friends were reading.<sup>124</sup> Spotify integrated with Facebook to offer a social music experience, enabling users to share playlists, listen to songs with friends, and explore new music through their connections.<sup>125</sup> TripAdvisor used Facebook social plugins so users could see which friends were using TripAdvisor, share travel plans, and discuss future trips.<sup>126</sup>

From users' point of view, Facebook could potentially be a one-stop shop for users to share anything with their friends, learn about what's happening around them and in the world, and express themselves. The more time users spend on the platform, the better Facebook's algorithm becomes at learning their preferences, displaying content they will find engaging, and attracting more users who enjoy the content. This creates a positive network effect, continuously growing Facebook's user base and reinforcing the platform's value.<sup>127</sup>

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<sup>122</sup> Facebook Prospectus 2012.

<sup>123</sup> Case Study: Facebook – The First Ten Years. Harvard Business School.

<sup>124</sup> Washington Post Social Reader. The Washington Post. [https://www.washingtonpost.com/washington-post-social-reader-editors-note/2011/09/22/gIQRauCoK\\_story.html?hpid=z3](https://www.washingtonpost.com/washington-post-social-reader-editors-note/2011/09/22/gIQRauCoK_story.html?hpid=z3)

<sup>125</sup> Facebook Prospectus 2012.

<sup>126</sup> Facebook Prospectus 2012.

Figure 16-1: Facebook "Like" Button<sup>127</sup>

 Facebook flashmob shuts down station – CNN.com

Source: www.cnn.com



Thousands of dancers jammed a major London Facebook-driven "flashmob" mimicking an adve company.

Comment – Unlike – Share 

 You, Frank Cho, Caitlin O'Farrell, Maureen O'Hara and 3 others like this.

 **Annie Ta** at 11:27am February 9  Can't believe they pulled this off

 **Carolyn Abram** at 11:27am February 9  sweet.

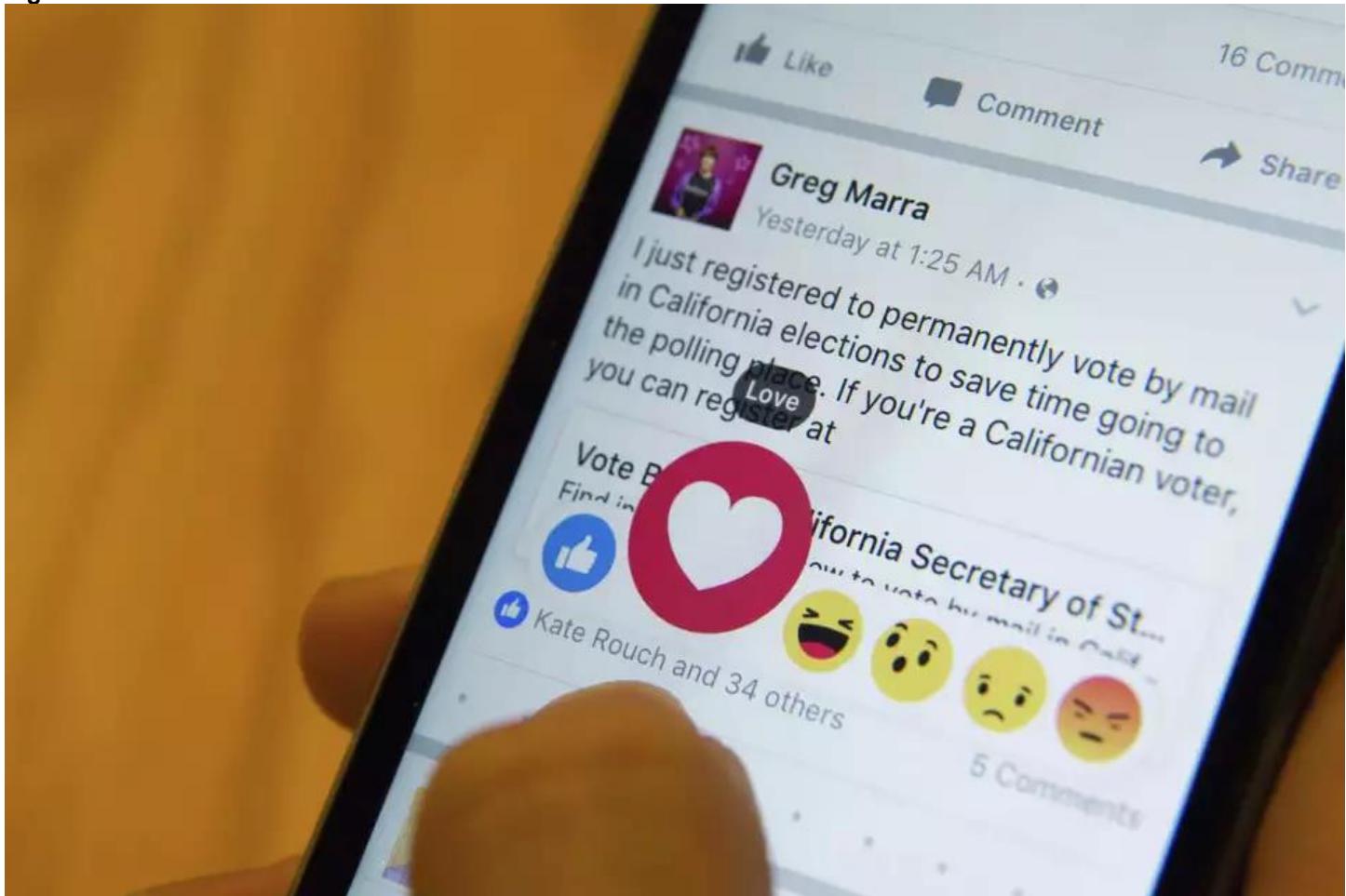
 **Maureen O'Hara** at 11:30am February 9  FB's mission at it's best :)

 **Frank Cho** at 11:30am February 9  Life imitating art... awesome.

Write a comment...

<sup>127</sup> Facebook Activates "Like" Button. [https://techcrunch.com/2009/02/09/facebook-activates-like-button-friendfeed-tires-of-sincere-flattery/?guccounter=1&guce\\_referrer=aHR0cHM6Ly9lbi53aWtpcGVkaWEub3JnLw&guce\\_referrer\\_sig=AQAAAFECaGb9L1N4H6rl-wYNgdSQ84892q1SC81sObukLVDOFG0vVEHWCfkZkEcXuHYP SXwpTpWoz7NP5Lc0w8tYQhE1W4z0fxDH3X2IualRUIIOCl-vD93gyrKj8USys8CIRDBgebt2iA2byHBNyCJ1sThbNFcXSfMACw45UpK56HHe](https://techcrunch.com/2009/02/09/facebook-activates-like-button-friendfeed-tires-of-sincere-flattery/?guccounter=1&guce_referrer=aHR0cHM6Ly9lbi53aWtpcGVkaWEub3JnLw&guce_referrer_sig=AQAAAFECaGb9L1N4H6rl-wYNgdSQ84892q1SC81sObukLVDOFG0vVEHWCfkZkEcXuHYP SXwpTpWoz7NP5Lc0w8tYQhE1W4z0fxDH3X2IualRUIIOCl-vD93gyrKj8USys8CIRDBgebt2iA2byHBNyCJ1sThbNFcXSfMACw45UpK56HHe)

Figure 16-2: Facebook Reaction Buttons<sup>128</sup>



Facebook Pages are a powerful tool designed to attract and retain users by allowing anyone, including artists, public figures, businesses, brands, organizations, and charities, to create a public presence on Facebook. These Pages enable owners to connect directly with users who are interested in their messages, products, or services, and build a community for users to share their common interests.<sup>129</sup> Through Pages, owners can provide updates, answer questions, receive feedback, and generally stimulate interest in their offerings. When a user Likes a Page, the Page owner can continuously share content with that user via their News Feed. Moreover, when a user interacts with a post by Likes or Comments, that action may appear in their friends' News Feeds, thereby increasing the Page's visibility and engagement to their networks.

Facebook Pages are both free and simple to create. While Facebook does not charge Page owners for using the platform or distributing their content, the company believes that engagement with and awareness of these Pages can be further enhanced through Facebook ads and sponsored stories.<sup>130</sup> By the time Facebook went public in 2012, over 42 million Pages had ten (yes, ten, reported by Facebook) or more Likes. Popular Pages, such as those for Lady Gaga, Disney, and Manchester United, each had over 20 million Likes. By 2018, then-Chief Operating Officer Sheryl Sandberg revealed that there were more than 80 million Facebook Pages.<sup>131</sup> Users can easily find and join communities centered around their favorite brands, celebrities, and artists, as well as other figures and organizations.

Facebook Pages have played a significant role in the platform's growth. For instance, in 2009, when Facebook had 360 million active users, Michael Jackson became the most popular person on the platform with over 7 million followers under his Page, which was created in December 2007, surpassing then-President Obama, who had 6 million followers.<sup>132</sup> CNN

<sup>128</sup> Facebook Adding 'Reactions' Buttons to Its Response Options. <https://www.registercitizen.com/news/article/Facebook-adding-Reactions-buttons-to-its-11978720.php>

<sup>129</sup> Facebook Prospectus 2012.

<sup>130</sup> Facebook Prospectus 2012.

<sup>131</sup> Facebook Q1 2018 Earnings Call. 4/25/2018.

<sup>132</sup> Michael Jackson Is Facebook's Most Popular.

<https://edition.cnn.com/2009/TECH/07/07/michael.jackson.popular.facebook/index.html>

reported that this popularity helped drive viral growth, as Pages with many fans were recommended to others, attracting even more users.<sup>133</sup> As of August 2024, Michael Jackson's Page has over 69 million followers.<sup>134</sup>

In 2013, Facebook introduced a verification feature for Pages and profiles, designed to add an extra layer of authenticity to high-profile accounts.<sup>135</sup> Verified Pages and profiles display a blue check mark to indicate the person or business is the legitimate account holder, including prominent public figures such as celebrities, journalists, government officials, and businesses. We believe that this move increased the trustworthiness of Pages, particularly fan pages of celebrities such as singers and athletes, many of whom have a large base of loyal fans globally. For example, as of August 2024, Cristiano Ronaldo's Page has over 170 million followers, as Figure 17-1 shows. On his page, users can see that Facebook has confirmed and verified that Ronaldo himself or any representative organization has completed the verification process and is responsible for the Page. We believe this verification likely adds the authenticity on the content posted on the page, potentially making fans feel closer to their idols by leading them to an impression that Ronaldo and his team personally manage the Page.

Ronaldo's Facebook Page was created in 2009, and by 2014, he became the first athlete to reach 100 million fans.<sup>136</sup> Since 2009 to 2014, his posts received an estimated 232 million Likes and nearly 10 million comments, implying a vast reach across the platform.

The large follower base of these Pages not only attracts new users but also offers significant commercial value to businesses. **For example, in 2016, Nike signed a \$1 billion lifetime deal with Ronaldo due to his substantial social media influence.**<sup>137</sup> Forbes, citing a third-party analytic platform in sports sponsorship in social and digital media, estimated that Ronaldo's social media presence, consisting 262 million fans, including 120 million followers on Facebook and 92 million from Instagram, was worth \$474 million in media value for Nike in 2016 alone.<sup>138</sup> Due to the popularity of these public figures and shared interests among users, brands like Nike and Adidas purchase advertising services from Facebook, which targets ads to the relevant audience, as examples shown in Figure 18-1 and Figure 18-2.

Facebook hosts many other mega-influencers besides Ronaldo. Just to name a few, as of August 2024, Leo Messi has over 116 million followers, Shakira has more than 123 million, Rihanna has over 104 million, and Taylor Swift has over 80 million followers.<sup>139</sup> Beyond celebrities, users can find communities that align with their interests, whether it's a major brand like Samsung with over 162 million followers or a fictional character from a British sitcom like Mr. Bean with over 140 million followers.<sup>140</sup> Even small local businesses, like neighborhood restaurants or coffee shops, can create Pages to interact with their customers and build communities around shared interests.

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<sup>133</sup> Michael Jackson Is Facebook's Most Popular. CNN.

<https://edition.cnn.com/2009/TECH/07/07/michael.jackson.popular.facebook/index.html>

<sup>134</sup> Michael Jackson Facebook Page. [https://www.facebook.com/michaeljackson?locale=en\\_GB](https://www.facebook.com/michaeljackson?locale=en_GB)

<sup>135</sup> Facebook Unveils Verified Pages And Profiles. <https://techcrunch.com/2013/05/29/facebook-unveils-verified-pages-and-profiles-takes-a-page-from-twitters-playbook/>

<sup>136</sup> Cristiano Ronaldo Is First Athlete With 100 Million Facebook Fans.

<https://www.forbes.com/sites/kurtbadenhausen/2014/10/14/cristiano-ronaldo-is-first-athlete-with-100-million-facebook-fans/>

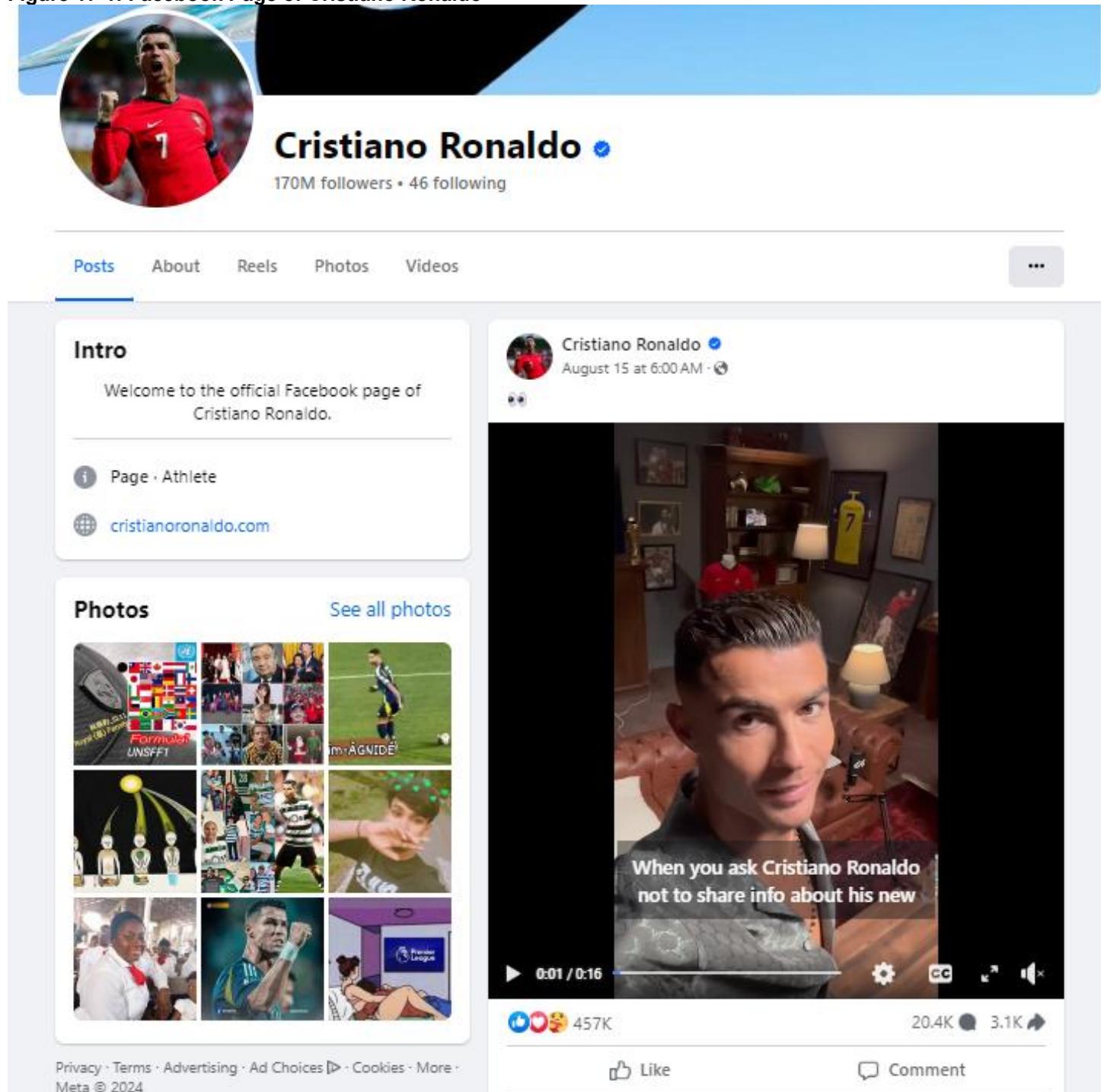
<sup>137</sup> Ronaldo's \$1 Billion Nike Deal Could Be The Future of Social Media Marketing. <https://www.businessinsider.com/ronaldos-1-billion-nike-deal-could-be-the-future-of-social-media-marketing-2017-3>

<sup>138</sup> Ronaldo's \$1 Billion Nike Deal Could Be The Future of Social Media Marketing. <https://www.businessinsider.com/ronaldos-1-billion-nike-deal-could-be-the-future-of-social-media-marketing-2017-3>

<sup>139</sup> Facebook Pages. Retrieved on 8/18/2024.

<sup>140</sup> Samsung Facebook Page; Mr. Bean Facebook Page. Retrieved on 8/18/2024.

Figure 17-1: Facebook Page of Cristiano Ronaldo<sup>141</sup>



The screenshot shows Cristiano Ronaldo's official Facebook page. At the top, there is a profile picture of him in a red Portugal national team jersey, with the number 7 on his shirt. Below the profile picture, his name "Cristiano Ronaldo" is displayed with a blue verification checkmark. Underneath his name, it says "170M followers • 46 following". Below this, there are navigation links for "Posts", "About", "Reels", "Photos", "Videos", and a "More" button. The "Photos" section is currently selected, showing a grid of 12 thumbnail images. To the right of the grid, there is a video player showing a video of Cristiano Ronaldo. The video is titled "When you ask Cristiano Ronaldo not to share info about his new". The video has a play button, a timestamp of "0:01 / 0:16", and various video controls. Below the video player, there are engagement metrics: 457K likes, 20.4K comments, and 3.1K shares. At the bottom of the page, there are "Like" and "Comment" buttons, along with a "Privacy · Terms · Advertising · Ad Choices · Cookies · More · Meta © 2024" link.

<sup>141</sup> Cristiano Ronaldo Facebook Page. <https://www.facebook.com/Cristiano>

Figure 17-2: Verification of Cristiano Ronaldo's Page

## Page information for Cristiano Ronaldo i



Cristiano Ronaldo i

Athlete

### Organizations that manage this Page i



**Cristiano Ronaldo is responsible for this Page.**

This is a person or organization that has completed our verification process and claimed responsibility for this Page.



**Verified**

The verified badge means an account has been verified based on their activity across our products and information or documents they provide. Some verified accounts are owned by a notable person, brand or entity, while others are Meta Verified.

With a Meta Verified subscription, you get a verified badge, proactive account protection, access to direct account support and increased prominence across Facebook and Instagram. [Learn more](#)

**Figure 18-1: Nike Active Ads on Facebook**<sup>142</sup>

**Figure 18-2: Adidas Active Ads on Facebook**<sup>143</sup>

<sup>142</sup> Retrieved from Meta Ad Library on 8/26/2024.

[https://www.facebook.com/ads/library/?active\\_status=active&ad\\_type=all&country=ALL&media\\_type=all&publisher\\_platforms\[0\]=facebook&search\\_type=page&source=nav-header&view\\_all\\_page\\_id=15087023444](https://www.facebook.com/ads/library/?active_status=active&ad_type=all&country=ALL&media_type=all&publisher_platforms[0]=facebook&search_type=page&source=nav-header&view_all_page_id=15087023444)

<sup>143</sup> Retrieved from Meta Ad Library on 8/26/2024.

[https://www.facebook.com/ads/library/?active\\_status=active&ad\\_type=all&country=ALL&media\\_type=all&publisher\\_platforms\[0\]=facebook&search\\_type=page&source=nav-header&view\\_all\\_page\\_id=15087023444](https://www.facebook.com/ads/library/?active_status=active&ad_type=all&country=ALL&media_type=all&publisher_platforms[0]=facebook&search_type=page&source=nav-header&view_all_page_id=15087023444)

Harald Øverby, a provost at BI Norwegian Business School at the Norwegian University of Science and Technology, conducted a study and concluded that Facebook's exponential growth in user base is primarily as a result of network effects based on its disclosed data from 2011 to 2017.<sup>144</sup> These network effects have been important in the development of Facebook and its Family of Apps, including Instagram and WhatsApp.

Some economists and researchers also have shown that digital platforms such as Facebook primarily benefit from direct network effects, **where the value of the service increases as more users join. In the context of social media, this means that the more friends you have on Facebook, the more likely you are to join as well as to attract additional friends through your existing connections.**<sup>145</sup>

Facebook also benefits from indirect network effects, which occur when the platform matches multiple user groups with complementary needs, such as users and developers, or advertisers and consumers.<sup>146</sup> For example, as Facebook's user base grows, so does the variety of interesting and relevant content available on the platform, which in turn attracts even more users. A notable example of this was CityVille, once a popular social game developed by Zynga and launched on Facebook. By January 2011, just one month after its release, CityVille had amassed over 84.2 million monthly players, making it the most popular Facebook game or application at that time,<sup>147</sup> whereas Facebook had a total monthly active users of 608 million at the end of 2010. Social games like CityVille allowed users to form new connections with other players, potentially creating a denser, more global, and more integrated network. In addition, as more players join the game, their friends are more likely to join Facebook and play the game with their friends.

**As Facebook's user base expands, the network effects tend to intensify, enhancing the platform's efficiency and service level as more users join. The interesting content generated by both users and developers, at theoretically little cost to the company, further drives its growth. Facebook then monetizes these interactions by delivering targeted advertising and collecting fees.** This model is highly scalable, with costs remaining relatively low, primarily involving the expansion of data centers and servers.<sup>148</sup> Furthermore, continuous research and development investments are crucial for fine-tuning algorithms to generate engaging content that attracts individual users and better targets them for advertising.

The interactions and behaviors of users on the platform generate extensive data, which Facebook continuously leverages to improve its services and refine advertising targeting, creating a cycle of growth and increased value. As Figure 19-1 demonstrates, expenses related to data centers (primarily under the cost of revenue) and research and development have consistently been among the largest expenditures for Meta since its IPO, together accounting for over 41% of revenue on average from 2012 to 2023.

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<sup>144</sup> Network Effects in Facebook. Harald Øverby. BI Norwegian Business School.

[https://www.researchgate.net/publication/327326231\\_Network\\_effects\\_in\\_Facebook](https://www.researchgate.net/publication/327326231_Network_effects_in_Facebook)

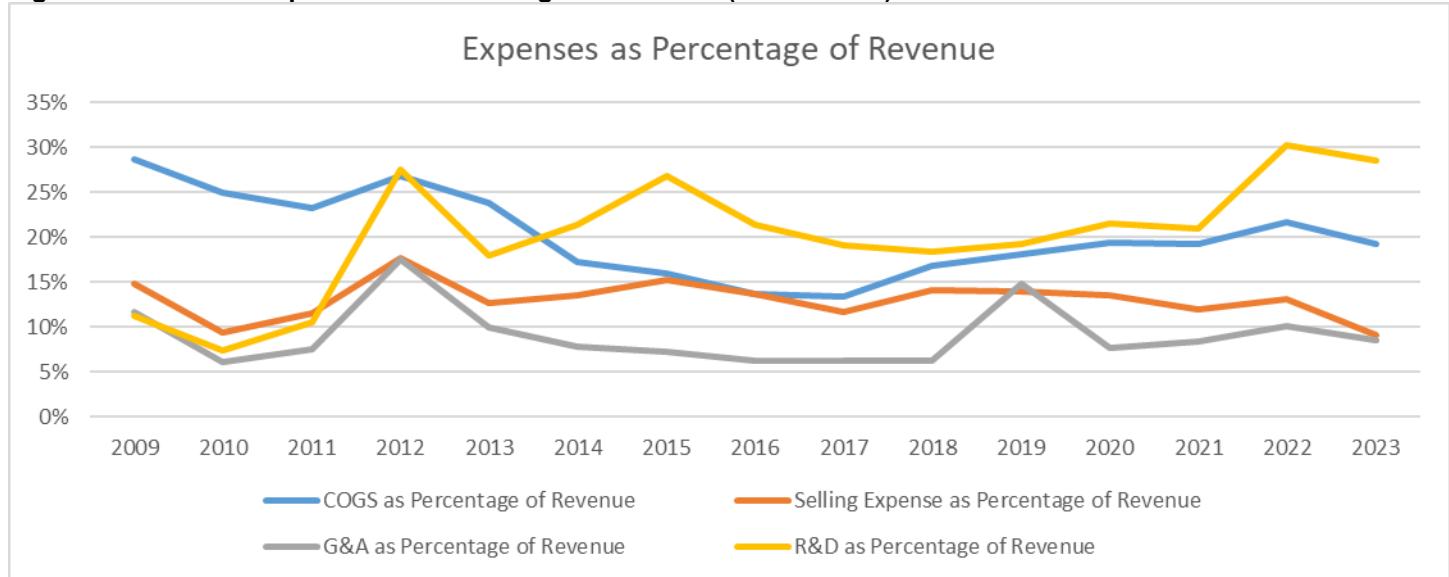
<sup>145</sup> What Are Network Effects? Harvard Business School. <https://online.hbs.edu/blog/post/what-are-network-effects>

<sup>146</sup> What Are Network Effects? Harvard Business School. <https://online.hbs.edu/blog/post/what-are-network-effects>; Why Tech Markets Are Winner-Take-All. <https://blogs.lse.ac.uk/medialse/2018/06/14/why-tech-markets-are-winner-take-all/>

<sup>147</sup> CityVille Has Largest Facebook Audience Ever. <https://www.gamedeveloper.com/game-platforms/-em-cityville-em-has-largest-facebook-audience-ever>

<sup>148</sup> Digital Dominance: The Power of Google, Amazon, Facebook, and Apple. Martin Moore and Damian Tambini.

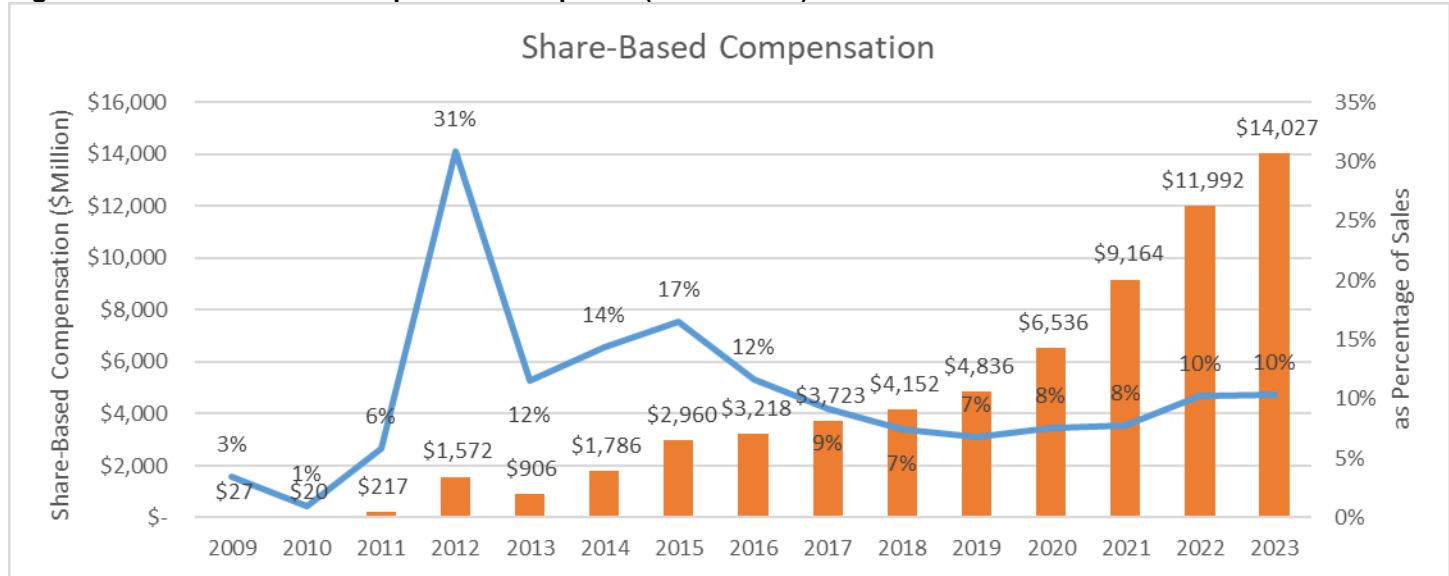
Figure 19-1: Meta's Expenses as Percentage of Revenue (2009 – 2023)



Notes:

1. Facebook's R&D expenses surged by \$1.01 billion, or 261%, in 2012, primarily due to \$729 million in expenses related to restricted stock units (RSU) tied to the IPO and increased payroll and benefits from a 73% rise in engineering, design, product management, and technical staff.<sup>149</sup> As a result, the R&D expenses as a percentage of the company's revenue grew from 10.5% in 2011 to 27.5% in 2012.
2. Facebook's selling expenses in 2012 increased \$503 million, or 128%, compared to 2011. The increase was primarily due to an increase in share-based compensation of \$269 million in 2012 resulting primarily from the recognition of expenses related to Pre-2011 RSUs triggered by the completion of Facebook's IPO in May 2012 and, to a lesser extent, Post-2011 RSUs.<sup>150</sup> As a result, the selling expenses as a percentage of the company's revenue grew from 11.5% in 2011 to 17.6% in 2012.
3. General and administrative expenses in 2012 increased \$578 million, or 184%, compared to 2011. The increase was primarily due to an increase in share-based compensation expense of \$278 million resulting from recognition of expense related to pre-2011 RSUs.<sup>151</sup> As a result, the G&A expenses as a percentage of the company's revenue grew from 7.5% in 2011 to 17.5% in 2012.

Figure 19-2: Share-based Compensation Expense (2009 – 2023)



Note:

<sup>149</sup> Facebook Annual Report 2012.

<sup>150</sup> Facebook Annual Report 2012.

<sup>151</sup> Facebook Annual Report 2012.

1. In 2012, Facebook recognized \$1.57 billion of share-based compensation expense, of which \$1.04 billion was due to the recognition of share-based compensation related to Pre-2011 restricted stock units triggered by the completion of its IPO in May 2012.<sup>152</sup> Had those expenses not been incurred, the share-based compensation expense as a percentage of sales would have been 10%.

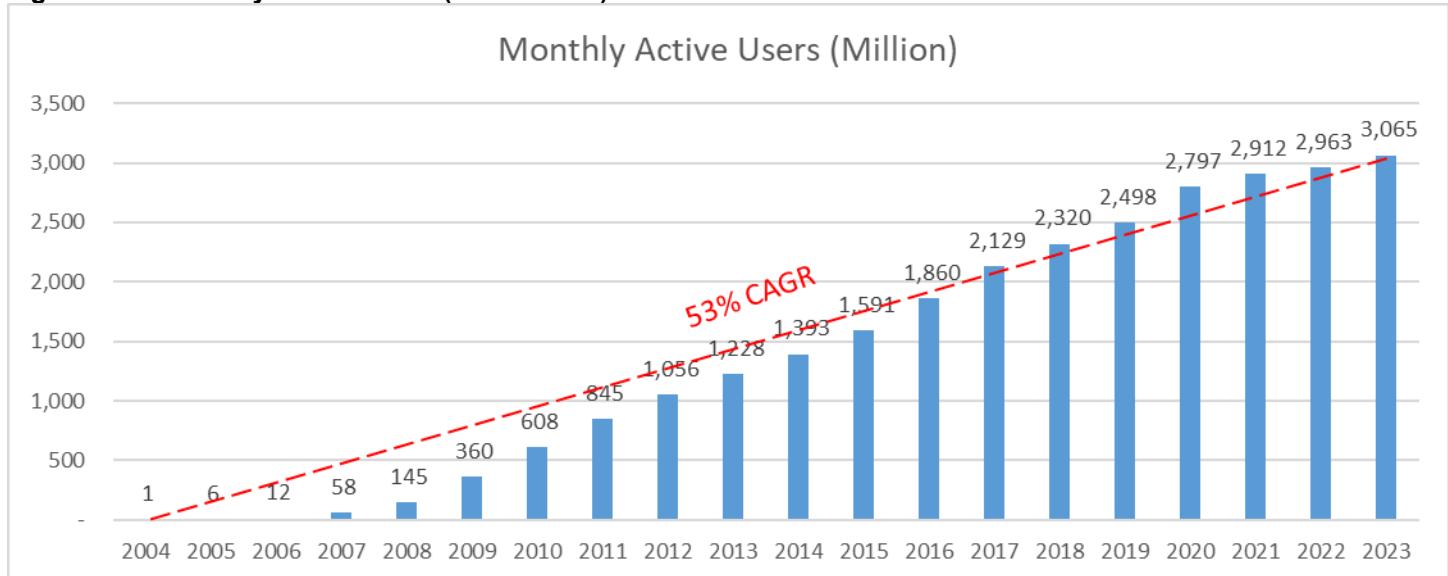
**Scholars also found that many technology industries exhibit winner-take all character, including social media companies.<sup>153</sup> As the network of Facebook continues to grow, the network effect is potentially reinforced by a few factors and potentially leads to a winner-take-all situation.** First, as mentioned above, the more people use it, the stronger the brand is going to be as it is widely spread across the world and becomes a habit for many users. Second, because of its popularity, many Facebook users already have many items attached to its Facebook accounts such as its real-life friends and online friend, family members and colleagues, organizations they belong to, and third-party accounts such as news sources and music playlists, all discourage switching.<sup>154</sup> In addition, in order to switch to a new social platform to replace Facebook, either a user needs to persuade many of his friends and colleague to switch with him, or many of his friends have already switched to a new platform.

As Facebook's user base expanded, it becomes increasingly essential for people not to feel left out of this social platform. Mark Zuckerberg himself highlighted the power of network effects, stating that businesses eventually attract new users simply because they want to interact with existing users.<sup>155</sup> He said:

"I think that network effects shouldn't be underestimated with what we do as well."

Furthermore, as Facebook continued to grow, many third-party websites began allowing users to sign in using their Facebook accounts, eliminating the need to create and remember different usernames and passwords for each site.<sup>156</sup> Facebook users can log in to countless other websites and applications, such as The Wall Street Journal, Spotify, and Yelp, as well as other popular websites that people browse regularly, using their Facebook accounts. This arrangement is mutually beneficial such that third-party sites simplify their user onboarding process by reducing the effort of users entering usernames, passwords, and other personal information, while Facebook embeds itself throughout the broader Internet ecosystem, expanding its influence and reach. Some websites reported that they saw a 30% to 200% increase in registration on their websites and a 15% to 100% increase in user engagement.<sup>157</sup>

**Figure 20-1: Monthly Active Users (2004 – 2023)**



Note:

<sup>152</sup> Facebook Annual Report 2012.

<sup>153</sup> Digital Dominance: The Power of Google, Amazon, Facebook, and Apple. Martin Moore and Damian Tambini.

<sup>154</sup> Why Tech Markets Are Winner-Take-All. <https://blogs.lse.ac.uk/medialse/2018/06/14/why-tech-markets-are-winner-take-all/>

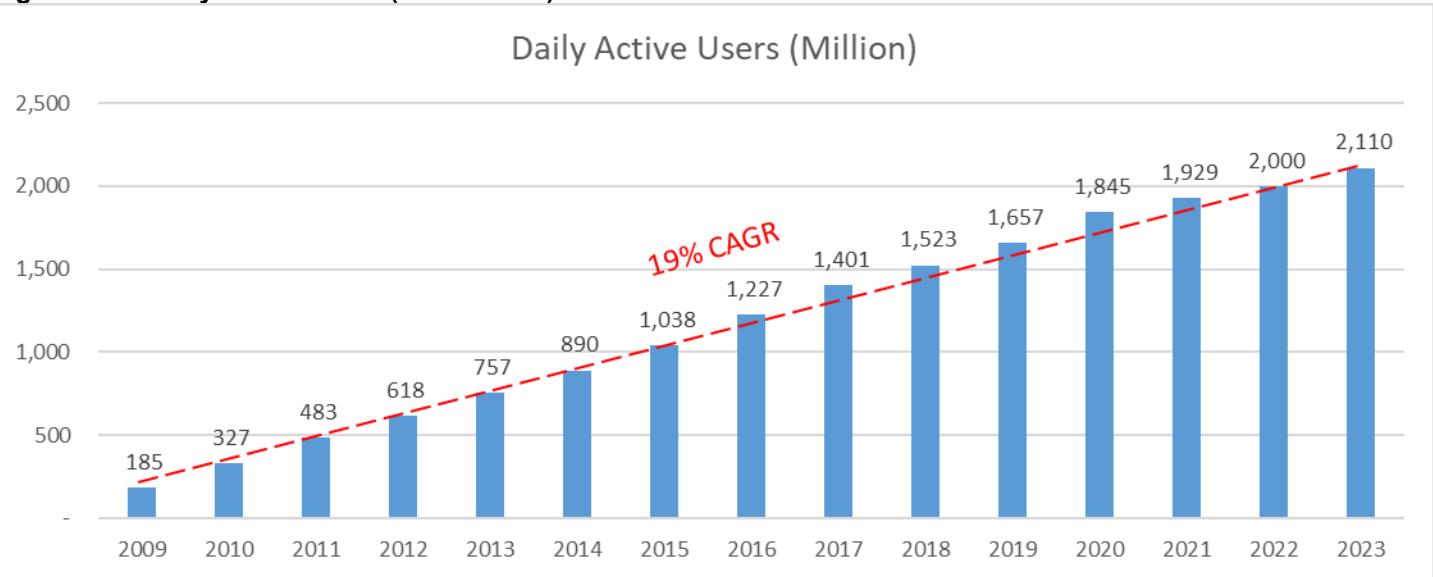
<sup>155</sup> Network Effects and Global Domination: The Facebook Strategy. Wired. <https://www.wired.com/2012/05/network-effects-and-global-domination-the-facebook-strategy/>

<sup>156</sup> Facebook Prospectus 2012.

<sup>157</sup> Case Study: Facebook – The First Ten Years. Harvard Business School.

