



Twitter Analyst Day - Prepared Remarks
February 25, 2021

PRESENTATION

Welcome

Krista Bessinger - Twitter, VP Investor Relations

Good morning - I'm Krista Bessinger, Vice President of Investor Relations at Twitter. Welcome to Twitter's 2021 Analyst Day. It's great to have you joining us for this virtual event.

Before we get started, I wanted to mention that statements made in today's presentation contain forward looking information, including long-term mDAU and revenue goals. Actual results could differ materially from what we present today. The information you see right now on your screen gives more details about some of the risks regarding the forward-looking statements we'll make today-as well as our risk factors.

We have also provided information regarding certain key metrics and non-GAAP financial measures. Additional information can be found in our filings with the SEC, which are also posted on the Investor Relations section of our website at investor.twitterinc.com.

During today's event, we'll provide details on how we plan to accelerate innovation and growth. Jack will start with the opening remarks to frame the day, and then members of our senior management team will go deep in their area of expertise, touching on our top company objectives - and after that, our CFO, Ned Segal, will wrap up with financial highlights.

We really want to make this event as interactive as possible, so we have three Q&A sessions scheduled during the day.

Our first Q&A session will come after the recorded remarks from our product, legal and policy leads. So we'll take your questions then related specifically to our consumer product and our public policies.

Our second Q&A session will come after our leads from sales, revenue product, and technology. So we'll take your questions related to those topics then.

And then during our final Q&A session, all of our speakers will come together to take your questions. We will also be live Tweeting throughout this event and taking questions asked on Twitter. So please follow along and Tweet us at [@TwitterIR](https://twitter.com/TwitterIR) using the hashtag [#TWTRAnalystDay](https://twitter.com/TWTRAnalystDay). We might also have time to take a few questions submitted via email, so please email us at IR@twitter.com to have your questions considered.

And finally, just to note, that shortly after the end of today's presentation, we'll be making a replay of the event available. And we'll also be posting downloadable slides to our Investor Relations website shortly after the end of each segment.

And with that, I would love to turn it over to our CEO, Jack Dorsey.

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Opening Remarks

Jack Dorsey - Chief Executive Officer

What's happening, everyone? Thank you for spending some time with us today. I wanted to start with a simple question: "Why Twitter?"

Take a moment to imagine all of the conversations happening in the world right now. People are talking with each other in person, or remotely through text, audio, and even through video like this.

A lot of these conversations are private. Some of them, like this one, are public, accessible to anyone who knows how to find them. But why do people want to talk in public in the first place?

Because public conversation has proven to be the fastest way to spread an idea. It's the fastest way to learn how other people are thinking. It's the fastest way to see the common problems facing us all. And it's the fastest path to understanding that ultimately, we're all in this together.

Most public conversation today is made possible by the internet. It transcends every border, every language, and every culture. It has the potential to reach every single person on this planet, and someday soon, across multiple planets.

Twitter has been a part of the internet's public conversation layer for 15 years. It's our purpose and reason for being. We believe public conversation is important, and if you're here watching this, you probably believe it too.

But that's not why you're here. You're here to answer another question: "Why should I believe Twitter's role in public conversation, and it's business as a result, is growing?"

That's the question we're focused on answering today. But why don't we start with why folks don't believe in us. It comes down to three critiques: we're slow, we're not innovative, and we're not trusted.

First, we agree we've been slow. If you compare us with our peers in the market, this is especially stark. If you compare us with ourselves over the past few years though, development velocity is demonstrably better. Why?

We've been working ourselves out of a significant deficit for years now. A lot of this was technical, and some of it was incorrect prioritization and how we organized around those priorities. In most cases, we've had to take the hard path of prioritizing fewer initiatives and rebuilding from scratch, which is never easy, especially as we have a system at scale which we have to run in parallel.

The best example of this work is our decision to rebuild our core ad server. We knew it would take a lot of time, we knew it would block and delay working on our performance advertising products, and we knew it would have to scale well beyond our current traffic.

And it worked. We now have an ad server that significantly accelerates our ability to ship revenue products faster and far more efficiently. It gives us greater agility to meet customer demands, and

be ahead of where the market is trending. This work was hard on our customers, hard on our shareholders and us, and yet has proven to be correct.

The ad server rebuild is an example of our work around development velocity. How quickly can any one team or engineer ship code so we can learn from it and iterate it ahead of the market? This work isn't just focused on our revenue products, but our entire technical stack.

You've probably seen news of us entering into new cloud contracts with providers. This is another example of us looking critically at our stack and improving it so we can move faster. There are some big shifts we're making over the next two years, and all these changes will compound into faster development velocity that lets us deliver more per engineer. Parag, Mike, and Mudge will go into this in detail later today.

Second, we agree we haven't been innovative. This is very closely related to the critique of our slowness. If we can't ship code fast, we can't experiment and iterate, and every launch comes with massive expectation and cost. A few years ago it may have taken 6 months to a year to get a single feature or new product to our customers. While we are in a better position today, consistently bringing this down to under a few weeks is a goal of ours.

We made another tough call a few years ago when we decided to not launch anything new, and instead focused entirely on our core job: showing people what's happening. Again, this was hard on all of us, but correct in that it enabled us to finally bring new technologies to help solve the main problems people were having on Twitter.

The most important of those problems was being able to see relevant tweets without having to scroll endlessly to discover them. A singular focus on this worked, and is a key reason we were able to grow our usage again, and provided a strong foundation with which to build new features and products.

Innovation isn't just launching fundamentally new or flashy products or features. It also comes in the form of observing what your customers are trying to do, and building ahead of them. We're now doing that in a few ways, both for individuals and for businesses on Twitter.

For individuals, we're finally building Twitter in the way that people have always wanted to use it: to talk about topics and interests. Being able to follow a timely topic or an enduring interest complements following individual accounts, takes a lot of the discovery work away, and makes Twitter far more enriching and powerful, especially for the long tail of niche topics. If I had to point to one area that will have the biggest positive impact for people's experience, and us as a business, this would be it.

Topics and interests are good for businesses on Twitter too, especially for local small businesses, as they provide stronger signals around intent, and the ability to serve more relevant ads, which will ultimately lead to a transaction like a donation, subscription, or purchase. Mobile App Promotion is where we start, and we're gaining confidence with the early results, including more than 50% year over year revenue growth in the fourth quarter of 2020.

For both individuals and businesses, we're looking to build a collection of experiences and products that positively reinforce one another. Meaning, using one feature makes another feature stronger. Take audio rooms, which we're calling Spaces, and long form newsletters, made possible by our acquisition of Revue. It's easy to imagine starting with a tweet, moving a conversation to real-time audio, and recapping the conversation with long-form text. It's this in-

between interaction that will prove to be powerful. The same is true for revenue products, as more accessible advertising models will encourage use of commerce tools and loop back into more advertising.

Kayvon and Dantley will talk through our short and long term plans, and Bruce and Matt will discuss the future of our revenue products and how we expand our offerings to businesses of all sizes.

Finally, we agree many people don't trust us. Never has this been more pronounced than the last few years. This isn't just about our actions to promote healthy conversation, it goes broader and deeper, down to how we use technology like machine learning algorithms. And we aren't alone: every institution is experiencing a significant trust deficit. We're not going to use that as an excuse.

Trust is earned in many ways. Transparency, accountability, reliability, choice...and the list goes on. Focusing on improving these four will likely have the greatest impact. I feel we're making a lot of progress with accountability by owning our mistakes and correcting, and reliability by following published principles and not wavering. However, we are lacking in transparency and giving people more choice and control.

I would love for us to be one of the most transparent and open companies in the world. I believe this will be a growing trend across all companies and organizations, both big and small. We intend to make our content moderation practices more transparent, give people more controls to moderate their interactions, enable a marketplace approach to relevance algorithms, and fund an open source social media standard we call @bluesky. Vijaya will speak to this and our open internet stance later on.

And of course to make this all happen, we want to think creatively about our brand and how we build our organization, which Leslie and Jennifer will discuss before Ned details how we're going to invest and measure our success.

I wanted to end by sharing three goals we're holding ourselves accountable to in order to build a company you all believe in as much as we do.

First, we plan to double our development velocity by the end of 2023, resulting in doubling the number of features per employee that directly drive either mDAU or revenue.

Second, we have a goal of at least 315 million mDAU in the fourth quarter of 2023, which requires continued compounding growth at about 20% per year from the base of 152 million mDAU we reported in the fourth quarter of 2019.

And finally, our goal is to more than double our total annual revenue to over \$7.5 billion in 2023. This requires us to gain market share with performance ads, grow brand advertising, and expand our products to small and medium sized businesses throughout the world solar system.

We're confident we can hit these goals, and we're confident they will make us even stronger and more valuable to you, and people around the world.

We'll be answering any questions you have in between the sessions today, with a larger question and answer session to end our day together. Thank you again for the time, and I'll be back to answer your questions soon.

And now, over to Kayvon.

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Healthy Participation: Consumer Product Priorities
Kayvon Beykpour, Product Lead

Hello everyone, my name is Kayvon Beykpour and I lead our consumer Product team at Twitter.

As Jack mentioned, Twitter's purpose is to serve the public conversation. Over the next 30 minutes, Dantley and I will give you an overview of *how* we want to live up to that purpose through our product strategy, and how we plan to measure our progress along the way.

Dantley Davis, Head of Design & Research

Hi everyone, my name is Dantley Davis and I lead Design & Research at Twitter. Before we dive into our strategy, we want to give you a sense of why people use Twitter today and how we are seeing usage of our platform evolve over time.

Twitter is what's happening, and what people are talking about right now. It keeps people plugged into conversations they care about and topics they want to learn more about.

It's where culture and news unfold. This has never been more true than over the last year, as Twitter was a critical tool to keep up to date on the latest news from journalists and experts about COVID-19. But it's also been a source of entertainment. It's where people followed along with the NBA bubble and made Baby Yoda into a meme powerhouse. Across news, politics, sports, entertainment, and even investing - Twitter is a vital space for this public discourse to happen. What happens in the world happens on Twitter and what happens on Twitter is reflected in the real world.

At its best, we believe Twitter can be the conversational layer of the internet.

Kayvon Beykpour, Product Lead

Our objective is to increase participation in the public conversation. In order to be an effective conversational layer of the Internet and to truly serve public conversation—that conversation needs to be inclusive of as many voices as possible, spanning languages, geographies, and perspectives.

We believe Twitter is capable of serving billions of people daily, and that the public conversation can be better for it. We're far from that figure today, with around 192M mDAU in Q4 2020. But we've been making steady progress and we're even more excited about the future.

Our top of funnel remains extremely strong with more than 2M people coming to Twitter every single day that are people who are either new to the service or who have not logged in for 30 days or more.

This consistent top of funnel, combined with the number of product improvements we're making, has allowed us to add significantly more mDAU in each of the past three years. mDAU was up:

- 11M YoY in Q4 2018
- 26M YoY in Q4 2019
- 40M YoY in Q4 2020

We're not just growing Twitter more every year, but the portion of that growth that comes directly from causal changes we're making in the product is increasing substantially. With the number of mDAU added in each period that were directly driven by product improvements growing almost 3x over that time.

This gives us confidence that our strategy and execution is working. It's important to underscore that the growth and impact you've seen us deliver over the last few years has primarily come through steady refinements to our existing product areas, like refining the relevance of our Home Timeline. These refinements will continue delivering impact, but we expect the next few years to be even more shaped by an ambitious strategy that will evolve the Twitter experience much more than our customers have seen over the last few years—and one that will deliver even more daily utility for new and existing customers. Today, we want to give you a bit more insight into that strategy.

Our strategy falls into three key areas, what we call *Health*, *Interests* and *Conversations*. Let's talk about each.

Health

We believe it's essential for public conversation to be healthy. If people don't feel that their conversations are safe from abuse and harassment, we know they won't feel comfortable participating in the first place. And if content on the platform is rife with spam or misleading information—people won't trust the integrity of the platform. Mitigating these risks is critical for us to create the best experience for our customers, and ultimately critical in supporting our growth.

Ensuring a healthy public conversation is also essential for our advertisers, who want to ensure that their brand and activity are not active alongside harassment, vitriol and misleading information. We hear from advertisers and agencies who tell us how important Health and safety is for brands and their users, and they know that Twitter is fully committed.

For all these reasons, increasing #Health has been an essential focus area for years. Increasing Health requires focus in 3 key areas: product, policies and enforcement.

