

Date: February 1, 2024

Operator

Thank you for standing by. Good day everyone and welcome to the Amazon.com Fourth Quarter 2023 Financial Results Teleconference. [Operator Instructions] Today's call is being recorded. For opening remarks, I will be turning the call over to the Vice President of Investor Relations, Mr. Dave Fildes. Thank you, sir. Please go ahead.

Dave Fildes

Hello and welcome to our Q4 2023 financial results conference call. Joining us today to answer your questions is Andy Jassy, our CEO, and Brian Olsavsky, our CFO. As you listen to today's conference call, we encourage you to have our press release in front of you, which includes our financial results, as well as metrics and commentary on the quarter. Please note, unless otherwise stated, all comparisons in this call will be against our results for the comparable period of 2022. Our comments and responses to your questions reflect management's use as of today, February 1, 2024, only and will include forward-looking statements. Actual results may differ materially, additional information about factors that could potentially impact our financial results is included in today's press release and our filings with the SEC, including our most recent annual report on Form 10-K and subsequent filings. During this call, we may discuss certain non-GAAP financial measures. In our press release slides accompanying this webcast and our filings with the SEC, each of which is posted on our IR website. You'll find additional disclosures regarding these non-GAAP measures including reconciliations of these measures with comparable GAAP measures. Our guidance incorporates the order trends that we've seen to date and what we believe today to be appropriate assumptions. Our results are inherently unpredictable and may be materially affected by many factors, including fluctuations in foreign exchange rates, changes in global economic and geopolitical conditions and customer demand and spending, including the impact of recessionary fears, inflation, interest rates, regional labor market constraints, world events, the rate of growth of the internet, online commerce, cloud services, and new and emerging technologies, and the various factors detailed in our filings with the SEC. Our guidance assumes, among other things, that we don't include any additional business acquisitions, restructurings or legal settlements, it's not possible to accurately predict demand for our goods and services, and therefore our actual results could differ materially from our guidance. And now, I'll turn the call over to Andy.

Andrew Jassy

Thanks, Dave. Today we're reporting \$170 billion in revenue, up 13% year-over-year excluding the impact of foreign exchange rates, \$13.2 billion in operating income, up 383% year-over-year, or \$10.5 billion and \$35.5 billion in trailing 12-month free cash flow adjusted for equipment finance leases, up \$48.3 billion year-over-year. While we've made meaningful progress in our financial measures, what we're most pleased about is the continued customer experience improvements across our businesses. These results represent a lot of invention, collaboration, discipline, execution, adjusting and reimagining from teams across Amazon. Looking back at Q4, I'll start with our stores business where customers responded to our continued focus on selection price and convenience. We continue to have the broadest retail selection with hundreds and millions of products available and added tens of millions of new items last year alone, including fashion selection from Coach, Victoria's Secrets Fashion, Pit Viper, and Beyonce's Renaissance to our Merge to cosmetics from Lancome, Urban Decay, cosmetics and No Beauty by Vanessa Hudgens, to consumer technology and services from Boost, Infinite, and Woop to homewares for Martha Stewart. Being sharp on price is always important. But particularly in an uncertain economy where customers are careful about how much they're spending. We kicked off the holiday season with Prime Big Deal Days, an exclusive event for Prime members to provide an early start on holiday shopping. This was followed by our extended Black Friday and Cyber Monday holiday shopping event, which was open to all customers and ended up being our largest event ever. These events also helped attract new customers and Prime members. Throughout the quarter customers saved nearly \$10 billion across millions of deals and coupons almost 70% more than last year. In addition to offering great deals, we continue to improve delivery speeds. In 2023, Amazon delivered to Prime members at the fastest speeds ever, with more than 7 billion items arriving same or next day including more than 4 billion in the U.S and more than 2 billion in Europe. In the U.S this result is the combination of two things, one is the benefit of regionalization, where we've architected the network to store items closer to customers. The other is the expansion of same day facilities, where in the U.S in the fourth quarter, we increase the number of items delivered the same day or overnight by more than 65% year-over-year. As we're able to get customers items this fast. It increases the number of occasions that customers choose Amazon to fulfill their shopping needs. And we can see that in all sorts of areas including how fast or everyday essentials business is growing. Our regionalization efforts have also brought transportation distances down which has helped lower our cost to serve. In 2023, for the first time since 2018, we've reduced our cost-to-serve on a per unit basis globally. In the U.S alone, cost-to-serve was down by more than \$0.45 per unit compared to the prior year. Lowering cost-to-serve allows us not only to invest in speed improvements, but also afford adding more selection at lower average selling prices or ASPs and profitably. We have a saying, that it's not hard to lower prices, it's hard to be able to afford lowering prices. The same is true with adding selection, it's not hard to add lower ASPs selection, it's hard to be able to afford offering lower ASPs selection and still like the economics. Like improving speed, adding selection puts us in the consideration set for more purchases. As we look toward 2024 and beyond, we're not done lowering our cost to serve. We've challenged every closely held belief for our fulfillment network and reevaluated every part of it, and found several areas where we believe we can lower costs while also delivering faster for customers. Our inbound fulfillment architecture and resulting inventory placement are areas of focus in 2024, and we have optimism there's more upside for us. Alongside our stores business, our advertising growth remains strong, up 26% year-over-year, which is primarily driven by our sponsored ads. We've recently added Sponsored TV to this offering in the U.S. a self-service solution for brands to create streaming TV campaigns with no minimum spend, putting this advertising within reach of any business. While still early days, streaming TV advertising continues to grow quickly. Brands are using our capabilities to reach engage viewers on Twitch, Freevee, Fire TV and Prime Video shows and movies, which just launched in the U.S., as well as Thursday Night Football. Shifting to AWS. Revenue in the quarter grew 13% year-over-year in Q4 versus 12% year-over-year in Q3. And we're now approaching an annualized revenue run rate of \$100 billion. We watched the incremental revenue added each quarter and in Q4 AWS added more than \$1.1 billion an incremental quarter-over-quarter revenue, which on an FX neutral basis is more than any other cloud provider as far as we can tell. While cost optimization continued to attenuate larger new deals also accelerated, evidenced by recently inked agreements with Salesforce, BMW, NVIDIA, LG, Hyundai, Merck, MUFG, Axiata, Cafe, BYD, Arcore, Amgen, and SAIC. Our customer pipeline remains strong, as existing customers are renewing larger commitments over longer periods and migrations are growing. 2023 also was a very significant year of delivery and customer trial for generative AI or Gen AI in AWS. You may remember that we've explained our vision of three distinct layers in the Gen AI stack, each of which is gigantic, and each of which were deeply investing. At the bottom layer, where customers who are building their own models run training and inference on compute with a chip is the key component in that compute, we offer the most expansive collection of compute instances with NVIDIA chips. We also have customers who would like us to push the price performance envelope on AI chips, just as we have with Graviton for generalized CPU chips, which are 40% more price performance than other X86 alternatives. And as a result, we built custom AI training chips, named Trainium, and inference chips, name Inferentia. At re:Invent we announced