1. Monthly active users (MAU) and daily active users (DAU) do not include users of Instagram or WhatsApp unless they would otherwise qualify as such users.<sup>158</sup>

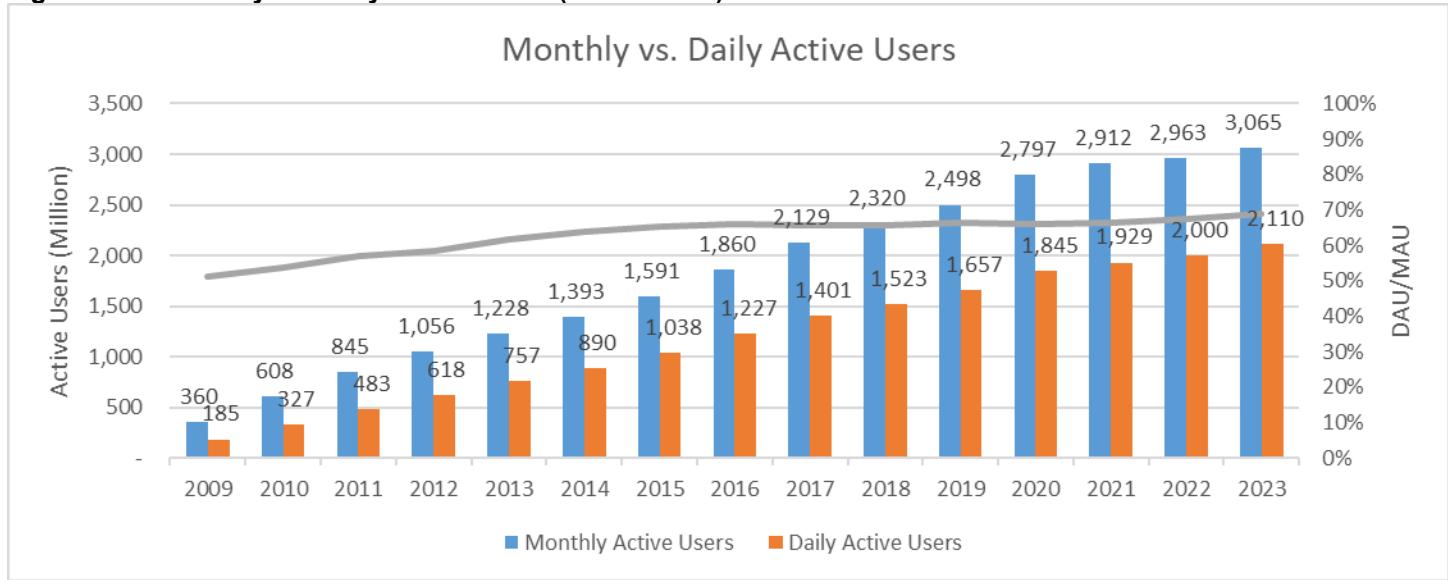
**Figure 20-2: Daily Active Users (2009 – 2023)**



Note:

1. Monthly active users (MAU) and daily active users (DAU) do not include users of Instagram or WhatsApp unless they would otherwise qualify as such users.<sup>159</sup>

**Figure 20-3: Monthly vs. Daily Active Users (2009 – 2023)**



Notes:

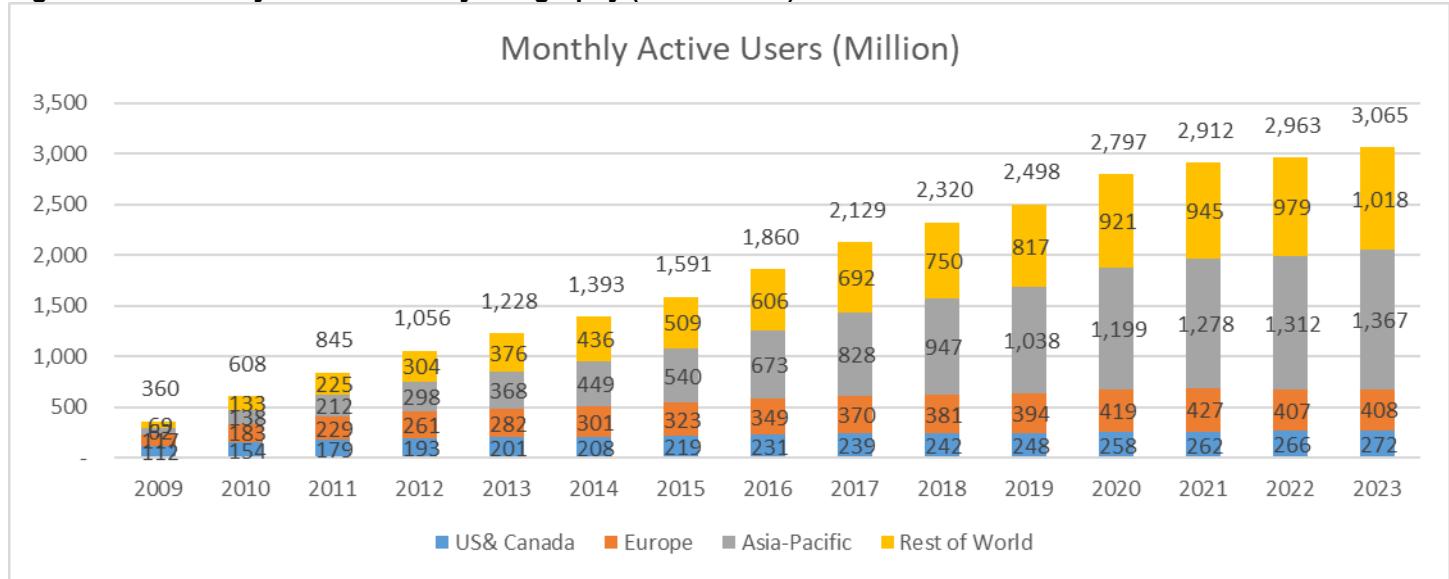
1. Daily active users-to-monthly active users ratio (DAU/MAU) is a measure of user engagement. It reflects how often monthly users are active on a daily basis, indicating the engagement level of Facebook. A higher DAU/MAU ratio suggests that users are more engaged, logging in frequently throughout the month.
2. Monthly active users (MAU) and daily active users (DAU) do not include users of Instagram or WhatsApp unless they would otherwise qualify as such users.<sup>160</sup>

<sup>158</sup> Facebook/Meta Annual Reports.

<sup>159</sup> Facebook/Meta Annual Reports.

<sup>160</sup> Facebook/Meta Annual Reports.

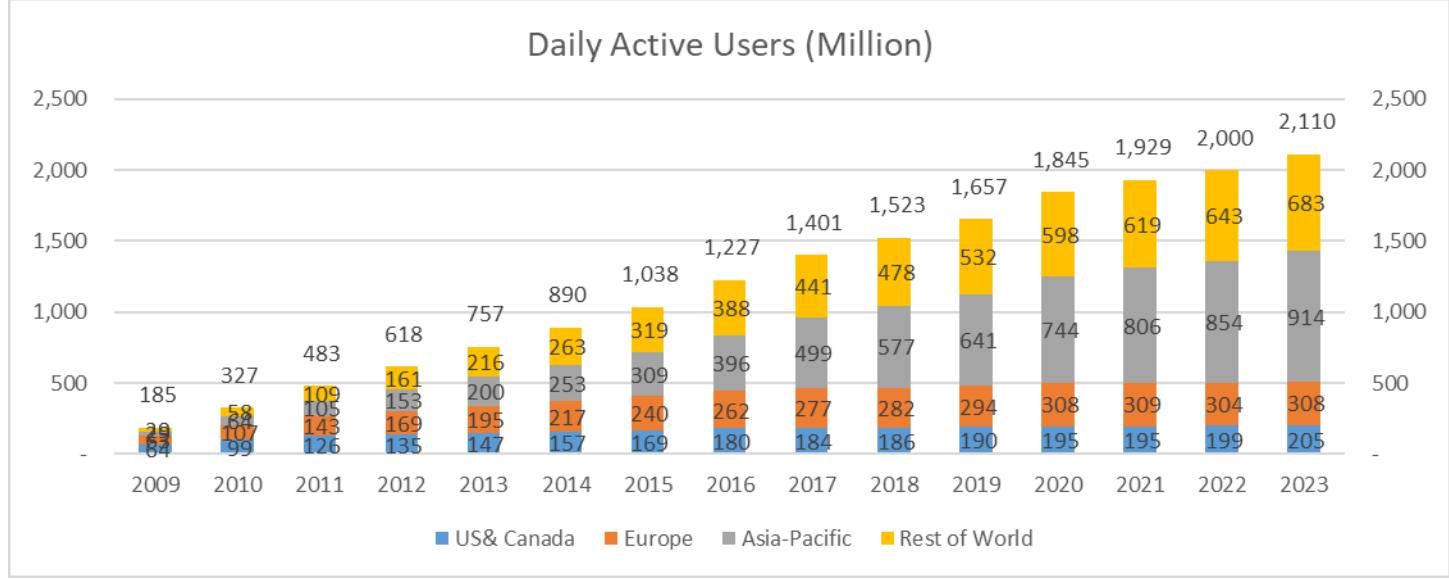
Figure 21-1: Monthly Active Users by Geography (2009 – 2023)



Note:

1. Monthly active users (MAU) and daily active users (DAU) do not include users of Instagram or WhatsApp unless they would otherwise qualify as such users.<sup>161</sup>

Figure 21-2: Daily Active Users by Geography (2009 – 2023)



Note:

1. Monthly active users (MAU) and daily active users (DAU) do not include users of Instagram or WhatsApp unless they would otherwise qualify as such users.<sup>162</sup>

Figure 22-1 indicates the steady rise in Facebook's user engagement over the years, measured by the ratio of daily active users (DAU) to monthly active users (MAU). The ratio essentially indicates the percentage of monthly active users who engage with Facebook on any given day. Since Facebook's initial public offering in 2012, the platform has seen a notable increase in user activity. **In 2012, the global engagement rate was approximately 59%. Over the years, this figure has grown steadily, reaching 69% by 2023.** This trend highlights how users have become more consistently active on the platform, indicating that a larger proportion of monthly users are accessing Facebook daily. Regionally, the U.S. and Canada stand out as the most engaged markets. In these areas, the engagement rate increased from 70% in 2012 to 75% in 2023, reflecting a particularly high level of daily activity among users. Europe follows a similar pattern, though with slightly lower engagement levels, while the Asia-Pacific, Rest of World, and other regions have shown more gradual but consistent increases over the same period. We believe a key reason for the difference between the U.S. and Canada

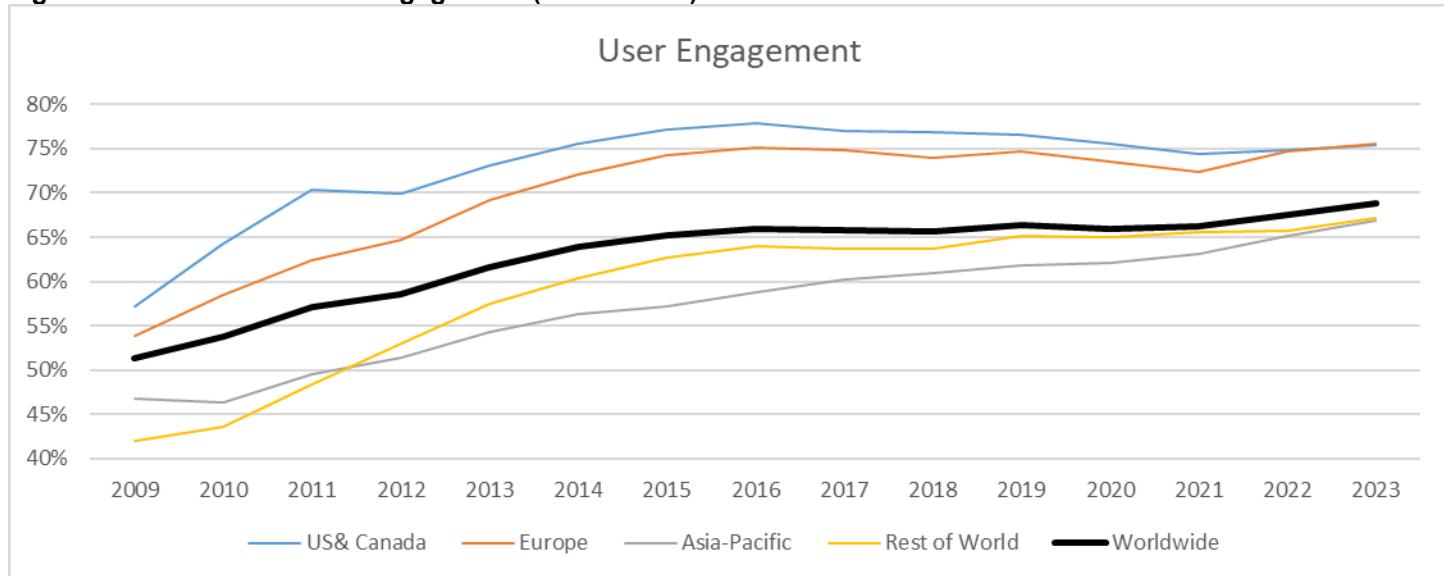
<sup>161</sup> Facebook/Meta Annual Reports.

<sup>162</sup> Facebook/Meta Annual Reports.

compared to the rest of the world lies in internet accessibility. As Figure 22-2 shows, internet penetration in the U.S. and Canada has consistently been higher than the world average, particularly in the early years when Facebook was founded, though this gap has been narrowing over time. In regions with high internet penetration, access is easier and more readily available, which likely contributes to a higher number of active internet users. In 2004, when Facebook was launched, over 65% of people in the U.S. and Canada had internet access, compared to just 14% globally. By 2021, internet access had risen to over 90% in the U.S. and Canada, while the global average reached 63%. European Union has followed a similar trend, with penetration rates slightly lower than in the U.S. and Canada, but still significantly higher than the world average.

There is no established industry standard for measuring user engagement that we could benchmark with Facebook's. Other companies do not provide sufficient disclosures for us to estimate it, making it difficult to draw direct comparisons. However, Twitter, often regarded as one of Facebook's key competitors, has reported significantly lower engagement figures on several occasions. In Q3 2014, Twitter's Daily Active Users-to-Monthly Active Users ratio (DAU/MAU) in its top 5 markets was in the low 50% range. For the top 10 markets, this figure was slightly lower, and for the top 20 markets, which make up 80% of Twitter's user base, it was in the high 40% range.<sup>163</sup> By Q2 2015, Twitter's DAU/MAU ratio for the top 20 markets had dropped to around 44%.<sup>164</sup> By 2019, the company's DAU/MAU was 39%.<sup>165</sup> This downward trend indicates that Twitter's users have become less engaged over time, which contrasts sharply with Facebook's rising user engagement.

**Figure 22-1: Facebook User Engagement (2009 – 2023)**



Notes:

1. User engagement is approximated by daily active users-to-monthly active users ratio (DAU/MAU).
2. DAU/MAU is a measure of user engagement. It reflects how often monthly users are active on a daily basis, indicating the engagement level of Facebook. A higher DAU/MAU ratio suggests that users are more engaged, logging in frequently throughout the month.
3. Monthly active users (MAU) and daily active users (DAU) do not include users of Instagram or WhatsApp unless they would otherwise qualify as such users.<sup>166</sup>

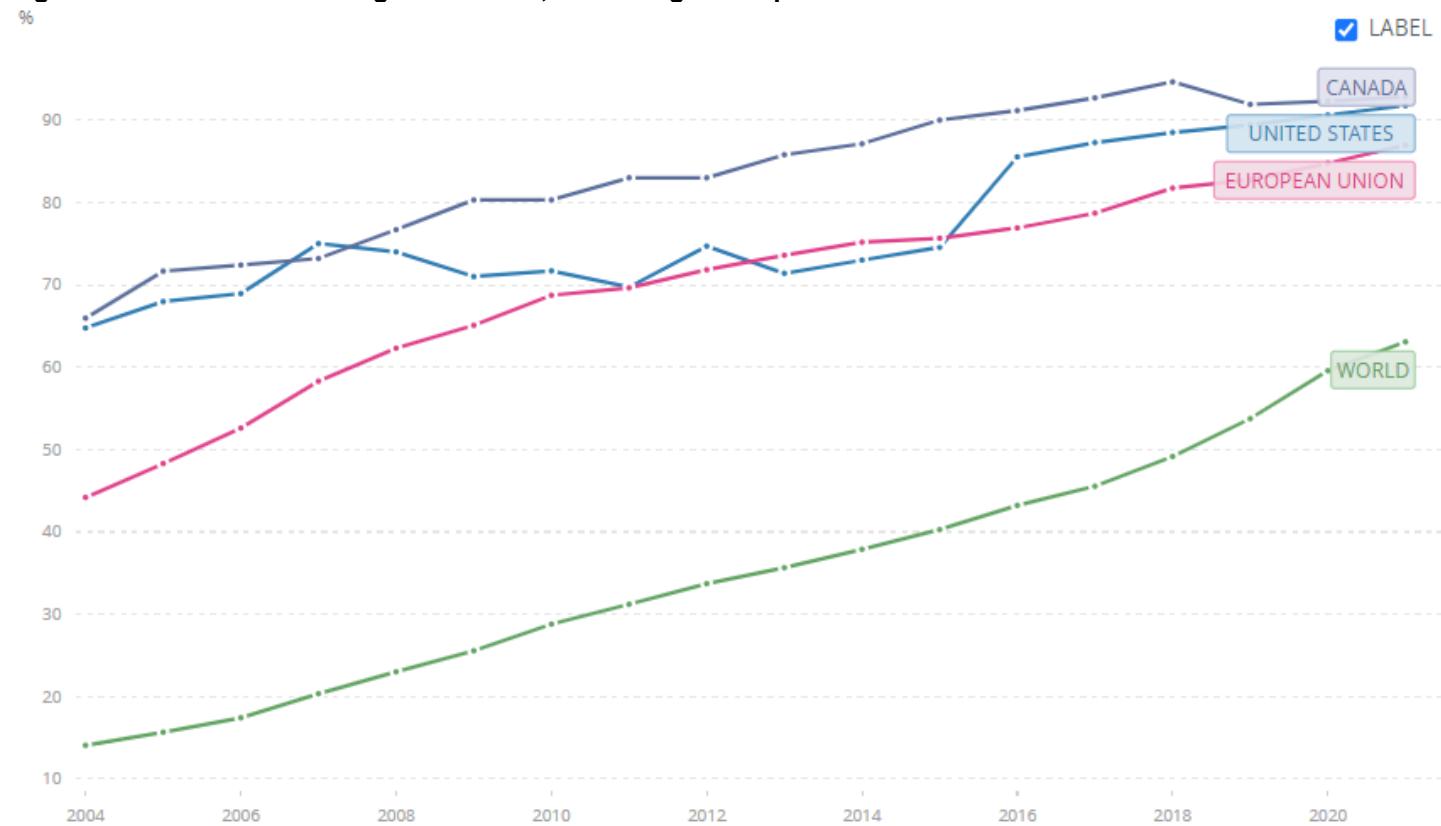
<sup>163</sup> Twitter Q3 2014 Earnings Call. 10/27/2014.

<sup>164</sup> Twitter Q2 2015 Earnings Call. 7/28/2015.

<sup>165</sup> Twitter Q4 2018 Earnings. 2/7/2019.

<sup>166</sup> Facebook/Meta Annual Reports.

Figure 22-2: Individuals Using the Internet, Percentage of Population 2004 – 2021<sup>167</sup>

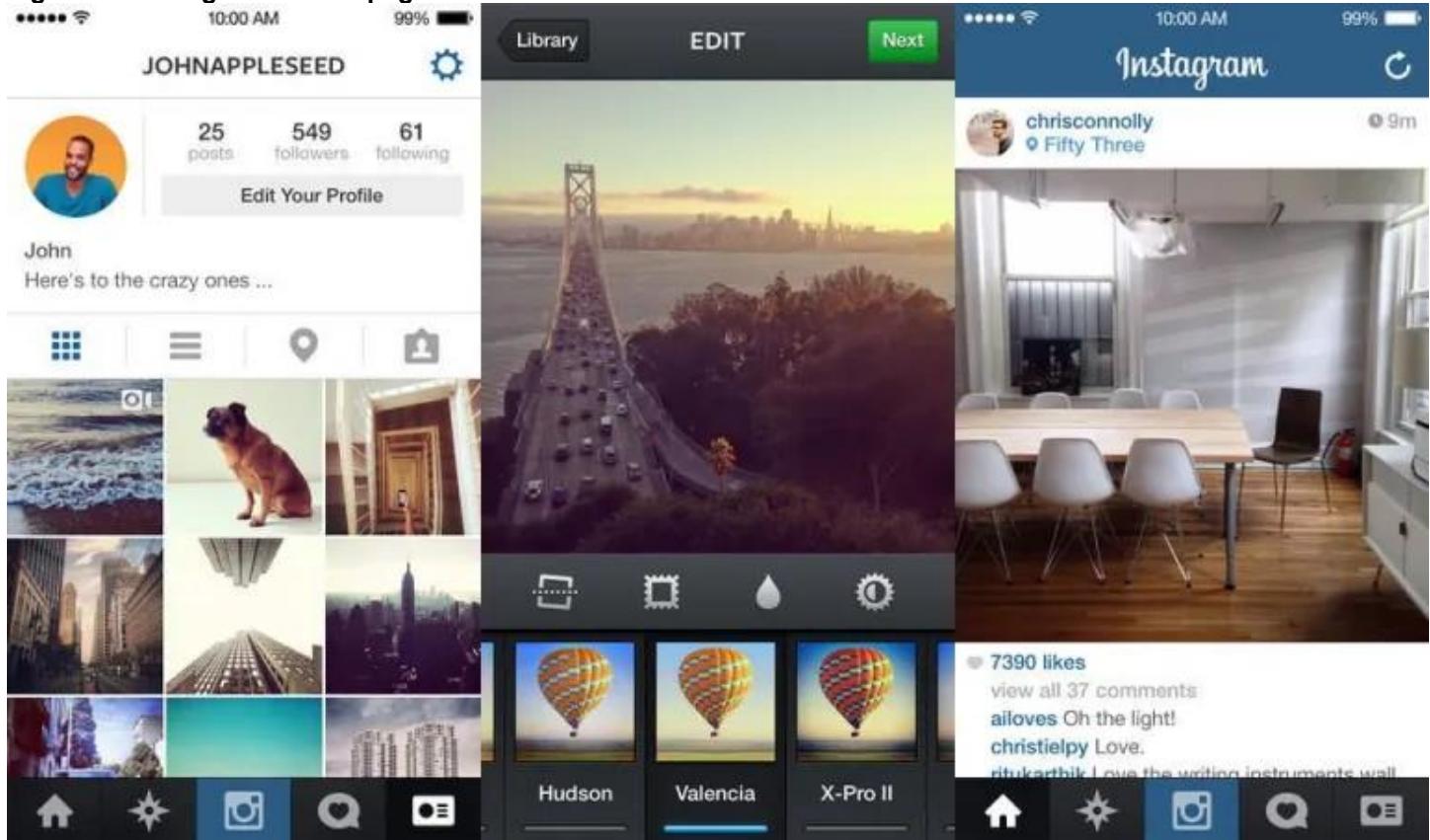


<sup>167</sup> Individuals using the Internet (% of population) - United States, World, Canada, European Union. World Bank. <https://data.worldbank.org/indicator/IT.NET.USER.ZS?end=2021&locations=US-1W-CA-EU&start=2004>

## Instagram

Instagram was founded in 2010 by Kevin Systrom and Mike Krieger in San Francisco. It started as a mobile app designed for location-aware photo-sharing, offering users the ability to enhance their photos with stylistic filters, frames, and effects.<sup>168</sup> These features were useful and considered necessary by users at the time since most phone cameras could not produce high-quality photos.<sup>169</sup> Before its official launch on Apple's App Store in October 2010, Instagram was already available to beta users for several weeks. Within hours of its public release, the app attracted over 10,000 users and quickly surpassed the founders' expectations, continuing to grow rapidly.<sup>170</sup>

**Figure 23: Instagram's Homepage 2010<sup>171</sup>**



A key feature of Instagram's photo-sharing was its hashtag function, allowing users to categorize their photos into albums that anyone could subscribe to, add photos to, and share with others, even outside their network.<sup>172</sup> By April 2012, when Facebook announced its acquisition of Instagram, the app had already accumulated over 27 million users and operated with just a dozen employees.<sup>173</sup>

Instagram's early success was largely due to its simplicity. Users loved how easy it was to take photos, apply beautiful effects, and share them with friends and followers. Some users also found it addictive and preferred it to other platforms such as Facebook for various reasons.<sup>174</sup>

<sup>168</sup> Kevin Systrom and Mike Krieger, Founders of Instagram. <https://www.inc.com/30under30/2011/profile-kevin-systrom-mike-krieger-founders-instagram.html>

<sup>169</sup> Facebook Q2 2013 Earnings Call. 7/24/2013.

<sup>170</sup> Kevin Systrom and Mike Krieger, Founders of Instagram. <https://www.inc.com/30under30/2011/profile-kevin-systrom-mike-krieger-founders-instagram.html>

<sup>171</sup> Evolution of Instagram. <https://paigepowers.wordpress.com/2016/05/13/evolution-of-instagram/>

<sup>172</sup> Instagram Taps Hashtags To Bundle Pictures. <https://techcrunch.com/2011/01/27/instagram-hashtags/>

<sup>173</sup> Kevin Systrom and Mike Krieger, Founders of Instagram. <https://www.inc.com/30under30/2011/profile-kevin-systrom-mike-krieger-founders-instagram.html>

<sup>174</sup> Instagram Sells For \$1 Billion, Despite No Revenue. <https://www.npr.org/2012/04/10/150372288/instagram-sells-for-1-billion-despite-no-revenue>

In April 2012, Facebook acquired Instagram for approximately \$1 billion, for a combination of \$300 million in cash and the rest in Facebook shares.<sup>175</sup> This was Facebook's largest deal at the time of IPO, despite Instagram being only two years old and not generating any revenue.<sup>176</sup> Kevin Systrom, one of Instagram's founders, mentioned that there had been no immediate plans to monetize Instagram, as the team was focused on refining the product and solidifying its position as a leader in the mobile space. However, he did consider various revenue models, such as offering premium services such as extra filters or incorporating an advertising platform.<sup>177</sup>

Mark Zuckerberg viewed the acquisition as a significant milestone for Facebook, as it was the first time the company acquired a product and a company with such a large user base.<sup>178</sup> It was worth noting that just a few days before the acquisition was announced, Instagram closed \$50 million funding in Series B, valuing the company at \$500 million.<sup>179</sup>

After the acquisition, Facebook decided to let Instagram continue operating independently rather than fully integrating it into Facebook.<sup>180</sup> This decision was partly because Instagram already had millions of users who recognized and valued its unique brand. Facebook wanted to ensure that Instagram users could continue sharing posts on Instagram without being required to use Facebook and could maintain separate followings and friends on each platform. Zuckerberg stated that the acquisition was intended to complement Facebook by incorporating Instagram's features and learning from its experience to build similar capabilities for Facebook. This acquisition would also help Instagram grow by leveraging Facebook's engineering resources and infrastructure,<sup>181</sup> which Instagram lacked given its size compared to Facebook. However, there were speculations that Facebook acquired Instagram to fend off potential competition. Josh Bernoff, who was the author of the book *Groundswell* about social media company and the then Vice President at Forrester Research, a consulting firm specializing in technology industry, suggested that Facebook was afraid of Instagram's potential, which explained the high acquisition price despite Instagram's small size at the time.<sup>182</sup>

A former Facebook employee later recalled that Facebook's decision to acquire Instagram was driven by the desire to counter a potential threat from Twitter, which had also made a bid for Instagram for \$500 million.<sup>183</sup> While neither Instagram nor Twitter was a direct threat to Facebook at the time, many Instagram users shared their photos on Twitter, making it a competitor in the mobile space where Facebook was still trying to establish its presence. Although by the end of 2011, Facebook had 845 million monthly users compared to Twitter's much smaller user base over 100 million, Facebook had viewed it as its main competitor since its launch in 2006.<sup>184</sup>

Another factor behind Facebook's acquisition of Instagram was its need to improve the performance of its mobile app, which the company projected the future growth to be. A former employee noted that its app ran slow and bulky at that time.<sup>185</sup> The company had bet on a web-based technology called HTML5 that was supposed to work equally well on

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<sup>175</sup> Facebook Annual Report 2012. Facebook to Acquire Instagram. <https://about.fb.com/news/2012/04/facebook-to-acquire-instagram/>

<sup>176</sup> Instagram Sells For \$1 Billion, Despite No Revenue. <https://www.npr.org/2012/04/10/150372288/instagram-sells-for-1-billion-despite-no-revenue>

<sup>177</sup> Kevin Systrom and Mike Krieger, Founders of Instagram. <https://www.inc.com/30under30/2011/profile-kevin-systrom-mike-krieger-founders-instagram.html>

<sup>178</sup> Facebook to Acquire Instagram. <https://about.fb.com/news/2012/04/facebook-to-acquire-instagram/>

<sup>179</sup> Facebook 'Flipped Out' After Instagram Recently Raised \$50 Million. <https://www.businessinsider.com/confirmed-instagram-closed-a-50-million-financing-at-a-500-million-valuation-before-it-was-acquired-by-facebook-2012-4>; Right Before Acquisition, Instagram Closed \$50M At A \$500M Valuation From Sequoia, Thrive, Greylock And Benchmark.

<https://techcrunch.com/2012/04/09/right-before-acquisition-instagram-closed-50m-at-a-500m-valuation-from-sequoia-thrive-greylock-and-benchmark/#:~:text=Because%20the%20rumors%20are%20true,reported%20by%20AllThingsD's%20Liz%20Gannes.>

<sup>180</sup> Facebook to Acquire Instagram. <https://about.fb.com/news/2012/04/facebook-to-acquire-instagram/>

<sup>181</sup> Facebook to Acquire Instagram. <https://about.fb.com/news/2012/04/facebook-to-acquire-instagram/>

<sup>182</sup> Instagram Sells For \$1 Billion, Despite No Revenue. <https://www.npr.org/2012/04/10/150372288/instagram-sells-for-1-billion-despite-no-revenue>

<sup>183</sup> As Calls Grow to Split Up Facebook, Employees Who Were There for The Instagram Acquisition Explain Why The Deal Happened. CNBC. 9/24/2019. <https://www.cnbc.com/2019/09/24/facebook-bought-instagram-because-it-was-scared-of-twitter-and-google.html>

<sup>184</sup> As Calls Grow to Split Up Facebook, Employees Who Were There for The Instagram Acquisition Explain Why The Deal Happened. CNBC. 9/24/2019. <https://www.cnbc.com/2019/09/24/facebook-bought-instagram-because-it-was-scared-of-twitter-and-google.html>

<sup>185</sup> As Calls Grow to Split Up Facebook, Employees Who Were There for The Instagram Acquisition Explain Why The Deal Happened. CNBC. 9/24/2019. <https://www.cnbc.com/2019/09/24/facebook-bought-instagram-because-it-was-scared-of-twitter-and-google.html>

different mobile platforms but ended up not performing as well as apps written specifically for each platform. To optimize the app and enhance its mobile presence, Facebook began spinning out different features into standalone apps. One such app was Facebook Messenger, released in August 2011, which allowed users to chat with one another. The company also planned to develop a separate photo app in 2011, but the rise of Instagram caught Facebook's attention, eventually leading to the acquisition.

In 2020, internal emails from Facebook, disclosed by the U.S. Congress during an antitrust investigation, revealed some behind-the-scenes stories of Instagram acquisition and provided insight into Facebook's motivations. These emails confirmed that Facebook's decision to acquire Instagram was indeed driven, in part, by a desire to fend off competition. In these emails, sent months before the Instagram acquisition, Mark Zuckerberg discussed his thoughts with David Ebersman, Facebook's then-Chief Financial Officer. Zuckerberg mentioned that he was considering acquiring mobile app companies like Instagram, which had around 20 million users at the time. He noted that although these companies were still "nascent", their networks were already established, and their brands were becoming increasingly meaningful. Zuckerberg also expressed concern that if these companies grew to a larger scale, they could become highly disruptive to Facebook. He acknowledged that many entrepreneurs were reluctant to sell, largely inspired by Facebook's success, but suggested that a high enough offer – like \$500 million or \$1 billion – would make them consider it.<sup>186</sup>

Mark Zuckerberg rejected several acquisition offers in Facebook's early years before its IPO. For instance, in January 2006, Viacom offered \$750 million to buy Facebook, and in September 2006, Yahoo offered \$900 million. Zuckerberg declined both offers.<sup>187</sup> In a 2007 interview with Time, he explained that Facebook was focused on remaining independent and building the company, rather than seeking a quick exit. The company's goal was to create products that added value to people's lives, as demonstrated by the fact that more than half of Facebook users engaged with the platform daily. Zuckerberg also mentioned that the company's early round investors supported the strategy of taking the time to build something meaningful, rather than rushing toward an exit.<sup>188</sup>

Ebersman responded from a financial perspective that acquiring companies simply to neutralize potential competitors might not be a wise strategy.<sup>189</sup> He pointed out that new competitors would always emerge and that some consumers would naturally lean toward upstart companies and prefer them over the industry leader. Ebersman also noted that acquiring these companies just for their talent seemed too expensive, but he did see some merit in acquiring and integrating these companies' products with Facebook's to enhance its products and services.

In a follow-up email, Zuckerberg clarified that his primary reasons for acquiring companies such as Instagram were to neutralize competition and to integrate their products with Facebook's offerings. He believed that there were network effects around social products and only a limited number of social mechanics that could be invented. Once a specific social mechanic was established, it would be difficult for others to compete without offering something entirely different. Zuckerberg reasoned that as long as Instagram continued to operate as a product, it would be challenging for any new competitor to persuade users to migrate to a different platform, even if it was built better. Regarding integration, Zuckerberg suggested that Facebook already understood the social dynamics of these platforms and could successfully integrate them within 12 to 24 months. He viewed such acquisitions as a way to buy Facebook time before any other company could achieve a similar scale.<sup>190</sup> Once Facebook incorporated the social mechanics used by these other platforms, any new competitors would struggle to gain traction because Facebook had already deployed those mechanics at scale.

In 2012, the year of Facebook acquiring Instagram, Facebook was the largest mobile app in the U.S. by share of time spent, accounting for 23% of the total time users spent on mobile apps, while Instagram, at that time, accounted for 3%, with no other apps coming close to these figures combined.<sup>191</sup>

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<sup>186</sup> Exhibit A – Facebook Documents, Online Platforms and Market Power. House Committee on the Judiciary. <https://democrats-judiciary.house.gov/online-platforms-and-market-power/>

<sup>187</sup> Tracking Facebook's Valuation. <https://archive.nytimes.com/dealbook.nytimes.com/2012/02/01/tracking-facebooks-valuation/>

<sup>188</sup> The Future of Facebook. Time. <https://time.com/archive/6904007/the-future-of-facebook/>

<sup>189</sup> Exhibit A – Facebook Documents, Online Platforms and Market Power. House Committee on the Judiciary. <https://democrats-judiciary.house.gov/online-platforms-and-market-power/>

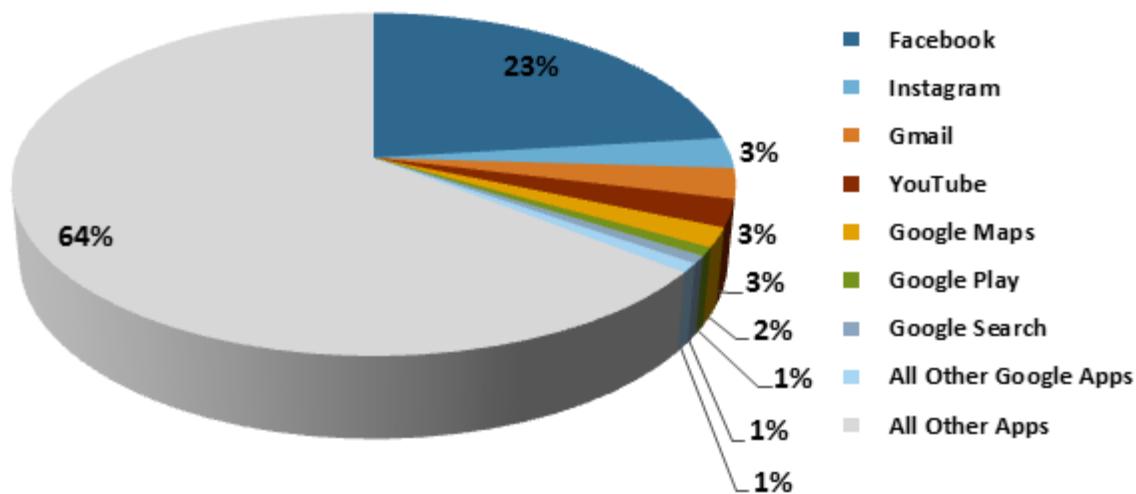
<sup>190</sup> Exhibit A – Facebook Documents, Online Platforms and Market Power. House Committee on the Judiciary. <https://democrats-judiciary.house.gov/online-platforms-and-market-power/>

<sup>191</sup> Facebook Vaults Ahead of Google Maps to Finish 2012 as #1 U.S. Mobile App.

<https://www.comscore.com/Insights/Blog/Facebook-Vaults-Ahead-of-Google-Maps-to-Finish-2012-as-number-1-US-Mobile-App>

Figure 24: Mobile Apps by Share of U.S. Time Spent 2012<sup>192</sup>

Facebook & Google: Mobile Apps by Share (%) of U.S. Time Spent  
 Source: comScore Mobile Metrix, Age 18+ on iOS & Android Platforms, U.S., December 2012



By early 2013, Facebook announced that Instagram had reached over 130 million monthly active users,<sup>193</sup> nearly five times its size at the time of acquisition a year earlier. In the first quarter of 2013, Facebook introduced a video-sharing feature to Instagram, enhancing its appeal by allowing users to create stable, professional videos directly from their mobile phones. This new feature aligned perfectly with Instagram's mission of capturing and sharing the world's moments.<sup>194</sup> As Instagram's user base continued to grow, it began attracting major brands such as GE, which saw the platform as a valuable way to engage with users and potentially reach customers on a global scale. By the third quarter of 2013, Instagram had over 150 million monthly active users and launched its advertising services. Advertisements were integrated into users' feeds in the form of photos and videos that matched Instagram's format.<sup>195</sup>

By 2022, Instagram had grown to over 2 billion monthly active users,<sup>196</sup> more than a 74x increase since Facebook acquired it in 2012, representing approximately a 53% CAGR over ten years. Although Facebook does not disclose Instagram's specific advertising revenue, documents from the antitrust case between the U.S. Federal Trade Commission and Meta revealed that Instagram generated \$11.3 billion in advertising revenue in 2018, \$17.9 billion in 2019, \$22 billion in 2020, \$32.4 billion in 2021, and \$16.5 billion in the first half of 2022,<sup>197</sup> reflecting a 42% CAGR from 2018 to 2021.

<sup>192</sup> Facebook Vaults Ahead of Google Maps to Finish 2012 as #1 U.S. Mobile App.

<https://www.comscore.com/Insights/Blog/Facebook-Vaults-Ahead-of-Google-Maps-to-Finish-2012-as-number-1-US-Mobile-App>

<sup>193</sup> Facebook Q2 2013 Earnings Call. 7/24/2013.

<sup>194</sup> Facebook Q2 2013 Earnings Call. 7/24/2013.