I'll cover what's happening at a high level across these areas; later, Vijaya will speak to the philosophical underpinnings that we use to guide those policies and our enforcement.

Our policy and enforcement work focuses on deterring abuse and harassment, and addressing harmful misleading information. Across both these areas, we've made a number of important advancements:

First, we've simplified our rules so that people can more easily understand what we do and do not allow on the service. Before, our rules were long, complex and rarely visible within our product. Today, they are crisp enough that they can each fit in a Tweet.

Second, we've expanded our policy and enforcement to address the rise of misinformation around the world. Our policy expansion includes guidelines for COVID-19-related misinformation, a Synthetic and Manipulated Media Policy that prohibits the use of manipulated media on Twitter that may cause harm, and an updated Civic Integrity Policy that prohibits voter suppression, voting misinformation, and misleading information intended to undermine public confidence in an election.

We've also focused on enforcing our rules proactively. A few years ago, very little of our enforcement was proactive. Today, around 50% of our rule enforcement is done proactively including through machine learning-based automation, without our customers needing to experience the burden of abuse or harm prior to us taking action.

Over the last year, we've developed new product capabilities that allow us to broaden the spectrum of enforcement decisions that we're able to make beyond the binary "take down or leave up". These new capabilities include the ability to label Tweets that are misleading, label accounts with context, and the ability to de-amplify and limit engagements on certain Tweets through Likes, Retweets, and Replies.

Throughout the U.S. election period of October 27 to November 11, 2020 alone, we labeled around 300,000 Tweets under our Civic Integrity policy, and limited Tweet engagements on approximately 456 of those. We saw an estimated 29% decrease in Quote Tweets of these labeled Tweets due in part to a prompt that warned people prior to sharing. And approximately 74% of the people who viewed those Tweets saw them after we applied a label or warning message.

Our effort to add context and encourage thoughtful amplification isn't limited to just misleading information either. We've also found that simple prompts that encourage people to read articles (past the headline alone) before amplifying them have demonstrated impact. These prompts for example result in 33% more people reading an article prior to Retweeting. And we've found that 50% more people cancel their Retweet after they read the article they were about to share. This is one of the many solutions we plan to implement to encourage more thoughtful amplification, which in turn should increase #health.

Beyond using our own algorithms and processes to enforce our rules, one of our key areas of focus within Health is to empower our customers and the community to scale safety. We don't believe Twitter alone can or should be a police officer for all conversations. Not only because this is difficult to scale, but because there are many circumstances where we believe it's important for people on Twitter to create and enforce their own social norms and etiquette, and to exercise more control around who can interact with them on the service. Because what people may consider unhealthy conversation may not actually be against our Terms of Service.

This is why, for example, we've built Conversation Controls which enable people to decide who can reply to their Tweets, and a way to hide unwanted replies to their own Tweets. We're seeing this feature used particularly amongst people who have reported experiencing harassment in the past. In those cases, these people are seeing an estimated 85% reduction in toxic and abusive replies. We'll continue to build on this foundation to give people new ways of controlling who can interact with their conversations.

We're also exploring smarter tools to proactively help people stay safe from unwanted interactions. An example of this is recognizing when somebody is getting dogpiled and providing

them more powerful and intelligent blocking capabilities to defend themselves from an overwhelming degree of intense interactions.

Another area where we're exploring the power of decentralized moderation is through Birdwatch. While our work in labeling misleading information started with a Twitter-led effort to label Tweets, Birdwatch is a more scalable Wikipedia-like model where an open community of contributors can collectively determine when context should be added to a tweet, and what that context should say.

Finally, we know that a common frustration we hear from customers is that they don't know who they're interacting with on Twitter. Is this account a real person? A bot? A business? Is this person who is claiming to be notable actually that person or just an impersonator? Twitter accounts have always been uniform, allowing for anonymity and expression which leads to all kinds of awesome use cases, but we think we can improve this. So we'll be expanding our taxonomy of account types on Twitter: People, Bots (automated accounts), and Businesses. Each of these accounts will have different attributes and capabilities. This should both enable interesting new use cases and increase the integrity of interactions on the service since people will have more context around the type of accounts they're interacting with.

We'll continue to remain steadfast in our focus on #health as a critical tenet of our strategy. We don't believe we can serve the public conversation without ensuring that the conversation is healthy. And we believe a healthy Twitter is critical to growth.

Interests

Let's move to another critical part of our strategy, which we call Interests. We know that one of the main reasons people come to Twitter is to stay informed about their interests. Whether you're interested in college football, politics or Japanese anime, Twitter is the best way to hear the latest about what's happening. But despite being such a fundamental reason for why people use Twitter over the last decade, it's actually been historically quite difficult to do this on Twitter. For years, you had to find content about your interests by proxy of following people, rather than specific topics themselves. If you knew what to search for, and if you knew who to follow, then Twitter was magical. Follow Draymond Green, Steph Curry, the best sports journalists, and Draymond's mom — and you'd have yourself a great "Warriors Twitter" experience. But that takes time and that's a lot to ask of people who are new to Twitter. Solving this is critical. Making Twitter better at connecting you to your interests will be a fundamental unlock for our growth. We expect it will significantly increase retention among both existing accounts and people who are newer to the service — and it will meaningfully improve our advertising capabilities over time due to us having a better understanding of people's interests.

I'll share some context around how our work on Interests began, and then some detail on where we're headed. Our work on Interests started in late 2018.

First, we made it easier for customers to toggle between seeing the latest tweets in reverse chronological order or letting Twitter show them the most relevant Tweets. This is a simple change that gave people more control to tune Twitter to better serve situations where a "real time" feed was critical.

We also bolstered the "Lists" feature, allowing people to more easily create a customized List, and more easily share them and pin them to the top of their Home. These changes have helped make it easier for people to segment their usage of Twitter in creative ways that resemble their

interests. We've seen the number of customers following Lists double in the last year as a result of these changes.

And in October 2019, we debuted for the first time followable Topics. This was the first time that people could tell Twitter that they were interested in a certain topic, and have Twitter do the work of recommending and surfacing the most relevant content for that Topic. We believe Topics is a critical and fundamental shift to the product -- and that the "Topic graph" will grow to be as critical and valuable as the "Follower graph". While we are still early in the life cycle of Topics, we are confident that Topics will be a meaningful and durable driver of mDAU growth.

One of the most promising indicators we look at is the engagement rate on Topical Tweets. We're seeing that Tweets that are recommended via Topic follows receive substantially more engagement than Tweets that are recommended by account-based follows. Topical Tweets have an 8.2% engagement rate versus 3.8% engagement rate for Tweets from account-based follows.

These metrics and our qualitative research tell us that people are finding value in following Topics. And we're already seeing causal evidence that Topics is increasing our daily active usage. This makes us feel very confident that we're placing energy on the right bet here. One that'll meaningfully improve the ability for people to find the most relevant conversations that map to their interests, increase our daily usage, and improve our advertising capabilities.

We're still in the infancy of our work here. Here are some of the areas you can expect us to continue focusing on.

We'll continue to massively scale the number of Topics that are available. While we have over 6,000 followable Topics today, we expect this to grow to hundreds of thousands over the next few years, offering a pervasive selection of Topics relevant in different geographies and languages.

We're heavily investing in machine learning to continue improving the relevance of Topical recommendations. We know through our efforts in improving Home timeline ranking just how impactful this investment is -- we see substantial value and impact through continued relevance improvements in our Topical recommendations.

We're also continuing to evolve Topics with more controls, like allowing people to fine-tune the volume of each Topic in their timeline, pinning certain Topics to the top of their app (similar to Lists), and making them more pervasively accessible within the product experience.

Beyond Topics, there are a number of other ways that we're helping people stay informed about their interests. I'd like to give you a glimpse of one of these efforts. You haven't heard us talk publicly about this until now, but we're sharing a quick glimpse to give you a comprehensive overview of how deeply we're focused on helping people find and talk about their Interests on Twitter.

One of the special things about Twitter is the diversity of micro-communities that form around different interest spaces. We see this across a broad range of verticals, be it the plethora of passionate "stan" communities around certain K-pop bands, communities centered around providing skincare advice, or super-fans of \$TSLA, and even social and political movements. These communities form ad hoc with little structure in our product beyond #hashtags, which speaks to the fluidity and openness of Twitter — but it also makes it difficult to find these communities. And even more difficult to have more focused conversations within those communities.

Twitter has undoubtedly proven its ability to serve the global public conversation, particularly during large-scale events, but we must improve at letting people have conversations that are more targeted to the relevant communities or geographies they're interested in. For example, today it could feel tone-deaf to talk about a hobby or interest amidst the intense global public conversation about the pandemic, and it remains difficult to target your conversation to a captive audience of people who cares about the same interest.

We're working on solving this problem by creating a product experience that makes it easier for people to form, discover and participate in these micro-communities. And an experience that enables creators to customize these spaces, including setting and enforcing social norms above and beyond our Terms of Service.

We see this as a highly complementary product experience to Topics. With Topics, Twitter is creating a taxonomy and graph that connects people to the content, people or communities they're interested in.

You'll see us experiment publicly and transparently, much like we did with Topics, Spaces and Fleets, starting later this year.

Hopefully, this gives you a helpful overview of the work we're doing to better connect people to their Interests.

Dantley Davis, Head of Design & Research **Conversations**

As you've heard us emphasize, our purpose is to serve the public conversation. Conversations which are Tweets, Fleets, and DMs are the life-blood of our service — the core atom of content that enables people to see what's happening in the world on Twitter as a person using their voice to say something in public. We believe it's essential, for the world and for Twitter, to increase the number of people who feel comfortable participating in the public conversation. The goal of our Conversations strategy is to do just that. We're focused on two specific things: enabling new use cases for conversations on the service and rethinking the incentives of the service.

Let's talk about the first. We believe that new formats can enable exciting creative use-cases for conversations, and that some customer demographics will be more drawn to formats and use cases beyond text.

One of the ways we're enabling new use cases for conversation is through Fleets.

We launched Fleets, as a way for people to share their fleeting thoughts. They enable people on Twitter to create more content with less pressure — since the content doesn't get public replies and also disappears after 24 hours rather than being on the public record indefinitely — and also with less judgement, since Fleets don't have publicly visible engagement metrics such as Likes and Retweets. Our goal is that Fleets serves as a way for more people to feel comfortable talking in public.

We're still early here, but we're encouraged by what we're seeing. Fleets is increasing the total net number of conversations (which we define as Tweets + Fleets), driving a significant increase in Direct Messages (which are people using Fleets as a springboard for conversation), and that Fleets has been particularly impactful in driving conversation and content creation amongst

people who traditionally do not Tweet. We also have observed that Fleets are more than 85% media (which are photos or videos), a significantly different mix than what we see with Tweets. That tells us that Fleets are giving people on Twitter an outlet for a new mix-shift of content. And because Fleets sits at the top of the app, it provides a foundation for us to build new conversation formats without interrupting the core Twitter experience.

Another focus area for us is Spaces, which we released into public beta in December.

With Spaces, we provide people a new way to connect directly in an intimate conversation space — using their voice. The human voice can bring a layer of connectivity, emotion, nuance and empathy that is often lost in text. We're still early in beta, but we're very excited about this new capability and how it can potentially allow experts from around the world to convene, to talk about sports, entertainment, politics or just hang out and enjoy each other's company.

Another way we're enabling new capabilities for content creation is through long-form written content on Twitter, and in the future you'll not only be able to just follow an author, but subscribe to their newsletters as well.

We view Twitter as uniquely positioned to help writers grow their readership much faster and at a much larger scale than anywhere else, which is why we acquired Revue to enable writers to publish paid or free newsletters to their audience. Many established writers and publications have built their brand and reputation on Twitter, amassing a built-in audience that is hungry for the next piece that they Tweet. We plan to make it easy for writers to connect with their subscribers on Twitter, opening up new opportunities for readers to interact with a community that shares similar interests. We also think that an audience-funded model, where subscribers can directly fund the content that they value most, is a durable incentive model that aligns the interests of creators and consumers. Revue is one exciting example of this model within the Twitter ecosystem, amongst others that we are exploring.

We see other impactful opportunities to provide monetary incentive models that allow creators and publishers on Twitter to be directly supported by their audience. You'll see us explore solutions here like Tipping and account subscriptions through Super Follows.

