

NOTES ON REVISION

Tuesday, April 18, 2023 9:50 AM

REVISION OF INPUTS	<p>Debt that FB had prior to 2013 was paid in full in August of that year. Did not take on long-term debt until 2012.</p> <p>Validated against IOK/IDC data since detailed values are not included in income statement.</p>
<input checked="" type="checkbox"/> Revenues <input checked="" type="checkbox"/> EBIT <input checked="" type="checkbox"/> Interest Expense	
<input checked="" type="checkbox"/> Net Income <input checked="" type="checkbox"/> Net operating Loss	The company has been generating profits for some time.
<input checked="" type="checkbox"/> Depreciation & Amortization <input checked="" type="checkbox"/> Capital Spending <input checked="" type="checkbox"/> Non-Cash Working Capital	
<input checked="" type="checkbox"/> Cash & Marketable Securities <input checked="" type="checkbox"/> Preferred Stocks	*Not present after IPO
<input checked="" type="checkbox"/> Book Value of Debt	*FB had no debt after FY2015. It did have a credit facility which they took on debt in 2019. We begin seeing debt related to leases. In 2019 due to accounting practices changes, the debt from FY2011-FY2015 was related to capital leases.
<input checked="" type="checkbox"/> Book Value of Equity <input checked="" type="checkbox"/> Trapped Cash	*FB stopped reporting this detail after FY2012. In the IOK/IDC, it specifically says retained the cash needed for the taxes were they to bring it to the US.
<input checked="" type="checkbox"/> Deferred taxes <input checked="" type="checkbox"/> Non-Operating Assets <input checked="" type="checkbox"/> Pension Liabilities	<input checked="" type="checkbox"/> Minority Interest *Investment in JioMart in India.
<input checked="" type="checkbox"/> Marginal Tax Rate <input checked="" type="checkbox"/> Interest Bearing Debt <input checked="" type="checkbox"/> Operating Leases	*Contractual commitment related to equipment/supplies for data center operations & to lesser extent construction of data center cities were added to these totals.
<input checked="" type="checkbox"/> R&D Expense <input checked="" type="checkbox"/> Straight Preferred Stock	*Only in 2011 Pre-IPO. Only where stock price is inputted. <input checked="" type="checkbox"/> Employee Options *Changed in 2019 to R&D + # of shares + Risk Free Rate, & on Stock + # of shares are inputted here.
<input checked="" type="checkbox"/> Convertible Bonds <input checked="" type="checkbox"/> Synthetic Spread for Cost of Debt <input checked="" type="checkbox"/> Revenue per Geography	<input checked="" type="checkbox"/> Equity Risk Premium
<input checked="" type="checkbox"/> Split adjustment factor <input checked="" type="checkbox"/> Change in Working Capital	<input checked="" type="checkbox"/> Industry Reference Values

2011-2015 Summary

2011 - IPO

- Revenue mostly from advertising.
 - ↳ See growth from increasing penetration in emerging markets
 - ↳ Mobile is critical to maintaining user growth & engagement in the long-term
 - *Haven't figured out how to monetize mobile yet.
 - ↳ Investing in data center infrastructure to better serve users.
- Two types of stocks with different voting rights.
 - ↳ Give total dependency & power to CEO Mark Zuckerberg's criteria.
 - Clearly seen in FB's purchase of IG which was basically executed w/o consulting shareholders.

*Lookup WACC for Tobacco industry due to the risk comparison with addiction & regulation.

ASSUMPTIONS

- Revenue: assuming Google's first 5 year CAGR as a reference for growth phase.
 - ↳ Terminal value set to Risk Free Rate.
- Operating Margin: Cost has been increasing due to high investments in R&D.
 - ↳ Assuming growth of 36% & cost variation of 100% which is close to last year's cost increase gives 40% margins.
- Maintaining Sales to Capital for Growth Phase, incrementing to 1.4 which is industry average for Stable phase.
- Assuming industry WACC for growth phase & lower company value for stable phase.

