


iQUANTI

QUARTERLY REPORT

MARCH 2022



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ONE

Performance Marketing Platform Updates

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1.1 Emerging performance marketing trends in Q4 2021

User engagement across digital channels continues to increase. Q4 saw the uptick of digital commerce, driven by the holiday season.

However, users favored channels where they felt they were getting the most value for their time. With users focusing on quality and new formats, marketers now need to adapt and focus on the channels that make the impact for them.

Financial results from Google, Microsoft and social platforms highlighted the correlation of revenue growth to the user growth; the key areas of focus for 2022 will be automation and privacy.

Competition and privacy concerns drive a decline in user engagement across Facebook and Twitter. Pinterest benefits from the holiday season.

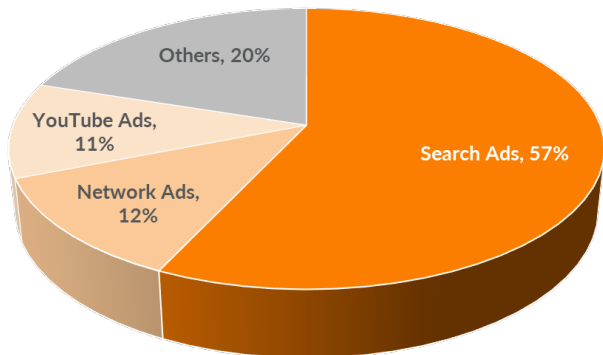
With the privacy changes, targeting on non-search paid media channels is becoming more challenging. This may move advertisers to the search channels, and paid search will get increasingly competitive.

Google launched new offerings to respond to privacy concerns; adoption is still in very early stages.

1.2 Google updates

Google continues growth, driven primarily by Search

- Google saw strong consumer online activity and a broad-based strength in advertiser spend.



- Q4 2021 reported revenues were \$75.3B (32.4% YoY growth).
- Share of ad revenues continue to be strong despite Google's efforts to diversify away from advertising.

	Reported	YoY Growth (%)
REVENUE	\$75.33B	32.4%
SEARCH ADVERTISING REVENUE	\$43B	36%
GOOGLE NETWORK ADS REVENUE	\$9.3B	26%
YOUTUBE ADS REVENUE	\$8.6B	25%
TRAFFIC ACQUISITION COSTS	\$13.4B	

- YouTube growth slowed down compared to Q3'2021 ; slowdown attributed to lapping growth in 2020.
- In Q4 2021, retail was the largest contributor to year-on- year growth of Google ads business. **Finance**, media and entertainment and travel were also strong contributors.

1.2 Google updates

Google continues focus on improving search quality and capabilities through a mix of AI-led upgrades

- Google's focus has been on keeping users coming back to Google for starting searches. From BERT to LaMDA, Google is focused on **improving Search quality**, driven by AI-led upgrades. Google appears to be leaning heavily on user-intent to enhance UX within its platform. As new search capabilities develop, marketers will likely see changes in the way users engage with their content within Google's platform.

LaMDA (Language Model for Dialogue Applications):

During the I/O Conference 2021, Google unveiled LaMDA. As the name suggests, LaMDA is a machine-learning model designed for **dialogue**. LaMDA can engage in a free-flowing way about a seemingly endless number of topics and is expected to revolutionize chatbot technology completely.

MUM (Multitask United Model):

Google also announced their new model **for interpreting user search intent** called MUM. This model is 1000x more powerful than [BERT \(2019\)](#).

MUM is an AI model that can better understand user's feelings, context, and intent. The goal is to reduce the number of queries needed to get users to where they need to be. MUM may eventually enable users to combine voice, text, & image search. For example, "Can I use these boots to hike Mt. Everest?"

- *"Our new AI models are helping to create information experiences that are truly conversational, multimodal and personal. And soon, we'll introduce new ways to search with images and words simultaneously."* - Sundar Pichai(CEO, Google)

1.2 Google updates

Exciting momentum in YouTube, reflecting strength in both direct response and brand advertising

- YouTube's ability to drive both massive reach and action is becoming clearer to more advertisers.
- Shorts, YouTube's short-form video format, continues to drive significant engagement; 5 trillion all-time views and 15 billion views each day globally. This is helping YouTube's creator community reach newer and bigger audiences.
- On the commerce front, the focus has been on making it easier for viewers to buy what they see and simpler for advertisers to drive action with innovative solutions and emerging formats like live commerce. In Q4 2021, Google piloted:
 - Creator Tagging Program (where viewers get a choice to browse, learn and shop products featured in their favorite videos)
 - Shopping live streams (with brands like Walmart and Target) and
 - Product feeds included more globally in video action campaigns
- YouTube has succeeded in bringing the advertisers **the precision of digital with the scale of linear and a lot more relevance**. YouTube's **Video Action Campaigns** were upgraded in October 2021 to automatically include Connected TV inventory, which means users get a more helpful viewing experience and brands get to drive more online sales and/or leads.

Philipp Schindler
(SVP and CBO, Google)

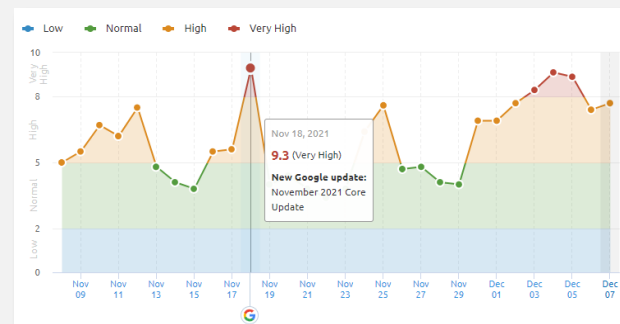
*"In a recent study, DR advertisers who added YouTube branding formats not only drove increased reach, but also averaged **9% more conversions**. At the same time, we see more brand advertisers adding action, like Nike Korea, which saw higher conversion rates and drove **50% plus incremental reach by adding video action**."*

1.2 Google updates

Multiple algorithm and feature updates have been rolled out that present new opportunities for marketers

Q4 2021 saw some major algorithm updates roll out – including the **November Core Algorithm and page experience updates**. These updates highlight **how improving user experience in Search continues to be a high priority for Google**.

- The **November 2021 core update** focused heavily on topical relevancy and improving user experience by **prioritizing terms that are more relevant to user intent**. This may lead to decline in performance of terms that do not match intent or are too broad in scope.
- A **Core Web Vitals update** focused on Desktop versions of pages is expected to rollout in late February/early March 2022. Recent research has shown that sites competing in positions 1-3 for any given keyword tend to meet all benchmarks Google has outlined for Core Web Vitals.
- Google has officially finished rolling out its **spam update** as of November 2021.



SERP Volatility. Source: [SearchEngineLand](#)

Implications:

- Continue to optimize and prioritize page experience metrics such as meeting Core Web Vital requirements during Q1 of 2022; target terms that clearly match user-intent for any content being optimized onsite to improve ranking potential; work towards improving authority by routinely cleaning up low-quality links.
- With changes being regularly made to Google's SERP, sites may experience changes in CTRs as Google is making strides to keep users engaged with their platform for longer periods of time.

1.2 Google updates

Google highlights its priorities for 2022

Automation

- Push for Performance Max, Discovery campaigns – simplicity, reach, inventory, conversions
- *“Over 80% of Google advertisers are now using automated bidding to free up time and improve ad performance.” - Jerry Dischler, VP Ads*