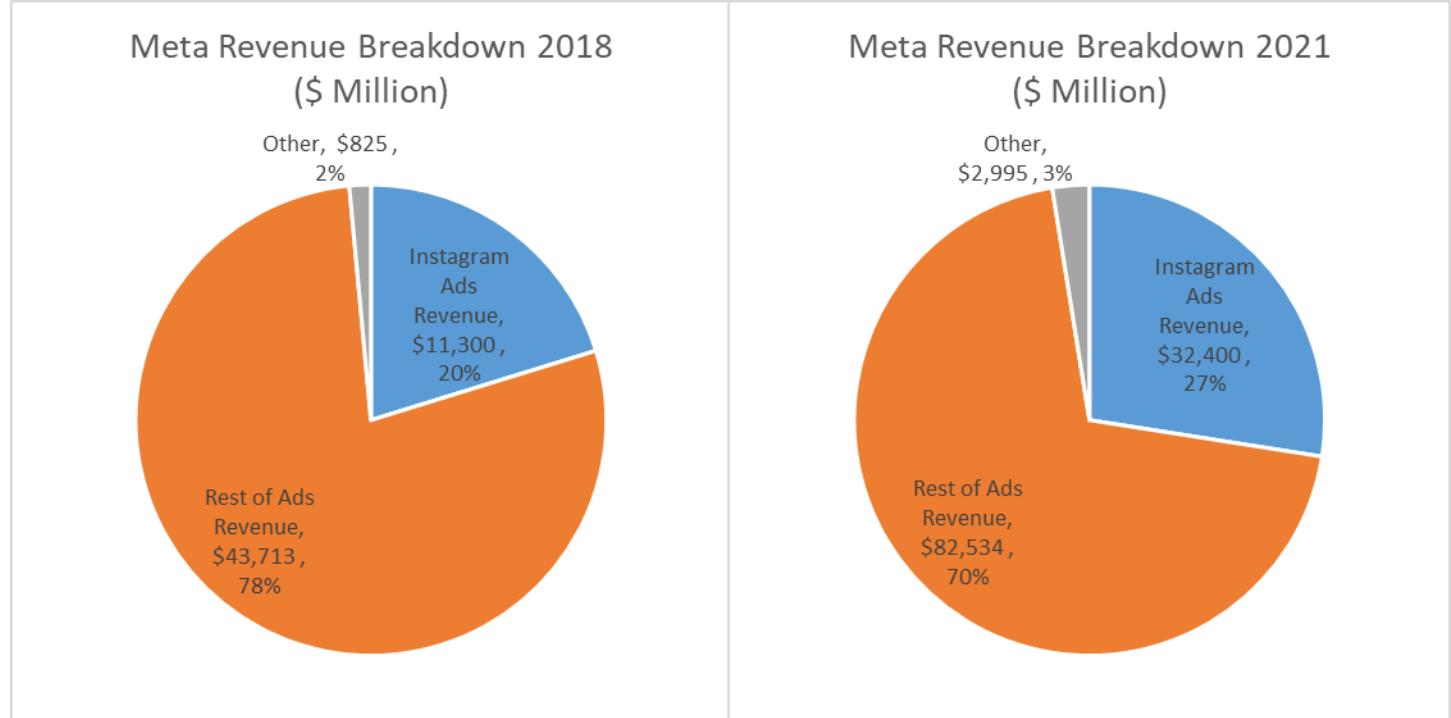
<sup>195</sup> Facebook Q3 2013 Earnings Call. 10/30/2013.

<sup>196</sup> Facebook Q3 2022 Earnings Call. 10/26/2022.

<sup>197</sup> Document 324-2. FEDERAL TRADE COMMISSION v. META PLATFORMS, INC.

[https://www.courtlistener.com/docket/18735353/federal-trade-commission-v-facebook-inc/?filed\\_after=&filed\\_before=&entry\\_gte=&entry\\_lte=&order\\_by=desc#entry-324](https://www.courtlistener.com/docket/18735353/federal-trade-commission-v-facebook-inc/?filed_after=&filed_before=&entry_gte=&entry_lte=&order_by=desc#entry-324)

Figure 25: Meta Revenue Breakdown – Instagram vs. Other



Note:

1. Advertising revenues of Instagram extracted from court files between Federal Trade Commission v. Meta.

## WhatsApp

WhatsApp was founded in 2009 by Jan Koum in California, with Brian Acton later joining as a co-founder after securing \$250,000 in seed funding from friends.<sup>198</sup> Both Koum and Acton were former Yahoo engineers. The idea for WhatsApp emerged after Koum purchased an iPhone in 2009 and recognized that the newly established App Store was going to revolutionize the app industry. WhatsApp, with its name resembling the phrase “what’s up,” was initially designed to display statuses next to individual contacts on the iPhone via internet, such as whether someone was on a call, had a low battery, or was at the gym. Early users were mostly Koum’s local Russian friends and was not popular partly because the app frequently crashed and had limited functionality.

The turning point came when Apple introduced push notifications in June 2009, enabling developers to push notifications to users even when they were not actively using the app. This new feature allowed WhatsApp to notify users whenever their contacts updated their statuses, significantly enhancing user engagement. Around this time, WhatsApp added an instant messaging feature, transforming the app's functionality.<sup>199</sup>

At that time, BlackBerry's BBM was the only other free texting service via internet available on mobile phones, but it was limited to BlackBerry devices. While services like Google's G-Talk and Skype existed, WhatsApp's unique approach used the user's phone number as the login credential, making it more accessible. After integrating instant messaging with WhatsApp 2.0 for iPhone in September 2009, the app's active user base quickly grew to 250,000, as many iPhone users had switched from BlackBerry and sought similar functionality.<sup>200</sup> WhatsApp quickly captured user demand with such features. Acton envisioned a richer messaging experience than simply Short Message Service (SMS), leading to the integration of a more effective Multimedia Messaging Service (MMS) over the internet.<sup>201</sup>

WhatsApp expanded rapidly, becoming available on BlackBerry devices in April 2010 and on Android phones shortly after,<sup>202</sup> as well as other operating systems. The app's popularity prompted the founders switch it from “free” to “paid”. In December 2009, an update allowed users to send photos, further driving user growth despite a \$1 price tag for the app.<sup>203</sup> The exact number of users is unknown given the company's private nature.

Up until July 2013, WhatsApp charged iPhone users a one-time fee of \$1 to download the app.<sup>204</sup> During that period, many U.S. mobile users faced pay-per-text plans where each 160-character SMS could cost 10 to 20 cents, despite costing carriers virtually nothing to transmit.<sup>205</sup> At the time, iPhone users could pay \$69.99 per month for a voice and data plan, plus an additional \$5 for 200 text messages,<sup>206</sup> amounting to an annual cost of \$60 for texting alone. If someone were to send large enough volumes of text messages via traditional SMS services, it could potentially cost them thousands of dollars monthly, as opposed to sending the same volumes of messages via the internet included in their iPhone data plan using WhatsApp. In a significant shift, WhatsApp later aligned its pricing model across platforms. The company made the app free to download and use for the first year on iOS, just like on Android, and introduced a \$1 annual subscription fee thereafter.

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<sup>198</sup> Exclusive: The Rags-To-Riches Tale Of How Jan Koum Built WhatsApp Into Facebook's New \$19 Billion Baby. Forbes.

<https://www.forbes.com/sites/parmyolson/2014/02/19/exclusive-inside-story-how-jan-koum-built-whatsapp-into-facebooks-new-19-billion-baby/>

<sup>199</sup> Exclusive: The Rags-To-Riches Tale Of How Jan Koum Built WhatsApp Into Facebook's New \$19 Billion Baby. Forbes.

<https://www.forbes.com/sites/parmyolson/2014/02/19/exclusive-inside-story-how-jan-koum-built-whatsapp-into-facebooks-new-19-billion-baby/>

<sup>200</sup> WhatsApp 2.0 Is Submitted. <https://blog.whatsapp.com/whatsapp-2-0-is-submitted>

<sup>201</sup> Exclusive: The Rags-To-Riches Tale Of How Jan Koum Built WhatsApp Into Facebook's New \$19 Billion Baby. Forbes.

<https://www.forbes.com/sites/parmyolson/2014/02/19/exclusive-inside-story-how-jan-koum-built-whatsapp-into-facebooks-new-19-billion-baby/>

<sup>202</sup> Yes, it is coming! <https://blog.whatsapp.com/yes-it-is-coming>; Breaking the Radio Silence. <https://blog.whatsapp.com/breaking-the-radio-silence>

<sup>203</sup> Exclusive: The Rags-To-Riches Tale Of How Jan Koum Built WhatsApp Into Facebook's New \$19 Billion Baby. Forbes.

<https://www.forbes.com/sites/parmyolson/2014/02/19/exclusive-inside-story-how-jan-koum-built-whatsapp-into-facebooks-new-19-billion-baby/>

<sup>204</sup> Why WhatsApp Scrapped Its \$1 Annual Subscription Fee. <https://venturebeat.com/mobile/whatsapp-subscription/#:~:text=Up%20until%20July%202013%20WhatsApp,a%20%241%20annual%20fee%20thereafter>.

<sup>205</sup> America's Biggest Rip-offs. CNN. [https://money.cnn.com/galleries/2010/news/1001/gallery.americas\\_biggest\\_rippers/](https://money.cnn.com/galleries/2010/news/1001/gallery.americas_biggest_rippers/)

<sup>206</sup> The Rising Cost of Texting. CNET. <https://www.cnet.com/culture/the-rising-cost-of-texting/>

By early 2010, about a year after its founding, WhatsApp was generating around \$5,000 a month, enough to cover its costs, primarily related to sending verification texts to users through third-party brokers. The founders deliberately avoided in-app ads and maintained that way even after Facebook's acquisition, believing they would disrupt the user experience and require collecting personal data.<sup>207</sup>

In early 2011, Sequoia Capital invested \$8 million, which was the first external fund after the initial \$250,000, valuing the company at less than \$100 million,<sup>208</sup> when it had less than 50 million users. By February 2013, just three years after its founding, WhatsApp had accumulated 200 million active users and had a staff of 50. Sequoia invested another \$50 million, bringing the company's valuation to \$1.5 billion. By April 2014, WhatsApp had over 500 million active users globally.<sup>209</sup>

In February 2014, Facebook announced that it would acquire WhatsApp for approximately \$16 billion, consisting of \$4 billion in cash and \$12 billion in Facebook shares, with an additional \$3 billion in restricted stock units for WhatsApp's founders and employees, vested over four years<sup>210</sup> (a total of \$19 billion). Despite generating \$10.2 million in revenue in 2013, WhatsApp had a net loss of \$138.1 million, with nearly 90% of expenses attributed to infrastructure and research and development.<sup>211</sup> The company had an estimated EBITDA of -\$138 million.

Facebook's internal emails, disclosed during a congressional hearing in 2020, revealed that, two months before acquiring WhatsApp, Facebook saw WhatsApp's rapid growth as a result of its role as a Short Message Service (SMS) replacement, which was "a universal use case on mobile", even more so than Facebook itself. Facebook also recognized that WhatsApp had a higher penetration rate among mobile users than Facebook.<sup>212</sup> Without further detail, it also estimated that WhatsApp's penetration rate on mobile users was greater than Facebook, with a near 100% overlap to Facebook's users.<sup>213</sup> Despite significant overlap in user bases, Facebook believed that acquiring WhatsApp would help expand its global reach, particularly in emerging markets where WhatsApp was more popular than Facebook Messenger,<sup>214</sup> which was spun off from Facebook app in 2011 as a standalone messenger. Acton mentioned that during his time with the company from 2009 to 2017, the U.S. was never a core market for WhatsApp in terms of user base and growth.<sup>215</sup> The app faced slow growth and was not competitive in the U.S., primarily because many phone users already had unlimited texting included in their phone plans. However, anecdotal evidence suggested that many U.S. users still found value in WhatsApp, particularly for staying in touch with friends and family overseas. His statement potentially implies that WhatsApp had better exposure in the overseas market than in the U.S., agreeing with Facebook's motivation acquiring the company.

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<sup>207</sup> Why We Don't Sell Ads. <https://blog.whatsapp.com/why-we-don-t-sell-ads>

<sup>208</sup> Exclusive: The Rags-To-Riches Tale Of How Jan Koum Built WhatsApp Into Facebook's New \$19 Billion Baby. Forbes. <https://www.forbes.com/sites/parmyolson/2014/02/19/exclusive-inside-story-how-jan-koum-built-whatsapp-into-facebooks-new-19-billion-baby/>; WhatsApp User Statistics 2024. <https://backlinko.com/whatsapp-users>

<sup>209</sup> 500,000,000. WhatsApp Blog. <https://blog.whatsapp.com/500-000-000>

<sup>210</sup> Facebook to Acquire WhatsApp. <https://investor.fb.com/investor-news/press-release-details/2014/Facebook-to-Acquire-WhatsApp/default.aspx>

<sup>211</sup> WhatsApp Financial Statements 2012 and 2013.

<sup>212</sup> Exhibit B – Facebook Documents, Online Platforms and Market Power. House Committee on the Judiciary. <https://democrats-judiciary.house.gov/online-platforms-and-market-power/>

<sup>213</sup> Facebook Email Thread between Facebook Senior Executives re WhatsApp, Online Platforms and Market Power. House Committee on the Judiciary. <https://democrats-judiciary.house.gov/online-platforms-and-market-power/>

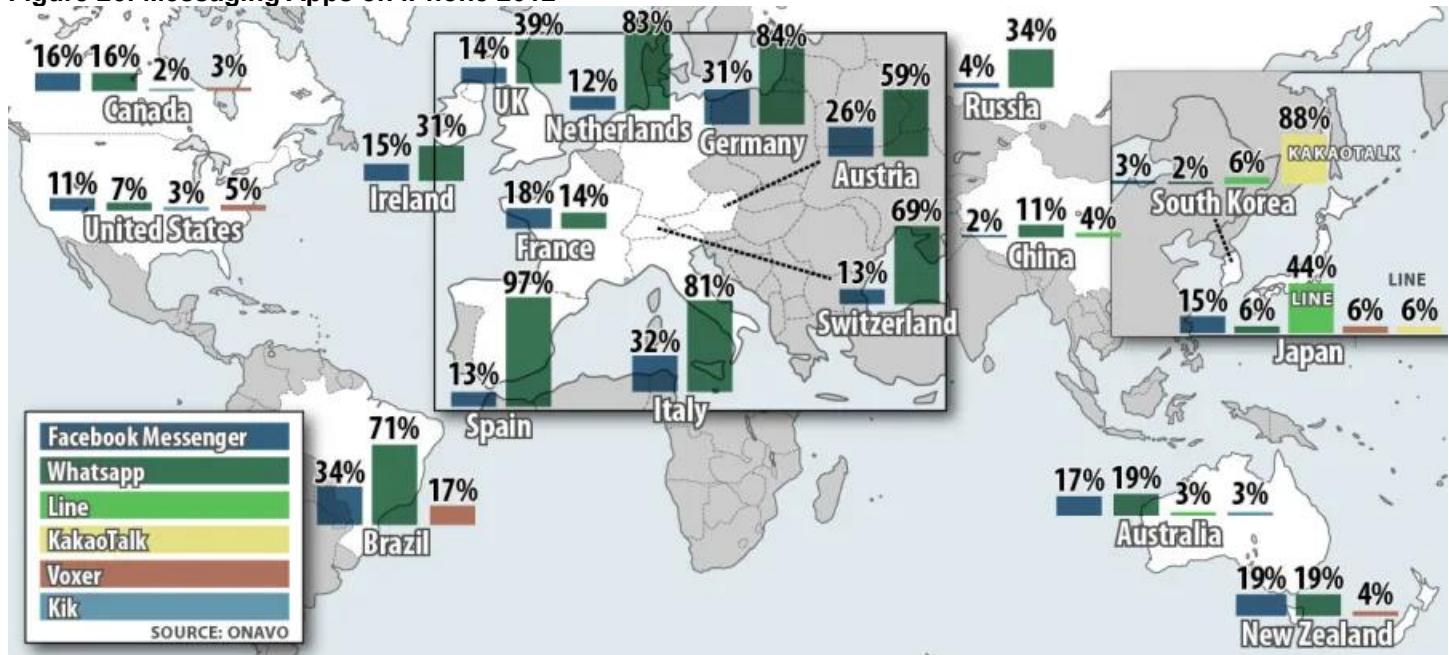
<sup>214</sup> Document 324-2. FEDERAL TRADE COMMISSION v. META PLATFORMS, INC.

[https://www.courtlistener.com/docket/18735353/federal-trade-commission-v-facebook-inc/?filed\\_after=&filed\\_before=&entry\\_gte=&entry\\_lte=&order\\_by=desc#entry-324](https://www.courtlistener.com/docket/18735353/federal-trade-commission-v-facebook-inc/?filed_after=&filed_before=&entry_gte=&entry_lte=&order_by=desc#entry-324)

<sup>215</sup> Document 324-2. FEDERAL TRADE COMMISSION v. META PLATFORMS, INC.

[https://www.courtlistener.com/docket/18735353/federal-trade-commission-v-facebook-inc/?filed\\_after=&filed\\_before=&entry\\_gte=&entry\\_lte=&order\\_by=desc#entry-324](https://www.courtlistener.com/docket/18735353/federal-trade-commission-v-facebook-inc/?filed_after=&filed_before=&entry_gte=&entry_lte=&order_by=desc#entry-324)

Figure 26: Messaging Apps on iPhone 2012<sup>216</sup>



At the time of acquisition in 2014, WhatsApp had over 450 million monthly users, 70% of whom were active on a daily basis.<sup>217</sup> WhatsApp's messaging volume was approaching that of global SMS volume, with over 19 billion messages sent and 600 million photos shared daily.<sup>218</sup> Facebook planned to keep WhatsApp team and let it operating independently, as it had done with Instagram, with the goal of growing WhatsApp's user base to over 1 billion in the coming years. Jan Koum joined Facebook Board of Directors. Neither Facebook nor WhatsApp had plans to introduce advertising at that time, as the focus was on user growth.

The company anticipated that WhatsApp would surpass 1 billion users worldwide within a few years.<sup>219</sup> Facebook saw WhatsApp as a valuable complement to its services, noting that while users often relied on WhatsApp as a replacement for SMS to communicate with their contacts, Facebook Messenger was primarily used for chatting with Facebook friends, often in non-real-time interactions. At the time of the acquisition, neither Facebook nor WhatsApp had plans to introduce advertising to WhatsApp, focusing instead on expanding its user base to 1 to 3 billion people.

Although internal discussions among Facebook employees revealed concerns about WhatsApp's 100% user overlap with Facebook, at the time of acquisition, Facebook publicly acknowledged that it lacked precise data on how many of its users also used WhatsApp. Unlike Facebook and Instagram, which require users to provide an email address and other personal details during registration, WhatsApp only requires a phone number. Additionally, WhatsApp does not collect detailed age information from its users, as it does not ask for ages during the registration process.<sup>220</sup> This lack of demographic data left Facebook with limited insights into the age distribution of WhatsApp users.

In January 2016, WhatsApp eliminated its subscription fee, making the app free for all users.<sup>221</sup> By Q1 2016, WhatsApp had over 1 billion users. As of 2022, WhatsApp had over 2 billion daily active users, and the company had yet to introduce ads within the main app interface, as it did not want to disrupt user experience.<sup>222</sup> However, there were discussions about potentially placing ads in other areas, such as channels or status updates.

<sup>216</sup> The Reality Of The Global Messaging App Market: It's Really Freaking Fragmented. <https://techcrunch.com/2012/12/04/global-messaging-market/>

<sup>217</sup> Facebook to Acquire WhatsApp. <https://investor.fb.com/investor-news/press-release-details/2014/Facebook-to-Acquire-WhatsApp/default.aspx>

<sup>218</sup> Facebook And WhatsApp M&A Call. 2/19/2014.

<sup>219</sup> Facebook And WhatsApp M&A Call. 2/19/2014.

<sup>220</sup> Facebook And WhatsApp M&A Call. 2/19/2014.

<sup>221</sup> Making WhatsApp Free And More Useful. <https://blog.whatsapp.com/making-whatsapp-free-and-more-useful>

<sup>222</sup> WhatsApp Considering Introducing Ads to App. <https://tech.co/news/whatsapp-ads-coming-soon>

In 2016, WhatsApp also implemented end-to-end encryption for all user conversations on WhatsApp, ensuring that only the sender and recipient could read the messages,<sup>223</sup> adding a significant layer of privacy. By 2018, WhatsApp had launched WhatsApp Business, a free app designed for businesses to communicate with customers, trying to monetize the app. Within the first quarter of release, it reached over 3 million users.<sup>224</sup> WhatsApp Business introduced a paid messaging model, allowing businesses to engage in customer service activities and deliver important information to customers, such as boarding passes or order confirmations.<sup>225</sup>

WhatsApp Business currently generates revenue through paid messaging and click-to-WhatsApp ads. Paid messaging allows businesses to communicate with customers at scale, while click-to-WhatsApp ads appear on Facebook and Instagram, directing users to WhatsApp to start conversations with advertisers,<sup>226</sup> as Figure 27-1 and Figure 27-2 show. As of Q3 2022, click-to-WhatsApp had a \$1.5 billion run rate, growing over 80% annually,<sup>227</sup> though this was still a small fraction of Facebook's \$116 billion revenue in 2022.

In January 2021, WhatsApp announced a significant update to its privacy policy, stating that it would begin sharing certain user data with Facebook. While all communications on WhatsApp would remain end-to-end encrypted, ensuring that messages could only be seen by the sender and recipient, the app would now share additional data with Facebook such as phone numbers, logs on how often and for how long users interacted with the app, device identifiers, IP addresses, and other information related to users' devices.<sup>228</sup> Although the policy was initially set to take effect in February, WhatsApp decided to implement it gradually over the following months to give users sufficient time to review the controversial changes. The company clarified that the collected data would be used to enhance services, improve customer support, and integrate more effectively with other Meta products.<sup>229</sup> In response to the backlash over these privacy changes, the company further emphasized that personal messages would remain private and encrypted<sup>230</sup> and explained that the update was primarily aimed at enabling businesses to use third-party hosting services to manage their messages and to help businesses leverage conversations with consumers more effectively.<sup>231</sup>

The changes sparked a significant backlash, leading to a surge in downloads for some of WhatsApp's competitors such as Signal. Signal, an instant messaging app developed by the Signal Foundation, a nonprofit founded in 2018 by Moxie Marlinspike and WhatsApp co-founder Brian Acton, reported "unprecedented" growth following WhatsApp's announcement.<sup>232</sup> While Acton did not disclose specific user numbers, he described Signal's growth as "vertical." Within a week of WhatsApp's announcement, Signal saw 17.8 million downloads, a staggering 62-fold increase from the previous week. Other reports indicate that Signal's user base grew from 0.5 million in 2019 to 12 million in 2020, 20 million in 2021, and 40 million in 2022.<sup>233</sup>

As a non-profit organization, Signal's mission is to "protect free expression and enable secure global communication through open-source privacy technology."<sup>234</sup> Acton kickstarted the foundation with a \$50 million investment and has promised that Signal will neither sell user data nor display ads. Instead, the app relies on donations from its users. In an interview, Acton expressed that "if Signal reaches a billion users, that's a billion potential donors. All we have to do is get you so excited about Signal that you want to give us a dollar or 50 rupees. The idea is that we want to earn that donation. The only way to earn that donation is building an innovative and delightful product. That's a better relationship in my

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<sup>223</sup> End-to-End Encryption. <https://blog.whatsapp.com/end-to-end-encryption>

<sup>224</sup> WhatsApp Launches A Separate App for Small Businesses. <https://www.theverge.com/2018/1/19/16908810/whatsapp-business-app-launch-small-businesses>. Facebook Q4 2017 Earnings Call. 1/31/2018.

<sup>225</sup> Facebook Q3 2018 Earnings Call. 10/30/2018.

<sup>226</sup> Document 324-2. FEDERAL TRADE COMMISSION v. META PLATFORMS, INC.

[https://www.courtlistener.com/docket/18735353/federal-trade-commission-v-facebook-inc/?filed\\_after=&filed\\_before=&entry\\_gte=&entry\\_lte=&order\\_by=desc#entry-324](https://www.courtlistener.com/docket/18735353/federal-trade-commission-v-facebook-inc/?filed_after=&filed_before=&entry_gte=&entry_lte=&order_by=desc#entry-324)

<sup>227</sup> Meta Q3 2022 Earnings Call. 10/26/2022.

<sup>228</sup> WhatsApp's New Privacy Policy Just Kicked In. Here's What You Need to Know. <https://www.wired.com/story/whatsapp-privacy-policy-facebook-data-sharing/#:~:text=Meanwhile%2C%20WhatsApp%20will%20be%20able,about%20your%20device%20with%20Facebook>

<sup>229</sup> WhatsApp Privacy Policy. <https://www.whatsapp.com/legal/privacy-policy>

<sup>230</sup> Facebook Q4 2020 Earnings Call. 1/27/2021.

<sup>231</sup> Facebook Presents at Morgan Stanley Technology, Media and Telecom Conference 2021. 3/2/2021.

<sup>232</sup> Signal Sees "Unprecedented" Growth After WhatsApp Controversy. <https://www.reuters.com/article/us-signal-users/signal-sees-unprecedented-growth-after-whatsapp-controversy-idUSKBN29I27U/>

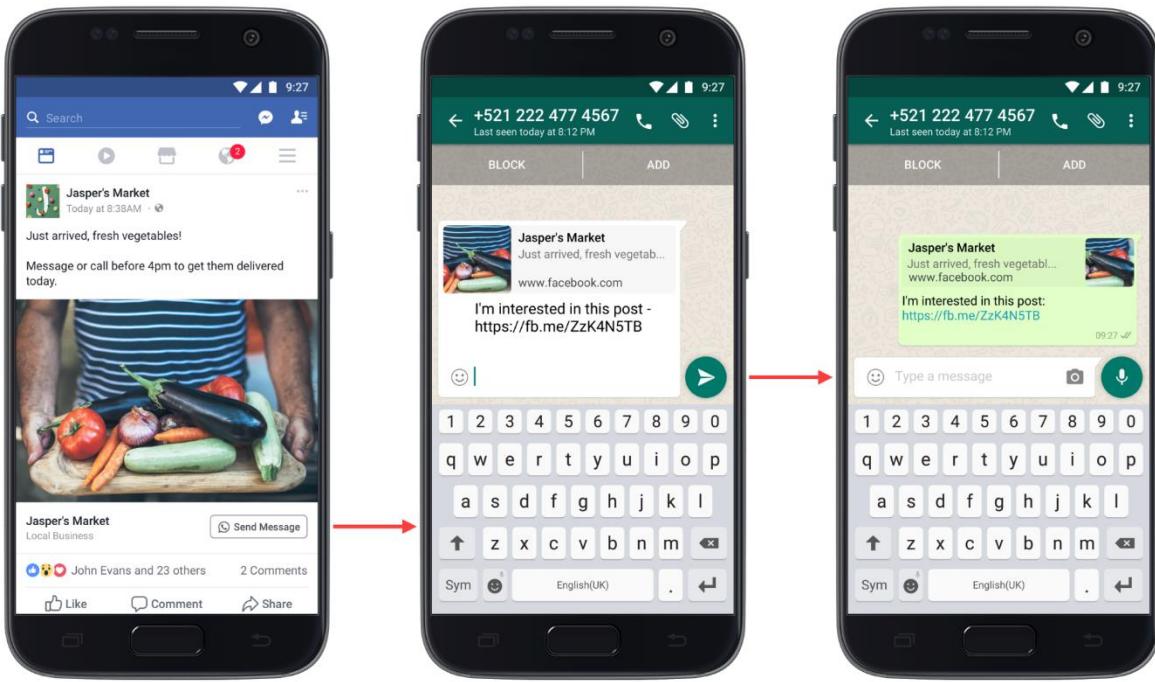
<sup>233</sup> Signal Revenue & Usage Statistics. <https://www.businessofapps.com/data/signal-statistics/>

<sup>234</sup> Signal Foundation. <https://signalfoundation.org/>

opinion.<sup>235</sup> Despite the controversy surrounding WhatsApp's new privacy policy, Acton did not urge users to stop using WhatsApp entirely. Instead, he suggested that people use Signal for private conversations with family and close friends while continuing to use WhatsApp for other types of chats.

Since Facebook does not regularly disclose user numbers for WhatsApp, it is difficult to assess the direct impact of the privacy policy changes. However, given that WhatsApp does not generate advertising revenue, and considering that Facebook now collects more user data through the app, it is likely that these changes have not harmed the company's revenue. In fact, they may even enhance it by enabling more precise ad targeting through improved algorithms from this additional data.

**Figure 27-1: Facebook Ads to WhatsApp<sup>236</sup>**

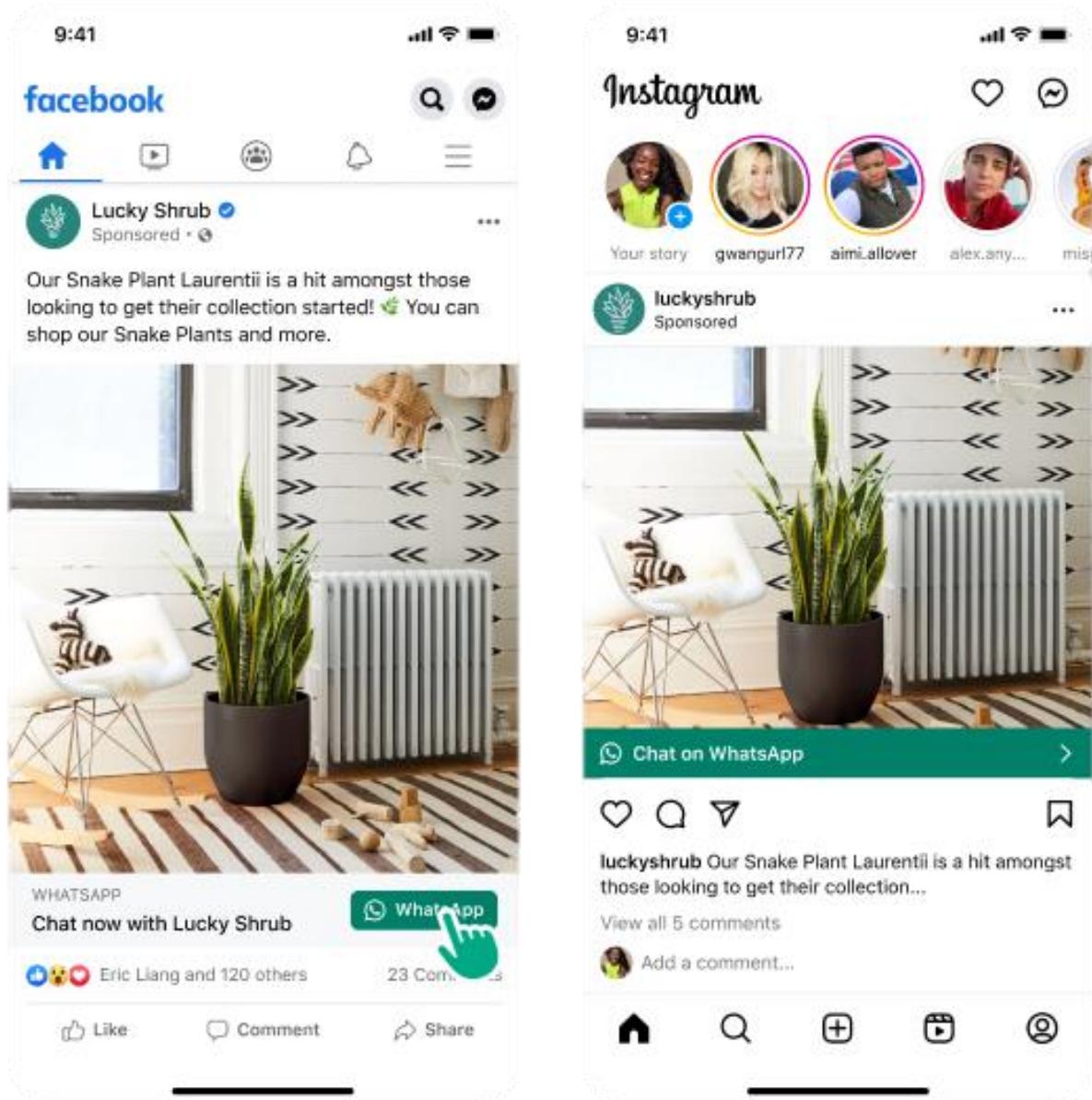


<sup>235</sup> Signal's Brian Acton Talks about Exploding Growth, Monetization And WhatsApp Data-Sharing Outrage.

<https://techcrunch.com/2021/01/12/signal-brian-acton-talks-about-exploding-growth-monetization-and-whatsapp-data-sharing-outrage/>

<sup>236</sup> Click-to-WhatsApp Messaging Buttons Are Now Rolling Out in Facebook Ads. <https://techcrunch.com/2017/12/13/click-to-whatsapp-messaging-buttons-are-now-rolling-out-in-facebook-ads/>

Figure 27-2: Instagram and Facebook Ads to WhatsApp<sup>237</sup>



### AI Initiatives (Oculus & AI)

Since its inception, Facebook has primarily generated revenue through advertising, leveraging its vast user base across various apps. However, the company has been aggressively exploring new fields of growth. A key focus area has been artificial intelligence (AI) and virtual reality (VR) technologies, with derivatives such as Mixed Reality and Augmented Reality, associated with it. In 2021, Mark Zuckerberg began referring to this AI-driven vision as the "metaverse", a virtual environment where users can interact, play games, work, create, and socialize in digital spaces.<sup>238</sup> The company sees the metaverse not just as the next generation of the internet, but as the next chapter for the company itself.

In a 2016 interview, Zuckerberg noted the difficulty of predicting AI's short-term advancements but expressed confidence in its long-term potential.<sup>239</sup> He compared the evolution of VR to the rise of smartphones, estimating that it could take at least a decade to fully develop the necessary ecosystem. Citing the example of BlackBerry, which launched in 2003 and

<sup>237</sup> How to create Ads That Click to WhatsApp. <https://business.whatsapp.com/products/create-ads-that-click-to-whatsapp>

<sup>238</sup> Facebook Q2 2021 Earnings Call. 7/28/2021.

<sup>239</sup> Mark Zuckerberg Interview With Axel Springer CEO Mathias Döpfner. <https://www.businessinsider.com/mark-zuckerberg-interview-with-axel-springer-ceo-mathias-doepfner-2016-2>

reached a billion units by 2013, Zuckerberg highlighted the lengthy timeline required for mass adoption of new technologies.

### Oculus

Facebook's commitment to VR was underscored by its 2014 acquisition of Oculus VR, a company specializing in virtual reality technology, for approximately \$2 billion.<sup>240</sup> This included \$400 million in cash and 23.1 million shares of Facebook common stock, valuing it at approximately \$1.6 billion at the time of acquisition, with an additional \$300 million earn-out in cash and shares contingent on certain milestones being met. As a private startup, Oculus did not publicly disclose detailed financials. However, some estimates indicated that Oculus generated around \$23 million in revenue,<sup>241</sup> largely from selling VR kits to developers. Based on Facebook's later comments about the acquisition, it is likely that Oculus was unprofitable at the time, with its focus being more on innovation and development than on immediate profitability.

Despite Facebook's lack of prior experience with hardware, Zuckerberg emphasized that the company was primarily interested in the software side of VR.<sup>242</sup> However, given the early stage of the VR industry, Facebook recognized the necessity of developing both hardware and software simultaneously to maintain the linkage between the two. In order to boost the industry development, Facebook partnered with Samsung in 2015, resulting in the launch of the Samsung Gear VR, designed to be compatible with Galaxy smartphones.<sup>243</sup> Samsung stopped releasing new Gear VR models after 2017 and discontinued support for Samsung VR content in 2020.<sup>244</sup> Zuckerberg reiterated in 2021 that while traditional devices like phones and computers would remain prevalent for a long time, Meta's VR products would eventually deliver more immersive experiences, aligning with the company's mission to help people to connect and enhance social interactions.<sup>245</sup>

As of 2023, Meta's Reality Labs segment, which includes consumer hardware products such as the Meta Quest (formerly Oculus Quest), wearables, and related software and content, generated \$1.90 billion in revenue, accounting for just 1.4% of Meta's total revenue. However, this segment reported a significant operating loss of \$16.1 billion, in contrast to the company's overall operating profit of \$46.75 billion.<sup>246</sup> Meta has attributed these losses to substantial and ongoing investments in its metaverse initiatives, which include the development of virtual, augmented, and mixed reality devices, software for social platforms, neural interfaces, and other foundational technologies for the metaverse. The company has indicated that it expects these losses to continue, viewing this as a long-term initiative that will rely on the profitability of other areas of its business to support its metaverse vision.

Despite the uncertainty surrounding the success of these efforts, Meta believes that the metaverse represents the next chapter of the internet, potentially providing new monetization opportunities for businesses, developers, and creators. These opportunities could include advertising, hardware sales, and digital goods, all within the evolving landscape of the metaverse.<sup>247</sup>

### Generative AI – Llama

Meta's AI initiatives can be traced back to 2013, when the company established the Facebook AI group with the goal of leveraging artificial intelligence to analyze and understand the vast amount of content shared by users on its platform.<sup>248</sup> The purpose of this initiative was not just to improve basic features like voice and photo recognition, but to create more intuitive and natural ways for users to interact with the platform. The vision behind Meta's AI efforts was to understand the deeper connections within its network by analyzing the meaning behind posts, photos, and videos shared by users. For example, AI could be used to transcribe voice clips shared in Messenger, making them easier for recipients to access and understand. Over time, Facebook anticipated that as its AI capabilities grew, it would be able to comprehend the meaning

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<sup>240</sup> Facebook to Acquire Oculus. <https://about.fb.com/news/2014/03/facebook-to-acquire-oculus/>

<sup>241</sup> Oculus VR Isn't A 'Pre-Revenue' Startup. <https://fortune.com/2014/03/26/oculus-vr-isnt-a-pre-revenue-startup/>

<sup>242</sup> Mark Zuckerberg Interview With Axel Springer CEO Mathias Döpfner. <https://www.businessinsider.com/mark-zuckerberg-interview-with-axel-springer-ceo-mathias-doepfner-2016-2>

<sup>243</sup> Samsung's Gear VR Is The First Virtual Reality Headset You Might Actually Want to Buy.

<https://www.theverge.com/2014/12/8/7353045/samsung-oculus-gear-vr-virtual-reality-headset-on-sale-price>; Samsung and Oculus Introduce the First Consumer Version of Gear VR. <https://news.samsung.com/global/samsung-and-oculus-introduce-the-first-consumer-version-of-gear-vr>

<sup>244</sup> Now that Gear VR is no longer available, Samsung XR service is being killed. <https://www.sammobile.com/news/gear-vr-no-longer-available-samsung-xr-service-killed/>

<sup>245</sup> Facebook Q2 2021 Earnings Call. 7/28/2021.