FY 2012

- Revenue driven by advertising, mostly by increase in number of ads delivered.
 - ↳ Related to user growth & introduction of News feed ads.
- Mobile representing important growth. Overall, users grew 2009-2012 CAGR of 43.15%.
 - ↳ YoY growth in overall MAUs was ~25%. Mobile MAUs grew ~57% where 23% of the mobile users accessed solely through mobile.
 - ↳ Company is focused on providing mobile-first experiences.
- Working on making metrics more accurate by partnering with 3rd parties.
- ~14% of the time spent on apps is owned by Facebook
- User privacy concerns start to rise.

ASSUMPTIONS

- Revenue: Focus on mobile first products, following the trend of high user growth through this medium. Increased to 40% for growth phase as it rides the mobile wave → already 11% of ad revenue comes from mobile.
 - ↳ Also introduced News Feed ads which were a factor that increased the # of ads per user.
- Operating Margin: taken current margin for growth phase (33.05%) as company continues to invest aggressively in headcount. Maintained 40% margin assumption for stable phase as company matures.

FY 2013

- Revenue continues to be driven by advertising, mainly through News Feed ads which are shown in both PC & Mobile.
 - ↳ News Feed ads have a higher level of engagement → higher price per ad.
- Mobile driving strong growth representing 45% of total ad revenue.
- User engagement increases with adoption of mobile.
- MAUs grew ~16% YoY while mobile MAUs grew ~39%. 31.32% of Mobile MAUs accessed exclusively through mobile.
- Expected aggressive headcount growth to continue → Higher growth in costs than revenues.
- Focused on simplifying ad products as more SMBs join the network.
- Launched video which increases engagement.
- Investors worried FB isn't attracting teen users. Tries to acquire Snapchat to attract this audience.
- Concerns over privacy as FB walks a fine line between sharing user data & its commitment with the FTC.

ASSUMPTIONS

- Revenue: using mid point between IPO & 2012 valuation to be more conservative due to lack of attraction of teens. Privacy issues may also reduce use of current audience. Reduced to 38%.
- Operating Margin: assuming 35% for growth phase since company states margins will be impacted in the short-term by higher growth in cost than in revenues. Increased to 45% in stable phase.

FY 2014

- Continued strong growth in advertising mainly driven by avg price per ad increase.
 - ↳ Greater shift to News Feed ads.
- Mobile continues to gain relevance, now representing 65% of total ad revenue.
- Users & engagement continue to increase.
 - ↳ MAUs increased 13% | Mobile MAUs increased +26% → 44.2% of Mobile MAUs accessed exclusively through mobile. *FB is still riding the mobile wave.
- Expect to continue aggressive headcount growth
- Separated Messenger as a standalone app. Driving users to this platform even though it doesn't monetize it yet.
- Important acquisitions of the year included WhatsApp + Oculus
- Are investing aggressively in improving ad tech/ measurement tools.
- Launched audience network worldwide which allows advertisers to place ads in other apps that work with FB - increases ad inventory.
- Seeing growth in video.
- Focus for growth will be in better targeting - makes for better user experience and better results for marketers.
- WhatsApp acquisition: denotes opportunity that FB sees in messaging. See it as competition for SMS.
 - Was only app that had higher engagement than FB as of acquisition announcement date.
 - Google was said to make a \$10B USD offer around the time.
- Oculus Acquisition:
 - Develops VR technology - FB sees it as a long-term bet towards what they expect to be the next computing platform.
 - Currently not yet available to consumers - sells prototypes to developers.
 - Sony is also developing VR hardware. Focus mostly right now in gaming.
- Big tech companies are going through an acquisition frenzy where they are competing to control as much as possible of the tech ecosystem.

ASSUMPTIONS

- Revenue: 40% for growth phase as they continue to ride mobile wave. Not expecting to receive additional revenue yet from acquisitions.
- Operating Margins: reduced to 30% from previous assumption of 35% since not expecting revenues at first from acquisitions but they will imply further costs in the short-term.