Trainium2, which offers four times faster training performance and three times more memory capacity versus the first generation of Trainium, enabling advantageous price performance versus alternatives. We already have several customers using our AI chips including Anthropic, Airbnb, Hugging Face, Qualtrics, Ricoh and Snap. In the middle layer where companies seek to leverage an existing large language model, customize it with their own data, and leverage AWS' security and other features all as a managed service. We've launched Bedrock which is off to a very strong start with many 1,000s of customers using the service after just a few months. The team continues to rapidly iterate on Bedrock, recently delivering capabilities including guardrails to safeguard what questions applications will answer, knowledge bases to expand models knowledge base with retrieval augmented generation or RAG and real time queries, agents to complete multi step tasks and fine tuning to keep teaching and refining models. All which will help customers applications be higher quality and have better customer experiences. We also added new models from Anthropic, Cohere, Meta with Llama2, Stability AI and our own Amazon Titan family of LLMs. What customers have learned at this early stage of Gen AI, is it there's meaningful iteration required in building a production Gen AI application with the requisite enterprise quality at the cost and latency needed. Customers don't want only one model, they want different models for different types of applications, and different size models for different applications. Customers want a service that makes this experimenting and iterating simple and this is what Bedrock does, which is why so many customers are excited about it. And to top layer of the stack is the application layer, one of the very best early gen AI applications is a coded companion. At Reinvent, we launched Amazon Q, which is an expert on AWS, writes code, debugs code, tests code, does translations like moving from an old version of Java to a new one and can also query customer's various data repositories, like Internet, Wickes or from over 40 different popular connectors to data in Salesforce, Amazon S3, ServiceNow, Slack, Elastin or Zendesk, among others. And answer questions, summarize this data, carry on a coherent conversation and take action. It was designed with security and privacy in mind from the start, making it easier for organizations to use generative AI safely. Q is the most capable work assistant and another service that customers are very excited about. By the way, don't underestimate the point about Bedrock and Q inheriting the same security and access control as customers get with AWS. Security is a big deal, an important differentiator between cloud providers. The data in these models is some of the company's most sensitive and critical assets. With AWS' advantaged security capabilities and track record relative to other providers, we continue to see momentum around customers wanting to do their long-term Gen AI work with AWS. We're building dozens of Gen AI apps across Amazon's businesses, several of which have launched and others of which are in development. This morning, we launched Rufus, an expert shopping assistant trained on our product and customer data that represents a significant customer experience improvement for Discovery. Rufus lets customers ask shopping journey questions like what is the best golf ball to use for better spin control or which are the best cold weather rain jackets and get thoughtful explanations for what matters and recommendations on products. You can carry on a conversation with Rufus on other related or unrelated questions and retains context coherently. You can sift through our rich product pages by asking Rufus questions on any product features and will return answers quickly. We're at the start of what Rufus will do with further personalization and expansion coming, but we're excited about how it will make discovery even easier on Amazon. Gen AI is and will continue to be an area of pervasive focus and investment across Amazon, primarily because there are a few initiatives, if any, that give us the chance to reinvent so many of our customer experiences and processes, and we believe it will ultimately drive tens of billions of dollars of revenue for Amazon over the next several years. In addition to our stores and AWS businesses, we continue to make progress on newer business investments that have the potential to be important to customers and Amazon long term. Touching on two of them. In October, we had a major milestone in our journey to commercialize Project Kuiper, which is our low earth orbit satellite initiative that aims to provide broadband connectivity to the 400 million to 500 million households who don't have it today. We launched two end-to-end prototype satellites into space and successfully validated all key systems and subsystems, made a 2-way video call, streamed a Prime Video movie in Ultra HD 4K and made an Amazon purchase over our end-to-end communication network. It's rare to be able to exercise all these elements in an initial launch like this. We're on track to launch our first production satellite in the first half of 2024 and started beta testing in the second half of the year. We've still got a long way to go, but are encouraged by our progress. During the quarter, we also completed our second season of Thursday Night Football, which was a rousing success by all accounts. The customer experience continued to improve as our talent, production, streaming quality, analytics, unique AI features like Prime Vision and defensive alerts, all took big leaps forward on top of the very good start last year. We launched a new NFL tradition with the inaugural Black Friday football game and our continuous innovation resonated with viewers as the number of people watching increased 24% year-over-year and with advertisers as we made dramatic year-over-year gains in ad sales. We have increasing conviction that Prime Video can be a large and profitable business on its own, and we'll continue to invest in compelling exclusive content for Prime members like Thursday Night Football, Go To The Rings, Reacher, Mr. & Mrs. Smith, Citadel and more. And with the ads in Prime Video, we'll be able to continue investing meaningfully in content over time. I'll close by reiterating that 2023 was a really good year. I'm grateful to all of our teams who delivered on behalf of customers. Yet I think every one of us at Amazon believes this is just the start of what's possible. We have a long way to go in every one of our businesses before we exhaust how we can make customers' lives better and easier, and there is considerable upside in each of the businesses in which we're investing. With that, I'll turn it over to Brian.