This work is part of a broader theme of rethinking the incentives of our service. Audience-funding models, by virtue of allowing talented content creators to earn from their audience, motivates them to continue creating great content that their audience loves. But our focus is also to ensure that we're evolving our product so that it incentivizes and amplifies healthy and positive discourse, and that it disincentivizes toxic and jerk-like behavior.

We won't be venturing on this journey alone. We're continuing to make significant investments in our developer API to allow third party developers to improve the creativity and functionality of our platform. Some of the most impactful features on Twitter came from a very passionate developer community. As we evolve our platform, you'll see developers introduce everything from new tools for moderation to expressive creative formats.

Kayvon Beykpour, Product Lead

Hopefully this gives you a helpful overview of why we're focused on Health, Interests, and Conversations. We want to emphasize that a central part of our strategy is to ensure that we're improving Twitter in these dimensions globally, not just in the regions where we have large adoption. In order to achieve our ambitions, we need to grow Twitter in developing markets in the

world where there are hundreds of millions of potential customers, but where we have very nascent adoption today. Regions like India and Africa are great examples, where we see very promising growth rates. In India for example, we saw 74% YoY mDAU growth in Q4 of 2020. And in Nigeria, we saw 84% YoY mDAU growth. To accelerate and capitalize on this growth, for the first time we are putting in place in-market product, design, and engineering teams in certain emerging markets. We expect a meaningful portion of our future growth to come from emerging markets, and that local teams and expertise can help us make this happen faster.

So you've seen what we're planning. But how will we know that our strategy is working?

Ultimately, we measure our long term success through our ability to grow monetizable daily active usage (mDAU). It's important to understand that it takes time for product changes to impact daily usage patterns, so for each part of our strategy and each feature we work on-- we use specific leading indicator measurements that tell us whether we're solving that customer problem. For example:

With Topics, for leading indicators of success we look at the number of Topic followers that we acquire, how we retain these followers, and the incremental increase in Tweets that Topic followers liked.

With simplifications to our onboarding flow, we look at the impact of these changes to retention over time.

With our misleading information labels, we measure the # of Tweet impressions without and with the misleading info annotation on it with a goal of minimizing the former.

With Conversational Controls, we look at the number of Tweets being created with controls enabled, the rate at which those are replied to and the rate at which those Tweets are reported for abuse.

As you can see from these examples, there are a variety of metrics that help us gauge whether our product solutions are working, but in aggregate the best way to measure our success is mDAU. If we measurably solve customer problems over time, more and more people will come to Twitter every day.

With our product roadmap, we believe that we can substantially grow Twitter's daily audience. In March of 2020, before the pandemic, we shared our ambition to grow mDAU at 20% a year. Our goal is to deliver 315M or more mDAU by Q4 of 2023. That will require continuing to compound growth at about 20% per year from the base of 152M mDAU we reported in Q4'19. Now it won't be a straight line from here to there, with exactly 20% year-over-year growth in every quarter, as events and product improvements impact our audience growth at various times -- with the substantial increase related to COVID-19 we saw in 2020 serving as an example of this. That said, we are confident in our ability to drive significant growth over the next few years.

How will we get there, and how does all of our work add up?

We'll continue to build on our bedrock of ongoing product refinements (like improving the relevance of our recommendations). This steady, compounding iteration has helped durably grow Twitter over the last few years and will continue to improve our product experience.

On top of that, we expect that our strategy across Interests, Conversations and the work we're doing to make Twitter better in emerging markets will yield immense impact, significantly more than we've been able to achieve with our more iterative refinement of the product over the last few years. We expect this work will increase our top of funnel by virtue of making Twitter more appealing to new audiences, and will improve our retention by virtue of making the product even better for people to stay informed and talk about their interests.

And, as a foundation to all of this, our work on #health will help increase the integrity of the public conversation, which is instrumental to keeping our customers *safe* enough to want to participate in the public conversation in the first place.

Hopefully you share our excitement for this strategy, and our focus on Health, Interests and Conversations. But, you may be wondering, how fast will we actually execute against this strategy? I want to talk for a moment about our pace of execution.

I can tell you with conviction that Twitter's historical pace of execution is one of the things that was most frustrating for me, and one of the things we've been most passionate about solving. But don't take it from me, take it from our customers. A couple of years ago, it was common for us to see quotes like this from Casey Newton in 2018: "Why does Twitter move so slowly? Nothing defines Twitter so thoroughly as its bias toward inaction. And yet the company's history suggests that it hasn't failed for lack of thinking. The problem, rather, is that thinking has so often served as a substitute for action."

Our customers were frustrated because it seemed like we were moving slowly to evolve the product. That Twitter felt stagnant while the world around it was evolving quickly.

Well, we've been hard at work to change that. Over these last couple years, we've been evolving the product in more transformational ways, solving bigger problems for our customers, and moving way faster than we have before.

To illustrate this, here's a calendar of some of our product launches over the last two years. We've been picking up the pace. And we see our customers noticing, too. Here's Casey Newton again in Nov 2019: "Twitter is finally backing up its talk with action. After years of delays, the company is finally shipping meaningful features — and at a surprising clip". And fast forwarding to just a few weeks ago, again from Casey Newton: "Twitter has announced more product launches and changes today than it did in all of 2014."

What's allowed us to do this is we have had a clear, bold and consistent strategy to reshape Twitter. A strategy that calls for bigger changes and solving bigger problems than ones the company has taken on in the past. We've also hired new leaders across product, engineering, design, and research — not just high caliber talent, but people who are filled with the energy and ambition to reshape Twitter.

But we've got more work to do and we're just getting started. We have been making meaningful investments across our infrastructure and technology which we expect will pay off through further increases in the pace of our product development. These investments are critical because growing our daily audience requires us to be able to build and ship products quickly. You'll hear from Mike, Mudge, and Parag later on how we're increasing development velocity at scale -- important initiatives that support all of the work we do on both the consumer product and revenue product while also keeping consumers' security and privacy in mind. With that, now I'll pass it on to Vijaya who will share more about our approach to policy.

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Healthy Participation: Policy and Enforcement **Vijaya Gadde - Head of Legal, Policy and Trust**

Thanks Kayvon and Dantley. I'm Vijaya Gadde, I lead the Legal, Public Policy, and Trust and Safety teams at Twitter. In addition to providing legal support for Twitter, these teams are responsible for developing and enforcing our platform policies and engaging with external stakeholders such as regulators, legislators, and civil society groups around the world.

As Jack mentioned, our purpose is to serve the public conversation, and we believe that public conversation is better when as many people as possible can participate.

Earlier, Kayvon highlighted some of the great work that our cross functional teams are doing to promote the health of the public conversation on Twitter.

Now, I'd like to talk to you about the philosophical underpinnings of our policy and enforcement work and how we hope elements of our approach can provide a good starting point for discussions about a regulatory framework for the internet.

Our policies are built primarily around the promotion and protection of three fundamental human rights - freedom of expression, safety, and privacy. These rights, among others, are enshrined in the Universal Declaration of Human Rights, which is an international document adopted by the U.N. and numerous countries around the world.

At times, these fundamental human rights can be in tension with each other. To address this tension, our rules attempt to establish an appropriate balance, prioritizing safety above all others. We believe deeply in and advocate for freedom of expression and open dialogue, but that means little as an underlying philosophy if voices are silenced because people are afraid to speak up due to threats to their physical safety or privacy.

Even though our content policies are grounded in an international human rights framework, they are also living documents that need to adapt to changes to behavior on and off our platform. Every day, millions of people around the world Tweet hundreds of millions of Tweets, and we need one set of rules that apply to everyone and every Tweet.

We strive to implement policies that scale, that are respectful of local laws, and that account for cultural nuance and norms. We solicit direct feedback from a number of stakeholders when developing and updating our policies, including civil society groups, academics, and government officials.

In order to make our policies more durable, we have also begun to solicit public feedback from the people using our service about new policies and changes to existing policies. We did this most recently with our verification policy, and this is a practice we would like to leverage even more in the future.

With regard to enforcement, we seek to enforce our policies in a consistent, transparent, and proportionate manner. The public and global policymakers have told us they want to be better informed about our actions so transparency is fundamental to the work we do at Twitter.

Our ability to bring transparency to our enforcement work allows the public to assess if we've acted in a fair, impartial, and consistent manner. Our aspiration is to prevent or take action on content that violates our rules before people see it. In order to do this at scale, we need to leverage machine learning to identify and prevent content that violates our rules from spreading and causing harm.

However, this technology isn't perfect and never will be. Mistakes are inevitable. As human communication evolves, so too will this technology. As more and more of our enforcement is automated, we need to continue to invest in a simple and quick appeals process so mistakes can be addressed quickly.

With regard to our enforcement actions, as Kayvon mentioned, we've been developing a broader range of remediations including interstitials, account labels, Tweet labels, and de-amplification, all of which allow more speech to remain on the platform while providing a toolkit of enforcement actions that can be tailored and proportionate to the violation.

Transparency, consistency, and proportionality are key to building trust in our enforcement process. Ultimately, all of this ties back to the work we do across policy, product, and enforcement to improve the health of the public conversation on Twitter.

There is significant interest in content moderation policies and enforcement by governments around the world. In 2020, we saw a broad acceleration in proposed legislation related to content moderation, privacy, and data protection. We expect that trend to continue in 2021 and we think it's important that you as shareholders understand our principles around these important topics which will be discussed and debated around the world for the foreseeable future.

We're in a highly dynamic global regulatory environment. We see the conversation around Section 230 of the Communications Decency Act in the United States and the Digital Services Act in the EU. But these discussions around privacy and online content are happening all over the world.

As you know, Twitter is a unique public forum for public conversation and debate. Twitter's public conversation and the access to information it enables is underpinned by a free and open internet. As debate around the world focuses on how to solve public policy challenges related to the technology industry, our approach to regulation and public policy issues is centered on protecting the open internet.

We define the open internet as a global and singular internet that is open to all and promotes diversity, competition and innovation. We believe the open internet has driven unprecedented economic, social, and technological progress. And while not without significant challenges, it is also led to greater access to information and greater opportunities to speak that are now core to an open society.

We have identified five key pillars that will be central to our advocacy. They represent the foundations of the open internet, an internet we believe that can be rights based and most importantly durable in the face of innovation and the new realities of our online life.

These five pillars are: universal access through open standards, algorithmic choice, transparency, competition, and consumer choice around privacy. I want to address each of these pillars separately.

First, recognizing that the open internet is a core driver of economic and social development, Twitter will support forward looking approaches to regulation that protect the open internet and universal access. We support regional and global efforts to harmonize standards that provide for a global internet framework and protect free expression.

These standards go far beyond defining different types of content. We believe in the adoption of technical standards that embed openness and interoperability. To accelerate efforts here, Twitter is funding a small independent team of open source architects, engineers, and designers to develop an open and decentralized standard for the public conversation on the internet. We call this Project Blue Sky. Ultimately, the hope is that Twitter will be one of many clients of this standard, and it can become the bedrock of a new democratized way of building services that can connect us.

This team will not only develop a decentralized standard for public conversation, but also build an open community around it, inclusive of companies and organizations, researchers, and civil society leaders, all of whom are thinking deeply about the consequences, positive and negative.

If successful, the adoption of this standard could allow us to access and contribute to a much larger corpus of public conversation in the long term. We would then be able to focus our efforts on building open recommendation systems which promote healthy conversation and access to critical content.

Second, we believe the regulatory debate needs to reflect how content moderation is now more than just leaving content up or taking it down. The fundamental question of how people find content and how it is amplified is more important than where and how content exists. It can no longer be seen as a binary debate. As well as the regulatory focus on content types and moderation systems, we believe it is essential that consumers are given more control over the algorithms that shape their online experience as part of a forward looking policy approach. Twitter's decision to include such a control on our home timeline highlights how users can be empowered without undermining the service.

Third, openness and transparency will remain core to Twitter's approach. Transparency is embodied in our open APIs, our information operations archive, and our disclosures in the Twitter Transparency Center. And we will encourage policy makers to expand transparency requirements to enable greater accountability. We've gone further than our peers offering a Covid-19 endpoint to empower public health research and a new academic platform to encourage cutting edge research using Twitter data. This is one of the reasons you hear more about reports featuring Twitter as core to the research methodology. We empower it.