FY 2015

- Revenue growth driven by advertising primarily avg price per ad increase.
 - ↳ Mobile continues to become more relevant → 77% of ad revenue comes from mobile.
 - ⇒ MAU grew +14% | Mobile MAUs +21% → 57.15% of Mobile MAUs accessed exclusively through mobile.
- Investment Focus:
 - ↳ Short-term: improving existing products & develop new ones.
 - ↳ Long-term: connectivity efforts, AI research, VR
- Continue aggressive headcount increase & grow through M&A.
- Announced WhatsApp will be free for everyone.
- Video → important part of experience & will continue to invest.
- Growing adoption of IG.
- Opened pre-orders for Oculus headsets
- Making progress building AI prototype.
- Testing a way for businesses to sell items through FB pages. + looking for ways to monetize Messenger (track orders / book flights) + digital assistant for Messenger.
 - ↳ New potential revenue streams but still new → are experimenting
- Even though engagement is increasing, people are posting less often. FB fears this will make platform boring. ★ RISK for losing users in the future.

ASSUMPTIONS

- Maintained same assumptions for revenue & margins.

FY 2016

Q1

- Revenue driven by advertising pushed by increase in # of ads delivered
 - ↳ Increase in demand of ad inventory & increase in mobile users & engagement
- Mobile continues to grow at rapid pace. (82% of total ad revenue)
 - ↳ MAU +16% | Mobile MAUs +21% → 59% of mobile users accessed exclusively through mobile.
- Expect to continue with headcount growth
- Video has been an important driver for engagement.
- Continue building datacenter infrastructure.

ASSUMPTIONS

- Maintained same assumptions for Revenue & Operating Margins.

Q2

- Advertising continues to drive revenue growth mainly through increase in # of ads delivered.
 - ↳ Increase for ad inventory → increase in # of marketers.
 - ↳ Mobile user growth & engagement.
 - Mobile represents 84% of ad revenue.
 - ↳ MAU ~15% | Mobile MAU ~20% → ~82% access exclusively through mobile.
 - News Feed ads in mobile are main driver.
 - Time spent per person increased double digits YoY across FB, IG + M
 - Biggest growth opportunities in emerging markets
 - Video continues to be driver for engagement
 - Making progress in AI → Deep text (understands context of several thousand posts/sec)
 - ↳ Help show people more of what they are interested in
 - Pre-orders for Oculus.
 - Ad load expected to continue to grow more modestly
 - FB called out by conservative party of biasing the feed.
 - ↳ FB depends on both its algorithm & human interference to select & present highlighted topics.
 - FB selling video ads on behalf of other companies (Audience Network)
 - FB has contracts with 140 media companies & celebrities to create content for new live-streaming service
 - FB tweaks algorithm to give friends & family more weight as it worries that having feed filled with outside information is not attractive & would reduce user engagement.

ASSUMPTIONS

- Slightly reduced revenue growth rate since company expects ad load to grow more moderately.
- Operating Margin assumptions remain

Q3

- Revenue growth driven by advertising primarily by # of ads delivered.
- Mobile represents 84% of ad revenue.
 - ↳ MAUs ~110% | Mobile MAUs +20% → 63.25% access exclusively by mobile
- Video first approach continues.
- Currently have 33k bots functioning in Messenger.
- Launched FB Marketplace
- AI continues to show people content they are interested in & help identifying inappropriate/dangerous content faster.
- Announced touch controllers for Rift will ship in December.
- Introduced IG Business profiles.
- Investing in measurements & working with 3rd parties.
- Emerging Markets continue to be opportunity for user growth.
- **Expect ad revenue growth rate to reduce.**
- Instagram stories attracting publishers who create content on Snapchat.
- Issues with false stories in "trending" list after FB's decision of letting software drive almost entirely what appears here.
- FB reveals it was miscalculating key metrics
- FB being perceived as a media company as it faces many of the issues these companies face.

ASSUMPTIONS

- Maintained revenue & operating margin assumptions for now. Will wait to see impact of metrics issue & misinformation. Might have to lower in future if this persists.

Q4

- Revenue driven by advertising primarily # of ads delivered.
- Since +83% comes from mobile, FB is no longer segregating mobile MAUs.
 - ↳ Has become a mobile company.
- Video is a megatrend in the same order as mobile.
- Trying to control misinformation → working with 3rd Party fact checkers in the US.
- Important growth in stories in IG.
- Using AI to enhance camera tools & filters
- Building out datacenter infrastructure.
- Mobile used for holiday shopping → mobile more involved in day-to-day activities.
- Expect revenue growth rate to decrease meaningfully
- Will accelerate hiring & R&D investments
- Still have adload opportunity with IG.
- Snapchat continues to be more popular with users between 18-24
- FB faces criticism as many are concerned that its algorithm puts its users in a "filter bubble"
- FB uncovers several more flawed measurements
- VR has had slower adoption than expected

ASSUMPTIONS

- Reduced further revenue growth rate as FB continues to state that it will decrease significantly.
 - ↳ Also facing distrust from advertisers & issues with misinformation.
- Maintained assumption for operating margins.