Measurement

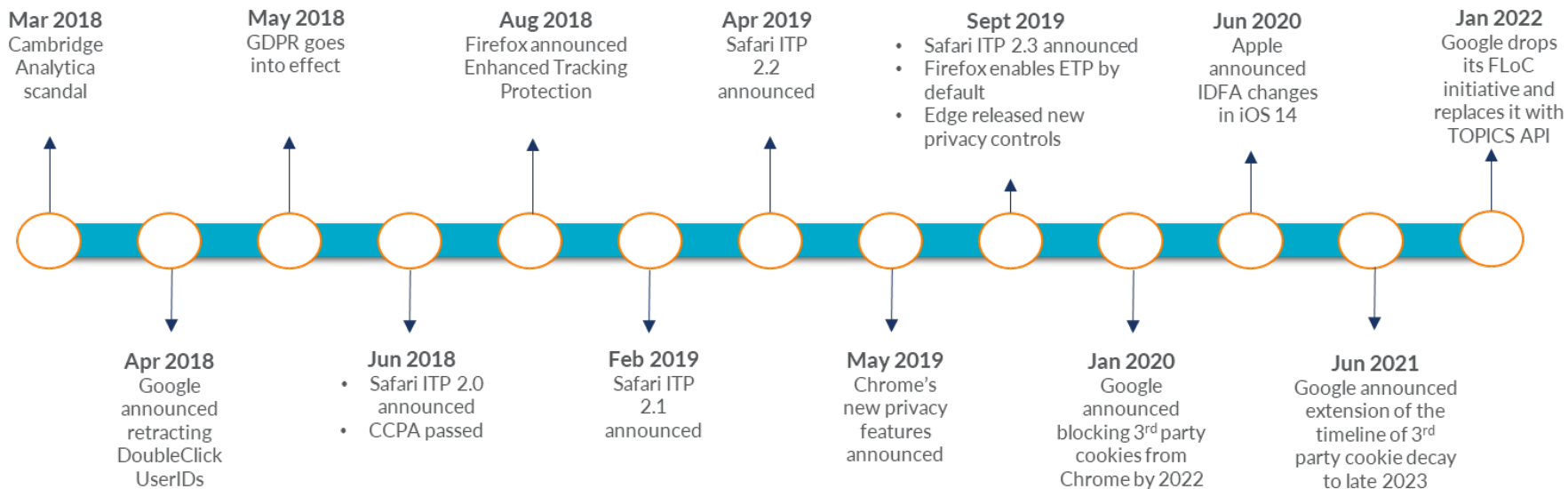
- A privacy-first world and the deprecating third-party cookies are making measurement difficult as identities phase out
- New solutions to privacy and measurement include:
 - Enhanced conversions
 - Consent mode
 - Conversion modeling
 - Data-driven attribution

Privacy

- Privacy takes centerstage as customer and governments across the globe shift their focus
- New privacy playbook to include:
 - Building direct customer relationships
 - Accurate and effective measurement
 - Ad relevancy

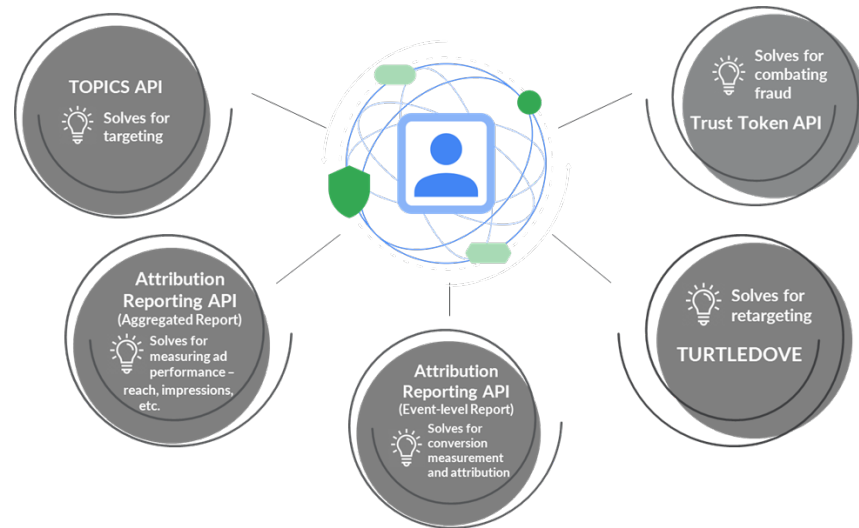
1.3 Analytics platforms and privacy updates

There has been a big shift in the global opinions around user privacy since 2018, leading to changes in the legal and technology landscape



1.3 Analytics platforms and privacy updates

Google is responding with privacy sandbox proposals that solve for different problem statements



The Privacy Sandbox comprises of proposals in the areas of ad targeting, ad delivery, ad performance, and user privacy.

- With **TOPICS API**, the chrome browser will learn about user interests around the web and keep data for the last three weeks of their browsing history, restricting the number of topics to 300.
- **TURTLEDOVE*** is Google's solution to retargeting that is currently done via cookies
- **Trust Token API** will help combat fraud by differentiating between humans and bots
- **Aggregated Reporting API** will help access performance such as reach, impressions, etc. without cross-site tracking the user
- **Conversion Measurement API** proposes a new way of tracking an ad campaign's success by storing how many users took action based on an ad.

*TURTLEDOVE - Two Uncorrelated Requests, Then Locally-Executed Decision On Victory

IN THE NEWS



Privacy Sandbox Rollout Updates

Google replaced the FLoC proposal with **Topics API** for public discussion. This will be Chrome's proposed solution to target advertising to users based on their general interests.



Europe's Move Against Google Analytics

GA was banned in Europe following claims that the platform breached the EU GDPR. IP addresses (classified as personal data) and other identifiers were sent to US in cookie data when using GA.

1.4 Microsoft updates

Customers spend more on Search & News ads; LinkedIn continues to grow

- Microsoft reported a 20% growth YoY; total revenues at \$51.7B
- **Search and News Ads Growth**
 - Ad revenues (excluding TAC) grew 32% with improved customer advertising spend
- **Advertiser demand grows on LinkedIn**
 - LinkedIn revenue grew 37% YoY
 - Growth driven by strong advertiser demand in their Marketing Solutions business, and an improving job market in their Talent Solutions business.
 - During this same time period, LinkedIn sessions grew 22% with record engagement-levels.
- **Continued massive growth in Cloud**
 - Azure, the company's flagship cloud-computing business, experienced 32% revenue growth of \$22.1B
 - Non-Azure cloud services experienced revenue growth of 46%.

1.5 Social platforms updates

User engagement declined; advertiser budgets impacted across social networks

- Facebook saw a decline in the number of daily users for the first time in its history and lost around a million daily users in the last quarter of 2021.
- Macroeconomic challenges and a steeper competition in the space impacted advertiser budgets across Facebook and Twitter.

Investment priorities going into 2022:

Meta highlighted priorities as:

- **Reels:** Focus on evolving and monetizing reels, the fastest-growing content format and the biggest contributor to engagement growth on Instagram and Facebook.
- **Community Messaging:** Focus on promoting real-time conversations within groups and communities – across WhatsApp, Facebook and Messenger; Business messaging is seeing a huge momentum as well.
- **Commerce:** Strategy focused on advertisers' ROI and easier experience on platform for both advertisers and customers; Improved Checkout; Social and immersive shopping experiences; Shops to Groups, and Live Shopping.
- **Ads:** With Apple's iOS changes leading to less personalized ads, new ad formats are being tested. The new 'Click to Messaging' ads are a great way to drive engagement, and is **seeing demand from utilities, financial services, education, and travel verticals.**

Twitter is accelerating their strategy of encouraging the signup of users (25% YoY growth in new account sign-ups or reactivation).

Pinterest's key priorities include creator led and inspirational content. Pinterest also plans to scale native content ecosystem and focus on shopping, ad products and measurement investment – so more avenues for monetizing the platform.



Revenue: \$1.57 billion
up by 22% YoY

Monetizable Daily Active Users: 217MM
up by 13% YoY



Revenue: \$847MM
up by 20% YoY

Monthly Active Users: 431MM
down by 6% YoY



Revenue: \$33.7B
up by 21% YoY

Ad Revenue: \$32.6B
up by 20% YoY

Daily Active Users: 1,93B
down by 5% QoQ



TWO

Industry Updates: Banking & Financial Services

- 2.1 Key takeaways for marketers going into 2022
- 2.2 Broad trends across banking & financial services industry
- 2.3 Key player updates

2.1 Key takeaways for marketers going into 2022

Credit Cards

- Demand for T&E cards will likely continue to grow in 2022, which will drive **more competition for this credit card category**.
 - 9 in 10 Americans have travel plans in next 6 months, and 8 in 10 US companies plan to conduct **business travel** in next 90 days*
- As customers are slowly accumulating balances, the **demand for balance transfer will gradually increase** in 2022.
- We do not expect any immediate impact on credit performance; it will likely continue to stay strong for the next few months. Thus, likely no significant impact on approval rates in the coming months.
- Given the right positioning and branding, **Gen Z and millennials are open to fee-based products**.
- Online spending behavior is here to stay post-pandemic; rewards tied to online shopping will continue to stay attractive for customers

Deposits

- As banks continue to slash and eliminate overdraft fees, it will result in changing expectation for the customers. Customers who did not consider overdraft fees as an important criteria will likely start looking for accounts with no overdraft fees.

Lending

- Home purchase loans will see modest growth in 2022, while refinance originations (\$) are expected to decline by 63% owing to saturation and rising rates.**

2.2 Broad trends across banking & financial services industry

Credit Cards: Positive outlook for 2022 with continued high spending, new account growth, and expected decline in paydown rates

Revenue for large issuers driven by strong sales (25%- 40% sales growth) offset by higher paydown rates. However, loan balances started to grow at a modest pace in H2 2021.