Fourth, competition is critical for our industry to thrive and we believe that the open internet is at risk of being less open as it becomes less competitive. Interoperability protects both public choice and competition as a policy tool that has significant potential. We are urging regulators to factor into their decisions a test of whether proposed measures further enhance the dominance of existing players or set insurmountable compliance barriers and costs for smaller companies and new market entrants. Entrenching the dominance of the largest companies serves no one - not our customers, our investors, or the societal values we cherish.

Finally, because we believe privacy is a fundamental human right, we will continue to advocate for choice with respect to privacy and data protection. We support regulatory proposals that enshrine thoughtful, innovative privacy protections into law. An internet structured around

consumers meaningful privacy choices will always be more open than one built around a business model that depends on accumulated stores of data for their own use.

These five pillars of the open Internet will drive our policy and regulatory discussions around the world. For example, in the United States we have encouraged Congress to work with industry and civil society to build upon Section 230's foundation, whether it be through additions to Section 230, industry wide self-regulation best practices, or a new legislative framework. By doing so, we can build an adaptable future internet that people trust by empowering technology companies to continually make necessary changes to policy services and products, as well as experiment and learn to improve their platforms and services.

We believe the principles we use at Twitter to build trust with the people using our service can be broadly applied to the industry and build upon the foundational framework of Section 230 for how to moderate content online.

These principles include transparency, fair processes, empowering algorithmic choice, and protecting the privacy of the people who use our service. And we believe a collaborative approach to regulation in the United State can avoid potential pitfalls.

For example, completely eliminating Section 230 through reactionary government speech mandates will neither address free speech concerns nor align with the First Amendment. Indeed, such actions could have the opposite effect, likely resulting in increased removal of speech, the proliferation of frivolous lawsuits, and severe limitations on our collective ability to address harmful content and protect people online. And it's not just Twitter that would be impacted by eliminating Section 230.

You can imagine there are numerous other types of companies or services that are dependent on public content and would be significantly impacted - ranging from Wikipedia, to commerce sites that accept product reviews, and news sites that allow comments on articles.

Likewise, amending Section 230 solely through carve outs for certain content types will inevitably favor larger incumbents who may willingly embrace such changes. As we believe, only a few giant and well-funded technology companies would have the resources to thrive.

For innovation to thrive in our industry, we believe it is not in the best interests of society to entrench the largest companies further. A level playing field is critical.

As you've heard today, Twitter's purpose is to serve the public conversation and we believe that the global public conversation is dependent on the open Internet. We believe that protecting the open internet is vital to fulfilling the potential of the internet as a global force for good and driver of economic growth. And we will be directly advocating for policies and laws that protect the foundations of the open internet.

With respect to our content policies and enforcement, Twitter's approach to content moderation is deeply rooted in an international human rights framework. We seek to protect the health of the public conversation in a fair and consistent manner that is transparent to those using our service. And we believe all of this work is foundational to the continued growth of mDAU and revenue over time.

I hope what I've shared with you today has been helpful in understanding our approach, and I look forward to taking your questions.

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Increasing Revenue Durability

Matt Derella - Customer Lead

Hi, I'm Matt Derella and I lead the Customers Team at Twitter. We help advertisers, content creators, mobile publishers, and developers contribute to, and benefit from, what's happening on Twitter. In my role, I lead all global sales and sales operations, driving revenue, partnerships, and country operations.

Bruce Falck - Revenue Product Lead

Hi, I'm Bruce Falck, and I lead the Revenue Product Organization at Twitter. My team is responsible for building revenue products, so that Matt's team can help advertisers and businesses harness the power of the public conversation to achieve their business goals. We're going to take you through our goal to more than double our revenue over the next three years to reach at least \$7.5 billion dollars in 2023. We call this strategy Revenue Durability. We'll make our business more durable, by building new enduring revenue streams, starting with performance advertising on top of our strong brand business. While we do see performance ads as a stepping stone to future monetization potential, like e-commerce, our immediate focus is going to be on the massive opportunity to increase our overall share of the global ad market.

Matt Derella - Customer Lead

As of today, approximately 85% of Twitter's \$3.2 billion dollars in annual advertising revenue comes from brand advertising budgets, which focus on marketing objectives at the top of the funnel, like interest and awareness. Only 15% of our ads revenue comes from performance or direct response advertising, which focuses on the remainder of the funnel where the customer takes an action - everything from an app download or a site visit to actual purchases.

Matt Derella - Customer Lead

Let me put these numbers into better context. The global advertising market at the end of 2020 was \$490 billion dollars. Digital advertising, where we participate, accounts for roughly half of this market, or \$280 billion dollars. And this is the ad category expected to grow the most in 2021. Within the digital ad market, the brand and direct response, excluding search, represents roughly \$150 billion dollars of opportunity in 2020. And we believe DR, which we also call Performance Advertising, is larger and growing faster than brand, especially considering the acceleration toward e-commerce we've seen in the past year.

Bruce Falck - Revenue Product Lead

Twitter currently owns less than 3% of that \$150 billion dollar market opportunity. While our strategy includes a roadmap for monetization beyond advertising, we can make progress on our goal and gain ad market share simply by bringing our existing performance products to parity with other dealer offerings in the market. As we do this, we believe we can go from an 85/15 brand/performance mix towards a 50/50 mix over time. We're confident in this because of pent-up demand we see every day from our customers who are constantly pursuing new and additional partners to help them achieve their performance marketing goal of 50/50 is a long-term vision, our growth doesn't depend on a mix shift, but it's a great indicator that we're creating value in both brand and performance advertisers. We'll go deeper into how we capitalize on the performance

ads opportunity and more, but first, Matt will zoom out and share a broader context around how we serve our customers worldwide at Twitter.

Matt Derella - Customer Lead

On the business front, customers around the world depend on Twitter to connect with consumers and grow their business. We have large advertisers and small and medium-sized businesses who use Twitter's ad platform when they're launching something new or connecting with what's happening in culture. Professional content creators partner with us to distribute content on Twitter that perfectly pairs with the public conversation, and helps them build audience reach, and complementary revenue streams via our Amplify programs.

Matt Derella - Customer Lead

You may be familiar with our innovative partnerships with the Olympics, the NFL, NBA, to name a few of the more than 200 partnerships that we have in place around the world that generate hundreds of millions of revenue for us and for our partners.

Matt Derella - Customer Lead

Mobile publishers drive incremental growth via our mobile ad exchange, MoPub, a platform which also enables us to extend advertising demand from Twitter to mobile publishers via the Twitter Audience Platform. And developers leverage our anonymized, aggregated, Twitter data to build and enhance their businesses through our Developer and Enterprise Solutions.

We have a strategy to grow revenue and market share by investing in our core brand advertising business where we have great momentum - while expanding our boundaries, as Bruce mentioned previously, to include more performance advertising use cases that unlock very large and growing addressable markets with both our existing large customers, and the millions and millions of businesses who already have an organic presence on Twitter.

Now, we can only achieve success with our amazing customer obsessed teams who are recognized around the world for their customer-first approach. Our teams are located in 25 markets, and with our partners, we serve customers in an additional 93 more. Across all revenue in 2020, the US accounted for approximately 55% of our ad revenue. Now today, roughly 85% of our revenue comes from advertising, with the remaining 15% derived from a combination of MoPub, our mobile ad exchange, and DES, our data product. As Bruce mentioned, the largest revenue opportunity for our business over the next few years is advertiser based. So, I'll focus most of my comments there today.

Within advertising, our large customers channel accounts for a little more than 85% of our ad revenue, while our SMB channel accounts for a little less than 15%. We believe that our advertising revenue can grow meaningfully from here, while also being more balanced between these two sales channels. As such, we are now investing in the product and the sales team to more aggressively capture this SMB opportunity.

Now that we have that context, I'll explain more about our core ads business by sharing why the most important brands around the world, including 100 of the Ad Age 100, hire Twitter Ads. Then we'll talk about what we're doing to capture the immense opportunity in performance ads that will fuel additional revenue growth, diversification of advertisers, and revenue predictability.

Twitter is what's happening, and what people are talking about right now. It is the indisputable hope for real time public conversation for sports, music, entertainment, technology, gaming, business, and seismic cultural shifts - across all interests and passions. Twitter is where the magic happens. It's like a water cooler, comedy club, and sports bar all wrapped into one. The variety and richness of the conversation gives Twitter an outside advantage in helping brands Launch Something New and Connect with What's Happening.

Now we define Launch as building awareness and interest for something new, and we don't mean just a product launch or a movie release. I'm talking about launching a new positioning, a brand extension, a new promotional campaign, a new app. We have proven tailored solutions for each of these use-cases by vertical, all around the world.

We define Connect as building relevance by being part of the conversation. This could be extending a sponsorship, being part of an event, a TV campaign, or simply part of the everyday conversations that matter to your customers. Today, we've earned a place "in the room" with customers in every vertical and sub-vertical around the world, helping them build their overall marketing strategy with the help of the insights from the world's largest real time focus group - Twitter. We now deliver real-time insights about conversations happening on Twitter, fueling campaigns where our platform is the foundation and the through line for their entire marketing strategy.

When Wendy's introduced a breakfast menu to the world this past year, we analyzed over 17 million Tweets that we see every morning about "breakfast" to drive a multiplatform campaign that started on Twitter and traveled into the physical world informing Wendy's overall strategy that included Tweets and TV spots, and on their billboards. This campaign drove a 46% increase in conversation about Wendy's on Twitter, as well as a 6x growth in their share of Twitter's daily breakfast conversation. Exposed audiences to the Wendy's breakfast battle campaign on Twitter, demonstrated a +17 point lift visit intent and a +19 point lift in purchase intent, and with Twitter as the lead social partner for this campaign, sales for Wendy's were up 15% in the week after the breakfast launch.

Bruce Falck - Revenue Product Lead

Advertisers like Wendy's have told us that measurement is the foundation of any successful brand or performance ad campaign. This is why we're making meaningful investments to both our first and third-party measurement solutions. Twitter Brand Surveys, our first-party measurement solution that launched in late 2019, helps advertisers understand how their ads affect metrics like awareness, consideration, and purchase intent. Advertisers that use Twitter Brand Surveys saw an average increase in 21 percentage points for ad recall, 7 percentage points for message association, and 6 percentage points for consideration.

While our first-party measurement solutions drive confidence in ad effectiveness on Twitter, most advertisers rely on third-party measurement reporting for objectivity. To that end, we've recently announced a partnership with Neustar, and we'll announce one soon with Nielsen for multi-touch attribution, targeted for Q3 of 2021. These partnerships help both brand and performance advertisers understand how Twitter ads play a role in the consumer purchase experience.

Beyond improving measurement, we're enabling better personalization. We've recently made a number of critical improvements to our ads personalization, and we have plans to invest more in this area. In 2020, we conducted a series of personalized ads win back events. We now have

20% more accounts that have opted into seeing personalized ads versus what we had a year ago. This allows us to serve more relevant ads, creating better experiences for the people who use our service, and driving better ROI for advertisers.

We see personalization as an opportunity for Twitter. We still have many consumer signals like Topics, Lists and Search that we can better leverage within our delivery systems to improve ad relevance - for example, building audience targeting segments based on such results. As we build trust and we deliver value for people on Twitter, and increase our personalization rates, we can give consumers a better experience and advertisers more value.

Matt Derella - Customer Lead

These updated offerings continue to prove effective for brands who want to Launch something new - and, this past year, the Revenue product team rebuilt our entire suite of takeover products to deliver more scale and impact for our advertising partners.

Our signature timeline takeover product, First View, puts your video ad first at the top of the Twitter timeline. Next, our new Promoted Trend Spotlight. This puts brands front and center at the top of the conversation in the Explore tab, where people go every day to see what's happening. Together, these two combine to create the ultimate high-reach, high-impact launch package, producing our biggest 24-hour reach ever with up to 120MM video impressions over 24 hours, capitalizing on the growth and delivering a 76% higher ad recall for our customers.

Bruce Falck - Revenue Product Lead

These are fixed priced, reserved products. Thanks to our audience growth, and to recent improvements, the First View product has increased impression targets by 72% on average in our top 10 markets. Given the massive increase, we've raised prices on takeover products in most markets by over 20%. As we grow our audience and we continue to improve reach, as well as improve our ad formats, we'll continue to have an opportunity to raise price and to reflect the value that we're delivering.

A key part of driving brand awareness during launch campaigns is getting your ad in front of as many people as possible. In December of 2020, we launched Frequency Caps, which allow advertisers to control the number of times someone sees an ad and reach more of their target audience. We found that campaigns with consistent frequency over 4 and 12-week periods saw an increase in up to 18% in brand lift.