Brian Olsavsky

Thanks, Andy. Overall, we saw strong performance in the fourth quarter. Worldwide revenue was \$170 billion, representing an increase of 13% year-over-year, excluding the impact of foreign exchange and approximately \$3 billion above the top end of our guidance range. Saw our highest quarterly worldwide operating income ever, which was \$13.2 billion for the quarter, an increase of \$10.5 billion year-over-year and \$2.2 billion above the high end of our guidance range. For the full year 2023, we had a meaningful improvement across our financial results. Revenue was \$574.8 billion, an increase of 12% year-over-year, excluding the impact of foreign exchange. Operating income tripled year-over-year to \$36.9 billion. Trailing 12-month free cash flow adjusted for equipment finance leases was \$35.5 billion, up \$48.3 billion versus last year. These financial outputs are a result of a lot of improvements in our key input metrics such as stores' cost to serve, which decreased year-over-year for the first time since 2018 and our ability to deliver to customers at our fastest speeds ever. I want to thank our customers, our partners and our teammates around the world for a very strong 2023 performance. Focusing on the fourth quarter, North America revenue was \$105.5 billion, an increase of 13% year-over-year and an acceleration of 200 basis points compared to Q3. International revenue was \$40.2 billion, an increase of 13% year-over-year, excluding the impact of foreign exchange, also an acceleration of 200 basis points compared to Q3. During the quarter, we remained focused on the inputs that matter most to our customers, price, selection and convenience. Our shopping events throughout the quarter included Prime Big Deal Days in October and our extended Black Friday and Cyber Monday shopping event helped to attract new Prime members and deliver billions in savings for customers. We made meaningful progress on delivery speeds in the United States and globally, which helped strong sales throughout the quarter, including notable strength in the last-minute gifting where our ability to provide fast shipping helped our Prime members ensure that they got their gifts before the holidays. These improvements in delivery speed have led to increased purchase frequency by our Prime members across all of our major geographies. It also strengthened demand for our everyday essentials. Categories like beauty and health and personal care, where speed is even more important to customers. Third-party sellers were a big part of our success over the holidays with worldwide third-party seller services revenue growing at 19% year-over-year, excluding the impact of foreign exchange. And worldwide third-party seller unit mix was 61%, its highest level ever. We also saw strong performance in worldwide advertising, which grew 26% year-over-year, excluding the impact of foreign exchange. The strength in advertising was primarily driven by sponsored products as our teams worked hard to increase the relevancy of the ads we show customers by leveraging machine learning. Advertising only works if the ads are helpful to customers and there's a lot of value in tailoring sponsored products, so they are relevant to what a customer is actually searching for. We're also continually focused on improving our measurement capabilities, which allow brands to see the payback of their advertising spend. Shifting to profitability. North America segment operating income