- All major issuers saw strong sales growth driven by new account growth, higher transaction volume in T&E and higher spend-per-transaction driven by inflation:
 - **AmEx (US GCS)** - 37% growth YoY
 - **Discover** - 25% growth YoY
 - **Wells Fargo** - 28% growth YoY
 - **Capital One** - 29% growth YoY
 - **Chase** - 29% growth YoY
- Paydown rates were still higher than pre-pandemic levels but started to go down in H2 2021.
 - **Discover** reported that payment rates leveled off during the quarter but remains 500 BP higher than pre-pandemic levels.
 - **Chase** reported card outstandings were down 8% compared to Q4 '19. The revolving balances bottomed in May '21, however, since then, they have kept pace with the 2019 growth rates.

Strong credit performance with historic low delinquency rates

- Credit performance continues to be strong with historic low receivable write-off and delinquency rate. They are expected to rise as loan balances build; however, even in 2022, they should be below pre-pandemic levels.

Robust growth in T&E, G&S and online spending in Q4 2021

- For **AmEx**, T&E spend reached 82% of pre-pandemic levels in Q4 2021 (consumer or SME).
- AmEx reported increased goods and services spending in Q4, 24% higher than Q4 2019. Small business B2B spending also saw a robust growth in Q4 2021 and was 25% higher than Q4 2019.

Growth in online and card-not-present spending continued, even as offline spending recovered, demonstrating the lasting impact of the behavioral changes accelerated by the pandemic.

2.2 Broad trends across banking & financial services industry: Credit cards

Credit Cards: Major issuers saw strong new acquisitions by deploying varied strategies

- **AmEx** saw strong acquisition numbers and acquired 2.7M new cards (54% increase YoY), driven by an investment of \$1.6B in marketing in Q4 2021, and \$5.3B for the full year.
- **Discover's** approach of focusing on cashback rewards and no-annual-fee value propositions, although in contrast with that of AmEx, proved effective with continued strong sales and account growth in 2021.
- **Wells Fargo** launched two new credit cards – Active Cash and Reflect - in 2021. Wells Fargo is seeing approximately twice as many accounts as before the launch of these cards.
- **Bank of America** is now operating at the same level of new card production as it was pre-pandemic, with roughly 1 million new accounts in the fourth quarter of 2021 alone.

AmEx saw a **high demand for premium fee-based products**, representing 67% of new accounts acquired in the quarter.

Millennials and Gen Z drove the growth in acquisitions representing 60% of new accounts acquired globally.

Positive outlook for 2022

- For 2022, **AmEx** expects an 18-20% revenue growth driven by continued spend & fee revenue growth and assisted by favorable movement on net interest income & travel related revenues.
- **Discover** entered 2022 in a strong position and expects a loan growth in high single digits, driven by continued strong sales trends, contributions from new accounts, and modest decline in the payment rates.

2.2 Broad trends across banking & financial services industry: Deposits

Deposits: Consumers deposited excess liquidity in transaction accounts rather than non-transaction accounts, driving much higher growth for traditional banks than online banks

Double digit deposit growth across top four banks

- **Wells Fargo** saw 27% higher balances than pre-pandemic levels but down 10% from Q3 '21.
- **Bank of America** has seen growth in balances across most of the segments in every month in H2 '21. Strong new account growth with net new checking accounts that have grown in each of the past 12 quarters.
- **Online banks** saw a modest to negative YoY growth in deposit balance, due to higher proportion of interest-bearing balances.
- **Discover** saw negative growth in balances YoY, driven by CD balances.
- **Large regional banks were middle-of-the-pack in terms of deposit growth, likely driven by mix of customer segments.**

Banks move away from overdraft fees, driven by pressure from Biden-era regulators as well as CFPB

- **JPMorgan Chase** gave customers an extra business day to avoid overdraft fees.
- **Bank of America** announced that it will slash its overdraft fee from \$35 to \$10.
- **Wells Fargo** announced new efforts in 2022 to help customers avoid overdraft fees and cover short-term cash needs, building on other changes they have made over the last several years.
- **Truist One Banking**, expected to launch in summer of 2022, will eliminate NSF fees, negative balances and overdraft protection transfers.

	Average Customer Deposits (Q4 '21)	% Growth in Average Customer Deposits (From Q4 '20)
Large National Banks		
JP MORGAN	\$1,094B	21%
BANK OF AMERICA	\$1,026.8B	16%
WELLS FARGO	\$864.4B	13%
CITI (NA)	\$214B	13%
Online Banks		
CAPITALONE	\$253.3B	2%
ALLY BANK	\$141.5B	3.3%
DISCOVER	\$72.4B	(6%)
Large Regional Banks		
TRUIST	\$410.9B	9.5%
PNC*	\$262.8B	30.9%
FIFTH THIRD	\$167.3B	6%
US BANK	\$445B	6.5%

*PNC's growth numbers include acquisition of BBVA

2.2 Broad trends across banking & financial services industry: Loans

Loans: Overall loan balances significantly lower in Q4 '21 due to PPP loan forgiveness and decline in mortgage activity

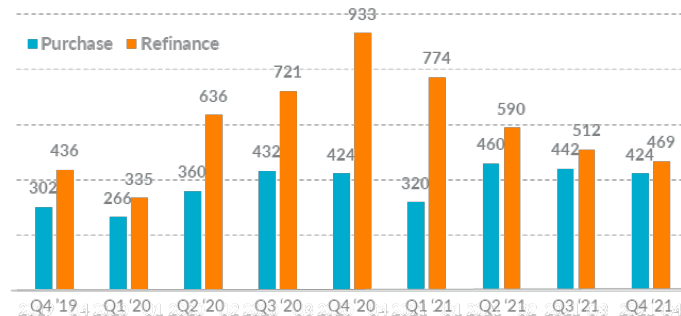
Mortgage loan average balances trends were down YoY in Q4 '21 as a result of decreased refinance activity due to market saturation post last year's rate cuts; purchase volumes remain constant

- **Wells Fargo** reported a 19% YoY and 1% QoQ drop in average mortgage loan balances in Q4 '21. They also had an 11% YoY and 7% QoQ drop in mortgage originations.
- **Bank of America** average mortgage balances declined 6.6% YoY.
- **US Bank** average residential mortgage balances dropped 1.2% YoY and home equity and second mortgages balances dropped 17.5% YoY.
- **Citibank's** North America GCB average mortgage balances dropped 8% YoY. They also reported a 27% drop in mortgage originations YoY.
- In contrast to the market's trends, **Chase** experienced strong originations (30% YoY) in home lending in Q4, driven by both purchase and refinance volumes. However, average loan balances dropped 1.3%.

Small business loan average balances drop drastically Q4 '21 due to PPP loan forgiveness and small businesses temporarily closing

- **Wells Fargo** reported a 13% YoY and 17% QoQ drop in average small business loan balances in Q4'21.
- **Bank of America** average small business loan balances declined 34% YoY, and 19%,QoQ.

Mortgage Originations (in Billions)



Small Business Loan Average Balances	Q4 '21	QoQ growth	YoY growth
BANK OF AMERICA	\$22B	-18.5%	-33.3%
WELLS FARGO	\$12.5B	-17%	-13%

2.2 Broad trends across banking & financial services industry: Loans

Loans: Commercial loan balances trend down; auto loan balances grow steadily

Major banks' commercial loan balances trend down due to PPP loan forgiveness and paydowns

- **Bank of America** saw an average loan balance growth in commercial loans of 1.2% YoY during Q4 '21, driven by paydowns.
- **JP Morgan Chase** and **Wells Fargo** reported a drop in YoY growth of average commercial banking loans in Q4 '21.
- **US Bank** reported a YoY decline in total commercial loans, driven by expected forgiveness of SBA Paycheck Protection Program loans. Total commercial real estate loans were down 3.1% YoY as a result of paydowns.

Banks saw a steady growth in auto loan balances despite lack of vehicle supply

- **Wells Fargo** saw a 14% YoY hike and **Bank of America** reported a 4.3% YoY growth in average auto loan balances in Q4 '21.
- **Chase's** auto loans remained elevated, up 1.2% YoY, although a lack of vehicle supply slowed originations.
- **CapitalOne** average auto loans grew 13% YoY. **Fourth quarter auto originations were up 32% YoY**, the growth being led by their digital capabilities and deep dealer relationship strategy build with the help of their new Auto Navigator product.

Student loan originations and balances rise on a yearly basis

- **Sallie Mae** student loan balances by up 6% YoY. They also reported an YoY origination growth of student loans by 2%.
- **Discover** reported an increase of 6% in student loans YoY along with stable credit performance at low levels and strong originations.