<sup>246</sup> Meta Annual Report 2023.

<sup>247</sup> Meta Annual Report 2023.

<sup>248</sup> Facebook Q3 2013 Earnings Call. 10/30/2013.

of all user-generated content more effectively, enabling the platform to offer significantly more relevant and personalized experiences across all its services.<sup>249</sup> However, Mark Zuckerberg also stated that it could take the company a long time to see the impact.

Meta has embraced an open-source strategy with its AI initiatives, including LLaMA, its most advanced large language model, allowing everyone to experiment and build with these tools. Mark Zuckerberg envisions an open ecosystem, where the broader community can contribute to and benefit from these AI advancements.<sup>250</sup>

On February 24th, 2023, Meta launched its first large language model, LLaMA (Large Language Model Meta AI), to the public. Initially, this model was made available exclusively to researchers, aiming to advance AI research for those who lack the large amount of infrastructure needed to study such models,<sup>251</sup> and soon after to the general public.

Open-source AI models such as LLaMA provide their source code freely to the public, enabling developers to use and modify them as they see fit. This approach fosters creativity and innovation, as developers can build upon existing AI algorithms and pre-trained models to create their own products and tools.<sup>252</sup> Zuckerberg believes that open-sourcing AI benefits not only Meta but also developers and the world at large.<sup>253</sup>

Zuckerberg thinks that for developers, Meta's open-source AI offers several advantages:<sup>254</sup>

1. It provides developers with ease of building so that they can create their own products based on a pre-trained model that has already been trained on a large volume of data.
2. It provides developers with control and independence. Open-source models allow developers to retain control over their products without being locked into a closed vendor, reducing dependency on any single platform and eliminating concerns about service disruptions.
3. It protects data privacy for developers by avoiding the need to send it to the cloud of a closed model provider.
4. It could advance rapidly than the closed ones potentially because of the open nature.

Alex Ratner, CEO of the data-focused company Snorkel AI and an assistant professor of computer science and engineering at the University of Washington, highlighted several potential benefits of Meta's decision to open-source LLaMA. It will benefit developers in large while also enabling Meta to reduce costs, attract talent, and potentially boost revenue.<sup>255</sup> Ratner also emphasizes the data privacy advantages that Meta's open-source AI models offer. When businesses or organizations want to integrate AI technologies into their operations, they usually need to fine-tune these models with their internal data, which are often considered the most valuable assets to them. With closed-source models, this often means sending valuable proprietary data to an AI model provider, who ultimately owns the final model. In contrast, using an open-source model like LLaMA allows enterprises to maintain ownership of their data and the outputs derived from it. This ownership makes open-source models significantly more appealing to developers and data scientists, potentially giving Meta a competitive edge in attracting top talent in the AI space.

Zuckerberg also thinks that for Meta itself, embracing open-source AI helps prevent the company from being trapped in competitors' closed ecosystems, where restrictions could hinder Meta's products.<sup>256</sup> [Meta learned a valuable lesson from Apple's 2021 release of iOS 14, a closed-end system running on Apple devices like the iPhone and iPad. iOS and Android, the open-source system developed by Google, dominate the global smartphone and tablet markets, with iOS holding nearly 30% of the global market share and Android nearly 70%.](#)<sup>257</sup> In the U.S., iOS commands

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<sup>249</sup> Facebook Q4 2013 Earnings Call. 1/29/2014.

<sup>250</sup> Meta Q1 2023 Earnings Call. 4/26/2023.

<sup>251</sup> Introducing LLaMA: A foundational, 65-Billion-Parameter Large Language Model. <https://ai.meta.com/blog/large-language-model-llama-meta-ai/>

<sup>252</sup> Open Source vs Closed Source AI: What's The Difference And Why Does It Matter?

<https://www.euronews.com/next/2024/02/20/open-source-vs-closed-source-ai-whats-the-difference-and-why-does-it-matter>

<sup>253</sup> Open Source AI Is the Path Forward. Meta. <https://about.fb.com/news/2024/07/open-source-ai-is-the-path-forward/>

<sup>254</sup> Open Source AI Is the Path Forward. Meta. <https://about.fb.com/news/2024/07/open-source-ai-is-the-path-forward/>

<sup>255</sup> Meta's Big, Expensive AI Bet Hinges on Giving Its Models Away For Free. <https://www.nbcnews.com/tech/tech-news/metabig-expensive-ai-bet-hinges-giving-models-away-free-rcna149426>

<sup>256</sup> Open Source AI Is the Path Forward. Meta. <https://about.fb.com/news/2024/07/open-source-ai-is-the-path-forward/>

<sup>257</sup> Mobile & Tablet Operating System Market Share Worldwide. GlobalStats. <https://gs.statcounter.com/os-market-share/mobile-tablet/worldwide/#yearly-2012-2023>

**close to 60% of the market, while Android has around 40%.**<sup>258</sup> Although the exact number of Meta app users on iOS devices is unknown, it is reasonable to assume that a significant portion uses iOS. One of the key features of iOS 14 was allowing users to opt out of giving apps, including Facebook, permission to track their activities across other apps and the web.<sup>259</sup> This tracking was crucial for Facebook's advertising services, enabling precise ad targeting for billions of users. While Apple claimed this move was to protect user privacy, Facebook argued that it served Apple's competitive interests by limiting digital advertising, potentially pushing apps to adopt in-app purchases and subscriptions, from which Apple could take up to a 30% cut.<sup>260</sup>

Zuckerberg contends that closed-end systems hinder product innovation due to the restrictions and rules imposed by the providers.<sup>261</sup> Therefore, building open ecosystems in AI and AR/VR (Augmented Reality and Virtual Reality) is crucial to prevent competitors from constraining Meta's capabilities. Although Meta has not disclosed the exact negative impact of the iOS update, the company experienced its first-ever revenue decline in 2022, one year after the release of iOS 14, with a -1.1% decrease, partly attributed to limitations on its ad targeting and measurement tools due to the changes in iOS.<sup>262</sup>

Zuckerberg also believes that open-source AI is beneficial to the world. He argues that AI has the potential to surpass any other modern technology in terms of increasing human productivity, creativity, and quality of life, and should not be controlled by a small number of companies but rather shared more broadly and safely across society.<sup>263</sup>

At present, Meta does not intend to charge fees for using LLaMA.<sup>264</sup> We believe this is primarily because the company is focused on building a user base. By expanding its open-source platform into a full ecosystem of tools, Meta encourages participation from other companies. Additionally, there is no significant competitive advantage for any AI developer at this early stage, given the rapid development and intense competition in the industry. **Furthermore, selling AI models is not part of Meta's business model, so open-sourcing LLaMA does not undermine the company's revenue or R&D investments, unlike closed-end providers.** Meta also believes that releasing server, network, and data center designs could lead supply chains to standardize the company's designs, potentially saving billions of dollars.

**While it remains uncertain whether the next generation of the internet will be driven by AI-powered platforms, or exactly how Meta will successfully monetize its investments in this space, Mark Zuckerberg remains confident that Meta will find ways to capitalize on its AI initiatives once they reach scale.**<sup>265</sup> This confidence stems from Meta's strong track record of effectively monetizing its user base (i.e. Facebook). As of July 2024, there have been 300 million total downloads of all Llama versions,<sup>266</sup> less than two years after its launch.

Zuckerberg has proposed several potential strategies for building a massive business around Meta's AI developments. These include offering AI-generated messaging services to businesses, integrating ads or paid content into AI-driven interactions, and allowing users to pay for access to larger AI models and additional computing power.<sup>267</sup> By leveraging these strategies, Meta aims to transform its AI innovations into profitable ventures, continuing its legacy of successful monetization in the digital space.

Although Meta has not yet succeeded in directly monetizing its AI capabilities, these technologies have already provided significant indirect benefits to the company. Mark Zuckerberg envisions AI eventually influencing every product Meta offers and even creating entirely new ones.<sup>268</sup> After experiencing its first-ever revenue decline in 2022, -1.1% year-over-year, partly due to Apple's App Tracking Transparency update, Meta introduced Advantage+ in late 2022. This AI-driven tool helps advertisers better test, learn, and optimize their campaigns.<sup>269</sup> In 2023, Meta further expanded its AI offerings by rolling out generative AI tools for advertisers. These tools enable the creation of content such as image backgrounds and

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<sup>258</sup> Mobile & Tablet Operating System Market Share United States Of America. GlobalStats. <https://gs.statcounter.com/os-market-share/mobile-tablet/united-states-of-america#yearly-2012-2023>

<sup>259</sup> Facebook vs. Apple: Here's What You Need to Know About Their Privacy Feud. <https://www.cnet.com/tech/services-and-software/facebook-vs-apple-heres-what-you-need-to-know-about-their-privacy-feud/>

<sup>260</sup> Facebook vs. Apple: Here's What You Need to Know About Their Privacy Feud. <https://www.cnet.com/tech/services-and-software/facebook-vs-apple-heres-what-you-need-to-know-about-their-privacy-feud/>

<sup>261</sup> Open Source AI Is the Path Forward. Meta. <https://about.fb.com/news/2024/07/open-source-ai-is-the-path-forward/>

<sup>262</sup> Meta Annual Report 2022.

<sup>263</sup> Open Source AI Is the Path Forward. Meta. <https://about.fb.com/news/2024/07/open-source-ai-is-the-path-forward/>

<sup>264</sup> Open Source AI Is the Path Forward. Meta. <https://about.fb.com/news/2024/07/open-source-ai-is-the-path-forward/>

<sup>265</sup> Meta Q1 2024 Earnings Call. 4/24/2024.

<sup>266</sup> Introducing Llama 3.1 Our Most Capable Models to Date. <https://ai.meta.com/blog/meta-llama-3-1/>

<sup>267</sup> Meta Q1 2024 Earnings Call. 4/24/2024.

<sup>268</sup> Meta Q2 2024 Earnings Call. 7/31/2024.

<sup>269</sup> Meta Q3 2022 Earnings Call. 10/26/2022.

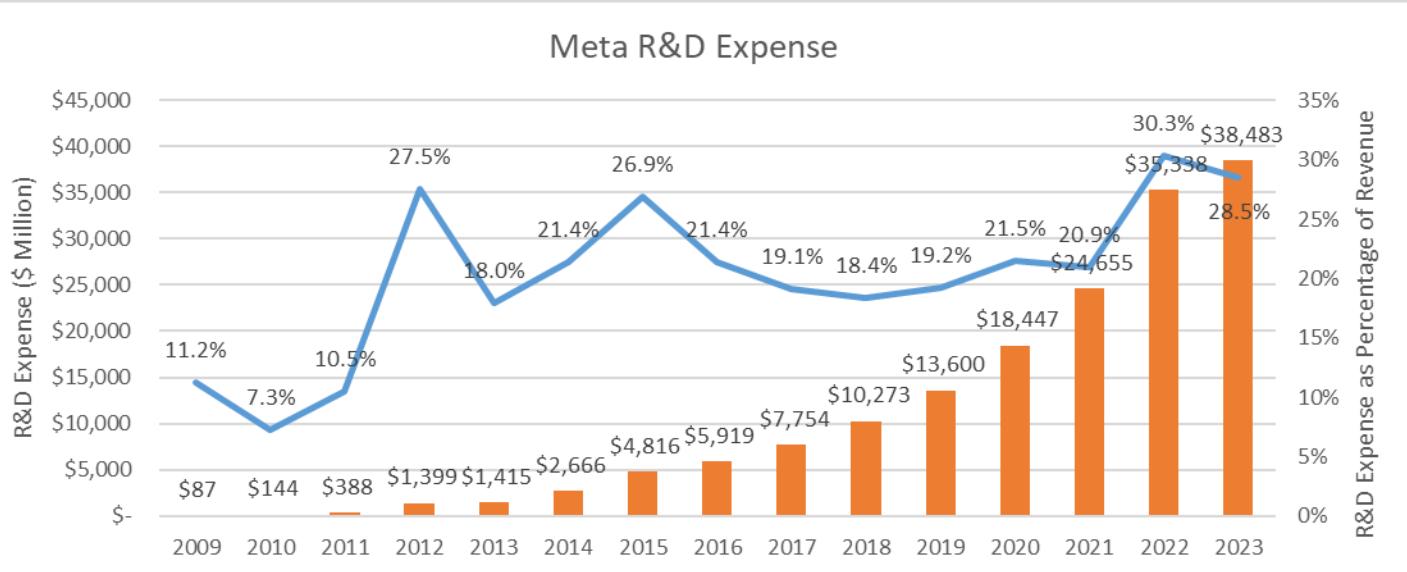
text variations, significantly improving efficiency.<sup>270</sup> Early tests suggest that these generative AI tools could save advertisers five or more hours per week, and many marketers agree that the tools enhance campaign performance. While it is unknown the direct impact of these initiatives on Meta's business, in 2023, its revenue increased 16% on a yearly basis.<sup>271</sup>

A significant commitment to the future of the company is reflected in Meta's substantial R&D spending. Research and development have always been crucial to its strategy, with Zuckerberg acknowledging that these investments are unlikely to be profitable in the near term.<sup>272</sup> Nonetheless, he believes the metaverse represents the successor to mobile internet, enabling deeper social connections regardless of physical location.<sup>273</sup>

Since its IPO in 2012, Facebook's R&D spending has averaged 23% of revenue, ranging from a low of 18% in 2013 to a high of 30% in 2022. Although Meta does not provide detailed breakdowns of its R&D expenses, the company has indicated that a significant portion is allocated to attracting and retaining top talent.<sup>274</sup> For instance, after going public in 2012, Facebook's R&D expenses surged by \$1.01 billion, primarily due to \$729 million in expenses related to restricted stock units tied to the IPO and increased payroll and benefits from a 73% rise in engineering, design, product management, and technical staff.<sup>275</sup> This trend continued in 2014, with R&D expenses rising by \$1.25 billion, largely driven by a \$724 million increase in share-based compensation and a 48% growth in technical staff.<sup>276</sup> Throughout its history, much of Facebook's R&D growth has been linked to expanding its workforce and compensating its talent.

As Figure 28-1 shows, from its IPO in 2012 to 2023, Meta's annual R&D expenses grew from \$1.4 billion to \$38.5 billion, reflecting a CAGR of 35%, in line with its revenue growth. However, in the recent five years, from 2018 to 2023, R&D expenses have grown at a CAGR of 30%, outpacing the company's revenue growth of 19% over the same period. In the short term, this sharp increase in R&D expense negatively affected the company's operating margin, from nearly 45% in 2018 to 35% in 2023, as Figure 28-2 shows.

**Figure 28-1: Meta R&D Expense (2009 – 2023)**



**Note:**

1. Facebook's R&D expenses surged by \$1.01 billion, or 261%, in 2012, primarily due to \$729 million in expenses related to restricted stock units (RSU) tied to the IPO and increased payroll and benefits from a 73% rise in engineering, design, product management, and technical staff.<sup>277</sup> Had that expense not been incurred, R&D expenses were approximately 13% of sales.

<sup>270</sup> Generative AI Features for Ads Coming to All Advertisers. <https://www.facebook.com/business/news/generative-ai-features-for-ads-coming-to-all-advertisers>

<sup>271</sup> Meta Annual Report 2023.

<sup>272</sup> Facebook Q3 2021 Earnings Call. 10/25/2021.

<sup>273</sup> Facebook Q3 2021 Earnings Call. 10/25/2021.

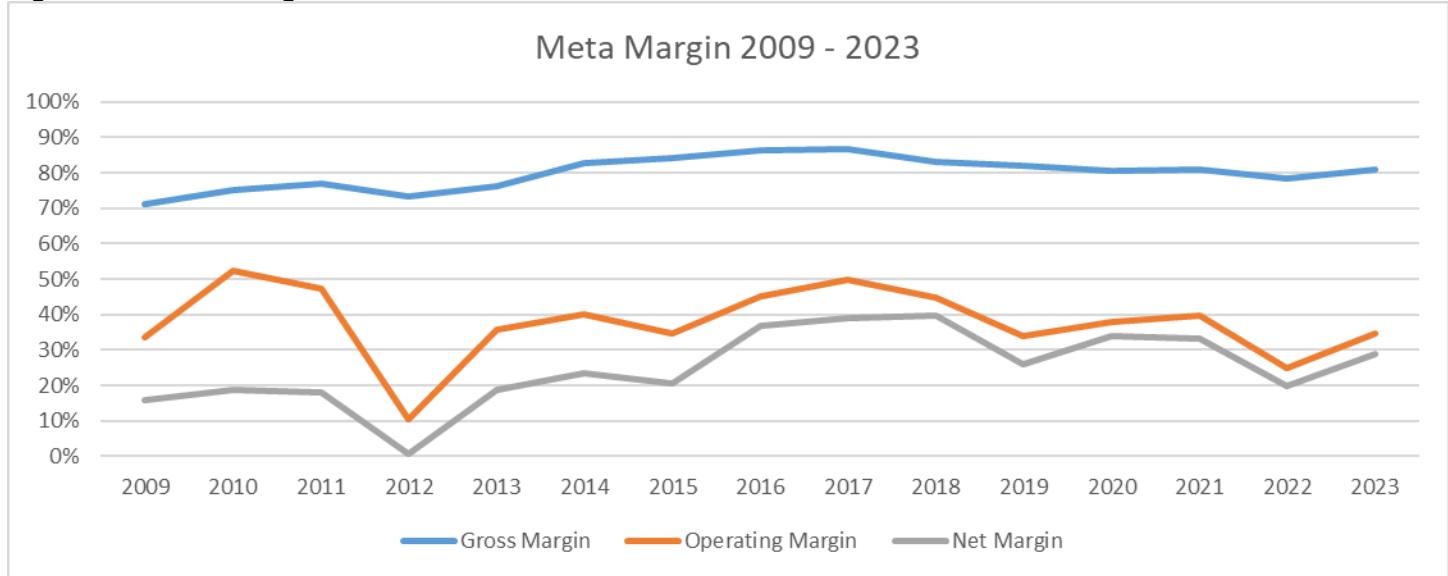
<sup>274</sup> Facebook Presents at The Goldman Sachs Technology and Internet Conference 2014. 2/11/2014.

<sup>275</sup> Facebook Annual Report 2012.

<sup>276</sup> Facebook Annual Report 2014.

<sup>277</sup> Facebook Annual Report 2012.

Figure 28-2: Meta Margin 2009 – 2023



Note:

1. The operating margin in 2012 declined primarily due to a significant rise in total costs and expenses, driven by substantial increases in share-based compensation and the related payroll tax expenses for restricted stock units (RSU). \$1.13 billion was attributed to the recognition of share-based compensation and related payroll tax expenses related to RSUs granted prior to January 1, 2011 (Pre-2011 RSUs) triggered by the completion of Facebook's IPO in May 2012.<sup>278</sup> In addition, the company expected an average withholding tax of 45% for the restricted stock units.<sup>279</sup> Had these expenses not been incurred, the adjusted operating margin was estimated to be 33%, and the net margin 13%.

The substantial level of R&D expenditure at Meta needs a robust infrastructure to support its ambitious goals. Another key indicator of Meta's ongoing commitment to AI development is its capital expenditure, which includes significant investments in data centers, servers, and network infrastructure.<sup>280</sup> These investments are crucial for advancing Meta's AI initiatives, such as generative AI and its AI-powered discovery engine, which are designed to enhance the company's advertising tools and improve ad delivery, targeting, and measurement capabilities.<sup>281</sup>

**Since Meta's IPO in 2012, the company's capital expenditure has grown at a CAGR of 33%, rising from \$1.2 billion in 2012 to \$27.3 billion in 2023. This trend is expected to continue, with projections suggesting that capital expenditures could approach \$40 billion by 2024.<sup>282</sup> This ongoing investment underscores Meta's dedication to building the necessary infrastructure to support its long-term vision for AI and the broader metaverse.**

<sup>278</sup> Facebook Annual Report 2012.

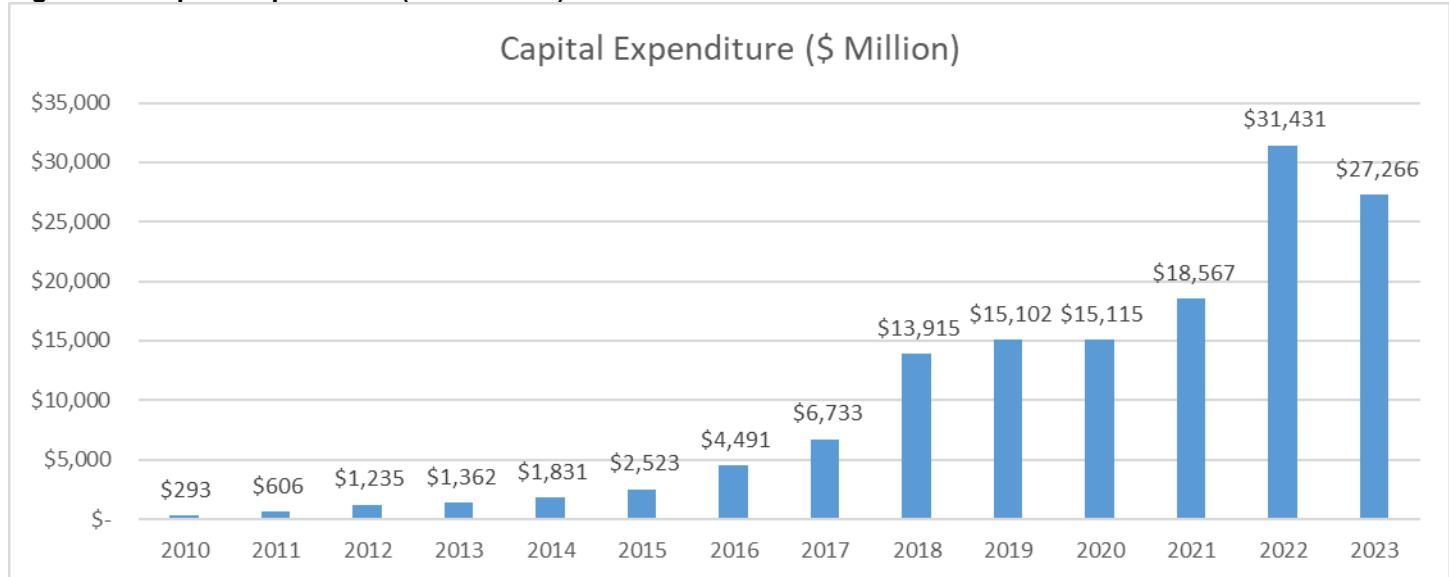
<sup>279</sup> Facebook Prospectus 2012.

<sup>280</sup> Meta Annual Report 2022.

<sup>281</sup> Meta Annual Report 2022.

<sup>282</sup> Meta Q1 2024 Earnings Call. 4/24/2024.

**Figure 29: Capital Expenditure (2010 – 2023)**



Note:

1. The decreased capital expenditure in 2023 was most likely due to savings on non-AI servers, and shifts in capital expenditure into 2024 from delays in projects and equipment deliveries rather than a reduction in overall investment plans.<sup>283</sup> Meta expects its capital expenditure in 2024 to be in the range of \$35 billion to \$40 billion, and continue to increase going forward as they invest aggressively to support ambitious AI R&D efforts.<sup>284</sup>

### Controversies

While Meta's explosive user growth has brought significant benefits to users, advertisers, developers, and the company itself, it has also attracted substantial criticism over the years. Much of this criticism focuses on controversies surrounding user privacy and, in recent years, politics. However, these controversies have yet to meaningfully impact the company's financial performance.

In 2011, the Federal Trade Commission (FTC) reached a settlement with Facebook over allegations that the company misled users about the privacy of their personal information. Facebook failed to uphold its promises to users in several instances:<sup>285</sup>

1. In December 2009, without warning users or getting their consent, Facebook changed its website so certain information that users may have designated as private – such as their Friends List – was made public.
2. Facebook claimed that third-party apps installed by users would only access the information necessary for them to function. However, in reality, these apps could tap into nearly all of users' personal data, including information that was not essential for their operation.
3. Facebook assured users that they could limit the sharing of their data to specific audiences, such as "Friends Only." However, even when users selected the "Friends Only" option, their information was still shared with third-party applications used by their friends.
4. Facebook had a "Verified Apps" program and claimed it certified the security of participating apps. It didn't.
5. Facebook promised users that it would not share their personal information with advertisers. It did.
6. Facebook claimed that when users deactivated or deleted their accounts, their photos and videos would become inaccessible. However, Facebook continued to allow access to this content, even after users had deactivated or deleted their accounts.

<sup>283</sup> Meta Q2 2023 Earnings Call. 7/26/2023.

<sup>284</sup> Meta Q1 2024 Earnings Call. 4/24/2024.

<sup>285</sup> Facebook Settles FTC Charges That It Deceived Consumers By Failing To Keep Privacy Promises. <https://www.ftc.gov/news-events/news/press-releases/2011/11/facebook-settles-ftc-charges-it-deceived-consumers-failing-keep-privacy-promises>

7. Facebook claimed that it complied with the U.S.- EU Safe Harbor Framework that governs data transfer between the U.S. and the European Union. It didn't.

As a result, Facebook agreed to remedy these violations by implementing measures such as obtaining consumers' consent for any changes in privacy policies, and undergo an independent privacy evaluation every two years for the next twenty years. Each violation of such an order may result in a civil penalty of \$16,000.

In 2018, a Belgian court ruled that Facebook must stop violating privacy laws as it was tracking individuals on third-party websites without their consent.<sup>286</sup> The court ordered Facebook to delete all data collected illegally on Belgian citizens, including non-users of the platform. If Facebook fails to comply, it faces a fine of up to 100 million euros, with a daily penalty of 250,000 euros. The court criticized Facebook for insufficient transparency about the data it gathers, how long it's stored, and for not obtaining proper consent.

One of the most controversial incidents involving Facebook occurred in 2019 when a whistleblower from Cambridge Analytica revealed that the firm had exploited Facebook data to influence the 2016 U.S. presidential election.<sup>287</sup> It was disclosed that both presidential candidates (Donald Trump and Ted Cruz) had paid over \$5 million each to Cambridge Analytica for political advertising services. The company used the data of millions of Facebook users, without their consent, to deliver targeted political ads. Cambridge Analytica specifically targeted individuals who were more susceptible to impulsive anger or conspiratorial thinking than the average citizen. The company employed various methods, including posts in Facebook groups, ads, and shared articles designed to provoke these users. In some cases, they even created fake Facebook pages, such as "I Love My Country," to attract and provoke these individuals. Once users joined these fabricated groups, Cambridge Analytica would bombard them with videos and articles that further inflamed their emotions.

Facebook, in response, characterized the incident as a data breach involving a third-party app that had conducted psychological surveys of its users.<sup>288</sup> Nearly 300,000 users took the psychological test, allowing the app to harvest their personal data, including that of their Facebook friends, ultimately amassing data from over millions of profiles, which was then sold to Cambridge Analytica. In total, the firm harvested data from as many as 87 million Facebook profiles. This data breach led to a class-action lawsuit representing between 250 to 280 million Facebook users in the U.S. against Facebook. Although Facebook did not admit to any wrongdoing, it agreed to pay \$725 million to settle the legal claims.

This incident receives large attention from the public on the risks inherent in large-scale data collection and the significant impact that social media platforms such as Facebook can have on public opinions.

As social media continues to grow in popularity, a range of social issues arise, notably including addiction and social comparison, both of which can have significant impacts on psychological health. Social media facilitates both upward and downward social comparisons, influencing how individuals perceive themselves in relation to others.

Upward social comparison occurs when individuals evaluate themselves against those they perceive as superior in some way, while downward social comparison involves comparing oneself to those perceived as inferior.<sup>289</sup> Typically, downward comparisons can boost self-esteem, as people take comfort in the idea that they are doing better than others. In contrast, upward social comparisons often have the opposite effect, potentially lowering self-esteem. Social media, with its endless stream of carefully curated content, exacerbates these upward comparisons. Unlike in real life, where comparisons are usually limited to a small group, the internet exposes individuals to countless others,<sup>290</sup> making it difficult not to engage in these comparisons.

One of the most prominent examples of social comparison on social media is related to body image. Users frequently compare their bodies to those of others they see online. This behavior has both positive and negative implications. On the positive side, social media can promote healthier body representations, encouraging users to embrace diverse and

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<sup>286</sup> Facebook loses Belgian privacy case, faces fine of up to \$125 million. Reuters. <https://www.reuters.com/article/us-facebook-belgium/facebook-loses-belgian-privacy-case-faces-fine-of-up-to-125-million-idUSKCN1G01LG/>

<sup>287</sup> The Cambridge Analytica Whistleblower Explains How The Firm Used Facebook Data to Sway Elections. Business Insider. <https://www.businessinsider.com/cambridge-analytica-whistleblower-christopher-wylie-facebook-data-2019-10>

<sup>288</sup> Aleksandr Kogan: The link between Cambridge Analytica and Facebook. CBS News. <https://www.cbsnews.com/news/aleksandr-kogan-the-link-between-cambridge-analytica-and-facebook-60-minutes/>

<sup>289</sup> Upward And Downward Social Comparisons: A Brief Historical Overview. [https://www.researchgate.net/publication/323243976\\_Upward\\_and\\_downward\\_social\\_comparisons\\_A\\_brief\\_historical\\_overview](https://www.researchgate.net/publication/323243976_Upward_and_downward_social_comparisons_A_brief_historical_overview)

<sup>290</sup> Upward And Downward Social Comparisons: A Brief Historical Overview. [https://www.researchgate.net/publication/323243976\\_Upward\\_and\\_downward\\_social\\_comparisons\\_A\\_brief\\_historical\\_overview](https://www.researchgate.net/publication/323243976_Upward_and_downward_social_comparisons_A_brief_historical_overview)

realistic body types. However, the downside is significant, excessive comparison to idealized body images can lead to or worsen eating disorders.<sup>291</sup>

Another common form of comparison on social media involves users comparing their lives to those of others, often leading to feelings of inadequacy. People tend to share only the highlights of their lives, glossing over struggles and challenges. This selective portrayal can create an unrealistic standard, leaving others to wonder why their own lives don't measure up.

On Facebook, for instance, users may compare themselves with others based on the number of likes or the types of comments their posts receive. A friend's status update or photo might trigger specific social comparisons, influencing how someone feels about themselves, sometimes for better, and sometimes worse. A 2018 study published by the National Library of Medicine, involving 250 undergraduate and graduate Italian students, found that females with low self-esteem spend more time on Facebook, likely seeking to compare themselves to others in an attempt to boost their self-esteem.<sup>292</sup> The study also found that females, in particular, tend to view themselves as inferior on various dimensions, prompting them to engage more in social comparisons. They are especially likely to compare their physical attractiveness based on online photos, often leading to negative feelings about themselves.

Facebook's own internal research has shown that this phenomenon among the app. According to its internal study, 32% of teen girls reported that when they felt bad about their bodies, Instagram made them feel worse.<sup>293</sup> The same research team also found that comparisons on Instagram could change how young women view and describe themselves, contributing to increases in anxiety and depression. Among teens who reported suicidal thoughts, 13% of British users and 6% of American users traced these thoughts back to Instagram.

The problem is particularly acute on Instagram, where the focus is often on body and lifestyle, in contrast to other platforms that might emphasize faces with jokey filters. The pressure to share only the best moments, the drive to appear perfect, and the platform's addictive nature can push teens toward eating disorders, negative body image, and depression. The study also warned that Instagram's algorithm, which curates photos and videos based on user interactions, can further exacerbate the issue by leading users deeper into harmful content. It's also worth noting that over 40% of Instagram's users are 22 years old or younger,<sup>294</sup> a demographic particularly vulnerable to these effects.

An Instagram research manager highlighted that teens frequently express frustration over the amount of time they spend on the app, feeling compelled to be present even though they know it is harmful to their mental health. This difficulty in resisting social comparison, despite awareness of its harmful effects, underscores the addictive nature of social media, sharing the same concerns that the impact of social media addiction is similar to that of substance addiction, as we discussed earlier. Facebook's researchers have even reported hearing teens express feelings such as "I feel like I am too big and not pretty enough," and "I felt like I had to fight to be considered pretty or even visible,"<sup>295</sup> revealing the deep-seated impact social media can have on self-perception.

**In response to growing public and legal concerns, Instagram has implemented several measures aimed at protecting its younger users.<sup>296</sup> These include restricting how ads are shown to users under 18 by not allowing advertisers from targeting them based on Facebook's interest categories, such as beauty, fitness, and alcohol. Additionally, Instagram made accounts private by default for users under 18, ensuring that their posts can only be seen by those they choose to connect with.**

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<sup>291</sup> The Link Between Social Media and Body Image. <https://online.king.edu/news/social-media-and-body-image/>

<sup>292</sup> Self-Esteem, Social Comparison, and Facebook Use.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6266525/#:~:text=Specifically%2C%20people%20on%20Facebook%20may,worse%20Steers%2C%20Wickham%2C%20%26>

<sup>293</sup> Facebook Knows Instagram Is Toxic for Teen Girls, Company Documents Show. WSJ. <https://www.wsj.com/articles/facebook-knows-instagram-is-toxic-for-teen-girls-company-documents-show-11631620739>

<sup>294</sup> Facebook Knows Instagram Is Toxic for Teen Girls, Company Documents Show. WSJ. <https://www.wsj.com/articles/facebook-knows-instagram-is-toxic-for-teen-girls-company-documents-show-11631620739>

<sup>295</sup> Facebook Knows Instagram Is Toxic for Teen Girls, Company Documents Show. WSJ. <https://www.wsj.com/articles/facebook-knows-instagram-is-toxic-for-teen-girls-company-documents-show-11631620739>

<sup>296</sup> Instagram Adds More Protections for Teenagers. WSJ. [https://www.wsj.com/articles/instagram-adds-more-protections-for-teenagers-11627390800?mod=article\\_inline](https://www.wsj.com/articles/instagram-adds-more-protections-for-teenagers-11627390800?mod=article_inline)

## C. Monetization Strategy – Advertising

Meta does not directly generate revenue from its users. Instead, the platform provides free services to them, focusing on expanding its user base across its family of apps such as Facebook and Instagram, and monetizes this audience primarily through advertising. **Since its IPO in 2012, advertising has consistently accounted for over 95% of Meta's revenue, reaching 98% in 2023.**

Despite efforts to diversify revenue streams, such as the introduction of Facebook Payments in 2010, most initiatives outside of advertising have had limited success. Facebook Payments was introduced as a platform that allowed users to purchase virtual goods using Facebook credits, as Figure 30 shows. The company earned a fee of up to 30% on these transactions<sup>297</sup> from third-party developers such as social games running on Facebook. A partnership was established with Zynga, a U.S. game developer, in which Zynga agreed to use Facebook Payments as the primary payment method for its games on the platform. This partnership was governed by an addendum that expired in May 2015.<sup>298</sup> However, by 2013, the company began reporting a slowdown in revenue growth from this business line, largely due to a decline in personal computer usage as mobile platforms gained popularity. Facebook noted that the majority of Payments revenue came from a limited number of games,<sup>299</sup> and as users increasingly shifted to mobile, Payments revenue began to decline between 2015 and 2017. This trend was further exacerbated by the overall decline in gaming activity on Facebook, which also contributed to a slowdown in the company's overall revenue growth during this period.<sup>300</sup> An internal email from Mark Zuckerberg in 2012 highlighted the issue, noting that the shift of gaming away from Facebook to mobile platforms was negatively impacting user engagement, ad spend from gamers, and overall revenue,<sup>301</sup> which may have influenced the acquisition of Instagram as a strategic move.

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<sup>297</sup> Facebook Prospectus 2012.

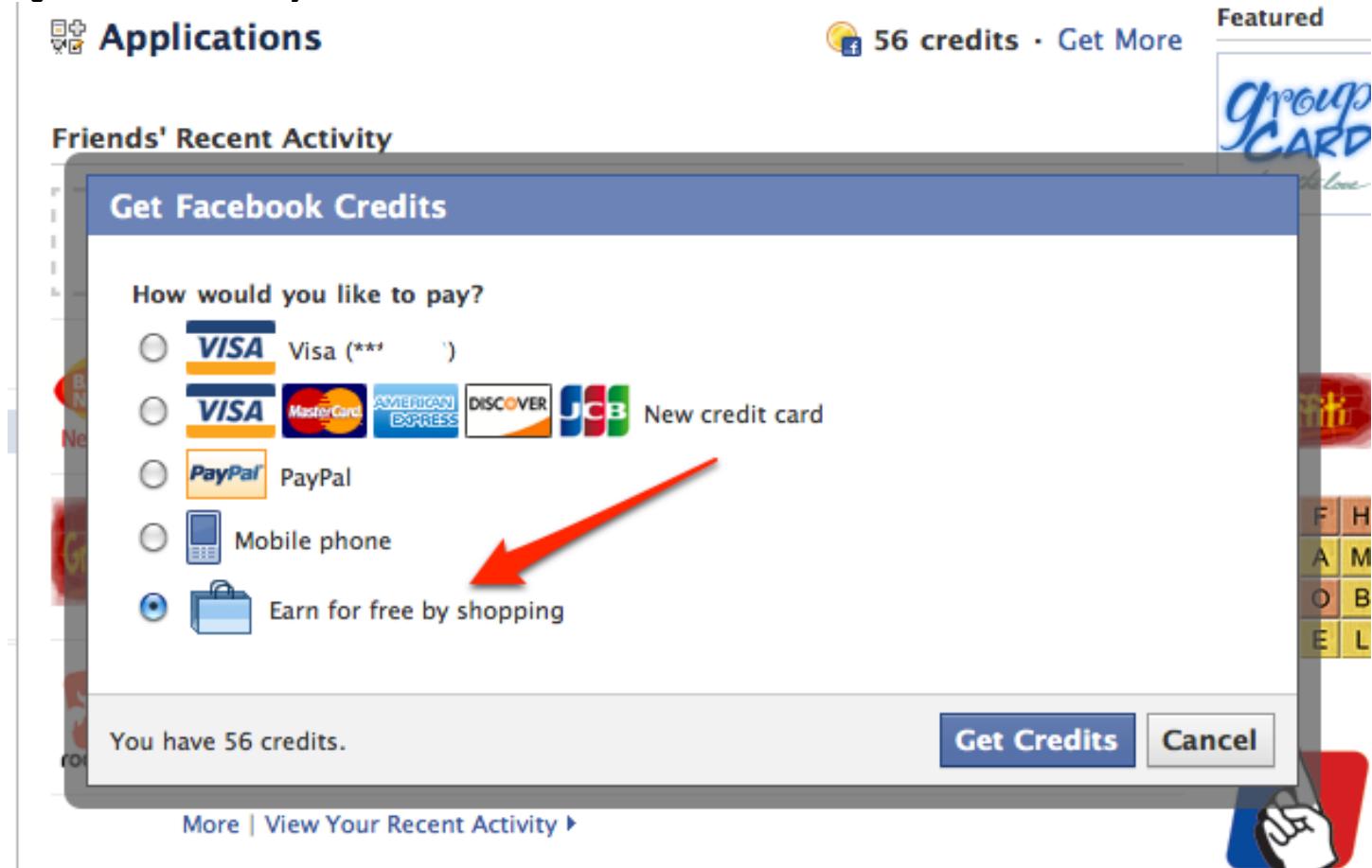
<sup>298</sup> Facebook Prospectus 2012.