2017

Q1

- Advertising still driving results through # of ads delivered.
- Mobile now represents 85% of total ad revenue. → ~17% MAU & DAU YoY.
- FB to hire more staff to focus on security & misinformation & work with fact checkers.
- Expanded stories
- Launched full-screen rounded ads on IG Stories
- Growth strongest in Rest of the World & APAC
- Continue to expect ad revenue growth rate to decrease.
- Searching for other ad revenue streams.
- FB intensifies its hunt for TV-like programming → willing to pay for some shows.
- FB Live is being used to broadcast acts of violence.
- Mastercard adding new payment option to FB Messenger.

ASSUMPTIONS

- Reduced both revenue growth rate & operating margin.
 - ↳ Revenue growth rate expected to decrease significantly as per company's guidance.
 - ⇒ Still computed higher than industry due to FB's relevance & Snapchat losing users to IG.
 - ↳ Operating margin taking into account aggressive headcount growth
- Added a 10% variation increase to the WACC. Estimation driven by Tobacco industry scandal where the industry WACC had a 13% variation increase post scandal.

Q2

- Advertising driving growth mainly due to avg price per ad increase due to increase demand in ad inventory.
- Mobile represents 87% of ad revenue → FB is a mobile company.
 - ↳ Officially +2B MAUs → user milestone. Engagement remains consistent ~66%.
- Focus on FB Groups to build communities. → helping people discover groups using AI.
- AI continues to improve how FB does business.
- Strong focus on video
- Focus on building business around messaging. Started showing ads on Messenger.
- Strong growth from Rest of the World + APAC, especially India.
- Ad load expected to play less significant growth → saturation of current products.
- 700M users in IG → IG Stories has 200DAUs, more than Snap.
- Fined \$122.7 M USD by European regulator for misleading over acquisition of WhatsApp.
- New regulation seen as a threat to big tech.

ASSUMPTIONS

- Maintained assumptions for revenue & operating margin.
- Made same +10% adjustment to WACC.

Q3

- Advertising revenue driven by avg price/ad
 - ↳ Increase in inventory demand / increase in spend by existing marketers / increase in # of marketers.
- Mobile represents 88% of ad revenue.
- User growth driven by emerging markets.
- **Content policing issue:** influence operation based in Russia spent \$100K in ads promoting divisive political & social messages.
 - ↳ Plans to strengthen security & double staff
 - ↳ Building AI to detect bad actors & content.
- Launched Watch Tab
- Testing business features for people to connect with businesses through WhatsApp.
- Rolled out Marketplace in Canada & Europe.
- Launched Oculus One headset
- Strongest area of advertisers are SMBs.
- "Related Articles" to limit spread of false news & working with outside fact-checkers & adjusting News Feed algorithm to demote fake stories.
- New wave of online users entering the internet through cheap smartphones, data plans & intuitive apps.
 - ↳ Using voice & communicating with images instead of text.
 - ↳ Fueling growth in places like India.
- FB uses data from Onavo to gain early insight into rival companies, measure user behavior on phones outside of FB apps & shape its product & acquisition strategy.
- Goal of getting 1B ppl into VR+ announced Oculus Go, a \$199 stand-alone headset set to ship in 2018.
- FB set to spend more on federal lobbying than in any previous year.

ASSUMPTIONS

- Maintaining revenue assumption.
- Decreasing margins in growth phase due to more spending required in privacy & security & lobbying to prevent further regulation.
- Same assumption for WACC.

Q4

- Advertising driving growth through avg price/ad
- Mobile = 88% of total ad revenue.
- Consistent user growth & engagement.
- Hard year - abuse by nation states, spread of false news + polarization.
- Video continues to grow.
- Investing in both people & AI to prevent false news, hate speech & other abuse.
- Focus on WhatsApp & Messenger to provide more tools for businesses.
- Continued investments in data centers.
- Musical.ly reaches +200M users. → Acquired by ByteDance
- Launch of Messenger Kids
- High turnover with content moderators - usually outsourced

ASSUMPTIONS

- Maintained revenue & operating margin assumptions
- Adding 10% increment to WACC.