Commercial Loan Average Balances	Q4 '21	QoQ growth	YoY growth
BANK OF AMERICA	\$167B	4.4%	1.2%
US BANK	\$104.5B	2.60%	-1.80%
CHASE	\$205.6B	1.5%	-3.1%
WELLS FARGO	\$184.6B	3%	-3%

Auto Loan Average Balances	Q4 '21	QoQ growth	YoY growth
BANK OF AMERICA	\$49B	2.1%	4.3%
CHASE	\$86.2B	-0.3%	1.2%
WELLS FARGO	\$55.8B	5%	14%

Student Loans Ending Balances	Q4 '21	QoQ growth	YoY growth
DISCOVER	\$9.9B	-0.7%	1.60%
SALLIE MAE	\$19.6B	-4.5%	6%

2.2 Broad trends across banking & financial services industry: Digital trends

Digital trends: Banks continue to enhance the capabilities of their digital assistants and servicing to build better digital engagement

We see consistent growth in customers' online behavior post pandemic, indicating that this behavior is here to stay. Brands are adding more digital capabilities to their platforms to keep customers engaged.

- **Wells Fargo** continued to see higher mobile engagement, up 7% YOY. In Q4 '21, they announced, a rebuilt mobile experience which will begin rolling out in Q1 2022, which will include an all-new virtual assistant – **Fargo**.
- **Discover** has made investments in machine learning to provide faster and better insights to improve customer personalization.
- On the retail side, **Chase** has been able to digitalize existing product offerings with applications like **Chase MyHome**.
- **Erica**, **Bank of America's** digital financial assistant, completed more than 400 million requests from clients in 2021. **Half of their consumer sales were digital in Q4 '21**. 86% of all the check deposit transactions are now digital. Customers have used **Zelle** to transfer \$65B in Q4 '21.
- **U.S. Bank** Smart Assistant helps complete banking tasks at voice command and helps analyze their spends across the board.

Share of Digital Banking Sales	Q4 '19	Q4 '20	Q4 '21
BANK OF AMERICA (share of banking sales)	32%	45%	49%
US BANK (share of total transactions)	70%	77%	81%
TD BANK (share of self serve transactions)	69.8%	79.7%	79.2%

Active Digital Customers	Q4 '19	Q4 '20	Q4 '21
BANK OF AMERICA	38.2M	39.3M	41.3M
US BANK	30.3M	32M	33M
TD BANK	52.4M	55.3M	58.8M
US BANK (share of Digital Active Customers in total customers)	73%	77%	80%

2.3 Key player updates



Citi divesting from other markets; likely to bring more focus to the North American market

- Solid client engagement and fee growth across Institutional Clients Group (ICG).
- Strong results in Investment Banking with share gains in Advisory and Equity Underwriting.
- Solid momentum in North America Branded Cards underlying drivers with **new accounts up 43% and card spend volume up 24%**.
- North America Citigold households up 9% and AUMs up 8%; Asia Wealth hubs AUMs up 13%
- Deposits and AUM continued to grow, with digital deposits up nearly 20% for the full year
- About 750 private bank clients and 45,000 Citi Gold clients added in 2021.
- Strong credit performance, with net credit losses declining on a year-over-year basis and nonaccrual loans down sequentially and year-over-year.

CITI Q4 2021	
Revenue	\$17B
Average Customer Deposits	\$214B (13↑% vs Q4'20)
Average Digital Deposits	\$20B (19↑% vs Q4'20)
Average Credit Card Loans	\$85B (3↑% vs Q4'20)
Average Mortgage Balances	\$49B (8↓% vs Q4'20)

2.3 Key player updates

JPMORGAN
CHASE & CO.**Strong Q4 '21 with 21% consumer deposit growth and 6% loan growth, driven by credit card loans' growth**

- Chase reported card sales volume growth of 29% YoY. The revolving balances bottomed in May '21, however, since then they have kept pace with the 2019 growth rates.
- Chase experienced strong originations (30% YoY) in home lending in Q4 (highest since Q4'20), driven by both purchase and refinance volumes. However, average loan balances dropped 1.3%.
- Chase deposits were up 20% YoY and 4% QoQ.
- Chase's auto loans remain elevated, up 1.2% YoY, although a lack of vehicle supply slowed originations to \$8.5B.
- Active mobile customers up 11% YoY.
- Invested in innovative products and marketing: Chase Ultimate rewards, MyChaseLoan and MyChasePlan.
- Continued to invest in technology stack to quickly build and deploy best-in-class products across businesses with focus on tech modernization and data strategy
 - Digitalized mortgage experience with Chase MyHome
 - Built cloud-native digital bank (Chase UK)
 - Full-service Macro trading platform for clients with Execute
 - Payment services with Onyx and Real-Time Payments (RTP).

JPMorgan Chase Q4 2021	
Revenue	\$30.3B
Average Customer Deposits	\$1094B (21↑% vs Q4 '20)
Average Credit Card Loans	\$254.1B (29↑% vs Q4 '20)
Average Mortgage Balances	\$183.3B (1.3↓% vs Q4 '20)

2.3 Key player updates



Results driven by strong organic growth, record levels of digital engagement; strengthened position as the leader in retail deposits

- Organic Client Growth: Added ~901,000 net new Consumer checking accounts and ~525,000 new Consumer investment accounts in 2021, up 64% and 24%, respectively, compared to 2019.
- Average loan and lease balances were up \$10B to \$945B; ending balances were up \$51B to reach \$979B, led by strong commercial loan growth as well as higher card balances.
- Average deposits grew \$142B, or 16%, to more than \$1T.
- Digital adoption, sales & volumes:
 - 70% of overall households actively using digital platforms.
 - 1.5M digital sales, accounting for 49% of total sales.
 - Consumers logged into BofA's digital channels more than 2.7B times in Q4 '21.
 - Erica, the digital financial assistant, completed more than 400 million requests from clients in 2021.
 - Half of the consumer sales were digital in Q4 '21. 86% of all the check deposit transactions are now digital.
 - 15.8M active Zelle® users, now including small businesses, sent and received 218M transfers worth \$65B, up 39% and 53% YoY, respectively. The number of Zelle transactions now surpasses the checks written by consumers.
 - Clients booked ~764,000 digital appointments.

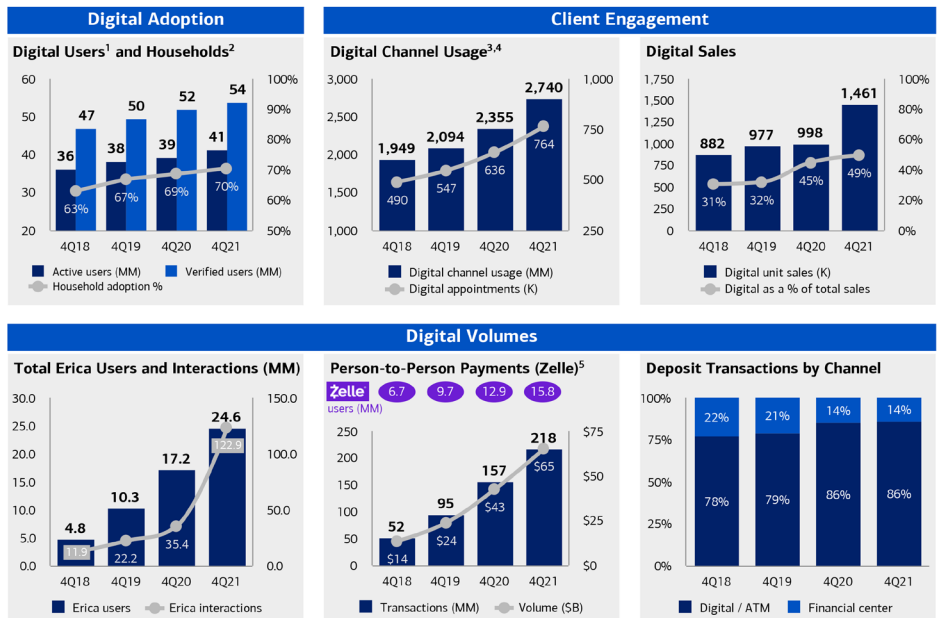
Bank of America Q4 2021	
Revenue	\$22.1B
Average Customer Deposits	\$1026.8B (16↑% vs Q4 '20)
Average Credit Card Loans	\$78.4B
Average Mortgage Balances	\$113B (6.6↓% vs Q4 '20)

2.3 Key player updates



BANK OF AMERICA

54 million verified digital users in Q4 2021; with 41 million active



Note: Amounts may not total due to rounding.

¹Digital active users represents mobile and/or online 90-day active users; verified users represent those with a digital identification and password.