was \$6.5 billion, an increase of \$6.7 billion year-over-year, resulting in an operating margin of 6.1%, up 120 basis points quarter-over-quarter. Since North America operating margins were at their recent low levels in Q1 of 2022, we have now seen seven consecutive quarters of improvement resulting in a cumulative improvement of 800 basis points over these past seven quarters. In addition to the strong top line growth, which helped to drive improved leverage throughout our businesses, we continue to make progress on reducing our cost to serve. The fourth quarter is our busiest time of year, supported by an increasingly large and integrated operations network. Overall, our teams executed extremely well, yielding strong efficiency gains with minimal disruptions. We were pleased with the performance of our regionalized network during the holiday period, where we saw benefits from improved inventory placement helping drive faster speeds and also lowering costs. We also continue to see benefits from lower transportation rates, which include linehaul, ocean and rail and from a more stable labor market, resulting in improved staffing levels. In our International segment, we had an operating loss of \$419 million, an improvement of \$1.8 billion year-over-year. This improvement was primarily driven by lowering our cost to serve through increased units per box, lower transportation rates and leverage across our fixed costs as we continue to focus on customer inputs and improve efficiencies within our operations. The International segment represents more than 20 countries of varying degrees of growth and our largest established countries like the U.K., Germany and Japan, relatively strong revenue growth contributed to the year-over-year improvement in profitability. Additionally, we saw good progress in our emerging countries as they continued to expand their customer offerings, while seeking to invest wisely. Moving to AWS. Revenues were \$24.2 billion, an increase of 13% year-over-year. On a quarter-over-quarter basis, we added more than \$1.1 billion of revenue in AWS as customers are continuing to shift their focus towards driving innovation and bringing new workloads to the cloud. Similar to what we shared last quarter, we continue to see the diminishing impact of cost optimizations. And as these optimization slow down, we're seeing more companies turning their attention to newer initiatives and reaccelerating existing migrations. Customers are also excited about our approach to generative AI. Still relatively early days, but the revenues are accelerating rapidly across all 3 layers and our approach to democratizing AI is resonating well with our customers. We have seen significant interest from our customers wanting to run generative AI applications and build large language models and foundation models, all with the privacy, reliability and security they have grown accustomed to with AWS. AWS' operating income was \$7.2 billion, an increase of \$2 billion year-over-year. Our operating margin for the quarter was 29.6%, up more than 500 basis points year-over-year and effectively flat on a quarter-over-quarter basis. This margin improvement reflects our headcount reductions from earlier in the year and a slowdown in the pace of hiring. Shifting to free cash flow. On a trailing 12-month basis, free cash flow adjusted for finance leases was \$35.5 billion, an improvement of \$48.3 billion year-over-year. The largest driver of the improvement in free cash flow is our increased operating income, which we are seeing across all three of our segments. We're also seeing improvements in working capital, notably in inventory efficiency driven by our regionalization efforts. Next, let's turn to capital investments. We define our capital investments as a combination of CapEx plus equipment finance leases. In 2023, full year CapEx was \$48.4 billion, which was down \$10.2 billion year-over-year, primarily driven by lower spend on fulfillment and transportation. As we look forward to 2024, we anticipate CapEx to increase year-over-year, primarily driven by increased infrastructure CapEx, support growth of our AWS business, including additional investments in generative AI and large language models. One thing I'd like to highlight in our first quarter guidance is that we recently completed a useful life study for our servers and we are increasing the useful life from 5 years to 6 years beginning in January 2024. We will have this anticipated benefit to our operating income of approximately \$900 million in Q1, which is included in our operating income guidance. As we turn the calendar to 2024, we are excited to continue upon the great work the teams have been able to deliver in 2023. We remain focused on streamlining and prioritizing projects in an effective way that reduces costs and also allows us to continue innovating and inventing for customers. With that, let's move on to questions.

Operator

[Operator Instructions] Our first question comes from the line of Eric Sheridan with Goldman Sachs. Please proceed with your question.

Eric Sheridan

Thank you so much for taking the questions. I'm just going to do a 2-parter on AWS. If we take a step back, can you talk a little bit about the contribution from backlog conversion, AI workloads and some elements that allowed you to reaccelerate revenue at AWS in Q4 and how we should think about those components from an exit velocity standpoint into 2024? And then against your broader comments on CapEx, any color on how we should be thinking about AI-driven CapEx within the AWS initiatives against the broader CapEx commentary? Thank you.

Dave Fildes

Yes, that's right. This is Dave. Just to give you that -- the balance was \$155.7 billion as of 12/31. So that's up more than \$45 billion year-over-year and \$20 billion quarter-over-quarter.