FY 2018

Q1

- Advertising driving growth mainly through avg price/ad.
- Mobile represents 91% of ad revenue.
- Investments in security & privacy continue to be top priority.
 - ↳ Require people running political ads to be verified with a govt ID.
- Messaging continues to grow.
- Continue to work with 3rd parties for metric verification.
- Anticipate revenue growth will decelerate throughout the year.
- Click-to-Messenger ads gaining traction.
- Continued growth in Stories.
- Providing users with tools to see why they are seeing certain ads - increase transparency.
- Facing backlash for allowing Cambridge Analytica to access user data w/o explicit permission.
 - ↳ Company investigating 3rd party apps that collect data from users.
 - Impossible to know full extent of misuse → many apps no longer exist.
- Marketers suspended advertising on FB on wake of CA scandal
 - ↳ Many remain on the platform, monitoring the situation to see if it sparks user exodus.
- MZ expected to testify in Congress.
- Large advertisers have shown drop in spending but "long tail" of small to midsize advertisers are unlikely to disappear as they have few other options that generate the same return.
- Tech workers fear poorly crafted or overly burdensome regulation from lawmakers who lack understanding of the internet.

ASSUMPTIONS

- Reduced revenue growth rate as some advertisers reduce spend due to scandal
 - * further regulation could limit future targeting → FB becomes less attractive.
- Maintained operating margin
- Increased WACC variation factor to 15%.

Q2

- Advertising driving growth - mix of avg price & # of ads.
- Mobile represents 91% of total ad revenue.
- Continue focus on safety - created 2 transparency tools.
- Fighting misinformation by getting rid of financial incentives for spammers to create fake news.
- Decline in MAUs in Europe as GDPR is implemented.
- Investments in security are being made on top of other investments.
- Video growth: IGTV, Watch, Stories
- Testing payments in WhatsApp India.
- Working on building new datacenters.
- Launching dating feature.
- Getting rid of "trending topics" which has been controversial & criticized for promoting fake news & political bias.

ASSUMPTIONS

- Maintained all assumptions for revenue, margin & WACC.

Q3

- Advertising driving growth mainly by # of ads delivered.
- Mobile represents 92% of total ad revenue.
- The way people connect is shifting to private messaging & stories.
- See potential monetization of messaging through providing business tools to communicate with customers.
- Early stages of monetizing stories - currently low monetization.
- Video growing dramatically.
- FB overall is generally stable - close to saturation in developed countries while growing rapidly in developing countries.
- Issues with safety & security continue.
 - ↳ Had a 3rd Party Cyberattack that exploited vulnerability in FB's code to steal user access token from ~29M user accounts.
- WhatsApp to introduce ads in status feature & charge companies for every message delivered to potential clients.
- Apple removing Onavo from app store - violates data collection policy
- FB removes app that could have exposed user data to Cambridge Analytica.
- FB to use tech & human reviewers certified by the International Fact checking network to identify & flag false content & will also rely on user feedback
- EU pressuring FB to be more explicit about how it uses user data or face sanctions
- WhatsApp founders had left the company previously. Now IG founders are leaving due to differences.
- FB launches Portal → video calling device with Amazon Alexa.

ASSUMPTIONS

- Maintaining revenue & operating margin assumptions.
- Maintaining WACC incremental 15% variation.

Q4

- Advertising revenue mainly driven by # of ads delivered
- Mobile represents 92% of total ad revenue.
- FB changing way it develops products to focus on preventing harm.
- Working on making all FB products end-to-end encrypted.
- Want to rollout WhatsApp Payments in more countries.
- Launched ads in Messenger Stories.
- Continue investing in AI; makes ads more relevant & effective + identify & review more quickly ads might violate policies.
- Continue to expect revenue growth rate to decrease & expense grow 40-50%
- FB continues to be in the spotlight for past issues with the elections.
- UK Parliament released 250 pages of internal FB emails that show FB executives pursuing hard-honed tactics to stifle competitors & considering monetizing massive amount of data company has on users.
- Advocacy groups are urging the FTC to seek breakup of FB.
- FB user base grew but are spending less time on the app, particularly those aged 18-24
 - ↳ Many are transitioning to IG which is expected to grow 40% in 2019.