²Household adoption represents households with consumer bank login activities in a 90-day period.

³Digital channel usage represents the total number of desktop and mobile banking sessions.

⁴Digital appointments represent the number of client-scheduled appointments made via online, smartphone or tablet.

⁵Includes Bank of America person-to-person payments sent and received through e-mail or mobile identification. Zelle users represent 90-day active users.



2.3 Key player updates

WELLS
FARGO**Renewed strategy & launch of two new credit card products in 2021 helped double acquisitions**

- Average loans were down \$24.7B, or 3% YoY, and up \$21.B from Q3 2021, including a \$16.3B increase in commercial & industrial (C&I) loans.
- **Reported strong credit card related spending in Q4 '21, up 28% from 2020, and 27% from 2019.** This increase was from both higher transaction volume as well as higher spend-per-transaction and higher spend in categories such as travel. Holiday sales were strong with spending up 31% the three weeks leading up to Thanksgiving and that momentum continued post-Thanksgiving.
- Launched new credit cards – **Active Cash** and **Reflect** in 2021. It is seeing approximately twice as many accounts as before launch of these cards.
- Deposits were up 7% YoY. Consumers continue to have more liquidity than prior to the pandemic, though we do see this declining as the median balances today are 27% higher than pre-pandemic levels but are down 10% from the third quarter.
- Reported a 19% YoY and 1% QoQ drop in average mortgage loan balances in Q4 '21. They also had an 11% drop in mortgage originations YoY. Their mortgage originations declined 7% from the Q3 '21.
- Wells Fargo **continued to see higher mobile engagement**, up 7% YoY. They announced a rebuilt mobile experience which will begin rolling out in Q1 2022, which will include an all-new virtual assistant – **Fargo**.
- In Q4, customers logged in 1.6B times using a mobile device, up 7% YoY.

Wells Fargo Q4 2021	
Revenue	\$20.8B
Average Customer Deposits	\$864.4B (13↑% vs Q4 '20)
Average Credit Card Loans	\$29.4B (28↑% vs Q4 '20)
Average Mortgage Balances	\$214.9B (19↓% vs Q4 '20)

2.3 Key player updates



Focusing on millennials and GenZ and premium fee-based products drives strong acquisition growth

- AmEx saw a high demand for premium fee-based products, representing 67% of new accounts acquired in the quarter.
- On credit cards, at roughly 1 million new accounts in the fourth quarter alone; now operating at the same level of new card production as it was pre-pandemic.
- Accelerated spending activity
 - For AmEx, the revenue drivers were increased overall spending (including Travel & Entertainment) and card fee revenue.
 - For 2022, AmEx expects a 18-20% revenue growth driven by continued spend and fee revenue growth, assisted by favorable movement on net interest income and travel related revenues.
 - For AmEx, T&E spend reached 82% of pre-pandemic levels in Q4 (consumer or SME).
 - AmEx reported increased goods and services spending in Q4, 24% higher than Q4 '19.
 - There was a robust growth in small business B2B spending in Q4 2021, 25% higher than Q4 '19.

American Express saw strong acquisition numbers and **acquired 2.7 million new cards (54% increase YoY)**, driven by an **investment of \$1.6B in marketing in Q4 '21, and \$5.3B for full year.**

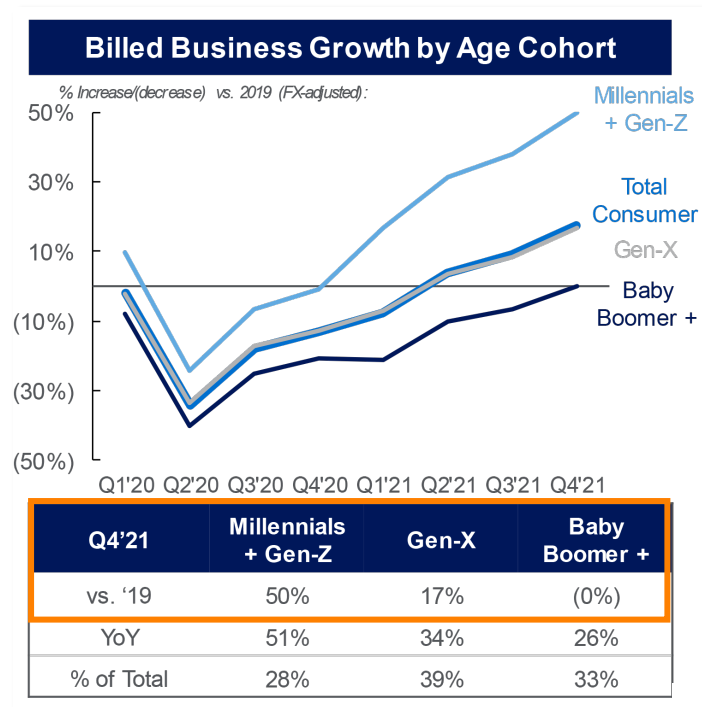
American Express Q4 2021

Revenue	\$12.1B
Average Credit Card Loans	\$82.9B (16% ↑ vs Q4 '20)

2.3 Key player updates



Millennials and Gen Z drove the growth in acquisitions representing 60% of new accounts acquired globally in 2021



2.3 Key player updates



29% credit card sales growth, 32% auto loan origination growth and 2% average deposit growth YoY

- Ending loans grew 10% in domestic cards segment, 7% in commercial, and 1% in consumer banking.
- Average loans outstanding increased \$12.6B to \$272.8B.
- Credit card purchase volumes for Q4 2021 was up 29% YoY and up 30% compared to the fourth quarter of 2019.
- Ending loan growth was the result of the strong growth in purchase volume, as well as the traction they are getting with new account origination and line increases, partially offset by continued high payment rates.
- Strong loan growth in consumer banking business continued in Q4 2021, driven by auto. Q4 ending loans increased 13% YoY in the consumer banking business. Average loans also grew 13%.
- Fourth quarter auto originations were up 32% YoY.

CapitalOne Q4 2021	
Revenue	\$8.1B
Average Customer Deposits	\$253.3B (2↑% vs Q4 '20)
Average Credit Card Loans	\$108.5B (5↑% vs Q4 '20)

2.3 Key player updates



Continued strong credit card sales and account growth; benefits offset by sustained high payment rates

- Strong credit card sales (25% growth YoY) and account growth (23% YoY and 13% compared to 2019) in 2021.
- Lot of the benefits from sales and new accounts were offset by sustained high payment rate. Payment rates leveled off during the quarter but remains 500 BP higher than pre-pandemic levels.
- Focus on cashback rewards and no annual fee value propositions drove growth.
- Quickly pivoted to account acquisition and brand investment as economy began to recover:
 - New accounts up 13% over 2019 and up 23% YoY.
 - Accounts acquired in 2021 will contribute to more robust loan growth in 2022.
 - Expects a credit card loan growth in high single digits, driven by continued strong sales trends, contributions from new accounts, and modest decline in payment rate.
- Made investments in machine learning to provide faster and better insights to improve customer personalization. Also invested in making advancements to the data and analytics platform, enhancing capabilities in areas including targeting, collections and fraud detection.

Discover Q4 2021	
Revenue	\$2.9B
Average Credit Card Loans	\$71.8B (3↑% vs Q4 '20)

2.3 Key player updates

DISCOVER Significant sales volume increase in gas, retail and restaurant categories

Quarterly Sales Volume Trend 2021 vs. 2019 (%)						
	FY20 Sales Mix	FY21 Sales Mix	1Q21	2Q21	3Q21	4Q21
Gas	4%	5%	7%	9%	29%	42%
Grocery	11%	9%	18%	24%	26%	28%
Retail	40%	39%	37%	41%	38%	40%
Restaurants	7%	8%	8%	30%	33%	41%
Services	18%	18%	10%	20%	25%	29%
Travel	4%	6%	(41)%	(8)%	1%	5%
All Other	16%	15%	10%	14%	17%	16%
Total Sales Volume	100%	100%	15%	24%	27%	31%

Category Definitions

- Services includes entertainment, auto, education, medical, and other service providers
- All Other includes discount stores, drug stores, wholesale clubs, telecommunication, utilities, insurance, financial services and government

2.3 Key player updates



Modest growth in credit card sales and deposits compared to other large banks and issuers, who saw double-digit growth

- Strong deposit growth supported related investment portfolio and cash balance strategies to optimize asset sensitivity going into 2022.
- 80% of overall users were digital in Q4 '21, as opposed to 73% in Q4 '19. 81% of total transactions were digital.
- Acquired TravelBank, a San Francisco-based fintech company that provides an all-in-one, tech-driven expense and travel management solution.
- Acquired PFM Asset Management, which not only increased US Bank's assets under management, but has enhanced their position in a niche area within the money market world.
- Average residential mortgage balances dropped 1.2% YoY and home equity and second mortgages balances dropped 17.5% YoY.
- Reported a decrease in total commercial loans 1.8% driven by expected forgiveness of SBA Paycheck Protection Program loans and lower total commercial real estate loans 3.1% was a result of paydowns
- Have a positive outlook for 2022 given improving client sentiment and business conditions, and continued strength in certain focused commercial portfolios, such as ABS lending and supply chain financing.