Brian Olsavsky

And then if you look back at the revenue growth, it accelerated to 13.2% in Q4 as we just mentioned. That was an acceleration. We expect accelerating trends to continue into 2024. We're excited about the migrate -- continuous their resumption, I guess, of migrations that companies may have put on hold during 2023 in some cases and interest in our generative AI and products, like Bedrock and as Andy was describing that. On the CapEx side, let me talk in total for the company. We had \$48 billion in 2023 was down \$10 billion year-over-year. We talked about during the year quite a bit. A lot of the mix of investment in 2023 was tied to infrastructure, mostly supporting AWS but also supporting our core Amazon businesses was about 60% of our spend. So it reached a very high percentage. We anticipate those trends continuing into 2024. CapEx will go up in 2024. I'm not giving a number today, but we do -- we're still working through plans for the year, but we do expect CapEx to rise as we add capacity in AWS for region expansions, but primarily the work we're doing with generative AI projects. In the fulfillment center and logistics area, I would say it's more incremental capacity at this point based on additional demand, although we are seeing some additional investments for same-day delivery sites and automation, robotics. But the trend for most of the large percentage of the spend will be in infrastructure is going to continue into 2024.

Andrew Jassy

I'll add a few things to what Brian said. I think just as it relates to the first part of the question, just the way to think about backlog conversion is just these are deals that we've signed that are long-term deals typically with customers. And then there's some amount of time it takes where we work with those customers to migrate those workloads. And so some of the trends that we have seen over the last quarter. First of all, I think that the lion's share of cost optimization has happened. It's not that there won't be any more or that we don't see anymore, but it's just attenuated very significantly. And at the same time, what we've seen is that migrations and this speaks to some of the backlog, migrations that were proceeding, but maybe not at the pace that we saw before, have started to pick up again. We've also seen that a number of the deals that typically signed more quickly, but were signing more slowly in more uncertain environments. A lot of those got done in the last quarter, and you heard in my opening remarks some of the examples, but that was some of several, and we're continuing to see that trend.

And then on the Gen AI side, it's -- if you look at the Gen AI revenue we have, in absolute numbers, it's a pretty big number, but in the scheme of a \$100 billion annual revenue run rate business, it's still relatively small, much smaller than what it will be in the future, where we really believe we're going to drive tens of billions of dollars of revenue over the next several years. But it's encouraging how fast it's growing and our offering is really resonating with customers.

Operator

And the next question comes from the line of Brian Nowak with Morgan Stanley. Please proceed with your question.

Brian Nowak

Thanks for taking my questions. I have two. Andy, the first one is sort of on the cost to serve comments coming down for the first time since 2018. As you sort of look into '24 and '25, can you just sort of walk us through some of the key operational blocking and tackling this to happen to continue to drive down that cost of serve back to 2018 levels? Or however you're thinking about your North Star from that perspective? And then the second one is on sort of philosophical about capital returns. It looks like the cash balance could start building pretty nicely here. How do you think about the idea of buybacks, share repurchases or some type of capital return programs to sort of help shareholders out?

Andrew Jassy

Thank you, Brian, I appreciate it. I'll take the first, and I'll let Brian take the second. On the cost to serve coming down, as I mentioned in my opening remarks, I don't think that we feel like where we're going to ultimately be. I think we feel like we have meaningful upside there. And I think one thing that it's easy to make as large a change as we made in regionalization in the U.S. and saying, check, we got that done. But the reality is, we still have several improvements and a bunch of ways that we can hone the regionalization improvements that we made in 2023 and in 2024. And so when the team speaks about the areas where they believe they have opportunities, there's still opportunities just in regionalization as we continue to hone that, but I also think, in many ways, it was very useful for us to go through what was a pretty significant change we went through during the pandemic, where we doubled the size of our fulfillment center network in 18 months and built out a last mile transportation network, the size of UPS in 18 months, it was disruptive to get that optimized. But one of the things that was very useful was, it really caused us to relook at everything we were doing with fulfillment network. And we looked at it really a beginner's eye and we have found so many areas that we believe that we can evolve that I think will both help our cost to serve and even more importantly, deliver faster delivery speeds for customers. And I mentioned one area which, in particular, which you'll see us focus on over the next year or two is just, we think there are real opportunities in our inbound network and our inbound processes. And then where we locate inventory in association with that, which will accomplish both of those tasks. But for us, I don't believe that we believe that 2018 is the North Star in cost to serve. I think we believe we can keep evolving it and being better than that.

Brian Olsavsky

Yes, I'd just add a couple of other items there. We've gotten a lot better at fixed cost controls, as we scale. And I think you're seeing that as part of our ability to lower cost per serve not only in operations, it's actually throughout the company. And we're seeing a reduction in some of the inflationary factors that hit us in -- especially hard in 2021 and 2022, things like transportation services, fuel and others. So not totally out of the woods there, but coming down, and we still see some more upside. On your share repurchase question, first of all, just really excited to actually have that question. No one's asked me that in three years and appreciate it. But we have come through a tumultuous period where, as Andy just said, we doubled the size of our logistics footprint and invested heavily in -- we saw that negative free cash flow, at least on our all two calculation for the period 2021 to 2022. So we're glad to see the improvement in the bounce back in free cash flow. A lot of -- and we do debate and discuss capital structure policies annually or more often. And I have nothing to announce today, but again, we primarily think we have a lot of strong investments in front of us. We're good -- we're glad to have the liquidity -- better liquidity at the end of 2023, and we're going to try to continue to build that.