ASSUMPTIONS

- Maintaining same assumptions.

FY 2019

- Advertising driving growth through # of ads. Price per ad decreased due to increase of ads in Stories & geographies that monetize at lower rate.
- Mobile = 93% of revenue
- Stories is main contributor to YoY impression growth.
- Advocating for privacy & data laws that are general worldwide.
- Focused on making it easier for ppl to shop directly in FB apps.
 - ↳ Commerce as growing potential monetization stream.
- One-time expense of \$3B accrual taken in connection with FTC probe into platform & user data practices. Remains unresolved - could be \$3B-\$5B.
- Smartphone apps are sharing sensitive data with FB w/o prominent/specific disclosure.
 - ↳ FB told apps to stop sending info it considers sensitive.
- FB shutting down Onavo app
- FB plans to offer end-to-end encryption on all its major products.
 - ↳ Limits FB's responsibility for policing content & blocks govn'ts from accessing encrypted messages.
- CEO MZ directing public outrage towards regulators - company shouldn't be making decisions about harmful speech, political ads & cybersecurity alone.
- FB's shift towards more private, encrypted communication may benefit users but potentially harm developers & advertisers as it limits access to user data & removes visibility.

ASSUMPTIONS

- Maintaining same assumptions.

Q2

- Advertising driving results due to # of ads. Same comment as before with price per ad.
- Mobile represents 94% of total ad revenue.
- Settlement with FTC will have a one-time effect expense of \$5B.
 - ↳ Will also require further investing + increased accountability.
 - ↳ Expect future products to take longer to ship.
 - ↳ Will form independent oversight board for decisions on content.
- Announced new project Libra → cryptocurrency powered by blockchain.
- Shipped Oculus Quest - first all-in-one headset with no wires.
- Introduced automated ads to take guesswork out of creating effective ads.
- Launched new video editing tools to help SMBs to quickly create eye-catching videos with images they already have.
- Started rolling ads in IG Explore.
 - ↳ 50% of accounts discover content of their interest every month through this tab.
- FB stopped paying commissions to employees who sell political ads.
- Faces govn't scrutiny & potential investigation into unlawful monopolistic practices.
- FB plans to double its global advertising spending to rebuild its reputation & work with new creative agencies for brands like WhatsApp & IG.

ASSUMPTIONS

- Maintained revenue assumption.
- Maintained operating margin assumption for growth phase. Reduced for stable phase assuming that it will have to continue with further investments in privacy for the future.
 - ⇒ 35% was Q2's margin before adjustments.
 - ⇒ Google, which is more mature, has averages of around 24-25% op. margin.
- Maintaining assumption for WACC.

Q3

- Advertising continues to drive growth through # of ads. Same comments on price.
- Mobile = 94%.
- New products: FB Dating in US, Threads for IG, FB News, Horizon (VR experience) & hand tracking tech for Oculus.
- FB continues to be source of debate with 2020 elections looming close by.
- Making it easier for SMBs to use FB tools.
- Click-to-Messenger ads in stories
- New wave of interactive advertising using AR.
- Continue to expect growth to decelerate.
- FTC investigating FB's acquisition practices as part of antitrust investigation
- Plans to pay up to \$3M a year to news outlets for the right to use their content in news section.
- FB Marketplace creates false sense of security for users & lacks oversight - breeding ground for scams & payment fraud.
 - ↳ Users selling firearms on Marketplace - FB struggles to enforce its own rules.
- FB competitors speaking with FTC about its hardball tactics
- Libra project lost high-profile backers due to regulatory concerns.
- FB is exempting political ads from fact-checking → employees urge company to reverse this.
 - ↳ Goes against other efforts to fight misinformation.

ASSUMPTIONS

- Maintaining previous assumptions.