US BANK Q4 2021	
Revenue	\$5.7B
Average Customer Deposits	\$449.8B (6.5↑% vs Q4 '20)
Average Credit Card Loans	\$22.4B (2↓% vs Q4 '20)
Average Mortgage Balances	\$75.8B (1.2↓% vs Q4 '20)



THREE

Industry Updates: Investment and Wealth Management

3. Broad trends across the investment & wealth management space

Wealth and Investment Management market's growth picks up again in Q4 2021

- Majority of the wealth and investment management brands reported an increase in assets under management during Q4 '21 led by increased market valuation of assets, further supported by net asset flows.
- Q4 '21 also saw a large chunk of AUM increase coming from new asset addition for brands.
 - Morgan Stanley, JP Morgan and Goldman Sachs reported 42%, 46% and 65% respectively of AUM increase coming from new assets addition.
- Net new account opening is getting closer to pre-pandemic levels** as advisers are meeting in person more with clients and are building their pipelines back following the shutdown during the pandemic.
 - Merrill Lynch Wealth Management added ~6700 net new households (compared to 4200 in Q3 '21); Private Bank added 500 (Compared to 275 in Q3 '21) net new relationships.
 - Schwab reported 1.3 million new accounts added in Q4 '21.

	Total Assets (End of Q4 '21)	%age Growth (From Q3 '21)	%age Growth (From Q4 '20)	New Assets Added (Q4 '21)
CHARLES SCHWAB	\$8.14T (+\$524B)	7%	22%	\$134.6B
MORGAN STANLEY	\$4.9T (+\$301B)	7%	23%	\$127.1B
JP MORGAN	\$3.1T (+\$117B)	4%	15%	\$54B
BANK OF AMERICA	\$3.84T (+\$158B)	4%	14.6%	\$21.5B
GOLDMAN SACHS	\$2.47T (+\$98B)	4%	15%	\$64B
WELLS FARGO	\$2.18T (+\$92B)	4%	11%	-
UBS	\$4.51T (+\$16B)	3.6%	10%	\$27B
ROBINHOOD	\$98B (+\$3B)	3%	55%	\$4B

3. Broad trends investment and wealth management space

Brands continue with acquisition initiatives to add to their offerings and capabilities

Acquisitions

- **UBS** entered into an agreement to acquire Wealthfront, an industry-leading, digital wealth management provider, for a cash consideration of \$1.4B.
 - This acquisition is aligned with their growth strategy in the Americas, will broaden the reach among affluent investors and add a new digital-first offering increasing distribution capabilities.
 - They currently have >470k clients with >27bn AuM.
- **Robinhood** announced it will acquire Cove Markets, a cross-exchange cryptocurrency trading platform. The deal is intended to help crypto investors manage their cryptocurrency accounts in simple and cost-effective ways.

Digital Initiatives

- Charles Schwab enhanced the digital onboarding experience for new accounts opened by the independent advisors who custody with Schwab.
 - They also expanded their access to Schwab Advisor Portfolio Connect® , proprietary portfolio management capability.
 - They also introduced the Schwab Starter Kit™, a new experience designed to support first-time investors with tailored educational content and tools.
- JPMorgan Chase became the first bank in the United States to enter the metaverse. They have opened a virtual lounge named “Onyx lounge” in Decentraland, based on blockchain technology.
- Robinhood has continued to improve the product experience by
 - Adding contextual in-app education.
 - Rolling out Crypto Gifts and recurring investments.
 - Opening up access to IPOs.
 - Giving customers a voice with the companies they invest in through the acquisition of Say Technologies and the integration of its Q&A platform into the Robinhood app.

2.2 Key player updates

Robinhood Stayed strong on growth trajectory; focus on improving product experience, educational content and crypto capabilities

Crypto engagement at record levels

- Robinhood successfully completed alpha testing on Crypto Wallets and has launched a public beta, which will continue to provide valuable insights as the company **prepares for a full launch of wallets** in Q1 '22.
- During the holiday season, Robinhood launched **Crypto Gifts**, which enables customers to send crypto to family and friends.
- Robinhood announced it will acquire **Cove Markets**, a cross-exchange cryptocurrency trading platform.

Prioritized customer service

- Continued to improve experience for customers, and introduced Options Alerts, Options Watchlist and made it simpler to roll option contracts.
- Launched Automated Customer Account Transfer Service ("ACATS") to limited users. The feature allows customers to transfer assets from other brokerages into Robinhood. The company will continue to improve the experience and expand the availability to all customers in Q1 2022.
- Introduced first trade recommendations to all new customers who have yet to place a trade, helping users get started with a diversified ETF portfolio based on their risk profile and investment objectives.

Robinhood		
Revenue	In Q4 2021	\$363M (↑14% vs Q4 '20)
Assets Under Management	Overall (in 2021)	\$98B
	In Q4 2021	\$3B (↑55% vs Q4'20)
Total Accounts	Overall (in 2021)	22.7M

2.2 Key player updates



BANK OF AMERICA

Record levels of client balances, led by higher Merrill Lynch acquisition numbers

- Bank of America reported record client balances of \$3.8T in Q4 2021. The growth was led by the higher Merrill Lynch acquisition numbers as a result of more frequent in-person client interactions.
- Merrill Lynch Wealth Management added ~6700 net new households (compared to 4200 in Q3 '21); Private Bank added 500 (Compared to 275 in Q3'21) net new relationships.
- 15% YoY growth of AUMs driven by higher market valuations and \$149B in client flows in 2021.

Digital usage continued to grow

- 79% of Merrill Lynch households are now actively using online or mobile platforms. Private Bank reported record 85% of clients as digitally active.
- Erica interactions up 418%; Zelle® transactions up 45%.
- Digital wallet transactions up 60%
- 100% associate adoption of Erica-based AI workstation.

Bank of America		
Revenue	In Q4 2021	\$5.4B
Assets Under Management	Overall (in 2021)	\$3.84T
	In Q4 2021	\$158B (↑14.6% vs Q4'20)
Net New Inflows	Overall (in 2021)	\$21.6BM

2.2 Key player updates



UBS Continued to expand its US reach; focus on digital capabilities and acquisitions

Key acquisition

- In January 2022, UBS acquired **Wealthfront**, an industry-leading digital wealth management provider. This acquisition is aligned with their growth strategy in the Americas. This move is also expected to broaden reach among affluent investors and add a new digital-first offering, increasing distribution capabilities.

Focus on digital capability addition with

- Personalized digital investment offerings and financial planning
- Digital-first, advisor-assisted model for clients seeking remote human advice
- Integrated suite of banking products.
- Asset Management operating income decreased 7% YoY, as an increase in net management fees was more than offset by a decrease in performance fees to a more normalized level (compared to the particularly high levels in Q4 '20).
- Wealth management operating income increased 13% YoY. Recurring net fee income increased by 17%, primarily driven by higher average fee-generating assets, reflecting positive market performance and net new fee-generating assets.

UBS		
Revenue In Q4 2021	Wealth Management	\$4.8B
	Asset Management	\$721M
Assets Under Management (Overall in 2021)	Wealth Management	\$3.3T
	Asset Management	\$1.21T
Net New Inflows In Q4 2021	Wealth Management	\$27B
	Asset Management	\$16.2B

2.2 Key player updates



Record growth in 2021, driven by the acquisition of TD Ameritrade.

- Net income \$1.6B; total client assets reached a record \$8.14T by end of 2021, up 22% vs. December 2020.
- Core net new assets set yet another record over the final three months of 2021 at \$162.2B. Investors remained actively engaged with the markets throughout the year.
- Ended the year with \$8.14T in client assets across 33.2 million brokerage accounts, increases of 22% and 12%, respectively.

Latest Updates

- Enhanced the digital onboarding experience for new accounts opened by the independent advisors who custody with Schwab and expanded their access to Schwab Advisor Portfolio Connect®, proprietary portfolio management capability.
- Introduction of the Schwab Starter Kit™, a new experience designed to support first-time investors with tailored educational content and tools.