Operator

And our next question comes from the line of Doug Anmuth with JPMorgan. Please proceed with your question.

Doug Anmuth

Thanks for taking the questions. Brian, you've seen very good improvement in International profitability over the last several quarters. Can you just talk about some of the levers here that you're thinking about just as you look to move into positive operating income and then how International could potentially approach North America levels over time? And then just a follow-up there. Are you seeing any shipping disruptions currently related to the Red Sea and does that factor into your outlook at all for 1Q? Thanks.

Brian Olsavsky

Yes. Let me start with the second one first. So we're mindful of the geopolitical issues around the world, especially as you say in the supply chain and how that might impact shipments both to the U.S. and to Europe. We're just working very hard to make that not back up on customers, and we'll continue to work that. It's not a material impact into the -- it's estimated in our guidance in Q1. But again, as I said, we're vigilant on that, and we'll work to take steps where we need to, to make sure that customer experience is not impacted. On the International segment, operating income, yes, we're very pleased with the results, especially over the last few quarters. We improved operating income by \$1.8 billion year-over-year. And I would attribute it to the steady progress that Andy was saying about the U.S. is, again, cost of serve down, advertising is stronger, a lot of attention to cost, a lot of attention to investments, and we are going to invest and other fixed cost control. So a lot of that is what we're seeing in the established countries of Europe and Japan. I would divide the segment a bit into a couple of buckets. First, there's that International segment, excuse me, European established country segment. And that's -- it behaves a lot like you would see in North America. If you look at the emerging countries, and again, we've launched 10 countries in the last 7 years. They're all on their own trajectory of journey to profitability and significance with customers, and we're pleased with that. I think they're all growing nicely and again, leveraging their cost structure, investing wisely and Prime benefits, but all on a curve to breakeven and then be a contributor to income and free cash flow. The other thing I'd point out is that we have advanced loaded, I would say, price benefits in our International markets. We think it's a very good source of customer acquisition and customer retention. The investment in those areas can fluctuate quarter-to-quarter. We had a bit of a higher spend in -- excuse me, in digital content in Q4 as we had a number of marketing and content, especially around live sports, English Premier League and Champions League in Germany and Italy, for example. But we like those benefits in those investments, different proven vehicle for customer acquisition, as I said, and it gets people shopping at our sites and engaging with benefits is always positive for the

relationship with Amazon.

Operator

And the next question comes from the line of Mark Mahaney with Evercore ISI. Please proceed with your question.

Mark Mahaney

Okay. Thanks. Two questions, please. I think you mentioned, Brian, that the North American margins have improved for 7 quarters in a row or something like that, a significant number. I would assume that most of the factors like rising capacity utilization given your CapEx commentary about retail, the regional center efficiencies and then overall, moderation in shipping and logistics costs, labor costs, I mean, all these factors probably mean that we'll continue to get an improvement in North American margins, but if you would comment on that. And then secondly, on the Primetime Video -- Amazon Prime video, I know we just launched. But could you provide any color or context on expectations around that? You've got a massive number of Prime users who are coming in with a reasonable CPM with low ad load, but it seems like there should be a substantial opportunity for you. So if you want to try to size that for us or how you think about the upside, that would be really appreciated. Thank you.

Brian Olsavsky

Sure, Mark. Thank you. I think Andy laid it out pretty well a few minutes ago on the cost structure, the regionalization, the -- growing into the assets that we added during the pandemic, great efficiency and work with productivity across really all of our operations network fixed -- attention to fixed cost and lowering costs where we can, maintaining costs where we can, the increase in advertising, success in advertising revenue growth that's outpaced our traffic growth rates. So all of those trends we expect to continue, and we're going to work hard to make sure they continue. And as we said, we have one guidepost is maybe pre-pandemic profitability, but we are working to -- we're not putting a limit on our improvement. We're going to continue to look for ways to lower the cost to serve. And I might add, at the same time, increase the customer experience because we did that -- we had that cost improvement at the same time when we at first got back to our shipping speeds from pre-pandemic and then exceeded them. So we're happy with that, and we'll continue to do both to improve the customer experience and also to lower our costs and leverage our cost structure. Yes, your second question on ads. I can't scale it right now. I mean what I would say for ads in videos is that advertisers are excited to access our Prime customer base. We are looking for ways to increase our advertising in our streaming properties, including Fire TV, but also -- and Prime Video, but also things like Freevee and Twitch. And it's an important part of the total business model, and we expect it will allow us to have a healthy business to continue to invest in content and to continue to grow that. And we feel good about it, and the way we anticipate the ads progressing, we will not have heavy ad loads relative to see other network TV and other things. And like all of our advertising, we're trying to be useful for customers.