<sup>299</sup> Facebook Annual Report 2013.

<sup>300</sup> Facebook Annual Reports 2012 – 2013.

<sup>301</sup> Facebook email thread between Mark Zuckerberg and Facebook employee. House Committee on the Judiciary. <https://democrats-judiciary.house.gov/online-platforms-and-market-power/>

Figure 30: Facebook Payments 2010<sup>302</sup>



Although Meta has explored other revenue sources, such as consumer hardware products such as Meta Quest, wearables, related software content, and the WhatsApp Business Platform, these have remained small contributors to Meta's overall revenue. The company's future revenue streams, particularly those tied to the metaverse, depend heavily on the development of AI initiatives. However, these ventures are still in the early stages and considered frontier research and thus may not generate meaningful revenue in the next decade.<sup>303</sup> In the meantime, Meta is working to build early metaverse experiences through Reality Labs products like Meta Quest devices, which combine VR hardware with software and content available through the Meta Quest Store. The company is also collaborating with third-party firms to enhance its Augmented Reality (AR) offerings, such as the Ray-Ban Meta smart glasses, which feature Meta AI as a conversational assistant. Despite these efforts, these business lines are not yet mature enough to contribute substantially to Meta's revenue.

As mentioned above, since its inception, Meta's business model has relied heavily on advertising revenue, which in turn depends on the size of its user base. Advertisers pay Meta based on the number of impressions or user actions, such as clicks, that their ads generate.<sup>304</sup> **Facebook's user base has grown significantly, from over 900 million monthly active users (MAUs) at the time of its IPO in 2012 to over 3 billion in 2023. Engagement has also increased, with 69% of monthly active users logging in daily in 2023, up from 59% in 2012.**

Facebook does not publicly disclose its click-through rates (CTR) on ads, which is typically defined as the number of clicks an advertisement receives divided by the number of times it is shown (impressions). However, some third-party surveys offer insights into this metric, though their findings can vary significantly due to differences in methodology. It is important to note that click-through rates can fluctuate considerably depending on the type of ad and the industry it targets.

<sup>302</sup> Facebook Begins Testing 'Offers' Payment Option Beyond Games. <https://techcrunch.com/2010/05/10/facebook-begins-testing-offers-payment-option-beyond-games/>

<sup>303</sup> Meta Annual Report 2023.

<sup>304</sup> Meta Annual Report 2023.

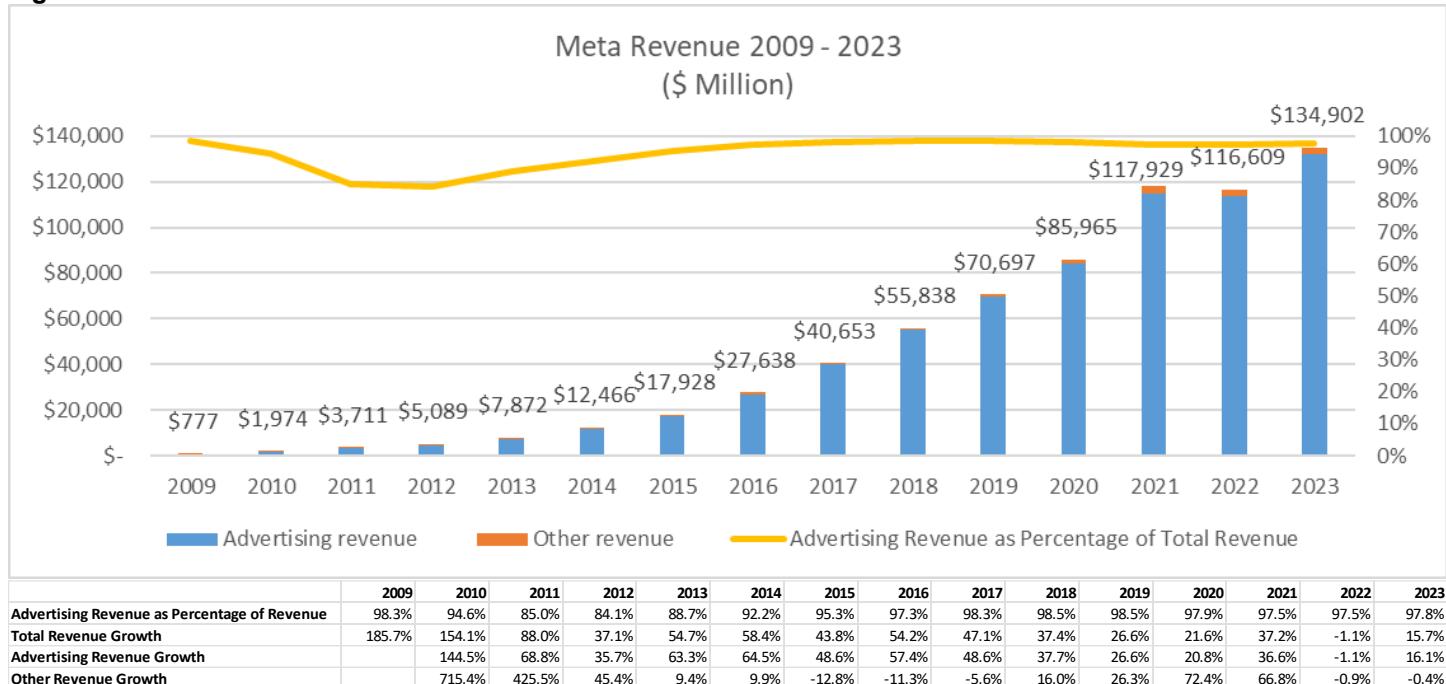
An estimation published by TBG Digital indicates that, in Q1 2012, Facebook's costs per thousand impressions (CPM) was \$0.296 on average across the U.S., U.K., Canada, France, and Germany, compared to \$0.21 in the previous year.<sup>305</sup> Comparable data on competitors during this period are not found.

Business Insider cited a third-party study in 2013, just before Twitter's IPO, that reported Facebook's average click-through rate (CTR) for advertisements was 0.119% with \$0.59 cost per thousand impressions, compared to Twitter's click-through rate that ranged from 1% to 3% with \$3.50 cost per thousand impressions.<sup>306</sup> At that time, Facebook had 1.15 billion active users sharing 4.75 billion posts daily, while Twitter had 232 million users generating 500 million tweets each day. However, directly comparing the CTRs of the two platforms can be misleading.

Twitter's much higher CTR could be attributed to its real-time nature, which encourages users to engage with tweets relevant to their current interests. Twitter's use of hashtags also enables advertisers to reach users who are actively discussing their brands. However, advertising on Twitter also costs more than advertising on Facebook. In contrast, Facebook ads are often shown to users who are passively scrolling through their feeds, targeting users' general interests rather than the precise, real-time engagement that Twitter's hashtags facilitate. Despite its lower CTR, Facebook has a much larger user base and its ability to target specific demographics can still lead to successful advertising campaigns at lower cost per thousand impressions.

Online advertising offers significant advantages to advertisers compared to traditional media channels like TV. For example, during 2011 and 2012, a 30-second TV commercial targeting an audience aged 18 and older during prime time in the U.S. had an average cost per thousand impressions (CPM) of \$19.48 for broadcast TV and \$10.61 for cable TV<sup>307</sup>, nearly 65 times and 35 times, respectively, that of Facebook's CPM. Advertisements on Facebook can theoretically remain on the screen for an extended period, allowing the target audience to view them in detail if they desire, whereas on TV, viewers might miss the advertisement and cannot go back to it, even if they want to, if they do not pay attention.

**Figure 31: Meta Revenue 2009 – 2023**



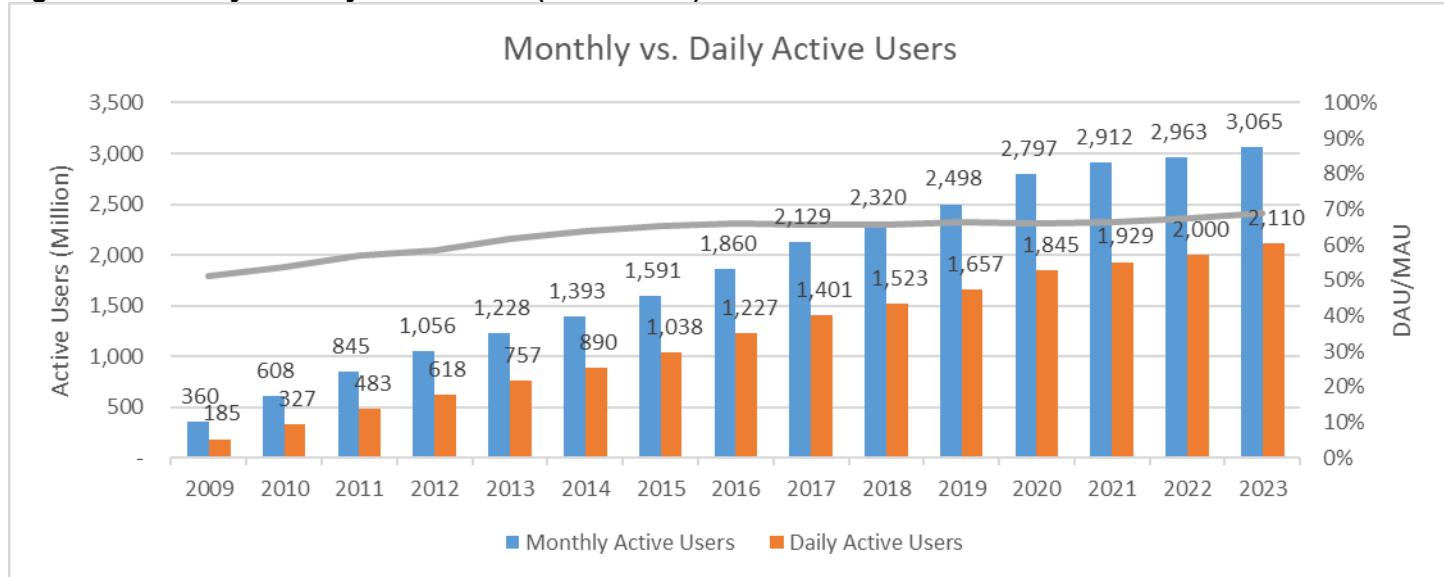
<sup>305</sup> Study: Facebook's Ad Business Booms Before IPO With CPC Up 23%, CPM Up 15%. <https://techcrunch.com/2012/04/16/facebook-cpc/>

<sup>306</sup> Hey Twitter, Your Ads Are Even Worse Than Facebook's. Business Insider. <https://www.businessinsider.com/hey-twitter-your-ads-are-even-worse-than-facebooks-heres-the-data-2013-11>

<sup>307</sup> Average CPM for US Primetime TV Upfront Ads, Broadcast vs. Cable, 2008-2020. EMARKETER.

<https://www.emarketer.com/chart/230277/average-cpm-us-primetime-tv-upfront-ads-broadcast-vs-cable-2008-2020>

Figure 32: Monthly vs. Daily Active Users (2009 – 2023)



Notes:

1. Daily active users-to-monthly active users ratio (DAU/MAU) is a measure of user engagement. It reflects how often monthly users are active on a daily basis, indicating the engagement level of Facebook. A higher DAU/MAU ratio suggests that users are more engaged, logging in frequently throughout the month.
2. MAU and DAU do not include users of Instagram or WhatsApp unless they would otherwise qualify as such users.<sup>308</sup>

While Meta does not regularly disclose the user base of individual apps, aggregate data shows that monthly active users across its family of apps grew from 2.64 billion in 2018 to 3.98 billion in 2023,<sup>309</sup> representing a CAGR of 8.6%.

Engagement also improved, with the percentage of daily active users rising from 77% to 80% during this period. This indicates not only a growing user base but also increased user engagement, as more people log in daily across Meta's social apps.

At the time of its IPO, Facebook users generated an average of 3.2 billion likes and comments per day, which the company believes such activities provide insight into how engaging users find the content to them.<sup>310</sup> Advertisers can target specific demographics based on the massive data Facebook collects, including age, location, gender, education, work history, and interests. This capability allows advertisers to reach highly relevant audiences, from millions of users for global brands to just hundreds for local businesses. For example, Procter & Gamble's advertising campaign for Secret deodorant on Facebook led to a 9% increase in U.S. sales within 26 weeks. Due to the authentic identities of Facebook users and the real interests they share, the platform has achieved higher accuracy rates in ad targeting compared to the industry average. A Nielsen report in 2011 highlighted that Facebook achieved 95% accuracy for broadly targeted campaigns and 90% for narrowly targeted ones, compared to industry averages of 72% and 35%, respectively.<sup>311</sup>

Ben & Jerry's, a well-known American company that manufactures ice cream, has a Facebook page. On Facebook's IPO roadshow in 2012, Jostein Solheim, Ben & Jerry's then CEO, said:<sup>312</sup>

"We really want to have a holistic relationship with our community, with our consumers about values about great ice cream. So having a platform where we can actually engage in a large-scale conversation, get feedback, that's what's so powerful about Facebook...Having other people talk about Ben & Jerry's is really at the core of the Ben & Jerry's strategy. Our 3.4 million fans have 244 million friends out there. The scale of that community is mind-boggling. That's how we engage a lot of people."

Katie O'Brien, the former Global Digital Marketing Manager at Ben & Jerry's, said:<sup>313</sup>

<sup>308</sup> Facebook/Meta Annual Reports.

<sup>309</sup> Meta Annual Report 2023.

<sup>310</sup> Facebook Prospectus 2012.

<sup>311</sup> Facebook Prospectus 2012.

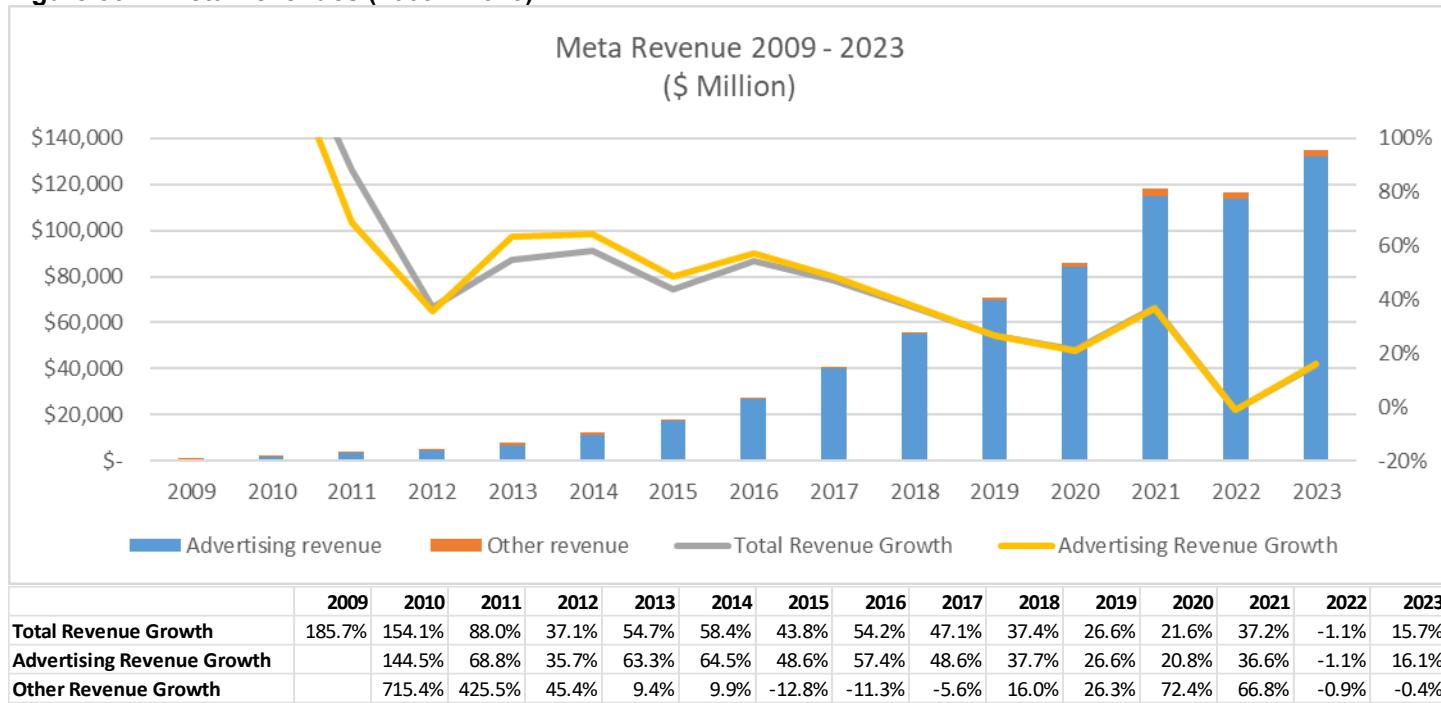
<sup>312</sup> Facebook IPO Roadshow Video. May 2012. <https://www.youtube.com/watch?v=wA81tRwvoPs&t=1006s>

<sup>313</sup> Facebook IPO Roadshow Video. May 2012. <https://www.youtube.com/watch?v=wA81tRwvoPs&t=1006s>

"You can really reach your consumers in a lot of different touch points, on their mobile phone, in their news feed. It also puts it into social context so you can see your friends if they've engaged with it. You can comment on it. You can like it. And you can share it. It's something that we would never be able to do if it wasn't for Facebook.... Every dollar we spent on Facebook, it returned three dollars in incremental sales."

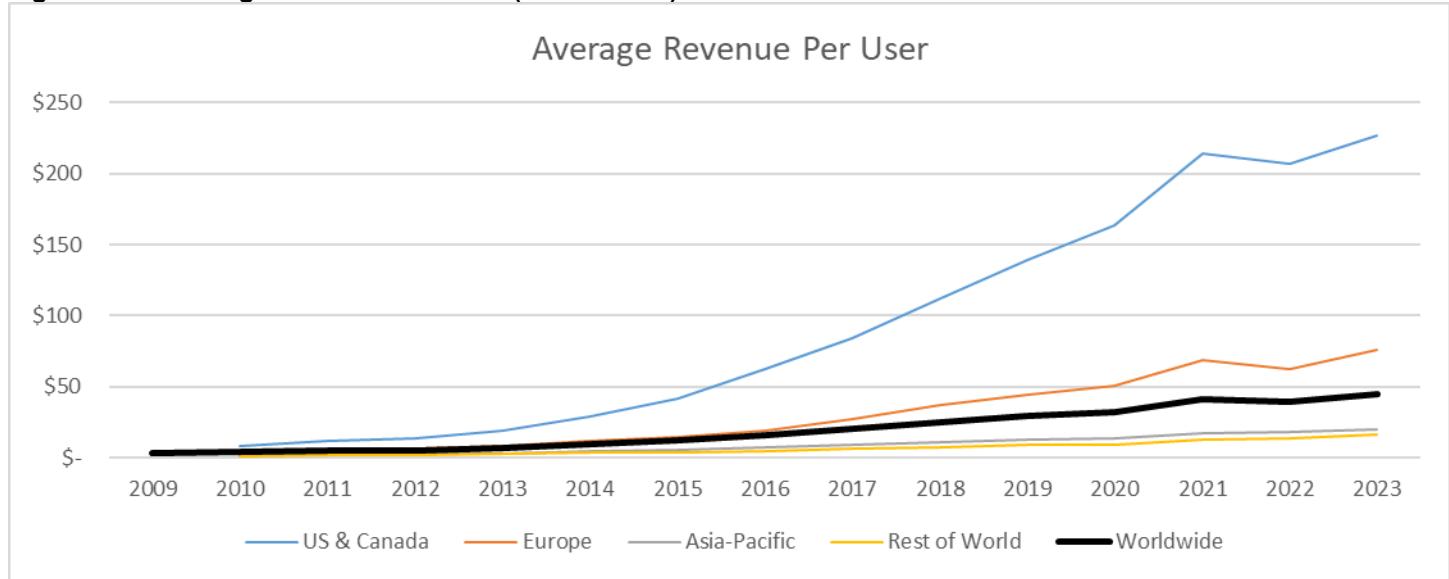
However, despite the large amount of user data it has accumulated over the years and its ability to constantly track new user activities, Meta has faced challenges in its targeted ads lately, particularly after Apple's introduction of the App Tracking Transparency (ATT) feature in 2021. This update allows iOS users to opt out of tracking, limiting the data available to app developers, including Meta's apps. This change has had a significant impact on Meta's ability to analyze user activity across devices, contributing to an estimated \$10 billion revenue loss in 2022,<sup>314</sup> but representing less than 10% of the company's overall revenue, and leading to the first revenue decline in Facebook's history. This decline also affected the company's average revenue per user, which grew from \$5.02 in 2011 to \$44.60 in 2023, representing a CAGR of 20%. The U.S. and Canada markets exhibit the highest ARPU growth, from \$11.33 in 2011 to \$226.93 in 2023, a 28% CAGR. In 2022, after one year taking the full impact from the iOS update, Meta's ARPU declined from \$40.96 to \$39.63, and rebounded to \$44.6 in 2023.

**Figure 33-1: Meta Revenues (2009 – 2023)**



<sup>314</sup> Facebook Says Apple iOS Privacy Change Will Cost \$10 Billion This Year. CNBC. <https://www.cnbc.com/2022/02/02/facebook-says-apple-ios-privacy-change-will-cost-10-billion-this-year.html>

Figure 33-2: Average Revenue Per User (2009 – 2023)

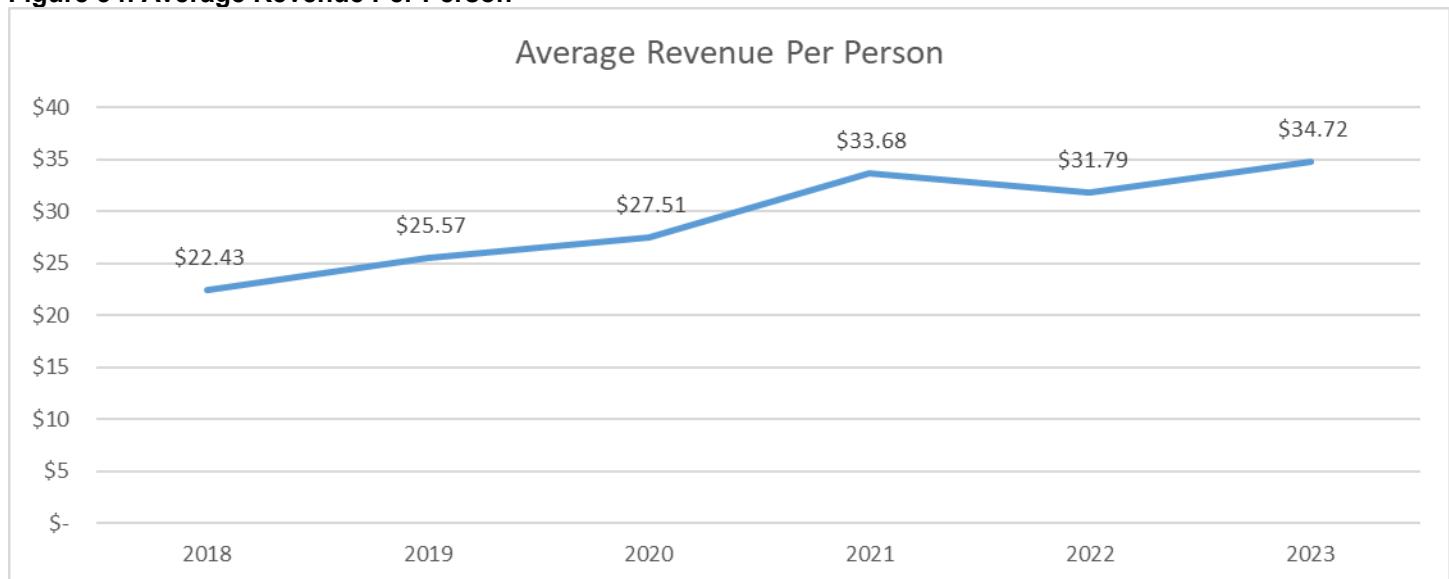


Notes:

1. Average revenue per user (ARPU) does not include users on Instagram, WhatsApp, or other products, unless they would otherwise qualify as monthly active users (MAU).
2. ARPU = Total Revenue/MAU.

Although Meta does not disclose the breakdown of average revenue per person (ARPP) for individual apps such as Instagram and WhatsApp, its ARPU, which is defined as total revenue divided by the number of monthly active people, grew from \$22.43 in 2018 to \$34.72 in 2023, CAGR of 9%. The broader ARPP metric of \$34.72 in 2023 is notably lower than the ARPU of \$44.60. This discrepancy is primarily because WhatsApp has not been significantly monetized, contributing less to overall revenue compared to other apps in Meta's portfolio.

Figure 34: Average Revenue Per Person



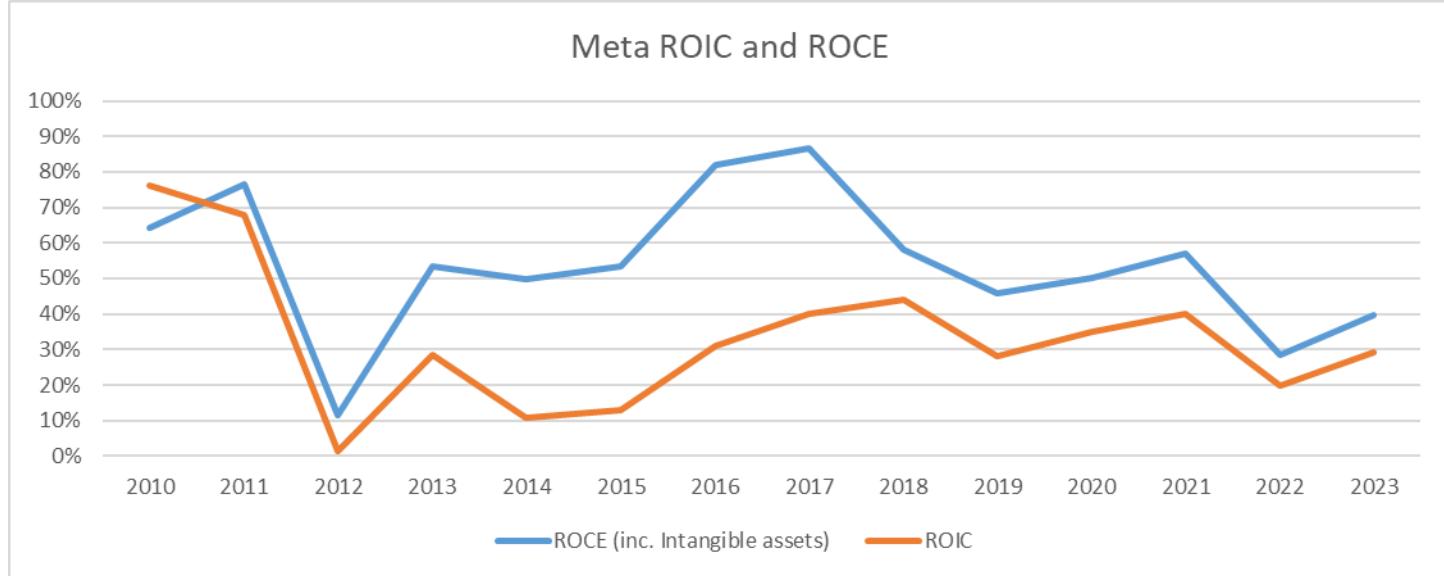
Notes:

1. Monthly active people reflect (MAP) the broader user base across Meta's family of apps, including Instagram, Messenger, and WhatsApp, in addition to Facebook.
2. ARPP = Total Revenue/MAP.

Meta's revenue model, which heavily relies on advertising tied to its massive user base, theoretically benefits from very low marginal costs when adding new users, as long as the company has sufficient capacity to process the associated data. This dynamic has the potential to generate high returns on investment as the company scales. Indeed, this has been the case for Meta, with its ROIC and ROCE showing an upward trend following its IPO in 2012, peaking at 86% and 40% in 2017, respectively. However, since 2018, the company's returns on investment have begun to slow down, a trend that coincides with its rapidly increasing research and development expenses. As Meta continues to invest in research and development, particularly in areas such as AI and the metaverse, we do not expect the two ratios to return to their previous level in the near future.

Meta's consistently high ROIC and ROCE highlight the exceptional quality of its business. The long-term ROIC for U.S. companies since 1963 has typically been around 10%, according to a 2006 McKinsey report.<sup>315</sup>

**Figure 35: Meta ROIC And ROCE (2009 – 2023)**



**Notes:**

1. ROIC is calculated  $EBIT^*(1-Effective\ Tax\ Rate)$  divided by  $Total\ Asset - Cash - Non-interest\ Bearing\ Current\ Liabilities$ . Capital lease is not considered an interest-bearing liability.
2. For ROCE, we included intangible assets (ex. goodwill) because, as a social media company, intangible assets such as patents and technology are vital to the business model. We also included operating leases, which are similar to capital leases, including offices and data center facilities that are essential to the company's operations.
3. The operating income in 2012 declined significantly from 2011 primarily due to a significant rise in total costs and expenses, driven by substantial increases in share-based compensation and the related payroll tax expenses for restricted stock units (RSU). \$1.13 billion was attributed to the recognition of share-based compensation and related payroll tax expenses related to RSUs granted prior to January 1, 2011 (Pre-2011 RSUs) triggered by the completion of Facebook's IPO in May 2012.<sup>316</sup> Had those expenses not been incurred, the adjusted ROCE and ROIC in 2012 would have been approximately 44% and 11%, respectively, assuming the 19.2% of effective tax rate<sup>317</sup> related to share-based compensation expenses had not occurred either.

#### D. Management Compensation

At the time of IPO, Facebook's executive officers included 1) Mark Zuckerberg, the founder, Chairman, and Chief Executive Officer of the company; 2) Sheryl Sandberg, the Chief Operating Officer; 3) David Ebersman, the Chief Financial Officer; 4) Mike Schroepfer, the Vice President of Engineering; and 4) Theodore Ullyot, the Vice President of General Counsel and Secretary.<sup>318</sup>

<sup>315</sup> A long-term look at ROIC. McKinsey. <https://www.mckinsey.com/capabilities/strategy-and-corporate-finance/our-insights/a-long-term-look-at-roic>

<sup>316</sup> Facebook Annual Report 2012.

<sup>317</sup> Facebook Annual Report 2012.

<sup>318</sup> Facebook Prospectus 2012.

The compensation structure of the management team consisted of base salary, performance-based cash incentives, and equity-based compensation such as restricted stock units (RSU).<sup>319</sup>

**Figure 36: Executive Compensation 2011<sup>320</sup>**

FY2011	Position	Salary	Bonus	Stock Awards	Other Compensation	Total
Mark Zuckerberg	Chief Executive Officer	\$ 483,333	\$ 445,500	\$ -	\$ 783,529	\$ 1,712,362
Sheryl Sandberg	Chief Operating Officer	\$ 295,833	\$ 170,508	\$ 30,491,613	\$ -	\$ 30,957,954
David Ebersman	Chief Financial Officer	\$ 295,833	\$ 170,508	\$ 18,294,952	\$ -	\$ 18,761,293
Mike Schroepfer	Vice President, Engineering	\$ 270,833	\$ 140,344	\$ 24,393,295	\$ -	\$ 24,804,472
Theodore Ullyot	Vice President, General Counsel and Secretary	\$ 270,833	\$ 602,500	\$ 6,098,317	\$ 110,644	\$ 7,082,294

In the first quarter of 2012, Mark Zuckerberg requested the company to reduce his base salary to \$1 per year, effective January 1<sup>st</sup>, 2013.<sup>321</sup>

**The IPO dramatically increased the wealth of Facebook's top executives. With Facebook's shares priced at \$38 each, Zuckerberg's stake in the company was projected to be worth over \$19 billion. Sheryl Sandberg, the company's Chief Operating Officer, was expected to have a net worth of nearly \$1.6 billion.** Meanwhile, David Ebersman, the Chief Financial Officer, and Mike Schroepfer, the Vice President of Engineering, were each anticipated to be worth over \$300 million, and Theodore Ullyot, the Vice President of General Counsel and Secretary, was expected to surpass \$200 million. The IPO marked a significant milestone, turning Facebook's leadership team into millionaires and, in some cases, billionaires overnight.

**Figure 37-1: Executive Stock Ownership After IPO<sup>322</sup>**

Position	Shares Owned Prior to Offering					Shares Owned After Offering				
	Class A Shares	%	Class B Shares	%	Voting Power Prior to Offering	Class A Shares	%	Class B Shares	%	Voting Power After Offering
Mark Zuckerberg	Chief Executive Officer	-	-	533,801,850	28.1%	27.9%	-	-	503,601,850	32.2%
Shares Subject to Voting Proxy		42,395,203	36.1%	541,994,071	30.4%	30.5%	5,166,794	<1%	430,293,407	28.6%
<b>Total</b>		<b>42,395,203</b>	<b>36.1%</b>	<b>1,075,795,921</b>	<b>56.6%</b>	<b>56.5%</b>	<b>5,166,794</b>	<b>&lt;1%</b>	<b>933,895,257</b>	<b>59.8%</b>
Sheryl Sandberg	Chief Operating Officer	-	-	1,899,986	<1%	<1%	-	-	1,899,986	<1%
David Ebersman	Chief Financial Officer	-	-	2,399,999	<1%	<1%	-	-	2,399,999	<1%
Mike Schroepfer	Vice President, Engineering	-	-	2,291,849	<1%	<1%	-	-	2,291,849	<1%
Theodore Ullyot	Vice President, General Counsel and Secretary	-	-	2,025,244	<1%	<1%	-	-	2,025,244	<1%
Marc Andreessen	Director, Board Member	-	-	6,607,131	<1%	<1%	-	-	6,607,131	<1%
Erskine Bowles	Director, Board Member	-	-	-	-	-	-	-	-	-
James Breyer	Director, Board Member	-	-	201,378,349	11.3%	11.2%	144,418,008	22.7%	7,929,092	-
Donald Graham	Director, Board Member	-	-	-	-	-	-	-	-	-
Reed Hastings	Director, Board Member	-	-	-	-	-	-	-	-	-
Peter Thiel	Director, Board Member	-	-	44,724,100	2.5%	2.5%	18,581,901	2.9%	9,297,884	<1%
<b>Total as a group (12 persons)</b>		<b>42,395,203</b>	<b>36.1%</b>	<b>1,326,579,470</b>	<b>69.6%</b>	<b>69.4%</b>	<b>168,166,703</b>	<b>26.4%</b>	<b>958,305,466</b>	<b>61.1%</b>
										<b>59.7%</b>

Notes:

1. Total shares do not add up because they include Class B shares issuable upon exercise of options exercisable within 60 days of March 31<sup>st</sup>, 2012.
2. The shares above do not include restricted stock units, which are subject to vesting conditions not expected to occur within 60 days of March 31s, 2012.
3. There are voting agreements among Mark Zuckerberg and certain stockholders, including directors and holders of more than 5% of Facebook's capital stock.
  - a. Type 1 Holder Voting Agreement, stockholders agree to vote all of their shares as directed by, and grant an irrevocable proxy to, Mr. Zuckerberg at his discretion on all matters to be voted upon by stockholders.
  - b. Type 2 Holder Voting Agreement, Zuckerberg is authorized to vote these investors' shares at his discretion on all matters, except for issuances of capital stock in excess of 20% of outstanding stock and matters that disproportionately, materially, and adversely affect the stockholder. It also restricts the investor from acquiring ownership of assets or businesses, making proxy solicitations, forming groups, nominating directors not nominated by the incumbent directors, and other similar actions.
  - c. Type 3 and Type 4 Holder Voting Agreements contain similar provisions to Type 2 with some variations.

<sup>319</sup> Facebook Prospectus 2012.

<sup>320</sup> Facebook Prospectus 2012.

<sup>321</sup> Facebook Prospectus 2012.

<sup>322</sup> Facebook Prospectus 2012.

**Figure 37-2: Restricted Stock Units**

	Position	RSU+Options
<b>Mark Zuckerberg</b>	Chief Executive Officer	-
<b>Sheryl Sandberg</b>	Chief Operating Officer	39,321,041
<b>David Ebersman</b>	Chief Financial Officer	7,469,424
<b>Mike Schroepfer</b>	Vice President, Engineering	6,144,188
<b>Theodore Ullyot</b>	Vice President, General Counsel and Secretary	3,782,818
<b>Marc Andreessen</b>	Director, Board Member	7,030,574
<b>Erskine Bowles</b>	Director, Board Member	20,000
<b>James Breyer</b>	Director, Board Member	-
<b>Donald Graham</b>	Director, Board Member	1,000,000
<b>Reed Hastings</b>	Director, Board Member	20,000
<b>Peter Thiel</b>	Director, Board Member	-

## **E. Employee Benefits**

In a 2009 interview, Mark Zuckerberg expressed a unique perspective on Facebook's approach to talent development. He explained that while Facebook aims to attract people, its goal is not to keep them forever.<sup>323</sup> Instead, the company strives to create an environment where individuals can learn how to build innovative products and develop their skills. Zuckerberg emphasized that Facebook is an excellent place for entrepreneurs and hackers (those who are good with computers). He even mentioned that Facebook would take pride in seeing its employees go on to create something great, even if that meant leaving the company, citing Steve Chen, who worked at Facebook before founding YouTube, as an example.

By 2013, Facebook was rated by its employees as the best company to work for in the U.S., based on overall satisfaction and key workplace factors such as career opportunities, compensation and benefits, work-life balance, senior management, culture, and values.<sup>324</sup> This high ranking was not a one-time achievement; in the years that followed, Facebook consistently ranked as one of the best places to work.

In 2018, Facebook once again topped the list of best places to work.<sup>325</sup> It was not just the perks such as free meals, fun workspaces, and access to leaders like Mark Zuckerberg that made it highly regarded; the company was also highly rated for its strong culture, mission-driven environment, and the opportunities it provided employees to make a significant impact. An internal employee survey revealed that the word "fulfilled" frequently appeared in responses, leading the company to explore the reasons behind this sentiment. They discovered that "fulfillment is really about individual impact. It's about learning, and it's about playing to your strengths," as stated by Facebook's Vice President of People.<sup>326</sup> Facebook encouraged employees to take on new projects and even move between roles within the company, ensuring that everyone was in a position where they could thrive and enjoy their work. Managers at Facebook are trained to help employees find projects they enjoy and have difficult and honest conversations around how their reports are feeling at work.