Charles Schwab		
Revenue	In Q4 2021	\$4.7B (↑13% vs Q4'20)
Assets Under Management	Overall (in 2021)	\$8.14T
	In Q4 2021	\$524B (↑22% vs Q4'20 & ↑7% vs Q3'21)
New Brokerage Accounts	In Q4 2021	1.31M
Average Daily Trades	In Q4 2021	6.11M (↓5% vs Q4'20)

2.2 Key player updates

Morgan Stanley **Record growth in 2021; acquired E*TRADE and Eaton Vance**

- Wealth Management business added net new assets of \$438B and total client assets under management were \$4.9T, up 23% from a year ago.
 - Revenue increase reflect higher asset levels, driven by market appreciation and strong positive fee-based flows.
- Investment Management reported full year net revenues above \$6B, driven by strong fee-based asset management revenues on record AUM of \$1.6T.
 - Fees increased from a year ago driven by the Eaton Vance acquisition, higher performance fees, and higher average AUM.
- Long-Term Net Flows increased from (\$2.3)B in Q3 '21 to (\$1.1)B in Q4 '21, led by fixed income and alternate solutions; offset by equity outflows.
- Focused on areas of client demand, such as customization (specifically, direct indexing through the premier Parametric brand), sustainability and alternatives.
- ~\$25 billion wealth management Client Asset Referrals in 2021; ~\$14B flows & commitments into investment management in 2021.

Morgan Stanley		
Revenue	In Q4 2021	\$14.52B (↑23% vs Q4'20)
Institutional Securities		\$6.7B
Wealth Management		\$6.2B
Investment Management		\$1.7B
Assets Under Management	Overall (in 2021)	\$4.9T
	In Q4 2021	\$301B
Advisor led AUM		\$3.88T
Self Directed AUM		\$1.04T
Workplace AUM		\$509B
Average Daily Trades	In Q4 2021	1,044,000

2.2 Key player updates

BlackRock

Continued growth in 2021; focus on technology investments to help clients construct resilient whole portfolios

- 20% increase in full year revenue; includes record organic growth, record performance fees and continued growth in technology services revenue.
- \$540B total net inflows in 2021, reflects 6% organic asset growth and 11% organic base fee growth, led by record flows in ETFs and active strategies.
- \$212B quarterly total net inflows positive across all client types, investment styles and regions.
- Investment advisory, administration fees and securities lending revenue increased \$25M from the third quarter of 2021, primarily driven by organic growth and the positive impact of market beta on average AUM, partially offset by lower securities lending revenue and the negative impact of foreign exchange movements.
- Securities lending revenue of \$136M decreased from \$152M in Q3 '21, primarily reflecting lower asset and liability spreads.
- BlackRock continued to invest in technology to scale its operations and support future growth, including completing Aladdin cloud migration, delivering new Aladdin capabilities and continuing to open the platform to promote client innovation.

Blackrock		
Revenue	In Q4 2021	\$5.1B (↑14% vs Q4'20)
Assets Under Management	Overall (in 2021)	\$10T
	In Q4 2021	\$0.53T (↑15% vs Q4'20)
Net New Inflows	In Q4 2021	\$212B

2.2 Key player updates

JPMORGAN CHASE & CO. **Ranked first for Global Investment Banking fees with 9.5% wallet share for 2021**

- JP Morgan reported assets under management of \$3.1 Tn in Q4'21 and continued making strategic investments and spends in its technology capabilities.
- Reported assets under management of \$3.1T, up 15%, driven by cumulative net inflows, as well as higher market levels.
- Total markets revenue of \$5.3B, down 11%, with Fixed Income Markets down 16% and Equity Markets down 2%.
- Hired >2,000 new sales/coverage bankers and client advisors across all LOBs to better penetrate geographies and sectors to continue to grow share.
- Spent over \$12B annually on its global technology strategy, innovation driving business elements and acquisitions for its client facing products.

JP Morgan Chase		
Revenue	In Q4 2021	\$4.47B (↑16% vs Q4'20)
Assets Under Management	Overall (in 2021)	\$3.1T
	In Q4 2021	\$117B (↑15% vs Q4'20)
Net New Inflows	In Q4 2021	\$33B

2.2 Key player updates

Growth story continues across the board

WELLS FARGO

- Wells Fargo reported a revenue growth of 6% in Q4 '21, primarily due to higher asset-based fees on higher market valuations.
- Total client assets increased 9%, primarily driven by higher market valuations.
- Net interest income declined as a result of the impact of lower interest rates, partially offset by higher deposit and loan balances.

Wells Fargo		
Revenue	In Q4 2021	\$3.6B (↑6% vs Q4'20)
	Overall (in 2021)	\$2.18T
Assets Under Management	In Q4 2021	\$92M (↑9% vs Q4'20)

Vanguard

- Vanguard has more than 30 million investors, in about 170 countries, as of January 30, 2022
- About \$8.5T in global AUMs reported by end of 2021.
- Vanguard completed acquisition of **Just Invest**, a provider of tax-managed, tailored wealth management technology. The acquisition adds direct indexing, or personalized indexing, capabilities to bolster Vanguard's world-class investment product line-up and service offering for advisors.

Vanguard		
Assets Under Management	Overall (in 2021)	\$8.5T
Total Accounts	Overall (in 2021)	30.2 Million

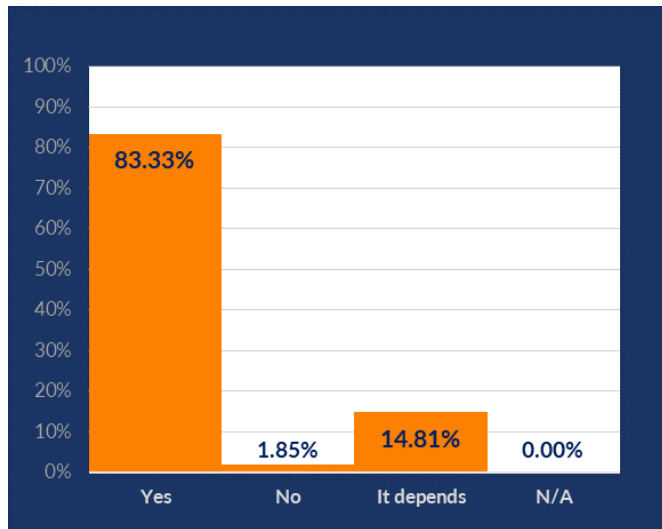


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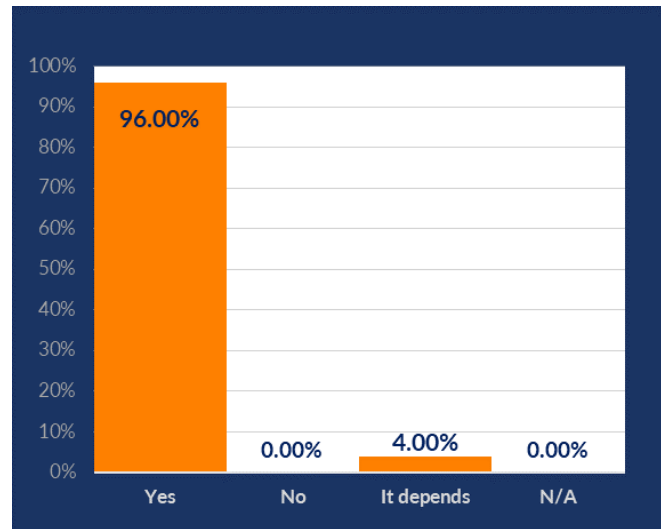
Latest from iQuanti

4. Latest from iQuanti

iQuanti's annual CSAT Survey* results highlight iQuanti's continued focus on client success; improved on the high CSAT ratings from past years



CSAT Survey - 2019



CSAT Survey - 2021

*Since 2015, iQuanti has invested in conducting an annual Customer Satisfaction study in partnership with an objective third-party ([Allegiant Partners, Inc.](#)). The 2021 survey results are based on a strategic analysis of detailed feedback gathered via in-depth 1:1 interviews with 94 clients. These interviews include a combination of qualitative and quantitative data and provide honest, relevant, and **detailed insight into overall client contentment** with the brand and capture our clients' **top priorities for improvement** from iQuanti for 2022 and beyond.

4. Latest from iQuanti

#iQuantiGives: Across geographies, the team continued their support of various non-profits who empower people through education



#TeamiQuanti organized a **#StepChallenge** to raise funds for the non-profit, [Girls Who Code](#)



In India, we've partnered with [The Gubbachi Learning Community](#), an NGO supporting government schools across Bangalore, and adopted one of their schools to care for its children's education.