Matt Derella - Customer Lead

When it comes to driving awareness and launching something new - we are always bringing more creative ways to drive engagement on Twitter thanks to the product innovation. We're in beta with Branded Likes - an exciting new product that will be widely available later in 2021. Branded Likes is a new ad format that allows brands to customize the Like button with animated brand imagery. Not only does it spark joy, but it drives results. Early testing shows big impact on two critical business indicators: brand recall and favorability. Let's take a look at how it works. [video plays]

And Video has continued to evolve on Twitter, now including Live Streams and Carousels.

Bruce Falck - Revenue Product Lead

These Carousel ads use multiple images of video that consumers swipe sequentially. When testing the Carousel versus a single-asset format, website carousels averaged a 15% increase in click-through rates, and App Carousels averaged a 24% increase in installs per impression.

Matt Derella - Customer Lead

And we expanded professional video services to help brands build the most effective creative for these new canvases. Video formats have been more than 60% of our advertising revenue for several years. Taken together, these product and service enhancements have secured our position as the place to launch something new and set us up for continued growth in core brand advertising.

When I talk to CMO's around the world, they're struggling with breaking through and being relevant with their messages. Media fragmentation is making it harder and harder for brands to be relevant with their customers. Unlike other digital media, Twitter is a complementary conversational layer to all forms of media, making Twitter the best place for a brand to be part of what's happening - from TV shows to tent-pole events to sports, holidays, movements and trends. That's why, as an example, nearly every Super Bowl advertiser buy ads on Twitter to complement their campaign. In fact, during major televised events, usage drops on almost every other platform. But on Twitter, it increases.

We saw 3 billion Tweets about sports around the world this past year, and many more about the NFL. For the past two seasons, Bud Light has successfully leverage Twitter to engage with NFL fans and drive cultural relevance through a custom content program called #BudLightCelly of the Week. In partnership with the NFL, Bud Light aligned with top touchdown celebrations, and gave fans the opportunity to vote for their favorite every week throughout the season. Not only did this drive tons of fan engagement, it also drove a massive amount of conversation. During the 2020 regular season alone, the campaign drove over 127,000 program mentions, and that conversation in turn generated millions and millions of impressions, successfully modernizing their traditional sponsorship, and making Bud Light an integral part of the NFL conversation. As Azania Andrews - VP of Connections at Anheuser-Busch, says "Bud Light is the 'official' beer of sports fans, and helping fans celebrate their favorite teams and players is key to our sports partnership strategy. Twitter is both a key platform for sports conversation, and an official content partner for many leagues, so it was the perfect home for the Bud Light Celly program. We're able to leverage our team and player relationships to deliver highly relevant and engaging content to millions of fans."

Bruce Falck - Revenue Product Lead

And to support brands like Bud Light who want to connect with what's happening, we've developed Curated Video Categories, a brand-safe and engaging way to match advertisers with thematic, premium content that best aligns with their target audiences. Demand is strong. Advertiser participation in the beta doubled between Q3 and Q4 of 2020, and revenue also doubled during that same time.

Earlier this year, we also redesigned our pre-roll video format to improve the user experience, by including advertiser logo and content previews. Based on our early research, these changes should increase ad recall by up to 20%. So when we have ads, the full highlights from the Olympics or the NBA, we'll have an even more immersive experience leading to higher advertiser ROI.

Matt Derella - Customer Lead

And because of all this, we see in customer feedback that we are the leader in the US when it comes to Connecting with what's happening, and "aligning brands and products with cultural moments."

Heading into this year, we're confident about growing our strength in both Launch and Connect for a few clear reasons: We're growing our audience. We're seeing accelerated consumer shift to digital. We're creating new ad formats that are launching at a faster pace. We're improving our ad relevance. We have innovative content partnerships and we're seeing accelerated shift of TV ad budgets to social video.

We're thrilled with our leadership position in Brand, and we can further gain market share as we grow usage and continue to innovate with new ad formats, better relevance with Brand Likes as a great example.

At the same time, performance must become a significant part of our future. Better performance products will give us more access than ever before to that performance addressable market. And as Bruce mentioned earlier, 85% of our ad revenue today comes from brand advertising, while just 15% is derived from performance-based advertising. Across that one \$150 billion dollar brand performance ad market, Twitter currently occupies less than 3% share. Twitter can win significantly more share of this digital ad market with scalable performance-based ad solutions.

The first vector to grow share will come from meaningfully growing our average revenue per advertiser for our large customers - call that the top 1,000. We've organized our large customer team by vertical and sub-vertical expertise, and they're embedded with our customers' businesses organizations around the world. We're already working with them and all of their major Launches. We're working with them on connecting to key events, we're helping them leverage Twitter data to make better decisions, and we hear consistent feedback that they want to invest more with us through lower funnel opportunities such as MAP and eventually e-commerce.

Bruce Falck - Revenue Product Lead

And this is exactly why we're accelerating our performance roadmap by expanding and improving our App Install and Website-Clicks-and-Conversions offerings. These help advertisers drive to their app or website in order to eventually convert users. We launched our Mobile App Promotion or MAP product earlier this month. MAP is the first step towards unlocking always-on performance dollars and accelerating our performance revenue growth. These MAP improvements, and our ability to accelerate our performance plans, are possible thanks to the hard work of our engineering teams. Between 2019 and mid 2020, these teams rebuilt our ad server, which improved our underlying ad infrastructure. This work wasn't glamorous, but it accelerated our ability to build products, and it puts us in a position to achieve future product breakthroughs and to catalyze our performance revenue growth. Over the first six months of 2020, before the project was done, we shipped 56 products and product improvements. We finished the project in June of 2020 and over the next six months, we nearly doubled that to 100 products and product improvements. This is another area where focusing on the fundamentals can unlock and accelerate more growth for us.

After the ad server rebuild finished, we started rolling out part of our new MAP solution in the second half of 2020. We're encouraged by the improved results. MAP revenue is up more than

50% year over year in Q4, generating approximately \$95 million in revenue with a roughly \$1 million dollar a day run rate.

While we've had a MAP product in the market since 2014, this new and improved offering allows us to serve app developers of different sizes and expanded categories with significantly better performance. In Q4, MAP ad impressions grew 80% year-over-year thanks to improved campaign management, ad placement, bidding and optimization. The MAP revenue and impression growth are the results of the hard work to build stronger foundations and should keep accelerating as we continue to innovate in this area.

A new MAP solution benefits from improved prediction models, which is how we decide the best possible candidate for a given ad. We launched Learning Period, which allows the prediction models to optimize ad delivery against the most valuable audiences during the first few days of a campaign. With Learning Period, our tests have shown a 39% improvement at the rate at which new campaigns gain enough audience insights to optimize campaign performance. The recent improvements are already paying off for our customers. In mid 2020, DraftKings, a daily fantasy sports brand, ran an app install campaign to drive new, first time depositors for the "Return of Sports" campaigns. The goal was to drive app downloads, and then to get new users to deposit funds. Campaign was incredibly successful, and they increased their first time depositors by 162% year-over-year.

DraftKings also previously launched other products on Twitter with similar success. And here's what they said: "These recent improvements are already paying off for our customers. In mid-2020, with the return of the NFL and the NBA, DraftKings connected with growing sports conversation on Twitter to drive engagement within its app. DraftKings leveraged Twitter's performance ad product suite, to generate strong customer acquisition, and increase the positive sentiment and mentions."

As we continue to develop MAP, but mindful of the potential impact that Apple's upcoming changes to IDFA, or identifier for advertisers, could have on our performance roadmap, we're innovating quickly around IDFA, and it's still too early to tell exactly how this will impact the industry, but it will be felt by the entire industry. We're confident that our brand advertising strength, combined with our improving performance products, and months of preparation, leave us well-positioned to continue to help advertisers meet their goals. Our recent integration with SK Ad Network, Apple's proprietary measurement solution, allows us to measure actions taken by audiences without IDFA. This new capability will allow advertisers to reach 30% more devices on Twitter right now. And it's going to make our business more durable once Apple enforces IDFA changes later this year.

Matt Derella - Customer Lead

And here's another recent, real world example of the success we're seeing with MAP improvements that Bruce just talked through. In Japan, UNIQLO wanted to drive users to their e-commerce experience this past year as part of their 36th anniversary. The e-commerce purchases required downloads of their app, which was successfully executed on Twitter. UNIQLO launched a campaign on Twitter leveraging our Launch Solutions. But that was just the start. They also used our improved MAP product to exceed the return on investment goals, leading to share shift to Twitter from competitors and a 19% year-on-year increase in total spend, as well as MAP investment that is up 6x versus last year. UNIQLO Japan's Head of Digital Marketing said it best: "Twitter is a critical partner to UNIQLO Japan. Whenever we launch a new campaign. Recently, with the improvements in their ability to drive lower funnel actions, Twitter has now moved into

the consideration set for more direct response campaigns such as mobile app downloads or driving sales."

Once again, this is early evidence of the massive upside we have with performance ad budgets. This UNIQLO campaign is an example of how standard optimization of our performance products can yield exponential increases in direct response investment. My team is on the ground with advertisers, and the opportunity we were capturing with UNIQLO is available to us in every market around the world as we nail our performance products suite.

Bruce Falck - Revenue Product Lead

Making ads on Twitter more useful and actionable will help us succeed in Performance. In the process, we'll increase the depth of our partnerships, and the breadth of our customer base around the world. It will drive more growth, better diversification, and increased revenue predictability. Our Website-Clicks-and-Conversions product contributes significantly to our Performance revenue base. This contribution should increase as we build products that drive more efficient and measurable outcomes, like sign-ups, or purchases on our customers website. To complement our efforts in MAP, we've been rebuilding our Website Clicks and Conversion product and we'll continue this work in 2021.

Earlier this month we launched Twitter Click ID, a parameter added to Twitter ads that improves our ability to attribute site visits. This is a step to future proof our business. And while it's not unique to Twitter, it'll help us remain competitive and expand our DR offering as the industry evolves.

In our latest findings during the beta, we saw a 10x increase in attributed site visits - advertisers frequently rely on this metric to compare performance across platforms and to guide investment decisions.

We also made several meaningful changes to ad formats that are frequently used by Website-Clicks-and-Conversions advertisers to help improve the ad experience. By adjusting the location of the video player controls, and improving web page load time, we further improved site visits by an additional 8.6%. While we're pleased with the progress that we've made with Website-Clicks-and-Conversions, we're definitely not done. This year we'll test multi-destination carousels, a highly requested feature that can drive users to multiple websites. And we'll continue to refine our conversion optimization models and make sure that we're delivering the most valuable audiences for our advertisers.

We're following the same playbook here that we used with MAP: we're taking an established but underperforming format that's in high demand with many advertisers today, we're upgrading it and enhancing its capabilities, and we're continuing to drive innovation to give Matt's team the tools that they need to deliver for our customers and to grow our revenue.

Matt Derella - Customer Lead

Let me help put this work that Bruce's product team is doing into tangible context, with a recent SMB example. In this website clicks campaign, female-founded fashion start-up M.M.LaFleur offered customers up to 50% discount on their best-selling products as a reward for voting, or encouraging others to vote, in the 2020 US presidential election. Customers had to share a photo, or a screenshot, or story of them participating in voting in order to receive the promotional code.

M.M.LaFleur's goal was to bring awareness to the campaign, increase engagement with the audience, and drive customers to the website to shop the discount.

Their goal for this campaign was to convert a high proportion of new customers and get at least a \$1 return on ad spend. The results from Twitter achieved these goals and surpassed other platforms on key metrics. We had an 8% higher ROI than results from other pay channels, a \$472 dollar average order value, 31% higher than the results from other pay channels, and 66% of orders were from new customers compared to only 25% from other mixed traffic campaigns.

Small and medium sized businesses like M.M.LaFleur make up about half of the total ad spend in major markets like the US. They spend a disproportionate amount of their budgets on digital advertising. About 70% of SMB ad budgets are digital, compared with about 30% from major brands. Twitter has millions of businesses who organically use our service, but only a small number of those customers are paying us directly today. In fact, small and medium businesses represent less than 15% of Twitter's ad revenue today. We believe it's a significant opportunity for Twitter to grow market share, which is why we're investing to better meet their needs. Because SMBs typically have fewer resources, and less time dedicated to learning ad platforms, anything we can do to improve their experience and lighten their operational load has an outsized impact for the segment.