Q4

- Advertising driven by # of ads.
- Focused on election integrity for 2020.
- Greatest growth in use comes from messaging, small groups, & disappearing stories where data doesn't stick around forever.
- Commerce & Payments also important for private social platform.
- FB continues to be in the spotlight
 - ↳ Executives viewed messaging apps such as WhatsApp as a threat - not good for antitrust investigation.
 - ↳ Not fact checking political ads causing controversy.
- Banned videos manipulated using advanced tools to combat deepfakes but drew criticism for not going far enough → won't remove most doctored content.
- Abandoned plans to sell ads in WhatsApp
- Announced will remove false claims about cures & prevention methods for coronavirus, block & restrict hashtags used to spread misinformation, alert users about false content & share data with universities to help forecast virus spread.

ASSUMPTIONS

- Maintain previous assumptions.

FY 2020

Q1

- Advertising driven by # of ads.
- COVID lowering advertisement demand.
- Use of all services increased, particularly messaging.
- Partnering with Jio Platforms in India with WhatsApp.
- After initial steep decrease in March, have seen signs for stability in April.
- Removed fake accounts to combat misinformation
- Still allowing posts promoting false COVID cures & conspiracy theories, despite efforts.
- \$5.7B investment in Jio Platforms.
- Messenger Rooms - group video chat for up to 50 ppl.

ASSUMPTIONS

- Slightly reduces revenue growth rate.
- Reduced margins in the short-term.
- Maintained WACC assumption.

Q2

- Advertising being driven by # of ads.
- AI helping police the network.
- Unclear of what impact pandemic will have on business.
- Focused on removing interference for election.
- People are spending more time online - growth driven by SMBs who leverage ad platform to connect with users.
- Algorithms accused of exacerbating polarization & tribal behavior.
 - ↳ Diverse content is attractive for the human brain.
- Advertising agency advising clients to support fully boycott against FB called for by civil rights group.
- Opponents of social distancing groups are using FB to organize & broadcast protests.
- Civil rights advocate met with MZ but left meeting feeling that no progress was made.
- Advertiser who previously boycotted FB started to return. Some brands will extend their boycott but FB's financial outlook remains unaffected.

ASSUMPTIONS

- Maintained previous quarter.

Q3

- Advertising growth through # of ads.
- Continue focus on security & transparency.
- Significant investment in hiring to develop new products.
- Focus on Reels, Messaging & Commerce efforts.
- Pandemic pushing e-commerce adoption.
- MZ actively raising concerns over TikTok's Chinese ownership.
 - ↳ Gained more than 100M users. Biggest threat to FB's social media dominance.
- Apple's privacy changes will affect its ability to place personalized ads
- FTC to launch potential antitrust lawsuit challenging company's dominant position.
- Preparing emergency measures to slow spread of viral content & suppress inflammatory posts in the wake of US election.

ASSUMPTIONS

- Taken back to previous assumptions as impact of pandemic was not that prominent.

Q4

- Advertising driven by # of ads.
- See Apple as one of its biggest competitors.
- Usage starting to normalize after COVID peak
- Headwinds for 2021 include platform changes for iOS, evolving regulatory landscape + continued global uncertainty.
- Launched Reels in +50 countries. Not yet monetizing.
- Offering credit to some advertisers due to measurement issue.
- Facing FTC antitrust issue.
- FB & Amazon were top spenders in lobbying in 2020.

ASSUMPTIONS

- Revenue decreased due to Apple changes.
- Maintained other assumptions.

FY 2021

Q1

- Advertising → Avg price per ad (recovery from COVID + more demand for products vs services)
- Ad targeting & measurement tools limited by changes in regulatory environment + 3rd party mobile operating systems + browsers.
- Will continue to invest heavily in next computing platform.
- Commerce & messaging becoming more important post pandemic.
 - ↳ Digital transformation.
- FB bans news in Australia as government attempted to enforce that they pay publishers.
 - ↳ Lawmakers in UK & Canada criticized this & are thinking of making similar law.
- Engagement declines with fewer DAUs & shorter visit duration which may be exacerbated by Apple's iOS update.

ASSUMPTIONS

- Maintained previous assumption which already contemplated Apple impact.

Q2

- Advertising → Avg price (shift online + COVID Recovery)
- Repurchasing stock
- Video primary way ppl use FB products.
 - ↳ Reels largest contributor to engagement growth in IG.
 - ⇒ Only just making ads in Reels available.
- Click-to-Messenger ads still growing
- Wants to help build the Metaverse.
- FB continues to be in negative spotlight.