Operator

And our next question comes from the line of Scott Devitt with Wedbush Securities. Please proceed with your question.

Scott Devitt

Thanks. I have one on grocery and one on healthcare. First, on grocery, I was wondering if you could talk a bit about the progress that you're making in unifying the offering between Dotcom, Fresh and Whole Foods. And as it relates to reverse logistics and using the grocery facilities, how that's lowering the cost of logistics and whether there is a significant opportunity there in terms of driving traffic and revenue in the grocery business? Then secondly, on health care, in such a poor -- notoriously poor customer experience industry, you've made significant efforts now within acquisition and offering primary care. Just be curious if you could talk a little bit more about the longer-term vision in healthcare. Thank you.

Andrew Jassy

Yes. On grocery, we're pleased with the progress we're making there. When we think about our grocery business right now and kind of, I'll call it, 3 big macro segments. The first is nonperishables where these are things like consumables and canned goods and pet food and health and beauty products and pharmaceutical. And we -- it's a big business and it's continuing to grow at a very healthy clip, and we're really pleased with that business. And it's really the way the most mass merchandisers got into the grocery business a few decades ago. So that continues to grow at a very healthy clip. We have a physical presence along with online, but Whole Foods market, which is really the pioneer and the leader in organic grocery and that's continuing to grow at a very good clip. We also made a number of changes in the business last year on the profitability side, where we really like the profitability trajectory we see there. And so again, you'll see that keep growing and expanding and feel very good about that as well. If you want to serve as many grocery needs as we do, you have to have a mass physical presence. And that's what we've been trying to do with Fresh over several years. We have tested -- we've been testing a V2 of our Fresh format in a few locations near Chicago, in a few locations in Southern California. It's very early. It's just a few months in, but the results thus far are very promising and on almost every dimension. And so we need to see it for a little bit longer time, but the results appear like we have something that's resonating. And if we continue to see that, then the issue becomes how fast and what's the best way to expand. We have also been spending increasing amounts of time and efforts here trying to make it easier for customers to be able to shop between the nonperishables and then our selection of Whole Foods as well as Fresh, I think you can expect to see that over time, both in the user experience on the app and on the website as well as how we're able to better leverage between the different business segments and their logistics capabilities, being able to get better leverage there, better economics and then allowing people to order in one conservative place to be able to pick up in multiple -- pick up for multiple types of grocery products in one place. Just seeing us already do more of that, and I think you can expect that in the future. In the healthcare space, I -- if you think about what we do on the retail side, adding a pharmacy capability is a pretty natural extension. It's something that customers had asked us for many years, and it's got more complexity to it than the rest of our retail business. So we have to think carefully about whether we wanted to pursue it, but customers so badly wanted it and the experience we thought could be better and we could be a meaningful part of changing that, that we pursued it. And I really like the momentum that we're seeing in our Amazon Pharmacy business. It's growing really quickly. But even more important with how fast it's growing, if you've used it and you've paid attention to the customer experience over the last 12 to 15 months, it's just substantially improved from where it already was pretty good. People really love the experience. And I think that when -- the healthcare experience, particularly in the U.S. is a pretty frustrating one and not a very good one. And I think that when we tell our grandkids that the way we used to have to go get primary care was to make an appointment 3 weeks in advance and then drive 20 minutes to the doctor, park, wait in the reception for 15 minutes, get put into an exam room for 15 minutes. Doctor comes in, talks to you for 5 to 10 minutes and then you got to drive 20 minutes to the pharmacy. People are just not -- our grandkids will not believe that was the experience and it's not going to be, and you already see that changing. And it's part of what attracted us in such a significant way to on medical. It's just their application, their app is so easy to use. You have all your healthcare data in one spot. You can do chats with medical practitioners. You can do video calls, if you need to see someone, there's

physical locations and lots of metropolis cities where you can get in the same day, if you need to see a specialist, they're probably into specialists and all the cities in which we operate, where you can get in a day or two later, like just it's a very different experience. Now if you actually need medication, you can get that sent to you in a day or two, either through Amazon pharmacy or other pharmacies that we work with. And that experience is so much better than what we've been accustomed to seeing. And so I think it's -- again, it's still early days. We're excited, we launched for Prime members the ability to get one medical subscription for \$9 a month or \$99 a year, which is 50% off, the typical price and that saw a very good take-up. So it's still early days, but we think we have an opportunity to be a meaningful part of changing that experience. And if we are helpful in changing what that primary care experience is and what it looks like to get pharmaceutical items, there's a lot of other things that we might be able to help customers with over time that whether it's wellness or whether it's diet, there's a bunch of areas that I think we can help over time.

Operator

And our final question will come from the line of Colin Sebastian with Baird. Please proceed with your question.