In 2020, we improved our advertiser experience by updating our Tweet Composer, our Audiences Tab, as well as the Advertiser Objective Picker. We expect further product improvements to bear fruit in 2021 as we aim to serve businesses of all sizes.

We're starting with two critical functions to help them build business presence and connect with the customers on Twitter - Business Profiles and Quick Promote.

With Business Profiles, we're building functionality for businesses to self identify and unlock specific features that highlight information like hours of operation, address, phone number and website.

Quick Promote is our most popular self-service product and is a great way to quickly and easily promote Tweets to a larger audience with a few simple clicks. We're building on Quick Promotes functionality to now include expanding the targeting capabilities from location only to location, age and gender, plus more control over budget allocation. All of these initiatives drive results for our advertisers, and you can see how they come together and the Ads Manager where they actually book their campaigns on Twitter. In the last year, we've made it a lot easier to work with us and launch campaigns quickly. I'd love to show you a quick demo.

[Demo plays: Welcome to Twitter ads manager, where you can create, measure and optimize all in one place. Let's dive into the key tools you'll be using most. Get started with Tweet Composer. That's where you'll draft your Tweet. Make it beautiful with a photo, gif, or video, or a Carousel of them. Upload from scratch, or pick ones that are already in media studio. Drag and drop to change the order. Give it a website destination. Make sure it looks just right before you time its delivery. You're ready to Launch? Pick the objective to help us optimize for your marketing goals. You're all set to run a Twitter Campaign. That's Twitter Ads Manager.]

Matt Derella - Customer Lead

As I referenced at the outset of today's session, approximately 15% of our total revenue comes from a combination of our mobile ad exchange and DES. MoPub, and recently-acquired

CrossInstall, help mobile app developers build durable businesses. MoPub maximizes mobile developer revenues by unifying demand across multiple sources: from ad networks to demand-side platforms and direct sold deals.

CrossInstall helps developers acquire quality users at scale through its creative buying platform. Together, they are predictable, high-margin business that complement our owned and operated ad strategy by enabling audience extension via the Twitter Audience Platform.

This business is in the midst of a transformation and has seen meaningful improvements and a return to double-digit growth in December of 2020 as we improved our differentiation and our execution. Developer and Enterprise Solutions, also known as DES, is a unique SaaS platform that enables developers to build solutions around the aggregated, anonymized wealth of data on Twitter. DES serves commercial and non-commercial developers. Our customers include businesses, Academics, Consumer developers. Our larger paying DES Customers typically signed multi-year subscriptions or enterprise agreements. We have more than 30 customers currently paying us more than \$1 million dollars each year, and most of them have renewed multiyear contracts with us, meaning the use case and the value we deliver, is well understood. DES will likely grow slower than ads in 2021 as the team launches its new generation of data APIs and expands to new customers and use cases, setting us up for acceleration in 2022 and beyond.

Overall, as we enter 2021, our revenue durability strategy is cohesive - invest in our core brand business while expanding our boundaries to include more performance advertising, use cases; unlocking new budgets and adding millions of new customers; continue to nurture our adjacent businesses that are strong standalone businesses that also benefit our core ads business. All this will happen on the continued strength of Twitter usage as we execute our revenue product strategy.

Bruce Falck - Revenue Product Lead

That's right. And we're also working on additional initiatives to expand our multi-year product roadmap, and we hope to share more with you as we bring them to market. I'll highlight two quick areas today. First, we're exploring ways to monetize additional surface areas on our consumer platform. Our focus is, of course, going to be on driving adoption of these services first with monetization following. You've heard from Kayvon and the team about their wins and their plans to continue mDAU growth, which will create network effects for the ads business. This growth allows us to experiment on new supply surfaces within Twitter. One area that we're considering monetizing is Fleets, and there'll be lots of other opportunities over time.

Topics, Interest, and Conversations are exciting opportunities for us to expand our proprietary targeting capability. These are existing data signals that we haven't used before in our revenue products, while Kayvon and his team are scaling the platform and driving better adoption of products like these, we're working to understand how these signals can best be used for monetization. We plan to incorporate these signals into both our targeting solutions and our prediction models as soon as possible. For example, a consumer following a Twitter topic is an explicit signal that we can use in our Interest targeting.

Second, we're researching ways to further diversify our revenue beyond ads. We're going to experiment with subscriptions, that will give people and businesses of all sizes access to unique features and enhance content creation and discovery. There are premium experiences that make

Twitter even better that people will be willing to pay for. For example, think about TweetDeck, or advanced profile analytics for influencers and creators.

We're also starting to explore ways to better support commerce on Twitter. Our MAP efforts help us understand how our users are transacting on the platform. Installing an app via an ad is in itself a form of commerce. We know people come to Twitter to interact with brands and discuss their favorite products. In fact, you may have even noticed some businesses already developing creative ways to enable sales on our platform. This demand gives us confidence in the power of combining real-time conversation with an engaged and intentional audience. Imagine easily discovering, and quickly purchasing a new skincare product or trendy sneaker from a brand you follow with only a few clicks.

While we're excited about the potential of commerce, it's in very early exploration, and our main focus is going to continue to be growing our performance ads business. We believe that a robust performance ad business will put us in a strong position to move towards commerce, and establishing tools for businesses to build their presence on Twitter will as well. In fact, we believe that a strong performance ads business is a prerequisite for commerce, just as we believe establishing a strong business presence on the platform is a prerequisite for commerce.

Making revenue durability our #1 company priority, provides tremendous focus for our teams to deliver on our ambitious revenue product roadmap, and drive the goal of doubling our total annual revenue to reach \$7.5 billion or more in 2023. We're well on our way to increasing revenue durability and have a lot of exciting work ahead of us.

With that, I'll hand it off to Mike, Mudge, and Parag to talk about how we're increasing development velocity at scale.

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Improving Development Velocity **Parag Agrawal - Technology Lead**

Good afternoon. Thank you for tuning in. I'm Parag and I'm the CTO at Twitter. We'll also be joined by Mudge Zatko who will touch on our plans to evolve Twitter security and privacy.

You heard Jack and Kayvon acknowledge a problem we have faced at Twitter - that we move too slowly. A big reason for this is that we've been building upon systems that weren't designed for the scale and complexity we work with today.

We've been fixing things along the way, paying for deficiencies, using increased operational burden and slower development. This frustrated great engineers, it slowed us down, and kept us from being creative and innovative. Today, we will talk about the work we've been doing to address this and the progress we've made.

We will also talk about work within our roadmaps that will help us achieve the goal you heard from Jack earlier: double the development velocity by the end of 2023. Specifically, this means doubling the number of successful features we launch on a per employee basis that contribute to growth in either mDAU or revenue.

This is an ambitious goal, made more difficult by the need to scale our service to support the growth goals in mDAU and revenue that we want to deliver. And together, these require

investment which will pay back in spades for the goals you care about - growing mDAU, growing revenue, and ultimately increase profitability.

When we set out to improve development velocity, we saw three areas we needed to address. One, parts of our technology back-end used to solve increasingly commoditized use cases, but no longer at par with the latest technology solutions available externally.

Two, we required significant coordination to shift new features as scale and complexity increased.

And three, machine learning was becoming increasingly important to our product outcomes.

Yet our capabilities around machine learning and analytics were lagging behind. Today, I want to talk about our approach to address each of these areas, the progress we've made, and the work that lies ahead. Let's start with the first area.

Our approach is to adopt external best-in-class technology solutions when Twitter's needs are not unique or differentiated. This enables our teams to focus on areas where we are uniquely positioned to innovate. We have taken a systematic, sequenced approach to how we drive these changes. We are on our way and are seeing the benefits of this approach. We've already completed a number of successful migrations and others are underway.

I will give you two examples of places where we are already seeing benefits from our work. Last year we finished moving many in-house systems to Apache Kafka an open source event streaming system. Migrating to Kafka has decreased the operational burden on our teams, unlocked new features, enabled better integration with data processing technologies, and simplified our tech stack. And it enabled improvements in our product as a result.

For example, we transition a data pipeline we use for training machine learning models in the home timeline from batch to streaming using Kafka. These models could now use data from a day ago instead of a week ago, resulting in improved relevance. Twitter is now one of the largest Kafka users in the industry, with upwards of 200 million Kafka events processed every second.

Moving on to the second example, we're working on improvements to the developer experience by enabling a much faster edit-compile-test loop for our engineers. This is some of the most common work for our engineers. A lag in any of these steps detracts from productivity and creativity and leads to frustration.

We started to adopt new solutions, including replacing our build tool with Bazel that decrease wait times by anywhere from 50 to 90%. When complete, we will have enabled best-in-class technology solutions for engineers for the most common work. These are just two examples.

The extent of our strategy and work is significantly broader. We are continuing to adopt other external solutions and the options space available to do so is expanding as we've established partnerships with multiple public cloud vendors. We are on a path to have modernized our technical underpinnings, having started at a deficit a few years ago.

To address the second area, our approach is to modularize our architecture to enable more autonomous teams. This enables more agile teams that iterate faster.

You've already heard about our work to rebuild the ad server that we completed last year. This was an example of our approach to modularize our architecture. Beyond enabling high reliability

and decreased operational burden, this re-architecture enabled significantly more autonomy for individual ads product teams by decomposing the monolith into a modular set of shared platform components.

The result was a very noticeable increase in how much we were able to ship. We went from having shipped 56 product improvements in the first half to over 100 in the second half of last year.

This acceleration enabled the recent launch of the map product that Bruce discussed. Similar to a transformative work on the revenue side, work is underway on evolving our architecture on the consumer side.

As Kayvon illustrated, the pace at which we are able to shift features has been improving. We expect this improvement to continue as we systematically address architectural challenges that we've identified.

Our approach around the third is to improve experimentation using advanced machine learning and analytics. This enables us to drive continuous improvements for our products.

We made investments in our data and ML Platforms that enable experimentation and learning. We've seen deep learning adoption go from 15 to 60% of all ML models over the last two years. But more importantly, we've seen real business impact as a result of these improvements.

Kayvon mentioned the number of mDAU directly driven by product improvements, has grown about threefold over the last three years. A large fraction of this growth is driven by improvements in our ML models that improve relevance of the content we surface.

In addition to helping us grow mDAU, our improved ML modeling work has improved the health of the conversation by proactively detecting, down ranking, and enforcing on unhealthy content.

Just in the last year, we were able to decrease abuse reports by 40% as a result of changes to the home timeline. Improved ML modeling has also been a consistent driver for improving ad relevance.

As a part of this work, we've partnered with Google Compute Platform and adopted BigQuery broadly for ad-hoc data analysis. We've seen large increases in performance. Some queries have been reported to be 10x faster on BigQuery compared to the pre-existing solution, and this has fostered us doing more analysis and learning more from the data we have.

We saw a 70% increase in the number of employees that run ad-hoc analysis using BigQuery on a monthly basis in the last six months and the number of ad-hoc queries has increased even more. Effectively learning from our data can drive significant impact. When we launch the carousel ads product last year, we were able to use BigQuery to quickly learn about its performance.

The experiment we ran for the month of October 2020 consisted of multiple iterations informed through learning and, ultimately, saw 24% increase in map ads install rate for this product. We believe there's a lot of opportunity by investing in this area.

We will see continued business impact through the mechanisms I described above, but also through enabling entirely new experiences like hundreds of thousands of topics for people to follow.

We are doing two things going forward: First, we are doubling down and moving our entire offline data and ML Platform to manage services on Google Compute Platform. This effort will drive a complete transformation of the technology available to our teams. It's a great example of the flywheel of investment. We will spend more on ML and analytics than we have in the past and we will expect to improve velocity as a result, analyze more data, and build better models using best-in-class tools. And we expect this will lead to increased mDAU and revenue, enabling further investment in technology.

Second, emboldened by the progress we've made, we are now investing in advancing ML research. These investments are in differentiated yet critical areas including recommendations systems, natural language processing, graph machine learning, conversation and media understanding, and responsible ML. Our initial investments, the progress we've made, and the impact we've seen, gives us confidence and guides that approach moving forward. Our goal is to double our velocity by the end of 2023 through continued focus and furthered investment in these areas.

Security and privacy are other core enabling areas for us to improve development velocity. Mudge Zatko recently joined our leadership team. He's a pioneer in cybersecurity and held leadership roles at Stripe, Google, and within the U.S. Department of Defense. I will turn it over to him to speak about our plans to evolve greater security and privacy to further enable development velocity.