ASSUMPTIONS

- All were maintained.

Q3

- Advertising → Avg Price/Ad
- Apple's changes fully implemented
 - ↳ Affects accuracy of ads + measurements.
- Focus on Reels → primary driver of engagement.
- TIKTOK → most effective competitor FB has faced.
- Global supply chain issues + labor shortages have affected overall commerce → affects ad spend.
- Online commerce has moderated from covid levels.
- FB again negatively in the spotlight
 - ↳ Whistleblower testifies against FB + published internal documents.
- Prominent democratic are denying high paying lobbyist roles from FB.
- FB changing name to meta → focus on the metaverse

ASSUMPTIONS

- Maintain Rev + op. Margin. Increased WACC variation to 20%

Q4

- Reels biggest contributor of engagement.
 - ↳ Focus due to competition.
 - ⇒ will lower revenue in the short term.
- Effect of iOS changes \$10B USD.
- European regulators are using disclosure from whistleblower to push for stricter regulation.

ASSUMPTIONS

- Maintained previous, reduced op. margin as signal loss will lower results.

FY2021

Q1

- Reduced market spending as a result of limitations from iOS
 - ↳ Will grow 1st party understanding of ppl.
- War on Ukraine → access restricted to Russia.
- Investments in servers + datacenters + headcount growth.
 - ↳ Expect expenses to exceed revenue growth rate.
- Video strong source of engagement, especially Reels.
- Shift to recommendations by AI → Discovery engine.
- Reels is growing rapidly but lagging behind TIKTOK.
 - ↳ Most downloaded app of 2021, especially among younger users.
- More antitrust issues.

ASSUMPTIONS

- lower revenue due to macroeconomic + competition.
- Other remain the same.

Q2

- Reduction in demand due to macroeconomics.
- Continued limitations due to iOS.
- Activities shifting back to offline.
- War on Ukraine.
- 2 waves driving business: AI + Metaverse.
 - ↳ AI building recommendation systems.
 - ↳ Metaverse: will not be limited by competitor - will control platform.
- Sheryl Sandberg is leaving.
- Rising inflation + looming recession.
- Are weeding out underperformers.

ASSUMPTIONS

- Maintaining previous.

Q3

- Divest gifify due to regulatory decisions
- Reduced marketer spending
- Reels → main engagement driver but not monetizing at same rate.
- RL investments expected to increase significantly in 2023.
↳ Reels is incremental time spent.
- Plans to cut expenses including layoffs.

ASSUMPTIONS

- Maintained.

Q4

- Layoff ~11,000 employees - more efficient.
↳ Reduced perks + cancelled data center projects.
- Declared "Year of Efficiency"
- Priorities haven't changed - AI & the Metaverse.
- Working on Reels monetization
- Want to become a leader in Generative AI.
- Continues with antitrust issues.

ASSUMPTIONS

- Increase operating margin & revenue.
↳ Efficiency increases margin.
↳ Reels + Messages could increment revenue.

FY 2023

Q1

- Plans to keep restructuring the company - sees efficiency as long-term shift.
↳ Further layoffs planned for 2023
- Revenue impacted by macroeconomics
- Investing in Reels + AI-powered discovery engine.
↳ Reels is growing but monetizes at lower rate.
↳ Discovery engine goes beyond Reels.
⇒ Increases sharing which creates a flywheel.
- +20% of content is recommended. In IG its 40%, especially through Reels.
- Working on products using Generative AI
↳ AI agents for customer service through messaging.
- Metaverse remains important focus.
- Click-to-message ads bring incremental growth.
- AI to create automation for advertisers & better measurement tools.
- Still tough regulatory environment.
- Marketers plan to increase Metaverse budgets.
- Biden wants TikTok to sell app to a buyer the govt can trust.

ASSUMPTIONS

- Revenue: increased as FB sees Reels becoming a tailwind by end of year / beginning of 2024.
↳ Also AI recommendation driving incremental time spent.
↳ Metaverse has positive outlook but since much of its revenues come from advertising, this determines growth rate.
- Operating Margin: increased to current year values as FB strives to be more efficient.
- WACC: reduced to 15% variation as FB behaves like a more mature company.