To further support this culture, Facebook implemented programs allowing employees to spend days or even weeks working with other teams. While the primary goal of this initiative was to help employees better understand the company's various functions, it also served as a platform for those interested in transitioning to different roles within the organization. Sheryl Sandberg, then Chief Operating Officer, emphasized that Facebook valued skills over experience and was committed to giving employees the opportunity to explore and grow within the company.<sup>327</sup> This approach reinforced Facebook's reputation as a place where employees could develop their careers and make meaningful contributions.

<sup>323</sup> Startup School: An Interview With Mark Zuckerberg. <https://techcrunch.com/2009/10/24/startup-school-an-interview-with-mark-zuckerberg/>

<sup>324</sup> The Best Companies To Work For In 2013. Forbes. <https://www.forbes.com/sites/jacquelynsmith/2012/12/12/the-best-companies-to-work-for-in-2013/>

<sup>325</sup> Facebook Is The Best Place To Work—And It's Not Just Because of The Fun Perks. <https://www.cnbc.com/2017/12/14/facebook-is-the-best-place-to-work-and-its-not-just-because-of-the-fun-perks.html>

<sup>326</sup> Facebook Is The Best Place To Work—And It's Not Just Because of The Fun Perks. <https://www.cnbc.com/2017/12/14/facebook-is-the-best-place-to-work-and-its-not-just-because-of-the-fun-perks.html>

<sup>327</sup> Facebook Is The Best Place To Work—And It's Not Just Because of The Fun Perks. <https://www.cnbc.com/2017/12/14/facebook-is-the-best-place-to-work-and-its-not-just-because-of-the-fun-perks.html>

## F. Feedback Loops

Across its family of apps including not only Facebook, but also Instagram and WhatsApp, Meta reaches 3.9 billion monthly active users in aggregate, with 80% interacting daily. The immense volume of data generated by these users is an invaluable asset, providing the company with deep analytical insights into user demographics, social networks, political stances, life events, preferences in food, hobbies, entertainment, and the digital devices they use.<sup>328</sup> This information, whether shared by users intentionally or not, is collected not just within Meta's platforms but also from other websites and apps that Meta has access to, allowing the company to fine-tune its algorithms and better serve users according to their preferences.

As users engage more with Meta's services, the company's understanding of their profiles deepens, enabling it to offer more effective advertising services to marketers. Meta reinvests the revenue generated from these ads into hiring talent and expanding data centers, further enhancing its algorithms. This cycle creates a positive feedback loop: better algorithms lead to more engaging content, which attracts more user interaction, driving further data collection and refinement, eventually turning into advertising revenue.

Facebook categorizes each user based on their interactions and the data they provide, including the content they post, like, comment on, and share. The platform's algorithm uses this information to craft a list of a user's interests.<sup>329</sup> This categorization is not limited to data collected within Facebook but also includes data gathered from a user's online behavior outside of the platform. Millions of websites globally have integrated Facebook's tracking tools, such as the Facebook pixel, which records user activity and feeds this data back to Facebook. This enables companies and organizations to better target ads to their website visitors who are also Facebook users.

Research by Pew indicates that frequent Facebook users, and those who have been on the platform for a longer time, are categorized into a larger number of personal interest categories.<sup>330</sup> For instance, 40% of users who access Facebook multiple times daily are listed in 21 or more categories, compared to 16% of less frequent users. Similarly, 48% of those who have used Facebook for 10 years or more are categorized into 21 or more categories, compared to 22% of those with less than five years of experience.

**Avoiding Facebook's tracking is nearly impossible, even for those who do not use the platform.**<sup>331</sup> Facebook collects data from both users and non-users through third-party apps and websites that use its advertising pixel or social plugins. This data collection occurs regardless of whether someone is a registered user of Facebook. For non-users who visit sites with Facebook plugins, Facebook cannot monetize through targeted ads but may still attempt to reach them with its own ads and make them become Facebook users. For Facebook users who never post on the platform, Facebook can still profile them based on their browsing history, IP addresses, browser type, and device software. This data is used to tailor content and ads to their preferences. For example, if a user visits many sports websites that use Facebook services, they might see sports-related content in their News Feed, even if they never post about sports.<sup>332</sup>

Rebecca Stimson, Facebook's Head of Public Policy in the UK, highlighted that between April 9 and April 16, 2018, over 8.4 million websites had Facebook's Like Button, and 2.2 million websites had installed Facebook Pixels.<sup>333</sup> Given the vast number of websites on the internet, nowadays it is difficult to find one, from major news outlets to local coffee shops, that does not have Facebook plugins. During a congressional hearing in 2018, a house member said that "On practically every website, we all see the Facebook like or share buttons, and with the Facebook Pixel, people may not even see that Facebook logo. It doesn't matter whether you have a Facebook account. Through those tools, Facebook is able to collect

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<sup>328</sup> Facebook Algorithms and Personal Data. Pew Research Center. <https://www.pewresearch.org/internet/2019/01/16/facebook-algorithms-and-personal-data/>

<sup>329</sup> Facebook Algorithms and Personal Data. Pew Research Center. <https://www.pewresearch.org/internet/2019/01/16/facebook-algorithms-and-personal-data/>

<sup>330</sup> Facebook Algorithms and Personal Data. Pew Research Center. <https://www.pewresearch.org/internet/2019/01/16/facebook-algorithms-and-personal-data/>

<sup>331</sup> This Is How Facebook Collects Data on You Even If You Don't Have An Account.

<https://www.vox.com/2018/4/20/17254312/facebook-shadow-profiles-data-collection-non-users-mark-zuckerberg>. Facebook Collects Data Even When You're Not on Facebook. CNBC. <https://www.cnbc.com/2018/04/16/facebook-collects-data-even-when-youre-not-on-facebook.html>

<sup>332</sup> Facebook Collects Data Even When You're Not on Facebook. CNBC. <https://www.cnbc.com/2018/04/16/facebook-collects-data-even-when-youre-not-on-facebook.html>

<sup>333</sup> Facebook Is Tracking You on Over 8.4 Million Websites. <https://theoutline.com/post/4578/facebook-is-tracking-you-on-over-8-million-websites?zd=2&zi=ixbvyntp>

information from all of us.”<sup>334</sup> This constant data collection trains Facebook’s algorithms to deliver more engaging content and accurate ads, attracting more advertisers. Websites and apps are willing to install Facebook plugins because they are free, publicly available, and provide user data such as emails, public profiles, likes, interests, and friend lists, depending on the permissions granted by users.<sup>335</sup> This convenience also saves users from the hassle of creating new accounts, reducing potential security risks.

## G. Competition

When Facebook went public in 2012, it stood largely unchallenged in the public market as a social media platform, with few competitors in the private sector. However, none of these competitors ever reached the scale that Facebook did.

We believe that a significant reason for Facebook’s success is its ability to quickly amass massive network effects, particularly during the early days of the internet following the dot-com bubble and later with the rise of smartphones. As Facebook’s user base grew, it became increasingly essential for people to join the platform to stay connected with their social circles. Even Mark Zuckerberg emphasized the importance of network effects, stating that the business eventually attracts new users simply because they want to interact with existing users, and that network effect is an important factor contributing to Facebook’s business.<sup>336</sup> In addition, as Facebook grew larger, it strategically acquired companies that it view as potential threats in the future, buying itself time and thus further solidifying its market position.

Although Facebook was not the first social media company, it was the first to achieve such a massive scale, to the point where its user network began to self-reinforce growth. Mark Zuckerberg believed that network effects were intrinsic to social products and that there were only a limited number of social mechanics that could be invented. Once a social mechanic was established, it became difficult for others to compete unless they offered something entirely different.<sup>337</sup>

We believe that one key factor in Facebook’s popularity and sustained user base growth was its initial focus on young people, specifically students across colleges, whether intentionally or not. Mark Zuckerberg mentioned, “At Harvard, a few of my friends saw me developing Facebook, and they send it out to a couple of their friends, and within two weeks two-thirds of Harvard was using it...when I started it, there was no concept of having Facebook across schools.”<sup>338</sup> He also noted that Facebook initially expanded to schools such as Yale and Columbia, where they believed Harvard students were most likely to have a lot of friends, even though they did not have evidence to scientifically support this intuitive assumption.<sup>339</sup> As a result, similar to Harvard, a significant number of students in these schools joined Facebook within a short period of time.

By targeting college students and teenagers at the outset, Facebook tapped into a demographic that would carry the platform not only to their peers but also into their workplaces as they entered adulthood, eventually expanding its reach to all age groups. When Zuckerberg dropped out of Harvard in 2004, only few months since Facebook’s initial launch,<sup>340</sup> about one-third of Facebook’s college users had already graduated and were connecting with people outside of their schools and workplaces. Although it was already available to college and high school students, Zuckerberg decided to open Facebook to the public in September 2006, responding to increasing demand from millions outside the network, enabling the existing Facebook network to further expand.

Targeting college students and teenagers was crucial for Facebook’s early success. Studies show that young people, particularly teenagers and those in early adulthood, are more likely to adopt new technologies, including social networking sites, compared to older generations. Additionally, people tend to reduce their use of social media as they age.<sup>341</sup> In 2013,

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<sup>334</sup> Shadow Profiles Are The Biggest Flaw in Facebook’s Privacy Defense. <https://www.theverge.com/2018/4/11/17225482/facebook-shadow-profiles-zuckerberg-congress-data-privacy>

<sup>335</sup> How to Use Facebook Login on Your Website. <https://www.socialmediaexaminer.com/how-to-use-facebook-login-on-your-website/>

<sup>336</sup> Network Effects and Global Domination: The Facebook Strategy. Wired. <https://www.wired.com/2012/05/network-effects-and-global-domination-the-facebook-strategy/>

<sup>337</sup> Exhibit A – Facebook Documents, Online Platforms and Market Power. House Committee on the Judiciary. <https://democrats-judiciary.house.gov/online-platforms-and-market-power/>

<sup>338</sup> Case Study: Facebook. Stanford Graduate School of Business.

<sup>339</sup> Case Study: Facebook. Stanford Graduate School of Business.

<sup>340</sup> Facebook Expansion Enables More People to Connect with Friends in a Trusted Environment. <https://web.archive.org/web/20181226015312/https://newsroom.fb.com/news/2006/09/facebook-expansion-enables-more-people-to-connect-with-friends-in-a-trusted-environment/>

<sup>341</sup> Usage And Adoption. Pew Research Center. <https://www.pewresearch.org/internet/2014/04/03/usage-and-adoption/>

Facebook noted that it had a particularly high penetration rate among users under the age of 25, who remained some of the most active and engaged users on both Facebook and Instagram.<sup>342</sup>

Young users are typically more active on social media, sharing everything from their thoughts on music to photos and personal experiences. They are often less concerned about the future implications of posting personal information, such as potential employability or identity theft.<sup>343</sup> However, this does not mean they are entirely unconcerned about privacy. Research indicates that teenagers are more worried about their privacy in relation to those with power over them, such as parents, teachers, or college admission officers, rather than advertisers using their data.<sup>344</sup> Teens and college students do not concern posting picture of themselves on Facebook or engaging in inappropriate as they have the ability on Facebook to decide who can view their profile and posts.<sup>345</sup> When Facebook decided to expand into U.S. high schools in 2005, existing college students on the platform were encouraged to invite high school students to join, who could then invite others from their schools. This invitation-only approach not only created a sense of exclusivity and scarcity but also provided a sense of security for these teenagers. As Facebook stated on its FAQ page about their high school sites, the high school and college networks were separate, meaning features such as search and messaging were restricted to the users' specific network. This was not only for security reasons but also because many users preferred this way. Given the large base of U.S. high school students, 16.6 million enrolled under the age of 30 compared to 13.2 million college students under 30 – high school students were eager to join.<sup>346</sup> According to Zuckerberg, "The high school network reached a million users way faster than the college network did. The college network took almost 11 months to reach a million, and the high school took only six or seven months."<sup>347</sup>

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<sup>342</sup> Facebook Q1 2013 Earnings Call. 5/1/2013.

<sup>343</sup> Are Teenagers Really Careless about Online Privacy? The Guardian.

<https://www.theguardian.com/technology/2013/oct/21/teenagers-careless-about-online-privacy>

<sup>344</sup> Are Teenagers Really Careless about Online Privacy? The Guardian.

<https://www.theguardian.com/technology/2013/oct/21/teenagers-careless-about-online-privacy>

<sup>345</sup> When It Comes To Online Privacy, A Disconnect For The Young. NPR.

<https://www.npr.org/sections/alltechconsidered/2013/06/10/190433719/when-it-comes-to-online-privacy-a-disconnect-for-the-young>

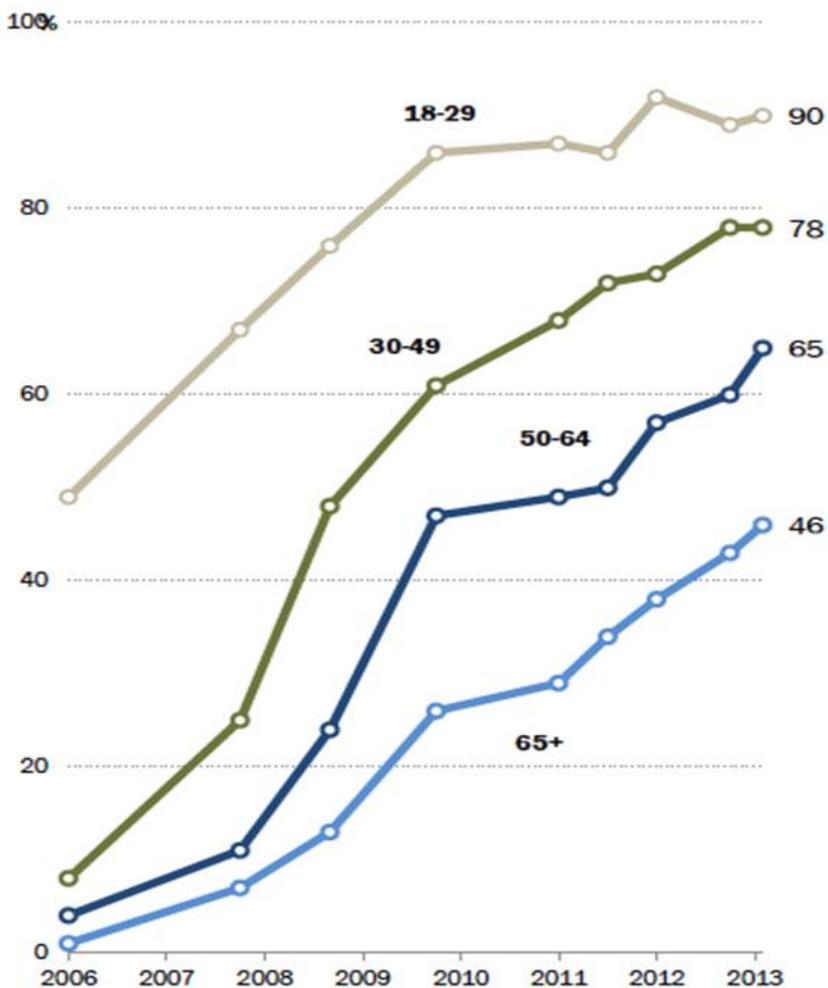
<sup>346</sup> Case Study: Facebook. Stanford Graduate School.

<sup>347</sup> Case Study: Facebook. Stanford Graduate School.

Figure 38: Social Networking Site Use Over Time, By Age Group.

### Social networking site use over time, by age group

*% of internet users in each age group who use social networking sites*



Pew Research Center's Internet Project surveys.

PEW RESEARCH CENTER

Before 2006, Facebook was exclusively available to college and high school students, creating an online environment free from the oversight of adults, particularly parents and teachers. By the end of 2005, Facebook had amassed over 6 million active users. In 2006, when it opened up to the public, the platform reached nearly 12 million users and continued its rapid growth from there.

## Friendster

Friendster, founded in California in 2003 by Canadian computer engineer Jonathan Abrams, was one of the first social networking websites in the world and is potentially credited with creating the social networking sector.<sup>348</sup> Despite being a private company with limited public information available, Friendster's impact on the early days of social media was significant. Mark Zuckerberg even mentioned that Friendster served as a model for Facebook,<sup>349</sup> as it allowed members to search for people based on their interests and create an online network of friends.

At its peak in 2011, Friendster had 115 million users, primarily in Asia. However, the company was sold to MOL Global, one of Asia's largest internet companies, in 2009, and ultimately shut down in 2015.<sup>350</sup>

We believe that the failure of Friendster is due to internal factors, such as poor execution and management, rather than external competition.

From the outset, Friendster was open to the public, quickly growing as Abrams' friends invited their own connections, leading to viral growth.<sup>351</sup> Within just a few months of its launch in 2003, Friendster had attracted over 3 million users.<sup>352</sup> Abrams recalled that, "we never did any marketing. I put this thing up. My friends invited their friends, who invited their friends...People were under pressure from their friends to sign up, improve their profile, and change their photo."<sup>353</sup> That same year, the company received backing from prominent venture capitalists, including John Doerr of Kleiner Perkins, who had invested in Google, Netscape, and Amazon, and Bob Kagle from Benchmark Capital, who was an early investor in eBay. At this point, the company was valued at \$53 million.<sup>354</sup> However, despite Abrams retaining about a third of the company's stock, he lost control of the board. High-profile investors like Peter Thiel, co-founder of PayPal and later an investor in Facebook, and K. Ram Shriram, one of Google's first investors, also invested in Friendster, helping to recruit top executives and computer programmers.

With such high-powered investors to satisfy, Friendster management felt they were under intense pressure to expand its user base and add new features. Unfortunately, in the rush to grow, the company neglected its technical infrastructure. As Friendster's popularity surged, its website became increasingly slow, sometimes taking up to 40 seconds to load.<sup>355</sup> Despite this glaring issue, the board, composed of star investors, focused more on potential competitors and adding features like internet phone services, displaying in different languages, and bring in large advertising deals, rather than fixing the site's fundamental performance problems.<sup>356</sup> Abrams also felt that the board members rarely used Friendster's website themselves but more likely to visit the websites they invested such as doing searches on Google and buying books from Amazon.<sup>357</sup>

In 2004, the board replaced Jonathan Abrams as CEO, further marginalizing him. Between 2004 and 2008, Friendster went through several CEOs, with some lasting only a few months to a year. Former employees stated that this constant turnover in leadership led to frequent changes in direction, leaving engineers feeling "jerked around."<sup>358</sup> As the website's performance continued to lag and remained outdated, users found there was little to do after setting up their networks and reconnecting with old friends, according to a former product manager at Friendster. Additionally, Friendster's closed network structure limited users' ability to connect beyond their immediate circles, unlike other social platforms such as MySpace and Facebook, which allowed users to interact more freely with a broader audience.

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<sup>348</sup> Wallflower at the Web Party. The New York Times.

[https://www.nytimes.com/2006/10/15/business/yourmoney/15friend.html?\\_r=1](https://www.nytimes.com/2006/10/15/business/yourmoney/15friend.html?_r=1)

<sup>349</sup> Hundreds Register for New Facebook Website. The Harvard Crimson. <https://www.thecrimson.com/article/2004/2/9/hundreds-register-for-new-facebook-website/>

<sup>350</sup> Why Facebook Triumphed Over All Other Social Networks. <https://www.forbes.com/sites/gilpress/2018/04/08/why-facebook-triumphed-over-all-other-social-networks/>

<sup>351</sup> How to Kill a Great Idea. <https://smartcomputing123.wordpress.com/2013/01/09/how-to-kill-a-great-idea/>

<sup>352</sup> Why Facebook Triumphed Over All Other Social Networks. <https://www.forbes.com/sites/gilpress/2018/04/08/why-facebook-triumphed-over-all-other-social-networks/>

<sup>353</sup> Case Study: Friendster (A). Harvard Business School.

<sup>354</sup> How to Kill a Great Idea. <https://smartcomputing123.wordpress.com/2013/01/09/how-to-kill-a-great-idea/>

<sup>355</sup> Wallflower at the Web Party. The New York Times.

[https://www.nytimes.com/2006/10/15/business/yourmoney/15friend.html?\\_r=1](https://www.nytimes.com/2006/10/15/business/yourmoney/15friend.html?_r=1)

<sup>356</sup> Wallflower at the Web Party. The New York Times.

[https://www.nytimes.com/2006/10/15/business/yourmoney/15friend.html?\\_r=1](https://www.nytimes.com/2006/10/15/business/yourmoney/15friend.html?_r=1)

<sup>357</sup> Case Study: Friendster (A). Harvard Business School.

<sup>358</sup> Wallflower at the Web Party. The New York Times.

[https://www.nytimes.com/2006/10/15/business/yourmoney/15friend.html?\\_r=1](https://www.nytimes.com/2006/10/15/business/yourmoney/15friend.html?_r=1)

Although there was internal recognition that new features were needed, adding them would have only slowed down the already sluggish site further. Despite one CEO leading a team to completely rewrite Friendster's code in a different programming language, a move many software developers deemed necessary, this effort failed to improve the website's performance and effectively halted business development for six months.<sup>359</sup> Another former CEO, who was a former president of NBC Entertainment, shifted Friendster's focus away from its core of friends and dating to mass-media content such as offering news headlines to boost user engagement on the website. In addition, he also suggested new features such as voice-over IP, and pursued deals with MTV, though these efforts eventually failed. Although the board considered many other initiatives, none were implemented.<sup>360</sup> During this period, many board-level decisions were made without the founder's participation.

In 2005, after seeing the sale of MySpace to News Corporation and Google's successful IPO, the board decided to put Friendster up for sale. Instead of focusing on product development, the company concentrated on fitting Friendster with the strategies of potential buyers.<sup>361</sup> The engineering team was primarily occupied with addressing website performance issues but failed to address underlying problems. Meanwhile, the marketing team worked on boosting sign-ups but struggled to keep the new members, as poor site performance and product choices led to infrequent use among U.S. members. Despite achieving relative stability, Friendster's pages took nine seconds to load, compared to the much faster three-second load times of MySpace and Facebook

By 2006, three years after its launch, Friendster was still struggling to secure advertising deals and had to halve its payroll to just 25 employees.<sup>362</sup> Although at this stage, Friendster had 27 million members, only 1 million of them were U.S. resident who logged in at least a month.<sup>363</sup> At this point, three-quarters of Friendster's users were in small Southeast Asian countries such as the Philippines and Malaysia. However, this large user base in Asia was of little value to Friendster's advertisers, yet the company continued to incur significant costs, paying millions of dollars annually to support its operations.<sup>364</sup> Despite the financial burden, cutting off the Asian market was not a viable option because many of these users were friends of and connected to Friendster's American user base. The limited user base in the U.S. likely made advertisers hesitant to partner with Friendster, creating an opportunity for competitors like Facebook to gain significant traction during this period. Friendster also attempted to negotiate with video sites such as YouTube and iFilm to bring new content to the website. However, negotiations failed when the companies saw how few of Friendster's visitors were U.S. based.

**In reflecting on his experience, Jonathan Abrams later stated his view that turning the company over to the “big-shot” investors was a mistake.<sup>365</sup> He initially believed they would help propel Friendster to success, but ultimately, their focus on rapid expansion and external competition, rather than addressing the platform’s core issues, led to the company’s downfall.**

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<sup>359</sup> How to Kill a Great Idea. <https://smartcomputing123.wordpress.com/2013/01/09/how-to-kill-a-great-idea/>

<sup>360</sup> Case Study: Friendster (A). Harvard Business School.

<sup>361</sup> Case Study: Friendster (A). Harvard Business School.

<sup>362</sup> Wallflower at the Web Party. The New York Times.

[https://www.nytimes.com/2006/10/15/business/yourmoney/15friend.html?\\_r=1](https://www.nytimes.com/2006/10/15/business/yourmoney/15friend.html?_r=1)

<sup>363</sup> Case Study: Friendster (A). Harvard Business School.

<sup>364</sup> How to Kill a Great Idea. <https://smartcomputing123.wordpress.com/2013/01/09/how-to-kill-a-great-idea/>

<sup>365</sup> How to Kill a Great Idea. <https://smartcomputing123.wordpress.com/2013/01/09/how-to-kill-a-great-idea/>

Figure 39: Friendster Home Page 2004<sup>366</sup>

## MySpace

MySpace was founded in 2003 by Chris DeWolfe and Tom Anderson, who were also the co-founders of a direct email marketing firm called ResponseBase, which was acquired by eUniverse in 2002.<sup>367</sup> The developers of MySpace envisioned it as a more freewheeling version of Friendster, with eUniverse, its parent company, leveraging its extensive email contact list to promote the new platform.<sup>368</sup> However, eUniverse had a mixed reputation, as it was involved in both legitimate marketing businesses and questionable practices such as selling overpriced wrinkle creams and distributing spyware-infested downloads.

MySpace officially launched to the public in August 2003, initially offering cash prizes to employees who could sign up the most users. Its parent company, eUniverse, had a significant advantage with an extensive email contact list to promote the new platform. The platform quickly stood out by allowing users to customize their profiles, a feature that became its signature. Users filled their pages with background images, songs, and unique layouts, which was a significant shift from the more passive internet experiences of the time.<sup>369</sup> Some reports suggest that this high degree of customization was accidental, resulting from developers inadvertently allowing users to use web code to alter their profiles.<sup>370</sup> This

<sup>366</sup> Friendster in 2004. <https://www.webdesignmuseum.org/gallery/friendster-2004>

<sup>367</sup> The Insane Reason That MySpace Lost Everything. <https://medium.com/@ibrahimzilzal/the-insane-reason-that-myspace-lost-everything-bcf4b60603f6>

<sup>368</sup> The Rise and Inglorious Fall of Myspace. Bloomberg.

<https://web.archive.org/web/20191202173130/https://www.bloomberg.com/news/articles/2011-06-22/the-rise-and-inglorious-fall-of-myspace>

<sup>369</sup> The Insane Reason That MySpace Lost Everything. <https://medium.com/@ibrahimzilzal/the-insane-reason-that-myspace-lost-everything-bcf4b60603f6>

<sup>370</sup> The Rise and Inglorious Fall of Myspace. Bloomberg.

<https://web.archive.org/web/20191202173130/https://www.bloomberg.com/news/articles/2011-06-22/the-rise-and-inglorious-fall-of-myspace>

customization, coupled with a focus on connecting with friends online, quickly gained traction, particularly among teenagers. MySpace's emphasis on helping musicians build their followings was also highly successful, contributing to the rise of musicians like Arctic Monkeys, Calvin Harris, and Lily Allen.<sup>371</sup>

Figure 40: MySpace 2004<sup>372</sup>

<sup>371</sup> The Insane Reason That MySpace Lost Everything. <https://medium.com/@ibrahimzilzal/the-insane-reason-that-myspace-lost-everything-bcf4b60603f6>

<sup>372</sup> MySpace in 2004. <https://www.webdesignmuseum.org/gallery/myspace-in-2004>

From its inception, MySpace was music focused. The founders strategically invited up-and-coming bands like Billionaire Boys Club and models like Tila Tequila to join the platform.<sup>373</sup> Initially, users had to sign up as MySpace members to view these profiles, listen to music, and see modeling pictures. However, after dropping this requirement in 2004 and making profiles public, page views skyrocketed, and by the end of the year, MySpace had nearly 5 million users.<sup>374</sup> Music bands found MySpace to be a valuable tool as it allowed them to send messages to everyone on their friends list about new releases, saving both time and money, particularly for smaller and emerging bands.<sup>375</sup> A member of a local Pittsburgh band recalled, "We were doing close to 10,000 mailers, where you had to get labels printed, someone had to have a stamping machine, the whole nine yards. Now you can just get on there and send your whole list in five minutes. Do what literally used to take three days of time." By March 2006, the number of bands on MySpace had grown to over 660,000, and this figure surged to over 2 million by the following summer.

Despite its early success, the very features that made MySpace popular, highly customizable homepages and the presence of popular figures, eventually became liabilities. Concerns about teenage users' safety emerged, with headlines reporting instances of cyberbullying, harassment, and exposure to adult content. **In 2005, a user spread a virus through customizable code, unintentionally affecting over a million users in less than 24 hours and forcing the company to take the website offline to fix the problem.**<sup>376</sup> Additionally, the New York Attorney General sued MySpace's parent company for installing spyware on users' computers without proper warning.<sup>377</sup>

In July 2005, News Corporation (News Corp) announced its acquisition of Intermix Media, the rebranded eUniverse, and its core asset, MySpace, for \$580 million in cash.<sup>378</sup> At the time of acquisition, MySpace was a youth-oriented music and social-networking site with over 16 million monthly users. Prominent music groups, including the Black-Eyed Peas, R.E.M., and Nine Inch Nails, used MySpace to stream their latest releases, and major advertisers like Procter & Gamble and Sony Pictures advertised on the site. In the announcement, News Corp stated that MySpace generates annual profits of "a few million dollars," out of its parent company's \$4.5 million earnings on \$78.9 million of revenue.<sup>379</sup> Although News Corp. kept the two founders to run MySpace, ads selling was done through a different department.

The period under News Corp ownership is widely seen by many insiders of MySpace and News Corp as a time when MySpace's once-dominant position was undercut, leaving the field open for Facebook's rise.<sup>380</sup> Chris DeWolfe recalled that, under News Corp, MySpace faced increasing pressure to monetize the site. While developers at startups like Facebook and Twitter, backed by venture capital, were free to design their products without the immediate pressure of advertising goals, MySpace's managers had to hit quarterly revenue targets. To meet these targets, MySpace doubled the number of ads on the site, making it increasingly cluttered. The bureaucracy within News Corp also made it difficult to stop the sale of intrusive ads, further degrading the user experience.

**Moreover, while Facebook focused on building its platform and allowing outside developers to create new applications, MySpace attempted to do everything in-house, from instant messaging and classifieds to video and music players, and even virtual karaoke.** MySpace started losing popularity among users from banning certain content since the beginning of 2006, specifically video- and content-sharing sites, explaining that such contents violated

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<sup>373</sup> The Rise and Inglorious Fall of Myspace. Bloomberg.

<https://web.archive.org/web/20191202173130/https://www.bloomberg.com/news/articles/2011-06-22/the-rise-and-inglorious-fall-of-myspace>

<sup>374</sup> The Evolution of MySpace: From Peak to Downfall. <https://medium.com/@mojicacamila/the-evolution-of-myspace-from-peak-to-downfall-02f67e5d3f24>

<sup>375</sup> Case Study: MySpace. Harvard Business School.

<sup>376</sup> Cross-Site Scripting Worm Hits MySpace. <https://betanews.com/2005/10/13/cross-site-scripting-worm-hits-myspace/>; The Rise and Inglorious Fall of Myspace. Bloomberg.

<https://web.archive.org/web/20191202173130/https://www.bloomberg.com/news/articles/2011-06-22/the-rise-and-inglorious-fall-of-myspace>

<sup>377</sup> New York Attorney General Sues Company Over Spyware. The New York Times.

<https://www.nytimes.com/2005/04/28/technology/new-york-attorney-general-sues-company-over-spyware.html>

<sup>378</sup> News Corp. to Acquire Owner of MySpace. <https://www.nytimes.com/2005/07/18/business/news-corp-to-acquire-owner-of-myspacecom.html>

<sup>379</sup> News Corp. to Acquire Owner of MySpace. <https://www.nytimes.com/2005/07/18/business/news-corp-to-acquire-owner-of-myspacecom.html>

<sup>380</sup> The Rise and Inglorious Fall of Myspace. Bloomberg.

<https://web.archive.org/web/20191202173130/https://www.bloomberg.com/news/articles/2011-06-22/the-rise-and-inglorious-fall-of-myspace>

copyrights and posed security risks, or engaged in commercial activities, etc.<sup>381</sup> Many users were not satisfied with the bans. A popular MySpace user expressed, “The reason why I am so bummed out about MySpace now is because recently they have been cutting down our freedom and taking away our rights slowly...MySpace will now only allow you to use “MySpace” things.”<sup>382</sup> DeWolfe indicates that, although some of these initiatives had real business potential, the lack of focus and resources led to buggy products that made the site slow and difficult to navigate. A former MySpace employee noted that testing, measuring, and iterating was never part of the company’s culture, resulting in a poor user experience.<sup>383</sup> A former CEO of Friendster also stated that many features that MySpace developed were not necessary.<sup>384</sup>

By April 2006, MySpace had accumulated over 60 million members, but concerns about the safety of teenage users on the platform persisted as some of them were sexually solicited after posting photos, locations, and music they liked.<sup>385</sup> In an effort to address these issues, MySpace had to replace banner ads with campaigns from News Corp’s other departments, including Fox and The New York Post, as part of a broader initiative by the Ad Council and the National Center for Missing and Exploited Children. MySpace also hired an executive from Microsoft to oversee safety, privacy, and law enforcement affairs. However, further investigations were initiated by attorneys general across the country.<sup>386</sup> During this time, Facebook introduced a clean, ad-free interface that allowed users to connect with real-life friends, positioning itself as a safer alternative to MySpace. A researcher at Microsoft Research noted that while MySpace was dealing with safety panics, Facebook was able to market itself as a secure platform,<sup>387</sup> further driving its growth. Despite these challenges, MySpace continued to grow, adding 300,000 users per day.<sup>388</sup> However, by this time, Rupert Murdoch’s attention had shifted away from MySpace, as he pursued the acquisition of Dow Jones and The Wall Street Journal. This left MySpace’s founders increasingly isolated from the rest of News Corp, potentially leading to the stalling of MySpace’s growth.

In April 2008, Facebook overtook MySpace as the largest social network in the world, with over 115 million users.<sup>389</sup> The following year, MySpace’s Chief Operating Officer, senior vice-president for engineering, and senior vice-president for strategy all left the company. MySpace’s global expansion efforts, which involved opening new offices around the world, were not yielding results, while Facebook attracted international users at a rapid rate without the need for expensive offices.<sup>390</sup> Soon after, the two founders were also out, followed by layoffs of nearly 30% of its U.S. employees and 66% of its overseas staff. Morale plummeted, and even basic perks, such as the per-diem for meals, were cut. The new CEO stayed less than a year and was replaced by two co-presidents, one of whom left after just four months.

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<sup>381</sup> Case Study: MySpace. Harvard Business School.

<sup>382</sup> Case Study: MySpace. Harvard Business School.

<sup>383</sup> The Rise and Inglorious Fall of Myspace. Bloomberg.

<https://web.archive.org/web/20191202173130/https://www.bloomberg.com/news/articles/2011-06-22/the-rise-and-inglorious-fall-of-myspace>

<sup>384</sup> The Rise and Inglorious Fall of Myspace. Bloomberg.

<https://web.archive.org/web/20191202173130/https://www.bloomberg.com/news/articles/2011-06-22/the-rise-and-inglorious-fall-of-myspace>

<sup>385</sup> MySpace Begins Warnings on Sexual Predators. <https://www.nytimes.com/2006/04/11/technology/myspace-begins-warnings-on-sexual-predators.html>

<sup>386</sup> The Rise and Inglorious Fall of Myspace. Bloomberg.

<https://web.archive.org/web/20191202173130/https://www.bloomberg.com/news/articles/2011-06-22/the-rise-and-inglorious-fall-of-myspace>

<sup>387</sup> The Rise and Inglorious Fall of Myspace. Bloomberg.

<https://web.archive.org/web/20191202173130/https://www.bloomberg.com/news/articles/2011-06-22/the-rise-and-inglorious-fall-of-myspace>

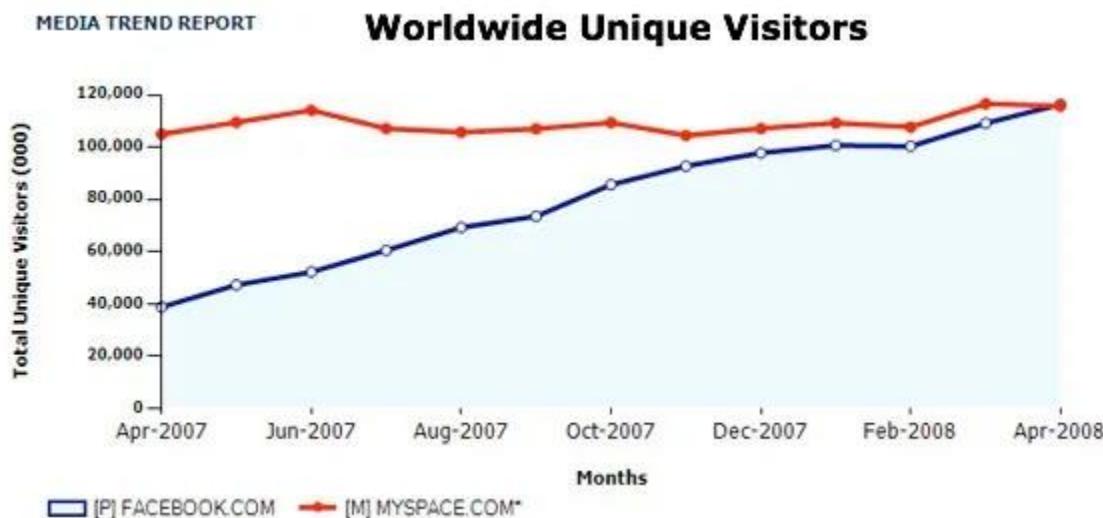
<sup>388</sup> The Rise and Inglorious Fall of Myspace. Bloomberg.

<https://web.archive.org/web/20191202173130/https://www.bloomberg.com/news/articles/2011-06-22/the-rise-and-inglorious-fall-of-myspace>

<sup>389</sup> Facebook No Longer The Second Largest Social Network. <https://techcrunch.com/2008/06/12/facebook-no-longer-the-second-largest-social-network/>

<sup>390</sup> The Rise and Fall of MySpace. <https://www.statista.com/chart/26176/estimated-number-of-myspace-users-at-key-milestones/>

Figure 41: MySpace vs. Facebook Worldwide Unique Visitors



Rupert Murdoch became increasingly frustrated as MySpace failed to meet his ambitions of becoming a major distribution outlet for Fox's TV shows, movies, and other content.<sup>391</sup> In 2011, News Corp sold MySpace to Specific Media for a rumored \$35 million, a fraction of the \$580 million paid in 2005.<sup>392</sup> By February 2011, MySpace's user base had dwindled to 63 million, down from 73 million the previous month, and it had lost 50 million users in just a year.<sup>393</sup> Meanwhile, Facebook had grown to over 600 million users by 2010.

A notable observation is that MySpace and Facebook seemed to cater to different demographics.<sup>394</sup> Facebook initially only allowed users with a valid .edu e-mail address to sign up, and gradually expanded to the general public. A research report focusing on high-school students revealed that those kids from families that emphasized education and attending colleges relatively tend to use Facebook more than MySpace at the time. A survey in 2007 suggested that Facebook users tended to have higher income demographics, stating that 50% of Facebook users lived in households with an annual household income over \$75,000, compared to just over one-third for MySpace users.

Ultimately, we believe that MySpace's failure can be attributed to its loss of focus on user experience and content, a lack of support from its parent company, misaligned interests between News Corp and MySpace, and an unstable management team. These issues led to the platform's decline, allowing Facebook to rise during this critical period.