Peiter “Mudge” Zatko - Head of Security

Thanks Parag. In the 15 years that Twitter has been up and running, the threat landscape has grown significantly.

At Twitter, there are multiple teams that handle aspects of information and cyber security spread throughout the organization. For example, at Twitter there's Trust and Safety, who deal with disinformation and attempts to manipulate the public conversation.

There's Twitter Services, who handles the security needs of the people who use our service, such as for account takeovers and machine learning to identify doxxing attempts. There's Corporate Security whose focus is on the physical safety of our teams and business.

And IT has a lot of security roles, such as commissioning and decommissioning employee's computers, identity management, and more. And, of course, the more traditional information security orgs. All of these are important areas of security, and all of them involve and touch on Twitter systems and data -- systems and data that are built, run, and maintained by the engineers.

With better alignment of the different security and engineering teams and a more cohesive security strategy, Twitter can be more secure and our engineering teams can move faster.

One of the most effective ways to improve and verify the integrity of something is to streamline it. Optimizing for business functions removes unnecessary complexity and attack surfaces; the easier it is to audit, scale, and accelerate.

When streamlining and optimizing correctly, the safe way to do something becomes the easier and faster way as well. This deeply co-mingles security and engineering. But, it's not enough to just streamline something to enable it to grow bigger and faster. You have to know what and where everything is.

- You need visibility and control.
- You have to have trust in the systems.
- You have to have trust in the data.

Some of our engineering and security projects include: updating the SDL, the Secure Development Lifecycle within the SDLC, ensuring it is able to be more automated and that it measures the efficacy of the code security processes at scale and at speed. This supports the critical function of making trustworthy software that you run on your computers and phones when you access the Twitter service.

We're refining configurations and monitoring on engineering platforms so we can make it easier for engineers to access them appropriately, but difficult and obvious when accessed in ways that increase risk or are malicious.

And, we're constantly re-evaluating if there's a safer way to perform back-end functions on smaller sets of data and thus presenting less risk while enabling better scale and velocity.

Twitter's been in the news the past year for some security and disinformation items. We are a very important and visible company to the world.

You will know that Twitter Security, Privacy, Safety, and Integrity is better meeting customers' needs when these areas appear to fade away, partners continue to grow their trust in us more and more, customers continue to worry less and less about information shared with Twitter, and even policy makers look to Twitter for solutions because we're viewed as actively leading the pack in improving the health of the public conversation.

Thanks for your time - and with that, I'll pass it to Mike.

Michael Montano - Engineering Lead

Thanks, Mudge. In order to double development velocity, we need to improve engineering scale. We are in the midst of modernizing Twitter so that the operational burden and unnecessary complexity of our technology no longer holds us back. As we increase our development velocity, grow mDAU and revenue, we need to ensure we are prepared to handle the additional scale. Let me walk you through how we're doing that.

When I refer to engineering scale, I'm really talking about significantly building out the foundational aspects of our engineering in two main ways: Infrastructure and Team.

The stronger the engineering foundation across these two dimensions, the more predictably we can deliver new features in service of healthy participation and revenue durability at a higher velocity. We have historically served Twitter using data centers that we operate.

Over the years, we've built a robust capability to serve our user base as it has grown. We operate these data centers with sufficient redundancy such that we can tolerate traffic surges without

impacting the service. This has allowed us to operate reliably through increases in usage including through the various challenges and global events that occurred in 2020 and into this year.

However, as we scale our platform to support more consumers and partners, we must invest now ahead of growth to enable greater flexibility, while maintaining reliability and being aware of cost efficiency. We have a two-pronged infrastructure strategy.

First, in 2021, we will bring a new data center online, taking advantage of modern design for high reliability and lower costs to support the continued growth of the service.

Second, we are investing in a hybrid approach by partnering with Amazon to use AWS to help us serve home timeline traffic and deliver features at greater scale with greater flexibility.

A key milestone on this approach will be serving live traffic from a region in AWS. We will experiment with this in the coming quarters and be fully operational at scale in 2023. Building an additional serving region in AWS will allow us to take advantage of technology advances developed externally.

This hybrid approach helps us realize several benefits, including: The ability to serve from locations closer to our customers around the world, unlocking customer performance benefits, which leads to increased usage. It will also help us manage capacity with even more flexibility, which decreases operational burden on our teams;

And finally, we expect to drive performance efficiencies with the ARM processor family across our infrastructure. We see an opportunity to realize immediate benefits here while positioning ourselves for further efficiencies as ARM technologies advance.

Next, I'll talk more about how we've been growing the team.

As we grow, we must continue to attract and retain the best talent and enable them with infrastructure and tools to do their best work.

We've done a much better job in the last few years, attracting and retaining top talent. From 2018 to 2020, we were able to reduce the engineering attrition rate by more than 60%, while growing the team by over 65%.

In the past year, we've strengthened our engineering leadership team with world-class talent, bringing in domain specific expertise that is critical to scaling our platform, including cloud management, security, and machine learning.

We've brought in leaders with deep experience in exponential growth from companies like Google, Facebook, and Microsoft. Additionally, their experience ranges from having led efforts to move infrastructure footprints to the cloud to having led engineering for innovative public conversation products like Reddit and Quora.

In the second half of 2020, having briefly slowed hiring during the start of the pandemic, we ramped our hiring engine back up and we've begun to hire at an even faster rate than before.

As we look ahead, we're also tapping into a wider pool of diverse and global talent - an area of great priority for us - by doubling down on remote and distributed work.

You've heard that in 2021, we plan to grow headcount by greater than 20% and expenses by 25% or more. Those increases are disproportionately focused on engineering, because we believe that increasing development velocity and improving engineering scale is the only way to achieve our ambitions around growing mDAU at a 20% compound annual growth rate and more than doubling total annual revenue by 2023.

To support these goals, we're continuing to grow our teams in three ways:

- First, we're investing in our teams to work on scaling our infrastructure.
- Second, we're growing teams that unlock development velocity by helping us adopt external technology solutions, modularize our architecture, and increase experimentation and learning as Parag described.
- Third, we're doing all of this alongside growing the product teams. We've been steadily accelerating feature delivery. and it's critical that we continue growing these teams to meet the size of our ambition.

Over time, our work to scale and increase development velocity, will enable us to shift more of our resources towards future developments.

To recap, today we have shared how important this work is. We are in the midst of modernizing Twitter so that the operational burden and unnecessary complexity of our technology no longer holds us back. As you heard from Parag at the outset, the work we have described will require significant investment, and will allow Twitter to move faster and to deliver on the goals Jack shared at the beginning of the day.

In order to realize our mDAU and revenue ambitions, we will double development velocity, by ramping up our investment in our team and technology.

We will focus on three areas:

- We will adopt external technology solutions, when Twitter's needs are not unique or differentiated.
- We will modularize our architecture to enable more autonomous teams.
- And we will invest to increase experimentation and learning to improve relevance and drive continuous improvement to our products.

Additionally, our focus on making security and privacy more seamless and scaling our infrastructure will reduce operational complexity as we grow. Growing our team will provide the foundation for all of this work.

As investors, you care about the usage and revenue that we deliver. We're focused on increasing development velocity and improving engineering scale because that is how we will deliver those outcomes.

I hope this session has been helpful and now, we look forward to taking your questions.

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Our Brand

Leslie Berland - Chief Marketing Officer and Head of People

Hi, I'm Leslie Berland, our CMO and Head of People at Twitter. I'll talk briefly about our brand and marketing, and then hand it over to Jennifer Christie to talk about our work supporting the people who built a better and stronger Twitter every single day.

When we market and advertise, we're talking to the people who use the service, who don't use the service yet, our content partners, and our advertisers who are consumers too. And to better serve our advertisers, we've also built an amazing Twitter Influence Council of CMO's, who give us powerful and ongoing feedback on our work, and make us stronger.

Just five years ago when I joined the company, one of our biggest challenges was defining and articulating what Twitter was, how it was different, and why it was unique.

We landed on a brand statement: Twitter is what's happening and what people are talking about right now. It was extremely clarifying at the time.

And that statement stays true today. Our brand and our service have never been more recognizable and understood. What makes Twitter different and unique is clearer than it's ever been.

Working at Twitter we have the advantage of being on the pulse of the conversations that happen every day, seeing what's trending, what breaks through, what people care about, how they engage. And we build our marketing programs accordingly.

And the bar for what we do is high. When we create programs on the platform, we've got to be at the level where advertisers stand up and say, "how can we do that?"

That's when we know we've nailed it. And when partners are coming to us to collaborate more and to do even bigger things together, we know we've struck a chord.

A great example of this is our collaboration with the NFL. The Super Bowl is always one of the biggest conversations in the US, and we wanted to engage fans like never before and put Twitter, especially Tweets, at the center. Last year we launched a campaign on our platform that got people talking. We picked the best fan and player Tweets, and put them on the confetti that rained down on the field after the game, extending the energy and excitement beyond the final score. The activation was so successful last year that we partnered with the NFL again to do it even bigger and better this year.

Through 2020 our marketing activations, including everything from sports and award shows, to watch parties, and celebrity Q & A's, Twitter was, and continues to be, central in an increasingly virtual world. These conversations - and the roar of the Twitter crowd - continue to deepen and broaden around the world. We're seeing more engagement in our marketing programs than ever before.

We launched all of our activations through our Twitter handles, and if you look at our @Twitter handle specifically, and our vertical handles like @Twittermusic, @Twittergaming, our engagement rate increased more than 50% year over year.

2020 proved the power of Twitter like never before, and we expect this year to be the same. We recently launched a refresh of our brand design to reflect the energy and power of the conversations that happen on Twitter. We're excited for you to see everything we've got planned ahead.

Our brand is defined by the people on Twitter and also the people who work here.

To talk about our amazing people, our Tweeps, I'll hand it over to Jennifer.

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Diversifying our Teams and Driving Distributed Work **Jennifer Christie - People, Real Estate and Workplace Lead**

Thank you, Leslie. The way that we attract and retain our people is a core differentiator for us, and key to our execution. So we're going to share what we've done and what you can expect to hear from us over time.

Whether it's setting growth targets for a remote workforce long before the stay at home mandate of COVID-19, or how we're reimagining our workspaces and setting bold diversity targets today, we're going to stay on the cutting edge of workplace and workforce trends so Twitter will be the best place for people to do their best work anywhere in the world.

When I joined Twitter from American Express in 2017, our biggest focus was on reducing our attrition. Competition for tech talent in the Bay Area has always been fierce, but at that time, we were losing more employees than we could hire which was affecting our ability to execute.

As we focused on the root causes of attrition, we identified opportunities to make changes to our compensation programs, as well as the experience across the entire employee lifecycle.

We also recognized the need to grow our teams outside the Bay Area - to be able to attract tech talent that's distributed across the globe.

We even took the opportunity to start to decentralize decision making and product development, to be closer to the people who use our service, the majority of whom are outside the United States.

To address these needs in 2018, long before a global pandemic forced many other companies to follow us in this work. We launched a workforce and workplace strategy that was designed to move us closer to decentralization. We believed that it would help our company better reflect our service by leveraging local context and cultural insights to serve the public conversation. It would also help us attract great talent, regardless of location, being able to tap into broader, more diverse talent pools.

And we also believed it would help us retain our people by providing the flexibility to balance their personal and professional lives effectively, reducing commutes, and focusing on productivity and output, not location.

A core element of this strategy is increasing our remote workforce and building distributed teams who are able to work effectively together without being co-located. As a result, we had a two year head start in building the kind of capabilities that allowed us to quickly pivot to a fully remote workforce in 2020, ensuring the safety of both our employees and our partners.

As we grow, we're able to leverage and tap into a very unique employee value proposition. We often say that our people come for the purpose and stay for the people, for the experience of working at Twitter, and the experience gained working at Twitter.

We think this is a big way that we separate ourselves from the pack and our ability to attract and retain the best and the brightest.

The impact of our work is also reflected in our results. The total number of employees at Twitter has grown more than 40% since 2018, and our engineering, product design, and research teams have grown over 50% in that same time frame. Total attrition, on the other hand, has decreased by 50%.

So we're attracting great talent and we're distributing our workforce. In fact, we have been retaining our people at greater rates year over year for the last five years.

Furthermore, the attrition rate for employees who have stayed at Twitter but have moved their location is 35% lower than our overall attrition rate.