4. Latest from iQuanti

Recent webinar in partnership with SearchEngineLand on what your SEO strategy needs in 2022

The graphic features the iQUANTI and ALPSQ logos at the top left. Below them, it says 'ON-DEMAND WEBINAR' with three orange arrows pointing right. The main title 'Build a high-impact SEO strategy in 2022' is in large orange font. An orange button with 'ACCESS NOW' is below the title. On the right, the Search Engine Land logo is at the top, followed by a circular portrait of Wayne Cichanski with a microphone icon overlaid. Below the portrait, his name and title are listed: 'Wayne Cichanski, VICE PRESIDENT, SEARCH & SITE EXPERIENCE, iQUANTI'. The background has light blue abstract lines and dots.

iQUANTI | ALPSQ

ON-DEMAND WEBINAR >>>

Build a high-impact SEO strategy in 2022

ACCESS NOW

Search Engine Land

Wayne Cichanski
VICE PRESIDENT,
SEARCH & SITE EXPERIENCE,
iQUANTI

[Access the on-demand webinar here](#)

4. Latest from iQuanti

Recent webinar in partnership with Search Engine Journal on challenges and opportunities for search marketers in a privacy-first world

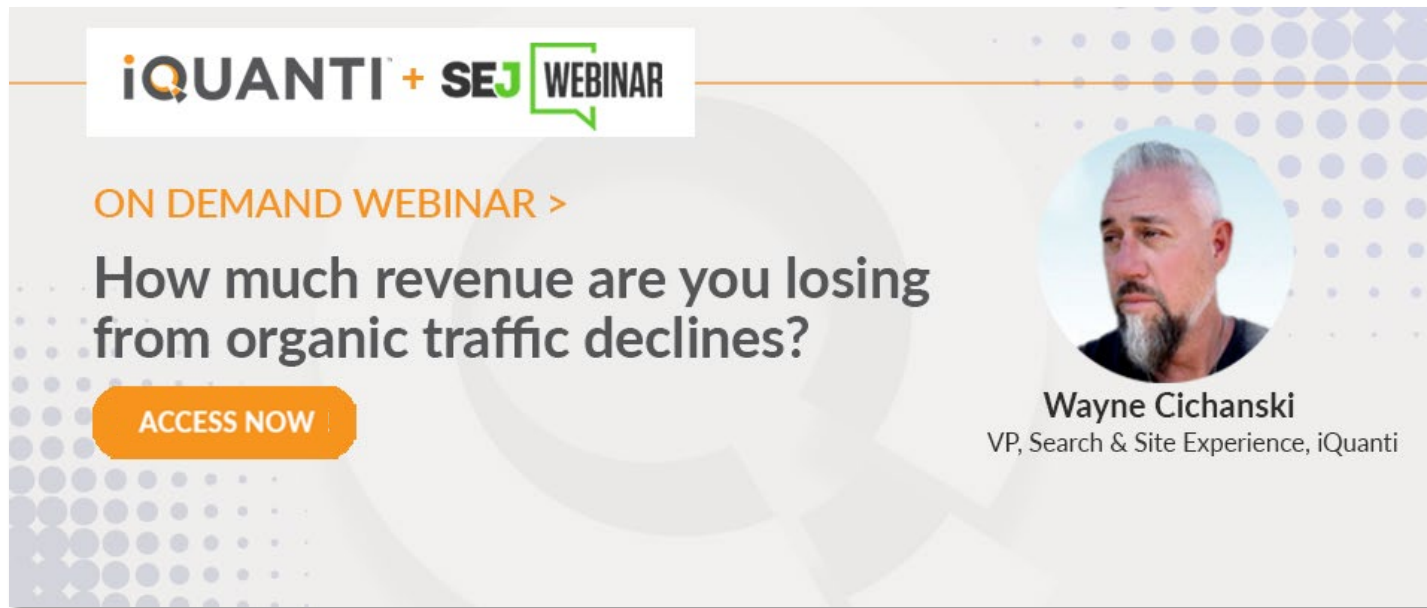


The banner features a blue background with a pattern of white and light blue dots. At the top left, there is a white box containing the text 'iQUANTI + SEJ WEBINAR'. Below this, the text 'ON DEMAND WEBINAR >' is displayed in white. The main title 'Paid Search in a Cookieless World: ARE YOU READY?' is prominently displayed in white. A blue button with the text 'ACCESS NOW' is located below the title. On the right side, there is a circular portrait of Sreekant Lanka, a man with glasses and a grey sweater. Below the portrait, his name 'Sreekant Lanka' and title 'SVP, Digital Solutions' are written in white.

[Access the on-demand webinar here](#)

4. Latest from iQuanti

Recent webinar in partnership with Search Engine Journal on how to measure revenue-impact of organic search traffic loss



iQUANTI + SEJ WEBINAR

ON DEMAND WEBINAR >

How much revenue are you losing from organic traffic declines?

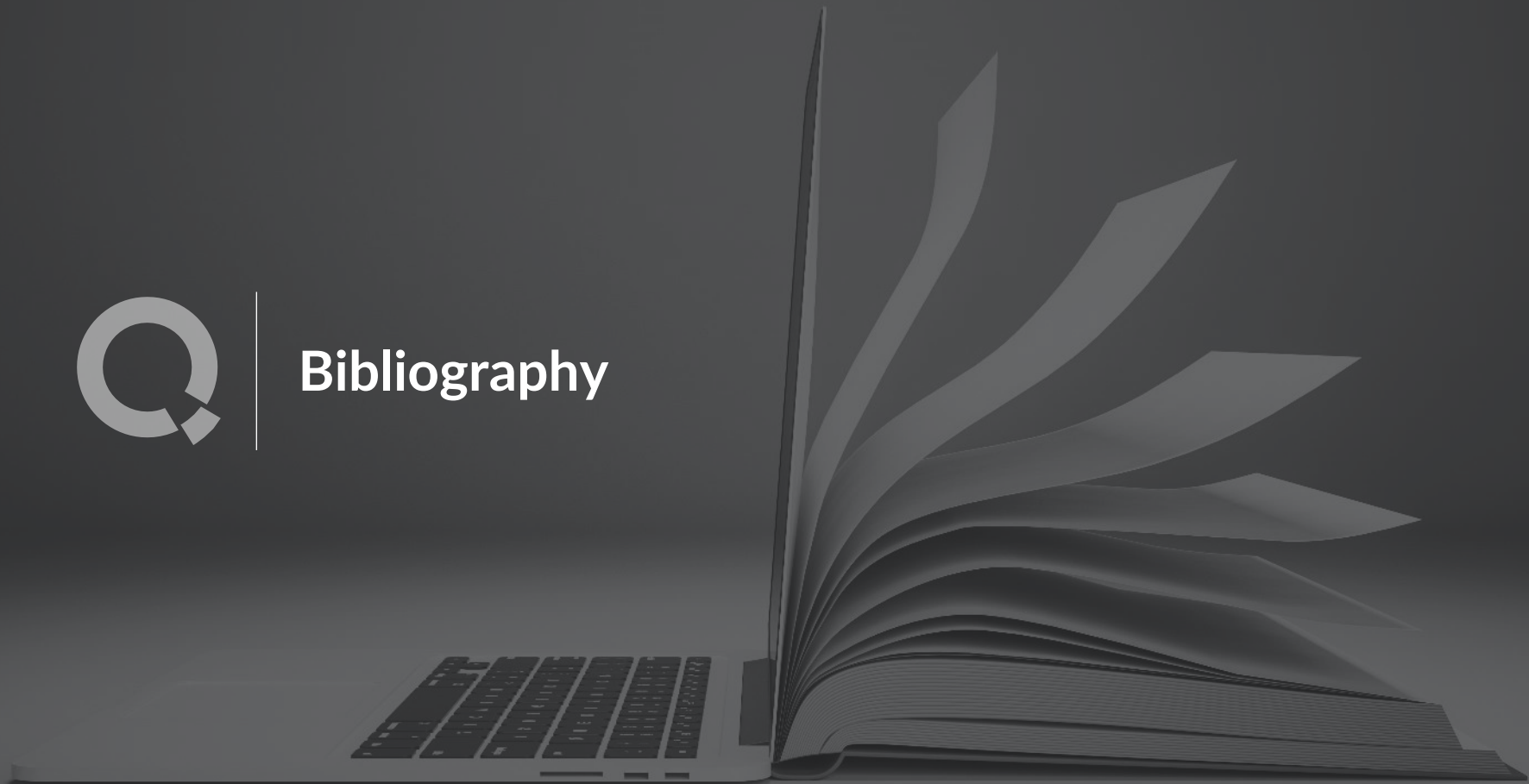
ACCESS NOW

Wayne Cichanski
VP, Search & Site Experience, iQuanti

[Access the on-demand webinar here](#)



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