#### LinkedIn

LinkedIn was founded in 2003 and publicly listed in May 2011. By the time Facebook went public in May 2012, LinkedIn had established itself as the world's largest professional social network, with more than 150 million members globally.<sup>395</sup> Unlike Facebook, which focuses on personal connections, LinkedIn is designed for professionals and businesses, offering a platform where users can create, manage, and share their professional identities, build and engage with their professional networks, access shared knowledge and insights, and explore business opportunities.

LinkedIn's business model differs significantly from Facebook's, which relies almost exclusively on advertising revenue. LinkedIn generates most of its revenue through professional services provided to enterprises and individual professionals. These services include hiring solutions, such as job postings and advanced candidate search features, as well as premium subscriptions that offer enhanced visibility and networking opportunities. These tools are designed to help professionals and companies expand their business opportunities, find better job matches, and improve their professional networks.<sup>396</sup>

<sup>391</sup> Murdoch Tightens His Grip on MySpace.

[https://web.archive.org/web/2011013165021/http://www.businessweek.com/technology/content/apr2009/tc20090427\\_826659.htm](https://web.archive.org/web/2011013165021/http://www.businessweek.com/technology/content/apr2009/tc20090427_826659.htm)

<sup>392</sup> News Corp. sells Myspace to Specific Media.

[https://money.cnn.com/2011/06/29/technology/myspace\\_layoffs/index.htm?hpt=te\\_bn2](https://money.cnn.com/2011/06/29/technology/myspace_layoffs/index.htm?hpt=te_bn2)

<sup>393</sup> Myspace Loses Millions of Users in A Few Weeks. BBC. <https://www.bbc.com/news/newsbeat-12862139>

<sup>394</sup> Case Study: MySpace. Harvard Business School.

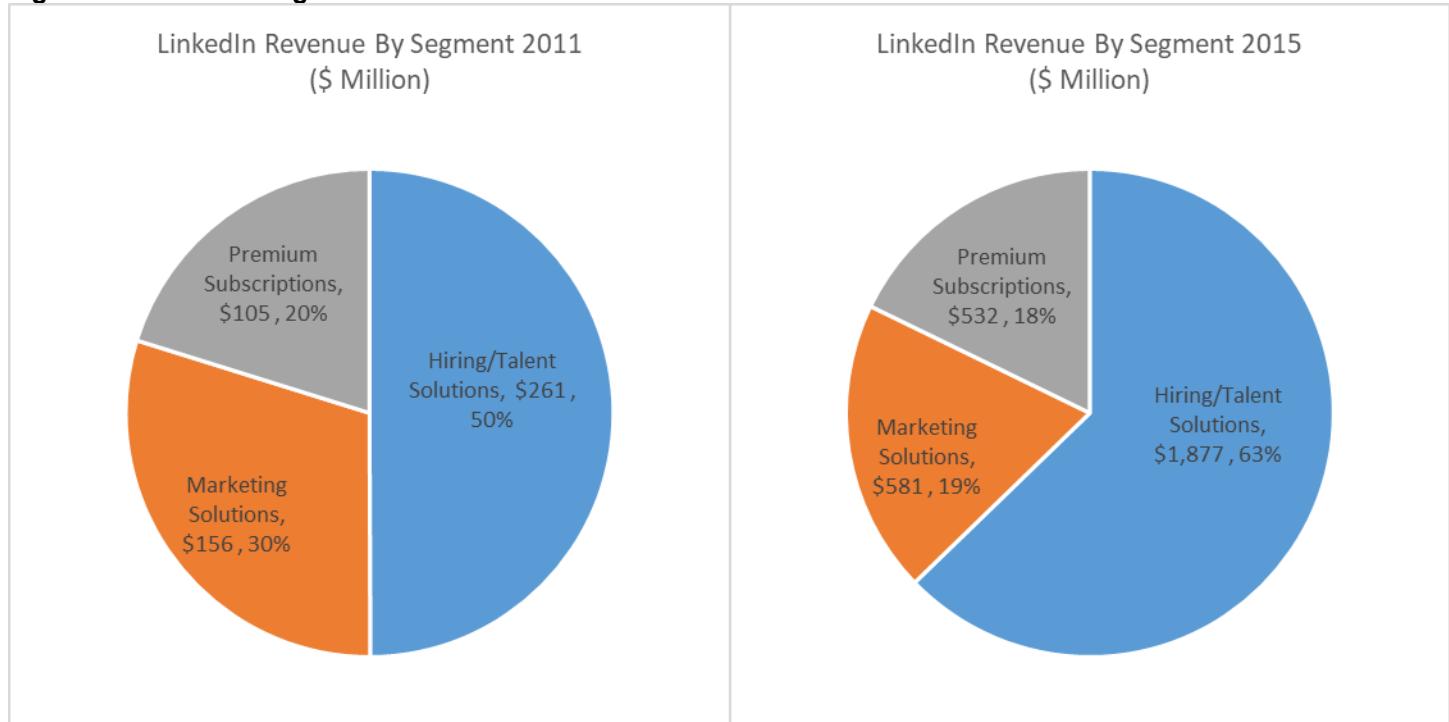
<sup>395</sup> LinkedIn Annual Report 2012.

<sup>396</sup> LinkedIn Annual Report 2012.

At the end of 2011, the year LinkedIn went public, 70% of its revenue came from professional services like hiring solutions and member subscriptions, while only 30% came from advertising, as Figure 42 shows. By 2015, this trend had intensified, with over 80% of LinkedIn's revenue coming from professional services and less than 20% from advertising. We believe that the target audience for advertising on LinkedIn and Facebook is also significantly different. On Facebook, where profiles and content are often personal, advertisements are tailored to users' personal interests, such as fashion, games, and consumer goods. In contrast, LinkedIn's professional environment, where profiles are filled with work experiences, job titles, and skills, lends itself to more B2B-oriented advertising. Advertisers on LinkedIn typically promote products and services like accounting software, professional development tools, and learning resources aimed at improving candidates' skills for job hunting. Given the platform's professional context, users are less likely to share personal details on LinkedIn, focusing instead on professional interactions and career development.

This distinction in user experience and revenue models highlights the different roles that Facebook and LinkedIn play in the social media landscape, with Facebook dominating personal social networking and LinkedIn leading in the professional networking space.

**Figure 42: LinkedIn Segment Revenue 2011 vs. 2015<sup>397</sup>**

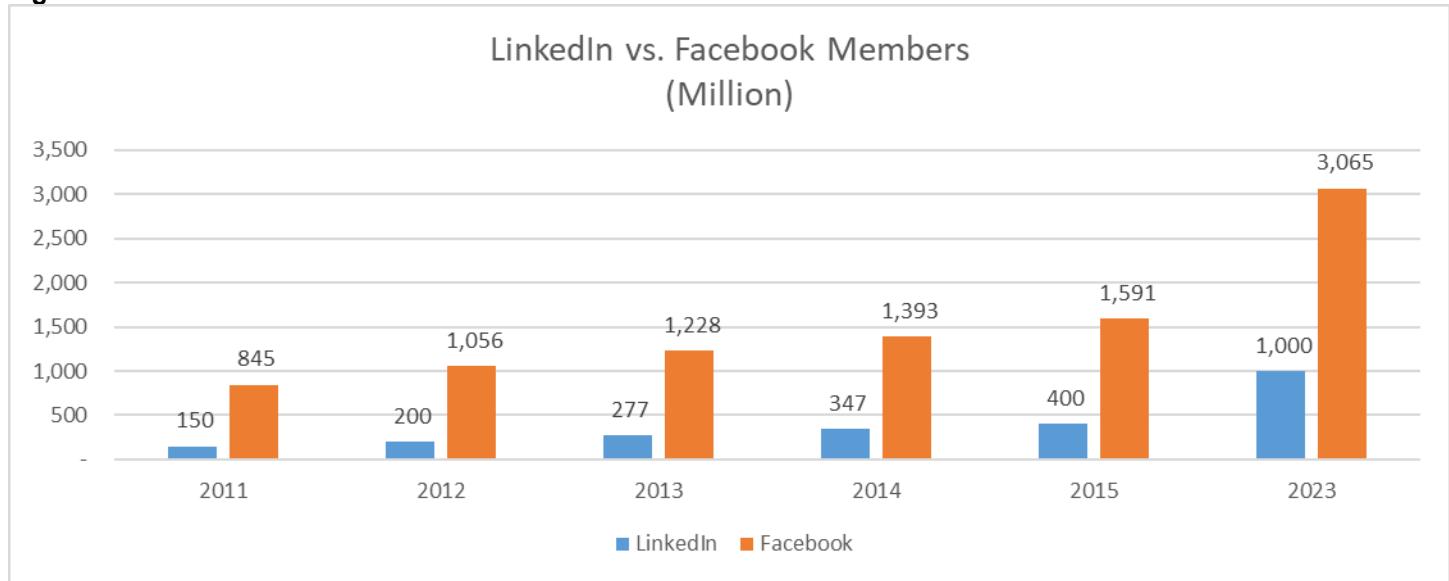


Note:

1. LinkedIn was acquired by Microsoft in 2016.

<sup>397</sup> LinkedIn Annual Report 2011 and 2015.

Figure 43: LinkedIn vs. Facebook Members 2011 – 2023<sup>398</sup>



Notes:

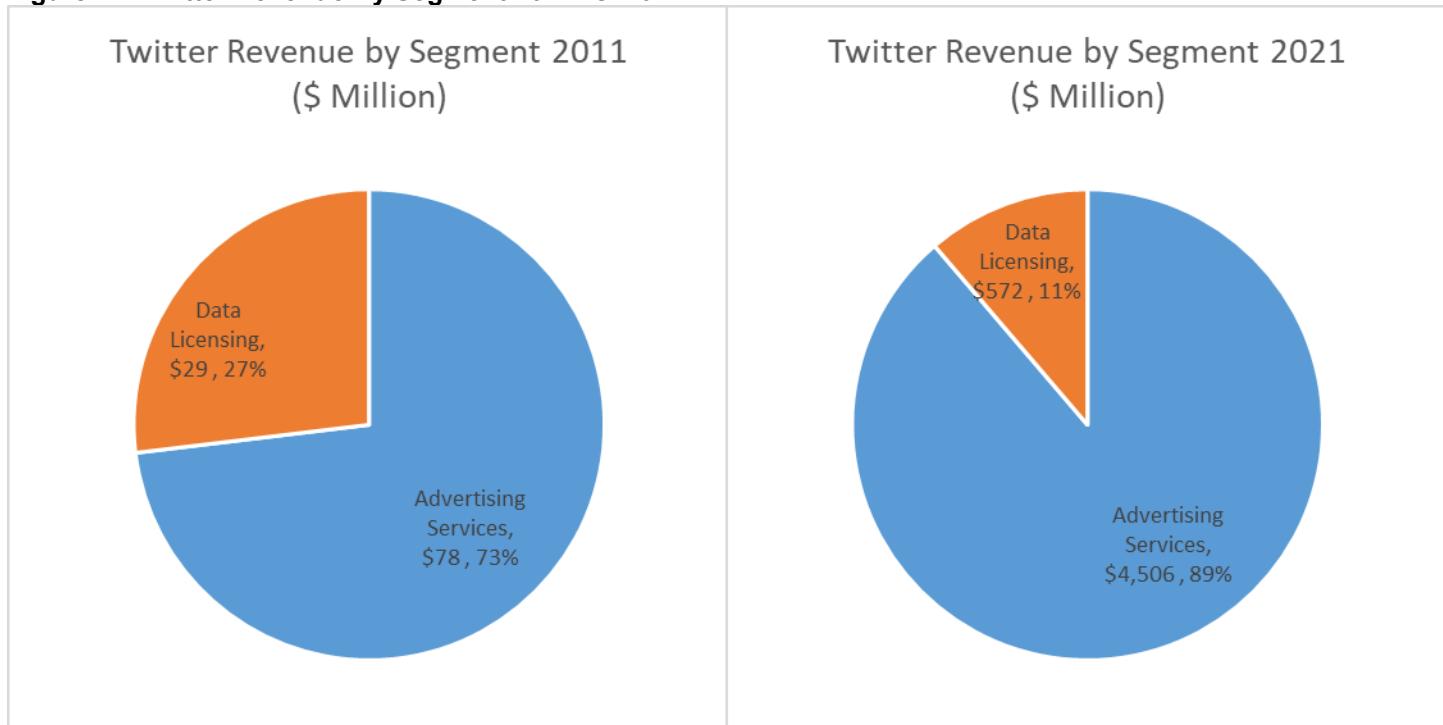
1. LinkedIn disclosed the total number of members while Facebook disclosed the numbers as monthly active members.
2. LinkedIn was acquired by Microsoft in 2016.

<sup>398</sup> LinkedIn Annual Report 2011 – 2015; LinkedIn Celebrating 1 Billion Members. <https://www.linkedin.com/pulse/celebrating-1-billion-members-our-new-ai-powered-linkedin-tomer-cohen-26vre>

## Twitter

Twitter, founded in 2006 by Jack Dorsey in California, is a public platform where users can create and share short messages, known as Tweets, initially limited to 140 characters, along with rich media like photos and videos.<sup>399</sup> Users can follow others, with account owners having control over who can follow them through privacy settings. Over the years, Twitter and Facebook have often been compared as social media platforms that heavily rely on advertising revenue. While they share some similarities, such as providing plugins for developers to integrate into their websites, allowing users to share content easily and developers to collect user information for targeted advertising,<sup>400</sup> there are fundamental differences in how the two platforms function and engage their users.

**Figure 44: Twitter Revenue By Segment 2011 vs. 2021**



Note:

1. Data licensing: Twitter offers data licenses to allow its data partners to access, search and analyze historical and real-time data on our platform, which data consists of public Tweets and their content. Data partners use this data to generate and monetize data analytics, from which data partners can identify user sentiment, influence and other trends.<sup>401</sup>

Twitter was designed for users to share information, such as news and pictures, in a concise format, fostering real-time conversations with a global audience. In contrast, Facebook primarily focuses on personal interactions within smaller, more intimate networks, offering a wider range of features, including text, pictures, social gaming, and fan pages, to engage users.

By the time Twitter went public in 2013, it had accumulated over 200 million monthly active users,<sup>402</sup> nearly seven years after its founding. In comparison, Facebook had already surpassed 1 billion users, nine years after its launch. Twitter's user base has never approached Facebook's in size. By 2018, the last time Twitter disclosed its monthly users, Twitter reported 321 million monthly active users, compared to Facebook's 2.3 billion. Notably, Twitter's user base had seen no meaningful growth since 2015, when it reached 320 million users, peaking at 330 million in 2017 before declining to 321 million in 2018. In 2019, Twitter stopped disclosing its monthly active users, opting instead to report monetizable Daily Active Users (mDAU), which accounts the log in on any given day through Twitter.com or Twitter applications that are able to show ads. Facebook does not offer a comparable metric, making it difficult to compare the two companies' user bases after 2019.

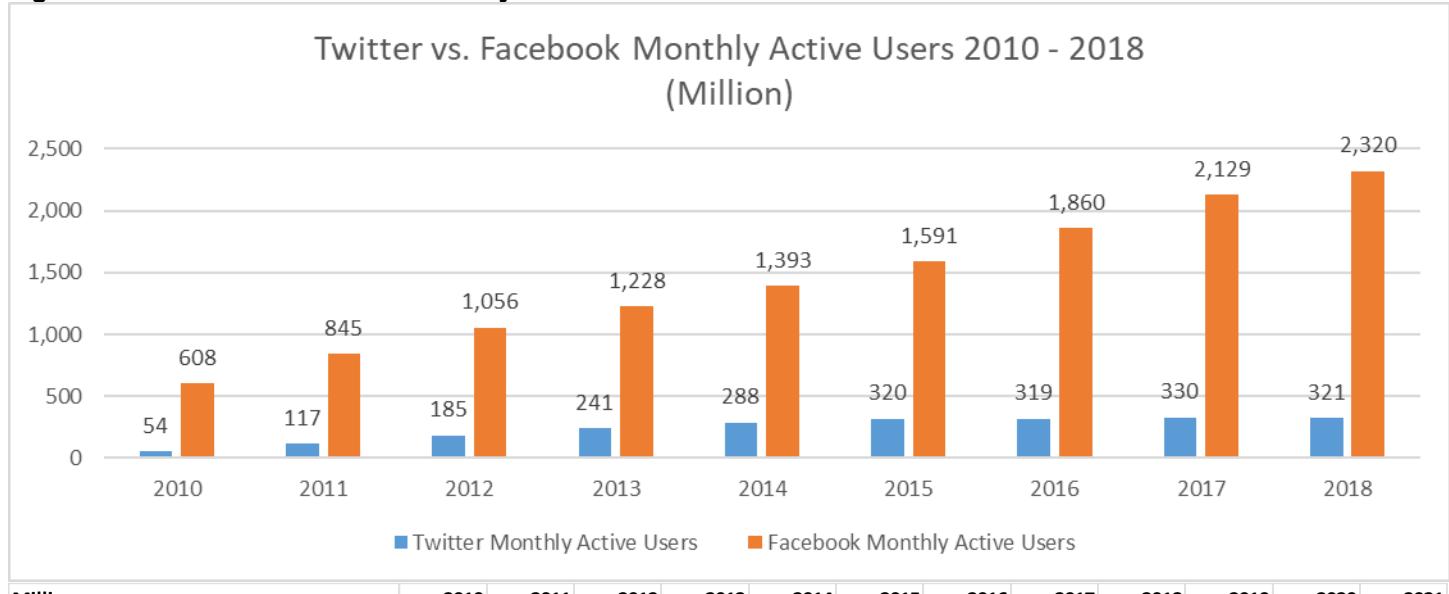
<sup>399</sup> Twitter Prospectus 2013.

<sup>400</sup> Twitter Prospectus 2013.

<sup>401</sup> Twitter Prospectus 2013.

<sup>402</sup> Twitter Prospectus 2013.

Figure 45: Twitter vs. Facebook Monthly Active Users 2010 – 2018



Million	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Twitter Monthly Active Users	54	117	185	241	288	320	319	330	321	N/A	N/A	N/A
Facebook Monthly Active Users	608	845	1,056	1,228	1,393	1,591	1,860	2,129	2,320	2,498	2,797	2,912

Notes:

1. Twitter stops disclosing monthly active users (MAU) starting in 2019.
2. Twitter was taken private by Elon Musk in 2022.

We believe that the primary reason for the significant difference in the size of the user base between Twitter and Facebook lies in how users build and interact with their networks. Facebook users typically have broader and more personal networks, consisting of friends and friends of friends. Content on Facebook is often shared within these circles, with the sharer's name clearly displayed, allowing viewers to know who shared the content. This creates a more intimate and controlled environment where users can easily engage with content from their personal networks. On the other hand, Twitter is an open platform where users can broadcast their thoughts to the world and receive content from both within and outside their networks in real-time. To manage the overwhelming amount of information, Twitter users must carefully curate the list of accounts they follow.<sup>403</sup> The platform's rules for interactions, such as the fact that starting a tweet with someone's username will hide it from followers not already connected to that user, can be unintuitive for new users. Additionally, many users find it intimidating to write tweets that could be seen by anyone globally. For example, if a user likes a piece of news, they might receive more similar news in their feeds, often shared by people outside their network. This sharing of tweets by strangers could also happen to users' personal tweets. This contrasts with Facebook, where users can easily view pictures of friends' weddings, vacations, and babies in a controlled, hassle-free environment. The personal nature of Facebook's content-sharing allows it to leverage more substantial network effects than Twitter, which is reflected in the disparity in their user base growth.

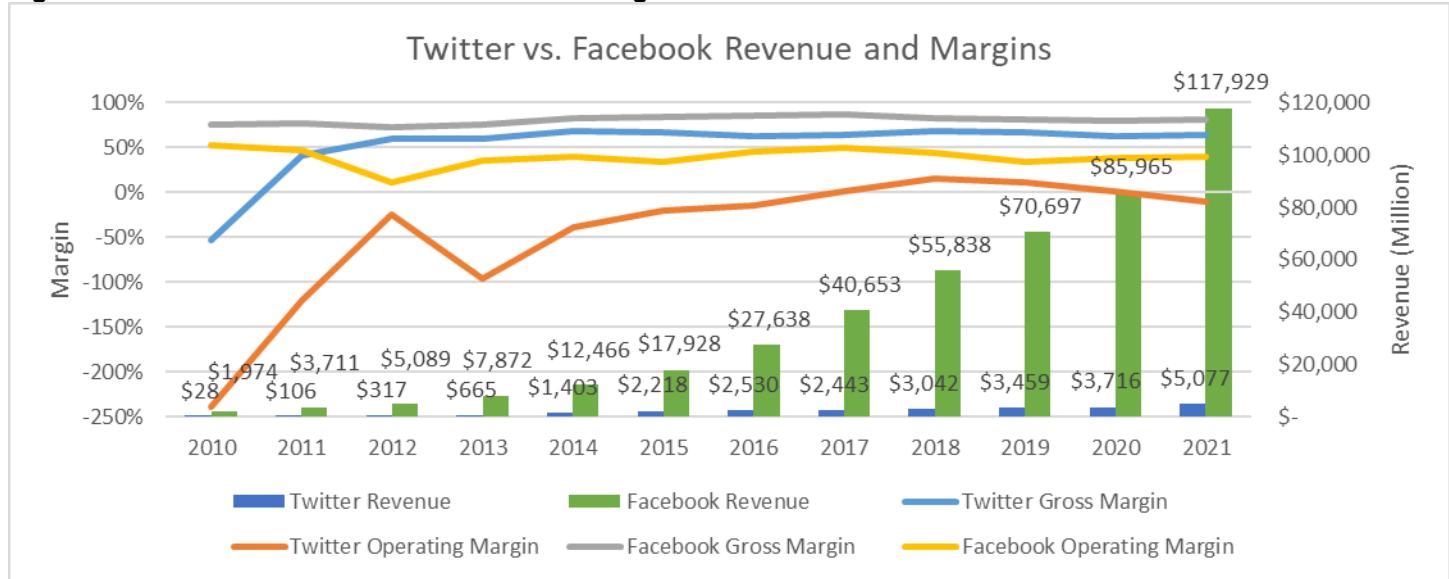
Twitter's stagnant user base growth has potentially contributed to a similar stagnation in its gross margin expansion. The growth trajectory of Twitter's monthly user base generally mirrors the company's gross margin, as user growth drives revenue while much of the cost structure, such as data centers and equipment, remains fixed. As a social media company heavily reliant on advertising revenue derived from a large user base, Twitter's inability to continuously expand its user base has likely had a significant impact on its attractiveness to advertisers.

In October 2022, Elon Musk purchased Twitter and took the company private for nearly \$44 billion, representing a 38% premium compared to Twitter's closing stock price on April 1, 2022, the last trading day before Musk disclosed his 9.2% stake in the company.<sup>404</sup> **This purchase implied an estimated 35x trailing-twelve-month EBITDA**, adjusted for a one-time litigation settlement of \$765.7 million in 2021.

<sup>403</sup> Why Twitter Hasn't Grown As Huge As Facebook. Vox. <https://www.vox.com/2015/6/14/8777899/facebook-twitter-reddit-complicated>

<sup>404</sup> Elon Musk's \$44B Twitter Deal by the Numbers. <https://www.spglobal.com/marketintelligence/en/news-insights/blog/elon-musks-44b-twitter-deal-by-the-numbers>; Elon Musk Completes \$44 Billion Deal to Own Twitter. <https://www.nytimes.com/2022/10/27/technology/elon-musk-twitter-deal-complete.html>

Figure 46: Twitter vs. Facebook Revenue and Margins 2010 – 2021



Notes:

1. Twitter stops disclosing monthly active users (MAU) starting in 2019.
2. Twitter was taken private by Elon Musk in 2022.
3. Facebook's operating margin in 2012 declined primarily due to a significant rise in total costs and expenses, driven by substantial increases in share-based compensation and the related payroll tax expenses for restricted stock units (RSU). \$1.13 billion was attributed to the recognition of share-based compensation and related payroll tax expenses related to RSUs granted prior to January 1, 2011 (Pre-2011 RSUs) triggered by the completion of Facebook's IPO in May 2012.<sup>405</sup> In addition, the company expected an average withholding tax of 45% for the restricted stock units.<sup>406</sup> Had these expenses not been incurred, the adjusted operating margin was estimated to be 33%, and the net margin at 13%.

Figure 47: Twitter Income Statement 2010 – 2021

\$ Million	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Advertising services	\$ 7	\$ 78	\$ 269	\$ 595	\$ 1,256	\$ 1,994	\$ 2,248	\$ 2,110	\$ 2,617	\$ 2,993	\$ 3,207	\$ 4,506
Data licensing	\$ 21	\$ 29	\$ 48	\$ 70	\$ 147	\$ 224	\$ 282	\$ 333	\$ 425	\$ 466	\$ 509	\$ 572
<b>Revenue</b>	<b>\$ 28</b>	<b>\$ 106</b>	<b>\$ 317</b>	<b>\$ 665</b>	<b>\$ 1,403</b>	<b>\$ 2,218</b>	<b>\$ 2,530</b>	<b>\$ 2,443</b>	<b>\$ 3,042</b>	<b>\$ 3,459</b>	<b>\$ 3,716</b>	<b>\$ 5,077</b>
Cost of revenue	\$ 43	\$ 62	\$ 129	\$ 267	\$ 446	\$ 729	\$ 932	\$ 861	\$ 965	\$ 1,137	\$ 1,366	\$ 1,798
Sales & marketing	\$ 6	\$ 26	\$ 87	\$ 316	\$ 614	\$ 871	\$ 958	\$ 717	\$ 771	\$ 914	\$ 888	\$ 1,176
Research & development	\$ 29	\$ 80	\$ 119	\$ 594	\$ 692	\$ 807	\$ 713	\$ 542	\$ 554	\$ 682	\$ 873	\$ 1,247
General & administrative	\$ 17	\$ 66	\$ 60	\$ 124	\$ 190	\$ 261	\$ 293	\$ 284	\$ 299	\$ 360	\$ 562	\$ 584
Other expenses	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 766
Total costs and expenses	\$ 96	\$ 234	\$ 394	\$ 1,301	\$ 1,942	\$ 2,668	\$ 2,897	\$ 2,405	\$ 2,589	\$ 3,093	\$ 3,690	\$ 5,570
<b>Income (loss) from operations</b>	<b>\$ (67)</b>	<b>\$ (127)</b>	<b>\$ (77)</b>	<b>\$ (636)</b>	<b>\$ (539)</b>	<b>\$ (450)</b>	<b>\$ (367)</b>	<b>\$ 39</b>	<b>\$ 453</b>	<b>\$ 366</b>	<b>\$ 27</b>	<b>\$ (493)</b>
Interest income (expense) net	\$ 0	\$ (1)	\$ (2)	\$ (7)	\$ (34)	\$ (98)	\$ (100)	\$ (105)	\$ (21)	\$ 20	\$ (65)	\$ (16)
Other income (expense) net	\$ (0)	\$ (2)	\$ 0	\$ (4)	\$ (6)	\$ 15	\$ 26	\$ (29)	\$ (8)	\$ 4	\$ (13)	\$ 97
Total non-operating income (expense)	\$ (0)	\$ (2)	\$ (2)	\$ (11)	\$ (39)	\$ (83)	\$ (74)	\$ (134)	\$ (30)	\$ 24	\$ (78)	\$ 82
Income (loss) before income taxes	\$ (68)	\$ (130)	\$ (79)	\$ (647)	\$ (578)	\$ (533)	\$ (441)	\$ (95)	\$ 424	\$ 390	\$ (51)	\$ (411)
Provision (benefit) for income taxes	\$ (0)	\$ (1)	\$ 0	\$ (2)	\$ (1)	\$ (12)	\$ 16	\$ 13	\$ (782)	\$ (1,076)	\$ 1,085	\$ (190)
<b>Net income (loss)</b>	<b>\$ (67)</b>	<b>\$ (128)</b>	<b>\$ (79)</b>	<b>\$ (645)</b>	<b>\$ (578)</b>	<b>\$ (521)</b>	<b>\$ (457)</b>	<b>\$ (108)</b>	<b>\$ 1,206</b>	<b>\$ 1,466</b>	<b>\$ (1,136)</b>	<b>\$ (221)</b>
<b>Net income (attributable to shareholders)</b>	<b>\$ (67)</b>	<b>\$ (164)</b>	<b>\$ (79)</b>	<b>\$ (645)</b>	<b>\$ (578)</b>	<b>\$ (521)</b>	<b>\$ (457)</b>	<b>\$ (108)</b>	<b>\$ 1,206</b>	<b>\$ 1,466</b>	<b>\$ (1,136)</b>	<b>\$ (221)</b>

Note:

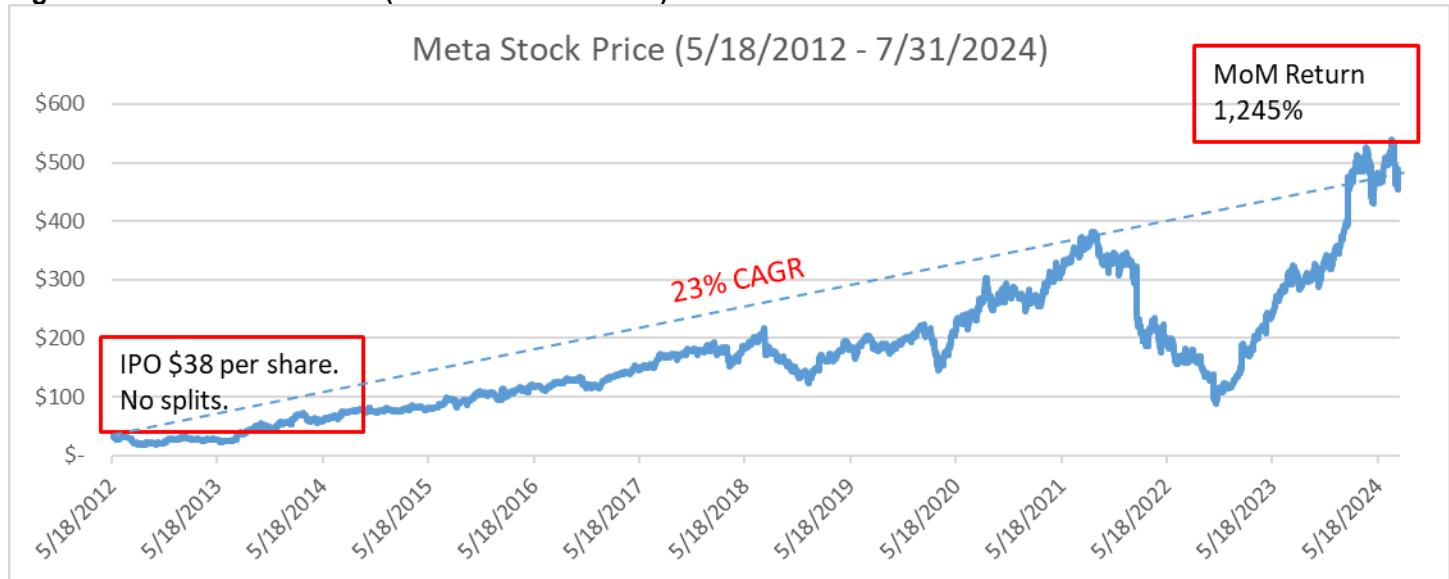
1. Twitter was taken private by Elon Musk in 2022.

<sup>405</sup> Facebook Annual Report 2012.

<sup>406</sup> Facebook Prospectus 2012.

## Stock Price and Comps

Figure 48: Meta Stock Return (5/18/2012 – 7/31/2024)



### Notes:

1. Price and return data from FactSet.
2. Total returns include dividend reinvested.

In a scenario analysis, we observe if at the time of the IPO, someone believed that ARPU could grow at a 15% CAGR over the next 5 years while the MAUs could grow at a 10% CAGR, coupled with an expansion of the net margin to 25% by the end of year 5, the P/E ratio would drop to 30x driven off the resulting 40% CAGR on earnings (as Figure 49-1 shows).

Figure 49-1: Scenario at Year 5

	IPO	Year 5	5-Year CAGR
<b>ARPU</b>	\$4.84	\$9.73	15%
<b>MAU</b>	901	1,451	10%
<b>Total Revenue</b>	\$4,038	\$14,126	28%
<b>Gross Profit</b>	\$3,068	\$11,725	31%
	<i>Gross Margin</i>	76%	83%
<b>SG&amp;A Expenses</b>	\$835	\$2,825	28%
	<i>SG&amp;A Expense as Percentage of Revenue</i>	21%	20%
<b>R&amp;D Expenses</b>	\$484	\$2,825	42%
	<i>R&amp;D Expense as Percentage of Revenue</i>	12%	20%
<b>Operating Income</b>	\$1,749	\$6,074	28%
	<i>Operating Margin</i>	43%	43%
	<i>Incremental Operating Margin</i>		43%
<b>Earnings Before Tax</b>	\$1,682	\$6,007	29%
<b>Tax</b>	\$707	\$2,523	
	<i>Tax Rate</i>	42%	42%
<b>Net Income</b>	\$652	\$3,484	40%
	<i>Net Margin</i>	16%	25%
<b>P/E</b>	164.3x	30.7x	

### Notes:

1. Revenue and earnings data used at IPO are the actual last-twelve-month results estimated from Facebook's IPO document.

2. Total revenue and net earnings are in millions.
3. ARPU at the IPO is annualized based on recent quarter ARPU of \$1.21.
4. The above scenario assumes that ARPU grows at 15% CAGR from \$4.84 at IPO to \$9.73 in Year 5, MAU grows at 10% CAGR from 901 million at IPO to 1,451 million in Year 5. It also assumes that gross margin expanded to 83%, which is approximately the average of the actual gross margin in the next five years. SG&A expenses as a percentage of revenue and R&D expenses as a percentage revenue are assumed to be 20% each, which is approximately the actual average for the next five years. The tax rate and miscellaneous items are assumed to remain unchanged. Net income to minority interest was low post-IPO and eventually approached zero after five years.
5. Projected P/E ratio at Year 5 in the above table is different from Figure 49-2 due to rounding.

**Figure 49-2: Meta's Price-to-Earnings Ratio Sensitivity Table, Next Five Year, Assumed 25% Net Margin**

		ARPU 5-Year CAGR																						
		1.0x		1.3x		1.6x		2.0x		2.5x		3.1x		3.7x		4.5x		5.4x		6.4x		7.6x		
		0%	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	0%	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	
MAU 5-Year CAGR	<b>1.0x</b>	<b>0%</b>	98.3x	77.0x	61.0x	48.9x	39.5x	32.2x	26.5x	21.9x	18.3x	15.3x	12.9x	93.5x	73.3x	58.0x	46.5x	37.6x	30.6x	25.2x	20.8x	17.4x	14.6x	12.3x
	<b>1.1x</b>	<b>1%</b>	93.5x	73.3x	58.0x	46.5x	37.6x	30.6x	25.2x	20.8x	17.4x	14.6x	12.3x	89.0x	69.7x	55.3x	44.2x	35.8x	29.2x	24.0x	19.8x	16.5x	13.9x	11.7x
	<b>1.1x</b>	<b>2%</b>	84.8x	66.4x	52.6x	42.1x	34.1x	27.8x	22.8x	18.9x	15.8x	13.2x	11.2x	80.8x	63.3x	50.1x	40.2x	32.5x	26.5x	21.8x	18.0x	15.0x	12.6x	10.6x
	<b>1.2x</b>	<b>3%</b>	77.0x	60.3x	47.8x	38.3x	30.9x	25.2x	20.7x	17.2x	14.3x	12.0x	10.1x	73.4x	57.5x	45.6x	36.5x	29.5x	24.1x	19.8x	16.4x	13.7x	11.5x	9.7x
	<b>1.2x</b>	<b>4%</b>	70.1x	54.9x	43.5x	34.8x	28.2x	23.0x	18.9x	15.6x	13.0x	10.9x	9.2x	66.9x	52.4x	41.5x	33.2x	26.9x	21.9x	18.0x	14.9x	12.4x	10.4x	8.8x
	<b>1.3x</b>	<b>5%</b>	63.9x	50.0x	39.7x	31.8x	25.7x	20.9x	17.2x	14.2x	11.9x	10.0x	8.4x	63.9x	50.0x	39.7x	31.8x	25.7x	20.9x	17.2x	14.2x	11.9x	10.0x	8.4x
	<b>1.3x</b>	<b>6%</b>	61.0x	47.8x	37.9x	30.3x	24.5x	20.0x	16.4x	13.6x	11.3x	9.5x	8.0x	58.3x	45.7x	36.2x	29.0x	23.4x	19.1x	15.7x	13.0x	10.8x	9.1x	7.7x
	<b>1.4x</b>	<b>7%</b>	55.8x	43.7x	34.6x	27.7x	22.4x	18.3x	15.0x	12.4x	10.4x	8.7x	7.3x	55.8x	43.7x	34.6x	27.7x	22.4x	18.3x	15.0x	12.4x	10.4x	8.7x	7.3x
	<b>1.5x</b>	<b>8%</b>	53.3x	41.8x	33.1x	26.5x	21.4x	17.5x	14.4x	11.9x	9.9x	8.3x	7.0x	51.0x	40.0x	31.7x	25.4x	20.5x	16.7x	13.7x	11.4x	9.5x	8.0x	6.7x
	<b>1.5x</b>	<b>9%</b>	48.9x	38.3x	30.3x	24.3x	19.6x	16.0x	13.2x	10.9x	9.1x	7.6x	6.4x	46.8x	36.7x	29.0x	23.3x	18.8x	15.3x	12.6x	10.4x	8.7x	7.3x	6.2x
	<b>1.6x</b>	<b>10%</b>	44.8x	35.1x	27.8x	22.3x	18.0x	14.7x	12.1x	10.0x	8.3x	7.0x	5.9x	42.9x	33.7x	26.7x	21.4x	17.3x	14.1x	11.6x	9.6x	8.0x	6.7x	5.7x
	<b>1.7x</b>	<b>11%</b>	41.2x	32.3x	25.6x	20.5x	16.5x	13.5x	11.1x	9.2x	7.7x	6.4x	5.4x	39.5x	30.9x	24.5x	19.6x	15.9x	12.9x	10.6x	8.8x	7.3x	6.2x	5.2x
	<b>1.8x</b>	<b>12%</b>	39.5x	30.9x	24.5x	19.6x	15.9x	12.9x	10.6x	8.8x	7.3x	6.2x	5.2x	37.0x	29.0x	23.3x	18.8x	15.3x	12.6x	10.4x	8.7x	7.3x	6.2x	5.2x
	<b>1.9x</b>	<b>13%</b>	35.1x	27.8x	22.3x	18.0x	14.7x	12.1x	10.0x	8.3x	7.0x	5.9x	5.2x	34.4x	26.7x	21.4x	17.3x	14.1x	11.6x	9.6x	8.0x	6.7x	5.7x	5.2x
	<b>2.0x</b>	<b>14%</b>	32.3x	25.6x	20.5x	16.5x	13.5x	11.1x	9.2x	7.7x	6.4x	5.4x	5.2x	31.6x	24.5x	19.6x	15.9x	12.9x	10.6x	8.8x	7.3x	6.2x	5.2x	5.2x
	<b>2.1x</b>	<b>15%</b>	29.0x	23.3x	18.8x	15.3x	12.6x	10.4x	8.7x	7.3x	6.2x	5.2x	5.2x	28.2x	22.3x	18.0x	14.7x	12.1x	10.0x	8.3x	7.0x	6.2x	5.2x	5.2x
	<b>2.2x</b>	<b>16%</b>	26.7x	21.4x	17.3x	14.1x	11.6x	9.6x	8.0x	6.7x	5.7x	5.2x	5.2x	25.9x	20.5x	16.5x	13.5x	11.1x	9.2x	7.7x	6.4x	5.4x	5.2x	5.2x
	<b>2.3x</b>	<b>17%</b>	24.5x	19.6x	15.9x	12.9x	10.6x	8.8x	7.3x	6.2x	5.2x	5.2x	5.2x	24.2x	19.0x	15.3x	12.6x	10.4x	8.7x	7.3x	6.2x	5.2x	5.2x	5.2x
	<b>2.4x</b>	<b>18%</b>	22.3x	17.3x	14.1x	11.6x	9.6x	8.0x	6.7x	5.7x	5.2x	5.2x	5.2x	21.9x	17.0x	13.5x	11.1x	9.2x	7.7x	6.4x	5.4x	5.2x	5.2x	5.2x
	<b>2.5x</b>	<b>19%</b>	20.5x	15.9x	12.9x	10.6x	8.8x	7.3x	6.2x	5.2x	5.2x	5.2x	5.2x	19.6x	14.7x	11.6x	9.6x	8.0x	6.7x	5.7x	5.2x	5.2x	5.2x	5.2x
	<b>2.6x</b>	<b>20%</b>	18.8x	13.5x	10.6x	8.8x	7.3x	6.2x	5.2x	5.2x	5.2x	5.2x	5.2x	18.3x	13.0x	10.0x	8.0x	6.7x	5.7x	5.2x	5.2x	5.2x	5.2x	5.2x

Notes:

1. The analysis assumes that the net margin at 25%, which is close to Facebook's actual average net margin for the next five years.
2. Projected P/E ratio at Year 5 in Figure 49-1 is different from the above table due to rounding.