Our focus on decentralization and flexible working is helping us retain our talent.

In terms of diversity, we have also made progress since 2018. Women now represent 42.6% of our workforce globally, up from 40.2% two years ago. Black employees represent 6.5% of our workforce, up from 4.5% two years ago. And Latinx employees represent 5.4% of our workforce, up from 3.9% in 2018.

So while we have made progress over the last two years, there's a lot more to do. We have set very aggressive workforce representation goals to reach by 2025. By that time, we want at least half of our workforce to be women globally, and in the US, we want at least a quarter of our workforce to be underrepresented minorities, with black employees comprising at least 10% of our workforce.

Despite the challenges of 2020, we have succeeded in growing our teams globally, retaining our talent, diversifying our workforce, and building a more resilient company ready for the next phase of growth.

Looking ahead, we are going to continue to scale our teams by more than 20% in 2021. We're going to continue to retain our talent, and we're going to stay the course on our decentralization strategy.

In terms of diversity, we are going to continue to make progress towards this aggressive 2025 workforce representation goals. And we're going to continue to have an evergreen focus on the future of work.

We got ahead of the game on flexible working, and that allowed us to hit the ground running in 2020. So we're going to continue to look ahead to the next phase of workforce and workplace trends, and lead the way.

In terms of how we will measure success, we are going to continue to track key results across workforce growth, retention, distribution, and representation.

Finally, why is this all important? Because by focusing on inclusion and diversity, the future of work and decentralization, we effectively position ourselves to be able to rapidly hire and retain the people we need. And it is in fact this dual ability to attract and retain our talent, that will enable Twitter to grow and execute better and faster.

Thank you for your time.

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Investing to Drive Growth
Krista Bessinger - Twitter, VP Investor Relations

Before we get started, I wanted to call your attention to the disclaimer you see on your screen now regarding our 2023 mDAU and revenue goals. These goals are subject to various risks and uncertainties and actual results could differ materially from what's presented here today.

Ned Segal, Chief Financial Officer

We've covered a lot so far today. Thanks for sticking with us.

Before we turn to the final Q&A, I'd like to cover two topics. The first is a look back at our financial and operational performance in 2020 as a way to level set where we are today. And second, a look ahead to the next few years and how we're planning to invest to deliver on our audience and revenue goals. Let's start with our 2020 results.

First on audience and engagement, our focus on making it easier for people to find what they're looking for when they come to Twitter is working. As Kayvon noted, we've added significantly more mDAU in each of the past three years with accelerating mDAU growth: 11 million from Q4 of 2017 to Q4 of 2018, 26 million from Q4 of 2018 to Q4 of 2019, and 40 million from Q4 of 2019 to Q4 of 2020. Total mDAU grew 27% in Q4 of 2020, driven by global conversations and ongoing product improvements.

Simply put, people are coming to Twitter and when they come, whether as part of their daily routine or something that happened in the world, we're doing a better job helping them find what they're looking for. The absolute number of mDAU added due to causal product improvements has nearly tripled over the last three years, and growth from product improvements reached an all time high in 2020.

Next, let's look at 2020 revenue. This year was best seen as three distinct periods. Let me go through them in detail. The first was January through early March, when we saw strength in the US with some COVID related weakness in Asia.

The second, the period most negatively impacted by COVID from early March through early June, we saw the impact of the pandemic on advertiser behavior in its most pronounced form.

And the third was early June through the end of the year, when we saw a broad based global recovery in advertising revenue as brands returned to Twitter and the world gradually began to open.

Q4 was a strong finish to the year, with nearly 1.3 billion dollars of revenue, the highest quarterly revenue we've delivered in our history. Total ad revenue grew 31% year over year and 43% sequentially, with greater than 50% year over year growth in map, albeit off easier comps.

Overall, we saw revenue growth accelerate sequentially across all major markets and verticals, as well as across both brand and performance ad formats in the fourth quarter. Now, while Q4 is typically our seasonally strongest quarter, and there was a broader recovery, we believe that our results also demonstrate the benefits we're delivering for advertisers with a larger audience, improved ad formats, and better measurement and targeting.

Data licensing and other revenue grew 9% in 2020, benefiting from strength in DES contract renewals, with many of our largest customers coming through in the first half of the year. This area continues to provide predictability, strong margins, and is a great complement to advertising on Twitter.

Finally, let's look at 2020 profitability.

We continue to invest in 2020, but it wasn't easy amidst the adversity that COVID threw our way. We believed strongly that it was important to manage for the long-term, despite the near-term uncertainty. We didn't reduce headcount. Instead, we hired people, added infrastructure, and invested in the areas needed to realize our ambitions.

Expense growth for the full year of 19% was in line with 2019, and slightly below our original plan due to COVID related constraints. Remember, this includes a 150 million dollar reserve for a pending FTC fine. We'll report back with more on that when it's available.

With improving business conditions in the second half, we're able to increase our level of investment and exited the year with expense growth of 21% year over year in Q4. Total operating income was 27 million dollars for the full year. Of note, strong revenue in Q4 resulted in operating income of 252 million dollars in the fourth quarter. That was our highest ever for a quarter and an operating margin of 20%.

Now when we deliver margin expansion, it will come from top line growth, not by cutting costs. Q4 was a good demonstration of our potential to deliver operating leverage at scale.

We also grew capex 62% this year to address our near-term capacity needs, and to continue the build out of a new data center to support the platform and engineering initiatives that Parag and Mike talked about earlier.

Looking ahead to our ambitions, we've shared these throughout the day and here they are all on one slide. I'll start with velocity, as that is the foundation that enables all of our work. We aim to double the number of successful features shipped per employee by 2023.

Next, is participation. Because without an audience, there's no revenue. We aim to deliver 315 million or more mDAU by the end of 2023, representing a 20% compound annual growth rate from when we first shared that ambition last year. Keep in mind that mDAU growth is likely to not be 20% year over year at every quarter, as we lap tough comps from last year and product improvements will not always yield the same contribution. We also don't know all the events the future holds that may bring people to Twitter. But when people do come, they'll continue to see the compounding benefit of the improvements we are making every day.

As we've shared, we expect about 20% mDAU growth in Q1 and low double digit growth in Q2, Q3, and Q4, with a low point likely in Q2 of 2021 [correction], given the massive surge that we saw in March of 2020.

And finally, durability, our number one company objective. We aim to gain share in the digital ad market, as Matt described, with the goal of doubling revenue from 3.7 billion in 2020, to 7.5 billion or more in 2023. We'll achieve this by growing our audience and executing on our revenue product roadmap, gaining market share in both brand and direct response.

The key is to significantly grow our share and performance advertising. We aim to see revenue from DR increase as a percentage of total revenue from 15 to 50%. The closer we get to that goal, the more revenue we can deliver. We'll share our brand/DR revenue split annually, so you can track our progress on this important measure of our success.

Remember, as the world continues to recover this year, we could see really strong performance in brand that could slow the mix shift towards DR. But that would be an indication of near-term strength - not a cause for concern.

While we believe driving better outcomes in DR is the biggest near-term opportunity to accelerate growth, we will also increasingly invest and roll out other ways to tap into the value of our service, including subscriptions for consumers and businesses, as well as commerce. These will deliver value to customers and will provide more predictability to our financial profile. And we're excited about their potential. We'll hear more about our progress in the coming quarters.

We've also begun investing in the small and medium business opportunity, both in sales and product. Today, this is less than 15% of ads revenue, but should be more over time, adding predictability and durability to our business. Like the brand/DR split, this may not change in 2021. But over time we want SMBs to be a bigger part of our business.

Now that you know our goals, let me share how we'll be investing to drive growth.

For 2021, we plan to grow total cost and expenses 25% or more compared to last year. Remember, we grew headcount by 14% in 2020. Just having all of those great people with us for a full year, and adding merit increases will grow expenses in the high teens. And of course, we have more ideas and plans for growth, for which we need to make incremental investments and hires this year. Expense growth in 2021 mostly reflects investments in infrastructure and headcount, with a focus on product and engineering to allow us to deliver on the goals that we've laid out today.

Assuming the global pandemic continues to improve, and that we see modest impact from the rollout of changes associated with iOS 14, we expect to grow 2021 total revenue faster than expenses. How much faster will depend on our execution, iOS 14, and macro factors.

You should expect that if revenue is growing meaningfully faster, we'll look to continue to invest while maintaining a rate of revenue growth that is higher than expenses. Looking further out, as long as we're on track to reach our mDAU and revenue goals, we will continue to bias towards investment.

There's no change to our thinking about our long term margin potential, but we have to balance our ability to realize that long term potential with investing for growth against the massive market opportunities that we've described today.

As a reminder, the long term margin target we've shared historically was 40 to 45% in adjusted EBITDA, which, given our focus on GAAP results, translates to mid teens operating margin. We've been within or even exceeded those margin targets several times in the past. And we believe ramping investment now, which may result in lower margins in the near-term, will yield accelerating growth and attractive margins over time.

Now, I'd like to take a couple of minutes to talk about capital allocation. First, we want to support our growth, both organically and through acquisitions. We're prioritizing investment in organic initiatives that expand our core products and services and accelerate our growth. There are billions of people that still don't use Twitter every day, and hundreds of billions spent on digital ads elsewhere on the internet.

We're also making strategic acquisitions that complement and accelerate our work. Acquisitions have been a key to adding to our team and advancing our top company objectives. Over the last three years, we've invested hundreds of millions in about 20 transactions, adding talented employees, important technology, and products to Twitter.

We continue to look for opportunities to add and enhance our products, technology, and talent through M&A, and we believe this is a core competency for us. As an indication of our success, retention of acquired employees is higher than those that we've hired other ways over the last three years.

Second, let me touch on our share repurchase program. We'll use part of our cash balance on our previously-announced buyback, of up to 2 billion dollars over time, as a way to offset stock dilution and return capital to shareholders. We're taking a disciplined, analytical approach. We initiated the repurchase program in Q4 and we bought back just over 250 million dollars worth of shares in the quarter. Our pace and future quarters is likely to be lower and may vary based on the operating environment, our capital needs, and market conditions. We'll report our progress on the share repurchase program each quarter when we share our earnings results.

Third, we want to maintain a strong balance sheet. We intend to manage to an appropriately efficient capital structure and what that looks like will vary over time. We'll leverage the capital markets periodically.

Recent financings include issuing notes in December of 2019 for 700 million, and a convert with Silver Lake for a billion dollars in early 2020. We have maturities from existing issuances in 2021, 2024, 2025, and 2027 to provide us maximum flexibility.

Let me recap what you've heard from us today. First, we believe Twitter has two massive market opportunities in both audience and revenue. You heard from Kayvon that we believe Twitter's capable of serving billions of people daily. And you heard from Matt and Bruce that we have a 150 billion dollar TAM in digital advertising, yet just 3% share today. That translates into enormous runway for growth.

Consequently, we've set bold ambitions and a clear strategy on how we'll achieve that. In order to realize our mDAU and revenue ambitions, we will double development velocity by ramping our

investment and our technology, and our team. We'll focus on adopting external technology solutions, modularizing our architecture, and increasing the pace of experimentation and learning.

Additionally, our focus on making security and privacy more seamless, and scaling our infrastructure will reduce operational complexity as we grow.

To consistently grow mDAU 20% or more per year, we will build on our strong foundation of ongoing product refinements, such as improved relevance. Layer on top of that work across interests, conversations, and making Twitter better in emerging markets, which we expect can both increase our top of funnel and improve our retention. This will all be complemented by our work on health across product, policy, and enforcement to help keep people safe, engaged, and informed.

To gain market share and double revenue, reaching \$7.5 billion or more in 2023, we will invest in our core brand business while expanding our opportunities to include more performance advertising use-cases - unlocking new budgets, and adding millions of potential customers.

We'll maintain steady contribution from DES and MoPub. And we will continue to nurture adjacent opportunities such as commerce and subscriptions.

As Bruce pointed out, we're really excited about these opportunities and we will invest to make them meaningful contributors to revenue, while balancing investments in the 150 billion dollar and growing near-term TAM for advertising.

Finally, I'm excited to be part of this amazing team that you've heard from today, and to serve under Jack. Our shared purpose, clarity of strategy, and pace of execution have never been better. This is the team to execute on the goals we've shared, and I can't wait for you to see what we can accomplish together.

We hope the time today has been helpful. Thank you for your support and your interest in Twitter.

With that, we're ready for our final Q&A.

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