Colin Sebastian

Thanks very much. I just wanted to follow up on AWS for a moment. You outlined the generative AI stack, which I think is -- which is very clear. So I'm just curious maybe how you're going to market within the application layer given sort of the competitive dynamics of that. And then maybe expand, if you could, Andy, a little bit on the strategy for Gene AI on the consumer-facing side of the business. I know you launched Rufus today. Is that an area that you think could materially improve conversion rates and the overall consumer engagement on retail apps or what's your vision there? Thank you.

Andrew Jassy

Yes. So Colin, I would say a few things on -- first on generative AI. It's -- when we talk to customers, particularly at enterprises as they're thinking about generative AI, many are still thinking through at which layers of those 3 layers of the stack, I laid out that they want to operate in. And we predict that most companies will operate in at least 2 of them. But I also think even though it may not be the case early on, I think many of the technically capable companies will operate at all 3. They will build their own models. They will leverage existing models from us, and then they're going to build the apps. And I know one of the other interesting things that we see early on right now in generative AI is that -- it's a very iterative process and real work to go from posing a question into a chat bot and getting an answer to turning that into a production quality application at the quality you need for your customer experience and your reputation and then also getting that application to work at the latency and cost characteristics that you need. And so what we see is that customers want choice. They don't want just 1 model to rule the world. They want different models for different applications. And they want to experiment with all different sized models because they yield different cost structures and different latency characteristics. And so Bedrock is really resonating with customers. They just -- they know they want to change all these variables and try and experiment and they have something that manages all those different transitions and changes so they can figure out what works best for them, especially in the first couple of years where they're learning how to build successful generative applications is incredibly important for them. So it's part of why we see Bedrock resonating so much. In the same way, what's attractive to enterprises when they think about coding companions like Q, is just if you can get 30%, 40% better productivity for your developers, which in many cases, for companies is their most scarce resource, it's a game changer. And they won't roll out every bit of code that comes from a coding companion. But if it can assist them to get 80% plus the way there quickly, that's a big deal. And one of the things that's unique about Q is it's not just a coding companion, yes, it's an expert on AWS. It will help you -- it helps you write the code, but it also helps you debug the code and it helps you test the code, helps you do transformations and it helps you figure out how a multistep implement features. There's a lot of -- helps you troubleshoot. If there's something in your application that's you write, you can find it and help you fix it. And so -- and then it also lets you look at all your data repositories, whether it's Internet or Wickes or the 40-plus data connectors like Salesforce, Alassian, and Zendesk and Slack. And let you have an intelligent conversation to get answers and take action. So it's a pretty differentiated capability there. And when enterprises are looking at how they might best make their developers more productive, they're looking at what's the array of capabilities in these different coding companion options they have. And so we're spending a lot of time -- our enterprises are quite excited about it. It created a meaningful stir at reinvent. And what you see typically is that these companies experiment with different options they have and they make decisions for their employee base, and we're seeing very good momentum there. The question about how we're thinking about Gen AI in our consumer businesses. We're building dozens of generative AI applications across the company. It's every business that we have has multiple generative AI applications that we are building. And they're all in different stages, many of which have launched and others of which are in development. So if you just look at our -- some of our consumer businesses, on the retail side, we built a generative AI application that allowed customers to look at summary of customer review, so that they didn't have to read hundreds and sometimes thousands of reviews to get a sense for what people like or dislike about a product. We launched a generative AI application that allows customers to quickly be able to predict what kind of fit they'd have for different apparel items. We built a generative AI application that in our fulfillment centers, that forecasts how much inventory we need in each particular fulfillment center. And so the start of the rollout of Rufus today is really just another step, but we think one that's pretty meaningful in being a generative AI powered shopping assistant and it's trained on our very expansive product catalog as well as our community Q&A and customer reviews and the broader web. But it lets customers discover items in a very different way than they have been able to on e-commerce websites. So if you want buying advice, like what should I look for in a pair of headphones or if you are doing purpose buying, like what should I buy for cold weather golf or comparisons, what's difference in lip-gloss or lip oil or you want recommendations of the best Valentine's Day gifts or you're on a detailed page with bridge product info, where you don't want to go through the whole page, you want to ask is this pickle ball rack that's good for beginners. All those questions you can pull in and get really good answers. And then it's seamlessly integrated in the Amazon experience that customers are used to and love to be able to take action. So I think that that's just the next iteration. I think it's going to meaningfully change what discovery looks like for our shopping experience and for our customers. And I could kind of step through every one of those consumer businesses. Our advertising business is building capabilities where people can submit a picture and ad copy is written and the other way around. And you kind of think about Alexa, where we're building a very large -- expansive large language model is going to make Alexa even more productive and helpful for customer. Every one of our consumer businesses has a significant number of generative AI applications that they either have built and delivered or they're in the process of building. And I don't see that changing for many years. We have a lot of ideas.

Dave Fildes

Thanks for joining us today on the call and for your questions. A replay will be available on our Investor Relations website for at least 3 months. We appreciate your interest in Amazon, and we look forward to talking with you again next quarter.

Operator

And ladies and gentlemen, that does conclude today's teleconference. You may disconnect your lines at this time. Thank you for your participation.