**Figure 49-3: Meta Pro-Forma Income Statement 2009 – 2023**

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Advertising revenue	\$ 764	\$ 1,868	\$ 3,154	\$ 4,279	\$ 6,986	\$ 11,492	\$ 17,079	\$ 26,885	\$ 39,942	\$ 55,013	\$ 69,655	\$ 84,169	\$ 114,934	\$ 113,642	\$ 131,948
Other revenue	\$ 13	\$ 106	\$ 557	\$ 810	\$ 886	\$ 974	\$ 849	\$ 753	\$ 711	\$ 825	\$ 1,042	\$ 1,796	\$ 2,995	\$ 2,967	\$ 2,954
<b>Total Revenue</b>	<b>\$ 777</b>	<b>\$ 1,974</b>	<b>\$ 3,711</b>	<b>\$ 5,089</b>	<b>\$ 7,872</b>	<b>\$ 12,466</b>	<b>\$ 17,928</b>	<b>\$ 27,638</b>	<b>\$ 40,653</b>	<b>\$ 55,838</b>	<b>\$ 70,697</b>	<b>\$ 85,965</b>	<b>\$ 117,929</b>	<b>\$ 116,609</b>	<b>\$ 134,902</b>
YoY Growth	185.7%	154.1%	88.0%	37.1%	54.7%	58.4%	43.8%	54.2%	47.1%	37.4%	26.6%	21.6%	37.2%	-1.1%	15.7%
<b>Gross Income</b>	<b>\$ 554</b>	<b>\$ 1,481</b>	<b>\$ 2,851</b>	<b>\$ 3,725</b>	<b>\$ 5,997</b>	<b>\$ 10,313</b>	<b>\$ 15,061</b>	<b>\$ 23,849</b>	<b>\$ 35,199</b>	<b>\$ 46,483</b>	<b>\$ 57,927</b>	<b>\$ 69,273</b>	<b>\$ 95,280</b>	<b>\$ 91,360</b>	<b>\$ 108,943</b>
Gross Margin	71.3%	75.0%	76.8%	73.2%	76.2%	82.7%	84.0%	86.3%	86.6%	83.2%	81.9%	80.6%	80.8%	78.3%	80.8%
YoY Growth	274.3%	167.3%	92.5%	30.7%	61.0%	72.0%	46.0%	58.3%	47.6%	32.1%	24.6%	19.6%	37.5%	-4.1%	19.2%
<b>Marketing and sales</b>	<b>\$ 115</b>	<b>\$ 184</b>	<b>\$ 427</b>	<b>\$ 896</b>	<b>\$ 997</b>	<b>\$ 1,680</b>	<b>\$ 2,725</b>	<b>\$ 3,772</b>	<b>\$ 4,725</b>	<b>\$ 7,846</b>	<b>\$ 9,876</b>	<b>\$ 11,591</b>	<b>\$ 14,043</b>	<b>\$ 15,262</b>	<b>\$ 12,301</b>
Marketing and sales expenses as % of Sales	14.8%	9.3%	11.5%	17.6%	12.7%	13.5%	15.2%	13.6%	11.6%	14.1%	14.0%	13.5%	11.9%	13.1%	9.1%
<b>Research and development</b>	<b>\$ 87</b>	<b>\$ 144</b>	<b>\$ 388</b>	<b>\$ 1,399</b>	<b>\$ 1,415</b>	<b>\$ 2,666</b>	<b>\$ 4,816</b>	<b>\$ 5,919</b>	<b>\$ 7,754</b>	<b>\$ 10,273</b>	<b>\$ 13,600</b>	<b>\$ 18,447</b>	<b>\$ 24,655</b>	<b>\$ 35,338</b>	<b>\$ 38,483</b>
R&D expenses as % of Sales	11.2%	7.3%	10.5%	27.5%	18.0%	21.4%	26.9%	21.4%	19.1%	18.4%	19.2%	21.5%	20.9%	30.3%	28.5%
<b>General and administrative</b>	<b>\$ 90</b>	<b>\$ 121</b>	<b>\$ 280</b>	<b>\$ 892</b>	<b>\$ 781</b>	<b>\$ 973</b>	<b>\$ 1,295</b>	<b>\$ 1,731</b>	<b>\$ 2,517</b>	<b>\$ 3,451</b>	<b>\$ 10,465</b>	<b>\$ 6,564</b>	<b>\$ 9,829</b>	<b>\$ 11,816</b>	<b>\$ 11,408</b>
G&A expenses as % of Sales	11.6%	6.1%	7.5%	17.5%	9.9%	7.8%	7.2%	6.3%	6.2%	6.2%	14.8%	7.6%	8.3%	10.1%	8.5%
<b>EBIT</b>	<b>\$ 262</b>	<b>\$ 1,032</b>	<b>\$ 1,756</b>	<b>\$ 538</b>	<b>\$ 2,804</b>	<b>\$ 4,994</b>	<b>\$ 6,225</b>	<b>\$ 12,427</b>	<b>\$ 20,203</b>	<b>\$ 24,913</b>	<b>\$ 23,986</b>	<b>\$ 32,671</b>	<b>\$ 46,753</b>	<b>\$ 28,944</b>	<b>\$ 46,751</b>
EBIT Margin	33.7%	52.3%	47.3%	10.6%	35.6%	40.1%	34.7%	45.0%	49.7%	44.6%	33.9%	38.0%	39.6%	24.8%	34.7%
YoY Growth	-	293.9%	70.2%	-69.4%	421.2%	78.1%	24.6%	99.6%	62.6%	23.3%	-3.7%	36.2%	43.1%	-38.1%	61.5%
<b>EBITDA</b>	<b>-</b>	<b>\$ 1,171</b>	<b>\$ 2,079</b>	<b>\$ 1,187</b>	<b>\$ 3,815</b>	<b>\$ 6,237</b>	<b>\$ 8,170</b>	<b>\$ 14,769</b>	<b>\$ 23,228</b>	<b>\$ 29,228</b>	<b>\$ 29,727</b>	<b>\$ 39,533</b>	<b>\$ 54,720</b>	<b>\$ 37,630</b>	<b>\$ 57,929</b>
EBITDA Margin	-	79.1%	72.9%	31.9%	63.6%	60.5%	54.2%	61.9%	66.0%	62.9%	51.3%	57.1%	57.4%	41.2%	53.2%
YoY Growth	-	-	77.5%	-42.9%	221.4%	63.5%	31.0%	80.8%	57.3%	25.8%	1.7%	33.0%	38.4%	-31.2%	53.9%
<b>Net income attributable to shareholders</b>	<b>\$ 122</b>	<b>\$ 372</b>	<b>\$ 668</b>	<b>\$ 32</b>	<b>\$ 1,491</b>	<b>\$ 2,925</b>	<b>\$ 3,669</b>	<b>\$ 10,188</b>	<b>\$ 15,920</b>	<b>\$ 22,111</b>	<b>\$ 18,485</b>	<b>\$ 29,146</b>	<b>\$ 39,370</b>	<b>\$ 23,200</b>	<b>\$ 39,098</b>
Net Margin	15.7%	18.8%	18.0%	0.6%	18.9%	23.5%	20.5%	36.9%	39.2%	39.6%	26.1%	33.9%	33.4%	19.9%	29.0%
YoY Growth	N/A	204.9%	79.6%	-95.2%	4559.4%	96.2%	25.4%	177.7%	56.3%	38.9%	-16.4%	57.7%	35.1%	-41.1%	68.5%
<b>Split Adjusted EPS</b>					<b>\$ 0.01</b>	<b>\$ 0.59</b>	<b>\$ 1.10</b>	<b>\$ 1.29</b>	<b>\$ 3.48</b>	<b>\$ 5.39</b>	<b>\$ 7.57</b>	<b>\$ 6.43</b>	<b>\$ 10.09</b>	<b>\$ 13.77</b>	<b>\$ 8.59</b>
YoY Growth	-					3909.6%	85.4%	17.1%	170.8%	54.6%	40.6%	-15.1%	57.0%	36.4%	-37.6%
<b>Split Adjusted Shares Outstanding</b>					<b>2,166</b>	<b>2,517</b>	<b>2,664</b>	<b>2,853</b>	<b>2,925</b>	<b>2,956</b>	<b>2,921</b>	<b>2,876</b>	<b>2,888</b>	<b>2,859</b>	<b>2,702</b>
YoY Growth	-					16.2%	5.8%	7.1%	2.5%	1.1%	-1.2%	-1.5%	0.4%	-1.0%	-5.5%
<b>Forward Split Adjusted P/E</b>							<b>2572.1x</b>	<b>64.1x</b>	<b>34.6x</b>	<b>29.5x</b>	<b>10.9x</b>	<b>7.1x</b>	<b>5.0x</b>	<b>5.9x</b>	<b>3.8x</b>
Split Adjusted IPO Price								<b>\$ 38.00</b>							<b>4.4x</b>
															<b>2.6x</b>

Notes:

1. Meta has not done a stock split since IPO. The company did not issue dividends before 2023.
2. P/E ratios above are calculated using the split-adjusted IPO price divided by the adjusted EPS at the end of each fiscal year.
3. The earnings at the end of 2012 declined significantly because the operating margin in 2012 declined primarily due to a significant rise in total costs and expenses, driven by substantial increases in share-based compensation and the related payroll tax expenses for restricted stock units.<sup>407</sup>
4. The operating income in 2012 declined significantly from 2011 primarily due to a significant rise in total costs and expenses, driven by substantial increases in share-based compensation and the related payroll tax expenses for restricted stock units (RSU). \$1.13 billion was attributed to the recognition of share-based compensation and related payroll tax expenses related to RSUs granted prior to January 1, 2011 (Pre-2011 RSUs) triggered by the completion of Facebook's IPO in May 2012.<sup>408</sup> Had those expenses not been incurred, the operating income would have been \$1,668 million, a 33% operating margin, instead of \$538 million, a 10.6% operating margin. The net income attributable to shareholders would have been approximately \$654 million, resulting approximately an EPS of \$0.30 and implying a 126x P/E in 2012.

In May 2009, three years before the company's IPO, Yuri Milner, a Russian investor from Digital Sky Technologies (DST), invested nearly \$200 million in Facebook, representing a 1.96% stake in the company with a \$10 billion valuation,<sup>409</sup> and later increasing DST's stake in Facebook in 2011 to 5.5% with a \$50 billion valuation.<sup>410</sup> He stated during an interview that "We don't really value this business on P/E basis of 2009. But rather based on a longer-term curve based on our experience." He considered his perspective unique compared to other investors and was comfortable with the \$10 billion valuation, despite Facebook being not popular in Russia due to the language barrier, although further details of his thought process were not disclosed. On the same interview, Mark Zuckerberg mentioned that, in 2009, 1) Facebook had been EBITDA profitable for 5 quarters; 2) revenue was growing at 70% year-over-year at least; 3) Facebook was expected to have a positive cashflow in 2010.

CNBC reported on May 16<sup>th</sup>, 2012, two days before Facebook's IPO, that DST began investing in internet companies in Russia and Eastern Europe as early as in 2005, where people took social games and trading virtual goods faster than in the United States.<sup>411</sup> The print media had been weak in Russia as a result of the Soviet Union's breakup and the political control on national papers, thus leaving a freer space for crowdsourced media including social networks. Milner considered himself the "best-informed person in the world about social networking monetization" and stated that "social

<sup>407</sup> Facebook Prospectus 2012.

<sup>408</sup> Facebook Annual Report 2012.

<sup>409</sup> Facebook Interview Yuri Milner. <https://www.youtube.com/watch?v=FkJK6PjyJw>

<sup>410</sup> Benefits and Barriers as Facebook's Friend. WSJ.

<https://www.wsj.com/articles/SB1000142405297020388904577201330085961516>

<sup>411</sup> A Russian Magnate's Facebook Bet Pays Off Big. CNBC. <https://www.cnbc.com/2012/05/16/a-russian-magnate-s-facebook-bet-pays-off-big.html>

networking business models involving tiny payments from large numbers of users had vast potential in emerging markets.”

Many of Facebook's comparable companies in social media are either private or have been unprofitable for years, often due to challenges such as scaling monetization. As a result, common valuation metrics like P/E and EV/EBITDA are not particularly useful for comparison. Since 2012, Meta's median P/E ratio has been 32.3x, and its EV/EBITDA has been 19.3x. However, both metrics have been trending downward as the company has grown larger and more mature.

**Figure 50-1: Social Media P/E (2012 – 2023)**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Meta P/E	2662.0x	91.1x	70.9x	81.1x	33.0x	32.7x	17.3x	31.9x	27.1x	24.4x	14.0x	23.8x
Twitter P/E	N/A	N/A	N/A	N/A	N/A	N/A	18.4x	17.2x	N/A	N/A	N/A	N/A
LinkedIn P/E	604.3x	942.7x	N/A									
Snap Inc. P/E	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pinterest P/E	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	89.2x	N/A	N/A
Average	604.3x	942.7x	N/A	N/A	N/A	N/A	18.4x	17.2x	N/A	89.2x	N/A	N/A
Median	604.3x	942.7x	N/A	N/A	N/A	N/A	18.4x	17.2x	N/A	89.2x	N/A	N/A

Notes:

1. P/E ratios are as of the end of each year. Data are sourced from FactSet.
2. “N/A” indicates either the value is negative, or the company is not public at the time.
3. Average and median do not include Meta.

**Figure 50-2: Social Media EV/EBITDA (2012 – 2023)**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Meta EV/EBITDA	47.1x	32.6x	33.3x	33.9x	20.4x	20.3x	11.4x	15.6x	18.4x	16.2x	7.1x	14.3x
Twitter EV/EBITDA	N/A	N/A	N/A	N/A	70.9x	34.7x	21.1x	26.0x	76.9x	41.2x	N/A	N/A
LinkedIn EV/EBITDA	85.8x	130.4x	96.6x	86.7x	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Snap Inc. EV/EBITDA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pinterest EV/EBITDA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	61.2x	N/A	1003.7x
Average	85.8x	130.4x	96.6x	86.7x	70.9x	34.7x	21.1x	26.0x	76.9x	51.2x	N/A	1003.7x
Median	85.8x	130.4x	96.6x	86.7x	70.9x	34.7x	21.1x	26.0x	76.9x	51.2x	N/A	1003.7x

Notes:

1. EV/EBITDA ratios are as of the end of each year. Data are sourced from FactSet.
2. “N/A” indicates either the value is negative, or the company is not public at the time.
3. Average and median do not include Meta.

**Figure 50-3: Social Media Revenue Growth (2012 – 2023)**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Meta Revenue Growth	37.1%	54.7%	58.4%	43.8%	54.2%	47.1%	37.4%	26.6%	21.6%	37.2%	-1.1%	15.7%
Twitter Revenue Growth	198.1%	109.8%	111.0%	58.1%	14.0%	-3.4%	24.5%	13.7%	7.4%	36.6%	N/A	N/A
LinkedIn Revenue Growth	86.2%	57.2%	45.2%	34.8%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Snap Inc. Revenue Growth	N/A	N/A	N/A	N/A	N/A	104.0%	43.1%	45.3%	46.1%	64.3%	11.8%	0.1%
Pinterest Revenue Growth	N/A	N/A	N/A	N/A	N/A	N/A	N/A	51.2%	48.1%	52.3%	8.7%	2.0%
Average	142.2%	83.5%	78.1%	46.4%	14.0%	50.3%	33.8%	36.7%	33.9%	51.1%	10.2%	1.0%
Median	142.2%	83.5%	78.1%	46.4%	14.0%	50.3%	33.8%	45.3%	46.1%	52.3%	10.2%	1.0%

Notes:

1. Data are sourced from FactSet.
2. “N/A” indicates either the value is negative or the company is not public at the time.
3. Average and median do not include Meta.

**Figure 50-4: Social Media EPS Growth (2012 – 2023)**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Meta EPS Growth	-97.8%	5900.0%	83.3%	17.3%	170.5%	54.4%	40.4%	-15.1%	56.9%	36.5%	-37.6%	73.1%
Twitter EPS Growth	N/A	N/A	N/A	N/A	N/A	N/A	N/A	19.0%	-175.8%	N/A	N/A	N/A
LinkedIn EPS Growth	72.7%	21.1%	-156.5%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Snap Inc. EPS Growth	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pinterest EPS Growth	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-135.9%	N/A
Average	72.7%	21.1%	-156.5%	N/A	N/A	N/A	N/A	19.0%	-175.8%	N/A	-135.9%	N/A
Median	72.7%	21.1%	-156.5%	N/A	N/A	N/A	N/A	19.0%	-175.8%	N/A	-135.9%	N/A

Notes:

1. Data are sourced from FactSet.
2. “N/A” indicates either the value is negative, or the company is not public at the time.
3. Average and median do not include Meta.

**Figure 50-5: Social Media Gross Margin (2012 – 2023)**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Meta Gross Margin	73.2%	76.2%	82.7%	84.0%	86.3%	86.6%	83.2%	81.9%	80.6%	80.8%	78.3%	80.8%
Twitter Gross Margin	59.4%	59.9%	68.2%	67.1%	63.1%	64.8%	68.3%	67.1%	63.2%	64.6%	N/A	N/A
LinkedIn Gross Margin	78.9%	77.9%	76.1%	71.9%	N/A							
Snap Inc. Gross Margin	N/A	N/A	N/A	N/A	N/A	7.5%	26.8%	43.9%	50.3%	55.1%	56.7%	50.7%
Pinterest Gross Margin	N/A	N/A	N/A	N/A	N/A	N/A	68.6%	73.4%	79.5%	75.9%	77.5%	
Average	69.1%	68.9%	72.1%	69.5%	63.1%	36.1%	47.5%	59.9%	62.3%	66.4%	66.3%	64.1%
Median	69.1%	68.9%	72.1%	69.5%	63.1%	36.1%	47.5%	67.1%	63.2%	64.6%	66.3%	64.1%

Notes:

1. Data are sourced from FactSet.
2. “N/A” indicates either the value is negative, or the company is not public at the time.
3. Average and median do not include Meta.

**Figure 50-6: Social Media Operating Margin (2012 – 2023)**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Meta Operating Margin	10.6%	35.6%	40.1%	34.7%	45.0%	49.7%	44.6%	33.9%	38.0%	39.6%	24.8%	34.7%
Twitter Operating Margin	-24.3%	-95.6%	-38.4%	-20.3%	-14.5%	1.6%	14.9%	10.6%	0.7%	-9.7%	N/A	N/A
LinkedIn Operating Margin	5.9%	3.1%	1.6%	-3.4%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Snap Inc. Operating Margin	N/A	N/A	N/A	N/A	N/A	-422.5%	-104.7%	-58.5%	-34.4%	-17.1%	-30.3%	-30.4%
Pinterest Operating Margin	N/A	N/A	N/A	N/A	N/A	N/A	-121.5%	-8.4%	12.7%	-3.3%	0.0%	
Average	-9.2%	-46.2%	-18.4%	-11.8%	-14.5%	-210.5%	-44.9%	-56.5%	-14.0%	-4.7%	-16.8%	-15.2%
Median	-9.2%	-46.2%	-18.4%	-11.8%	-14.5%	-210.5%	-44.9%	-58.5%	-8.4%	-9.7%	-16.8%	-15.2%

Notes:

1. Data are sourced from FactSet.
2. “N/A” indicates either the value is negative, or the company is not public at the time.
3. Average and median do not include Meta.

**Figure 50-7: Social Media R&D as Percentage of Sales (2012 – 2023)**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Meta R&D as Percentage of Sales	27.5%	18.0%	21.4%	26.9%	21.4%	19.1%	18.4%	19.2%	21.5%	20.9%	30.3%	28.5%
Twitter R&D as Percentage of Sales	37.5%	89.3%	49.3%	36.4%	28.2%	22.2%	18.2%	19.7%	23.5%	24.6%	N/A	N/A
LinkedIn R&D as Percentage of Sales	26.5%	25.9%	24.2%	25.9%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Snap Inc. R&D as Percentage of Sales	N/A	N/A	N/A	N/A	N/A	183.0%	62.6%	49.6%	42.4%	36.5%	43.7%	39.2%
Pinterest R&D as Percentage of Sales	N/A	N/A	N/A	N/A	N/A	N/A	N/A	105.6%	35.8%	30.3%	33.9%	34.8%
Average	32.0%	57.6%	36.7%	31.1%	28.2%	102.6%	40.4%	58.3%	33.9%	30.4%	38.8%	37.0%
Median	32.0%	57.6%	36.7%	31.1%	28.2%	102.6%	40.4%	49.6%	35.8%	30.3%	38.8%	37.0%

Notes:

1. Data are sourced from FactSet.
2. “N/A” indicates either the value is negative, or the company is not public at the time.
3. Average and median do not include Meta.

When we compare Meta with its peers in digital advertising, we find a similar situation. Many digital advertising companies are also social media companies that rely heavily on advertising as their main source of revenue are either private or have struggled with profitability for years, often due to difficulties in scaling monetization. This makes traditional valuation metrics like P/E and EV/EBITDA less meaningful for comparison. Since 2012, Meta's median P/E ratio has been 32.3x, and its EV/EBITDA has been 19.3x. However, both metrics have been declining as the company has grown larger and more mature.

**Figure 51-1: Digital Advertising Companies P/E (2012 – 2023)**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Meta P/E	2662.0x	91.1x	70.9x	81.1x	33.0x	32.7x	17.3x	31.9x	27.1x	24.4x	14.0x	23.8x
Alphabet P/E	21.9x	31.2x	27.7x	34.1x	28.4x	58.5x	23.9x	27.2x	29.9x	25.8x	19.4x	24.1x
Twitter P/E	N/A	N/A	N/A	N/A	N/A	N/A	18.4x	17.2x	N/A	N/A	N/A	N/A
LinkedIn P/E	604.3x	942.7x	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Snap Inc. P/E	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pinterest P/E	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	89.2x	N/A	N/A
The Trade Desk P/E	N/A	N/A	N/A	N/A	N/A	39.8x	60.3x	114.6x	162.0x	331.7x	419.8x	201.1x
Average	313.1x	487.0x	27.7x	34.1x	28.4x	49.2x	34.2x	53.0x	95.9x	148.9x	219.6x	112.6x
Median	313.1x	487.0x	27.7x	34.1x	28.4x	49.2x	34.2x	53.0x	95.9x	148.9x	219.6x	112.6x

Notes:

1. P/E ratios are as of the end of each year. Data are sourced from FactSet.
2. “N/A” indicates either the value is negative, or the company is not public at the time.
3. Average and median do not include Meta.

**Figure 51-2: Digital Advertising Companies EV/EBITDA (2012 – 2023)**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Meta EV/EBITDA	47.1x	32.6x	33.3x	33.9x	20.4x	20.3x	11.4x	15.6x	18.4x	16.2x	7.1x	14.3x
Alphabet EV/EBITDA	11.9x	18.0x	14.2x	20.3x	15.9x	17.6x	15.3x	17.3x	19.6x	19.9x	11.8x	16.9x
Twitter EV/EBITDA	N/A	N/A	N/A	N/A	70.9x	34.7x	21.1x	26.0x	76.9x	41.2x	N/A	N/A
LinkedIn EV/EBITDA	85.8x	130.4x	96.6x	86.7x	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Snap Inc. EV/EBITDA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pinterest EV/EBITDA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	61.2x	N/A	1003.7x
The Trade Desk EV/EBITDA	N/A	N/A	N/A	N/A	15.9x	22.7x	41.2x	76.1x	182.4x	210.4x	123.8x	121.2x
Average	48.8x	74.2x	55.4x	53.5x	34.2x	25.0x	25.9x	39.8x	93.0x	83.2x	67.8x	380.6x
Median	48.8x	74.2x	55.4x	53.5x	34.2x	25.0x	25.9x	39.8x	93.0x	83.2x	67.8x	380.6x

Notes:

1. EV/EBITDA ratios are as of the end of each year. Data are sourced from FactSet.
2. “N/A” indicates either the value is negative, or the company is not public at the time.
3. Average and median do not include Meta.

**Figure 51-3: Digital Advertising Companies Revenue Growth (2012 – 2023)**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Meta Revenue Growth	37.1%	54.7%	58.4%	43.8%	54.2%	47.1%	37.4%	26.6%	21.6%	37.2%	-1.1%	15.7%
Twitter Revenue Growth	198.1%	109.8%	111.0%	58.1%	14.0%	-3.4%	24.5%	13.7%	7.4%	36.6%	N/A	N/A
LinkedIn Revenue Growth	86.2%	57.2%	45.2%	34.8%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Snap Inc. Revenue Growth	N/A	N/A	N/A	N/A	N/A	104.0%	43.1%	45.3%	46.1%	64.3%	11.8%	0.1%
Pinterest Revenue Growth	N/A	N/A	N/A	N/A	N/A	N/A	N/A	51.2%	48.1%	52.3%	8.7%	2.0%
Average	142.2%	83.5%	78.1%	46.4%	14.0%	50.3%	33.8%	36.7%	33.9%	51.1%	10.2%	1.0%
Median	142.2%	83.5%	78.1%	46.4%	14.0%	50.3%	33.8%	45.3%	46.1%	52.3%	10.2%	1.0%

Notes:

1. Data are sourced from FactSet.
2. “N/A” indicates either the value is negative, or the company is not public at the time.
3. Average and median do not include Meta.

**Figure 51-4: Digital Advertising Companies EPS Growth (2012 – 2023)**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Meta EPS Growth	-97.8%	5900.0%	83.3%	17.3%	170.5%	54.4%	40.4%	-15.1%	56.9%	36.5%	-37.6%	73.1%
Alphabet EPS Growth	8.6%	11.1%	6.7%	19.2%	22.1%	-35.5%	142.9%	12.5%	19.2%	91.4%	-18.8%	27.3%
Twitter EPS Growth	N/A	N/A	N/A	N/A	N/A	N/A	N/A	19.0%	-175.8%	N/A	N/A	N/A
LinkedIn EPS Growth	72.7%	21.1%	-156.5%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Snap Inc. EPS Growth	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pinterest EPS Growth	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-135.9%	N/A
The Trade Desk EPS Growth	N/A	N/A	N/A	N/A	-969.1%	N/A	67.4%	17.7%	118.3%	-44.1%	-61.4%	235.0%
Average	40.7%	16.1%	-74.9%	19.2%	-473.5%	-35.5%	105.1%	16.4%	-12.8%	23.6%	-72.0%	131.2%
Median	40.7%	16.1%	-74.9%	19.2%	-473.5%	-35.5%	105.1%	17.7%	19.2%	23.6%	-61.4%	131.2%

Notes:

1. Data are sourced from FactSet.
2. “N/A” indicates either the value is negative, or the company is not public at the time.
3. Average and median do not include Meta.

**Figure 51-5: Digital Advertising Companies Gross Margin (2012 – 2023)**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Meta Gross Margin	73.2%	76.2%	82.7%	84.0%	86.3%	86.6%	83.2%	81.9%	80.6%	80.8%	78.3%	80.8%
Alphabet Gross Margin	59.0%	56.8%	61.6%	61.7%	60.8%	58.9%	56.5%	55.5%	53.5%	56.9%	55.1%	56.8%
Twitter Gross Margin	59.4%	59.9%	68.2%	67.1%	63.1%	64.8%	68.3%	67.1%	63.2%	64.6%	N/A	N/A
LinkedIn Gross Margin	78.9%	77.9%	76.1%	71.9%	N/A							
Snap Inc. Gross Margin	N/A	N/A	N/A	N/A	N/A	7.5%	26.8%	43.9%	50.3%	55.1%	56.7%	50.7%
Pinterest Gross Margin	N/A	68.6%	73.4%	79.5%	75.9%	77.5%						
The Trade Desk Gross Margin	N/A	N/A	N/A	N/A	80.4%	78.5%	76.1%	76.4%	78.6%	81.5%	82.2%	81.2%
Average	65.7%	64.9%	68.6%	66.9%	68.1%	52.4%	56.9%	62.3%	63.8%	67.5%	67.5%	66.5%
Median	59.4%	59.9%	68.2%	67.1%	63.1%	61.8%	62.4%	67.1%	63.2%	64.6%	66.3%	67.1%

Notes:

1. Data are sourced from FactSet.
2. “N/A” indicates either the value is negative, or the company is not public at the time.
3. Average and median do not include Meta.

**Figure 51-6: Digital Advertising Companies Operating Margin (2012 – 2023)**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Meta Operating Margin	10.6%	35.6%	40.1%	34.7%	45.0%	49.7%	44.6%	33.9%	38.0%	39.6%	24.8%	34.7%
Alphabet Operating Margin	26.3%	23.4%	25.4%	24.4%	25.8%	26.2%	23.0%	22.0%	22.5%	30.5%	26.0%	28.1%
Twitter Operating Margin	-24.3%	-95.6%	-38.4%	-20.3%	-14.5%	1.6%	14.9%	10.6%	0.7%	-9.7%	N/A	N/A
LinkedIn Operating Margin	5.9%	3.1%	1.6%	-3.4%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Snap Inc. Operating Margin	N/A	N/A	N/A	N/A	N/A	-422.5%	-104.7%	-58.5%	-34.4%	-17.1%	-30.3%	-30.4%
Pinterest Operating Margin	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-121.5%	-8.4%	12.7%	-3.3%	0.0%
The Trade Desk Operating Margin	N/A	N/A	N/A	N/A	28.3%	23.0%	22.5%	17.0%	17.3%	10.4%	7.2%	10.3%
Average	2.6%	-23.0%	-3.8%	0.3%	13.2%	-92.9%	-11.1%	-26.1%	-0.5%	5.4%	-0.1%	2.0%
Median	5.9%	3.1%	1.6%	-3.4%	25.8%	12.3%	18.7%	10.6%	0.7%	10.4%	2.0%	5.2%

Notes:

1. Data are sourced from FactSet.
2. “N/A” indicates either the value is negative, or the company is not public at the time.
3. Average and median do not include Meta.

**Figure 51-7: Digital Advertising Companies R&D as Percentage of Sales (2012 – 2023)**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Meta R&D as Percentage of Sales	27.5%	18.0%	21.4%	26.9%	21.4%	19.1%	18.4%	19.2%	21.5%	20.9%	30.3%	28.5%
Alphabet R&D as Percentage of Sales	13.2%	13.2%	14.9%	16.7%	15.5%	15.0%	15.6%	16.1%	15.1%	12.3%	14.1%	14.5%
Twitter R&D as Percentage of Sales	37.5%	89.3%	49.3%	36.4%	28.2%	22.2%	18.2%	19.7%	23.5%	24.6%	N/A	N/A
LinkedIn R&D as Percentage of Sales	26.5%	25.9%	24.2%	25.9%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Snap Inc. R&D as Percentage of Sales	N/A	N/A	N/A	N/A	183.0%	62.6%	49.6%	42.4%	36.5%	43.7%	39.2%	
Pinterest R&D as Percentage of Sales	N/A	N/A	N/A	N/A	N/A	N/A	105.6%	35.8%	30.3%	33.9%	34.8%	
The Trade Desk R&D as Percentage of Sales	N/A	N/A	N/A	N/A	13.5%	17.1%	17.6%	17.7%	19.9%	18.9%	20.3%	21.2%
Average	25.7%	42.8%	29.5%	26.3%	19.1%	59.3%	28.5%	41.7%	27.4%	24.5%	28.0%	27.4%
Median	26.5%	25.9%	24.2%	25.9%	15.5%	19.7%	17.9%	19.7%	23.5%	24.6%	27.1%	28.0%

Notes:

1. Data are sourced from FactSet.
2. “N/A” indicates either the value is negative, or the company is not public at the time.
3. Average and median do not include Meta.

Given that many of Meta's peer companies in the social media space are unprofitable, making a meaningful comparison using traditional valuation metrics is challenging. To gain a clearer perspective on Meta's position within the broader market, we compared it with the S&P 500 and Nasdaq indices as benchmarks. For most years, Meta's P/E and EV/EBITDA multiples have been higher than those of these indices, though they have shown a declining trend in recent years as the company has matured. This premium over the market is likely due to Meta's higher growth potential as a relatively young company with substantial room for expansion, as well as its profitability, which has consistently exceeded the market average. In this sense, Meta's premium over the market is justified.

**Figure 52-1: Meta vs. Market P/E (2012 – 2023)**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Meta P/E	2662.0x	91.1x	70.9x	81.1x	33.0x	32.7x	17.3x	31.9x	27.1x	24.4x	14.0x	23.8x
S&P 500 P/E	13.7x	17.0x	17.2x	17.8x	19.3x	21.8x	16.6x	21.4x	28.4x	24.6x	18.1x	23.1x
Nasdaq P/E	N/A	N/A	N/A	19.3x	21.5x	23.5x	19.8x	24.8x	34.6x	29.8x	20.3x	28.8x

Notes:

1. P/E ratios are as of the end of each year. Data are sourced from FactSet.
2. Data of Nasdaq Index prior to 2015 were not available on FactSet.
3. P/E ratios exclude companies with negative earnings.

**Figure 52-2: Meta vs. Market EV/EBITDA (2012 – 2023)**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Meta EV/EBITDA	47.1x	32.6x	33.3x	33.9x	20.4x	20.3x	11.4x	15.6x	18.4x	16.2x	7.1x	14.3x
S&P 500 EV/EBITDA	8.6x	10.5x	10.7x	11.4x	12.4x	13.5x	11.7x	14.4x	18.3x	17.9x	12.7x	15.8x
Nasdaq EV/EBITDA	N/A	N/A	N/A	N/A	13.3x	16.7x	13.1x	17.0x	24.44	23.1x	15.0x	20.8x

Notes:

1. EV/EBITDA ratios are as of the end of each year. Data are sourced from FactSet.
2. Data of Nasdaq Index prior to 2015 were not available on FactSet.

**Figure 52-3: Meta vs. Market Revenue Growth (2012 – 2023)**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Meta Revenue Growth	37.1%	54.7%	58.4%	43.8%	54.2%	47.1%	37.4%	26.6%	21.6%	37.2%	-1.1%	15.7%
S&P Revenue Growth	2.8%	1.7%	4.0%	-2.4%	0.0%	5.9%	10.2%	5.0%	-1.9%	13.7%	13.8%	5.3%
Nasdaq Revenue Growth	N/A	N/A	N/A	4.2%	2.2%	9.5%	12.9%	6.3%	3.5%	20.7%	14.7%	4.0%

Notes:

1. Data are sourced from FactSet.
2. Data of Nasdaq Index prior to 2015 were not available on FactSet.

**Figure 52-4: Meta vs. Market EPS Growth (2012 – 2023)**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Meta EPS Growth	-97.8%	5900.0%	83.3%	17.3%	170.5%	54.4%	40.4%	-15.1%	56.9%	36.5%	-37.6%	73.1%
S&P EPS Growth	6.8%	3.4%	9.3%	-6.5%	-1.3%	11.7%	19.6%	3.4%	-17.5%	55.9%	8.0%	-1.0%
Nasdaq EPS Growth	N/A	N/A	N/A	13.1%	-3.5%	22.6%	14.4%	7.6%	-6.3%	66.2%	-2.3%	0.1%

Notes:

1. Data are sourced from FactSet.
2. Data of Nasdaq Index prior to 2015 were not available on FactSet.

**Figure 52-5: Meta vs. Market Gross Margin (2012 – 2023)**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Meta Gross Margin	73.2%	76.2%	82.7%	84.0%	86.3%	86.6%	83.2%	81.9%	80.6%	80.8%	78.3%	80.8%
S&P Gross Margin	30.1%	30.1%	30.5%	31.1%	31.3%	31.5%	31.9%	31.7%	31.4%	33.3%	33.0%	33.0%
Nasdaq Gross Margin	N/A	N/A	N/A	37.5%	38.2%	38.6%	39.1%	38.9%	38.4%	40.3%	39.9%	40.3%

Notes:

1. Data are sourced from FactSet.
2. Data of Nasdaq Index prior to 2015 were not available on FactSet.

**Figure 52-6: Meta vs. Market Operating Margin (2012 – 2023)**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Meta Operating Margin	10.6%	35.6%	40.1%	34.7%	45.0%	49.7%	44.6%	33.9%	38.0%	39.6%	24.8%	34.7%
S&P Operating Margin	13.7%	13.5%	14.3%	13.9%	13.7%	14.0%	14.4%	13.8%	12.0%	15.6%	15.1%	14.1%
Nasdaq Operating Margin	N/A	N/A	N/A	14.6%	14.4%	12.9%	15.1%	14.0%	12.6%	15.6%	14.3%	13.7%

Notes:

1. Data are sourced from FactSet.
2. Data of Nasdaq Index prior to 2015 were not available on FactSet.

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