

# shareholder letter

## Q4 / FY 2023



**our mission is  
to develop the  
best education  
in the world  
and make it  
universally  
available.**



## Q4 and FY23 Highlights

User Metrics	Q4 2022	Q4 2023
Daily Active Users	16.3M	26.9M 65% YoY
Monthly Active Users	60.7M	88.4M 46% YoY
Paid Subscribers at period end	4.2M	6.6M 57% YoY
Paid Subscriber Penetration as % of MAU*	7.8%	8.3%

Financial Metrics	Q4 2023	FY 2023
Revenue	\$151.0M 45% YoY	\$531.1M 44% YoY
Total Bookings	\$191.0M 51% YoY	\$622.2M 45% YoY
Net Income	\$12.1M	\$16.1M
Adjusted EBITDA	\$35.2M 23.3% margin	\$93.7M 17.6% margin

\*LTM MAU

## Dear shareholders,

2023 was a record year that ended with a record quarter. Our user growth accelerated throughout the year, we achieved record bookings and revenue in both the fourth quarter and the full year, and we became significantly more profitable. We believe we reached these milestones by making our product more engaging and by attracting users through several extraordinary brand moments. Here's a summary of our Q4 2023 results:

### Fourth Quarter Highlights

- Total bookings were \$191.0 million, an increase of 51% from the prior year quarter;
- Subscription bookings were \$157.8 million, an increase of 57% from the prior year quarter;
- Paid subscribers totaled 6.6 million at quarter end, an increase of 57% from the prior year quarter;
- Daily active users (DAUs) were 26.9 million, an increase of 65% from the prior year quarter, and monthly active users (MAUs) were 88.4 million, an increase of 46% from the prior year quarter;
- Total revenues were \$151.0 million, an increase of 45% from the prior year quarter;
- Net income totaled \$12.1 million, compared to a net loss of \$13.9 million in the prior year quarter;
- Adjusted EBITDA was \$35.2 million, compared to \$5.2 million in the prior year quarter, a 23.3% versus 5.0% Adjusted EBITDA margin, respectively; and
- Cash flow from operating activities was \$49.2 million compared to \$11.6 million in the prior year quarter, and free cash flow was \$47.7 million compared to \$11.3 million in the prior year quarter.

Our bookings outperformance was largely driven by strength in family plan bookings and our New Year's Promotion (which began at the end of December 2023). These factors also contributed to our Adjusted EBITDA outperformance.

### 2023 Was Our Best Year Ever

In 2023, we made a number of **product innovations**. We launched the **Math and Music** courses in our main app, which continued our expansion beyond language learning. We also used generative AI to develop new features and lesson types that enable more conversational and listening practice, which moved us closer to our long-term goal of teaching as well as a human tutor.

Our **brand became more iconic**. Our social-first marketing strategy, discussed in last quarter's letter, earned nearly 3 billion social media impressions in 2023 (+170% YoY). The iconic Duolingo "ding" appeared in "Barbie", the highest-grossing movie of the year. We also won our first Cannes Gold Lion award for our 2022 HBO "House of the Dragon" campaign.

We **scaled our business** meaningfully while also becoming **more profitable**. Our freemium, product-led business model, coupled with disciplined execution, allowed us to grow users, subscribers, bookings, and revenue faster than marketing and other operating expenses. By the numbers: DAU growth accelerated throughout the year, reaching 65% YoY in Q4; for FY 2023, we achieved 45% bookings growth, 44% revenue growth, and a 13-point increase in Adjusted EBITDA margin.

## Looking Ahead to 2024

In 2024, we plan to continue the formula that has worked so well for the past several years: growing users and subscribers, and teaching even more effectively.

Our success in **growing users** has come from strong word of mouth growth and a relentless focus on improving engagement to keep learners coming back. This year we plan to continue to invest in the product experience by adding new, immersive lesson types, iterating on gamification mechanics and social features, and improving efficacy, particularly in our English courses (see more below).

We will experiment with our three subscription tiers (free, Super, and Max) to optimize **monetization**—changing the look, relative price, features, and even the name of the tiers to help learners select the best option for them. We will also focus on growing adoption of our family plan. Family plan bookings grew over 100% year over year in 2023, but family plan subscribers still only make up 18% of all our paid subscribers.

Our **efficacy** work will focus on English learners. The English-learning market is huge and represents a mission-aligned growth opportunity. Since many English learners already have a basic grasp of English, we see an opportunity to better meet their needs by offering improved advanced English courses. In Q1, we've already launched advanced English content to 17 of our courses teaching English to learners across the world.

Finally, we'll continue to build upon our long-term effort of **integrating AI** into our products to make them more personalized and engaging.

## 2024 Financial Profile

2023 was an exceptional year, and yet even on that strong base we expect user growth to moderate only slightly in 2024. As we've said for several quarters, we can't expect our user growth to accelerate forever. This makes sense given how rapidly we've grown over the past couple of years, going from about 10 million DAUs in Q4 2021 to nearly 27 million in Q4 2023. So far in Q1 2024, our YoY DAU growth is closer to the mid-50s than the 60%+ it was throughout 2023.

We expect strong financial performance in 2024 and estimate that we'll deliver total bookings growth of 28%, revenue growth of 36% and an Adjusted EBITDA margin of 22.5% at the midpoint of our guidance. This Adjusted EBITDA margin implies that more than 35% of incremental revenue will flow through to Adjusted EBITDA.

With over 2 billion people learning languages around the world, we see a large market opportunity that we're just starting to address. Our recent performance reaffirms our belief that we can achieve our long-term bookings growth target of greater than 25% per year. And as we showed in 2023, we're making meaningful progress toward our long-term Adjusted EBITDA margin target range of 30-35%.

## In Closing

As we enter 2024, I want everyone to know that my goal is to maintain the spirit of innovation that we've had since the beginning. Our creativity was on display in our **"Superb Owl" campaign**, which featured a 5-second local ad and concurrent push notification during the Super Bowl. In true Duolingo fashion, this scrappy ad was

home-grown, cost us roughly one tenth of the average media spend for a Super Bowl ad, and delivered outsized social buzz and press coverage (it was featured in The Late Show with Stephen Colbert, the WSJ, The New Yorker, CNBC, etc.). Indeed, Duolingo's social posts received the most likes of any brand on X/Twitter during the Super Bowl. This is a great example of how our technical and creative excellence combine to create delight for our current and future learners.

Until next time, no buts....Do your Duolingo!



**Luis von Ahn**  
CEO and Co-Founder

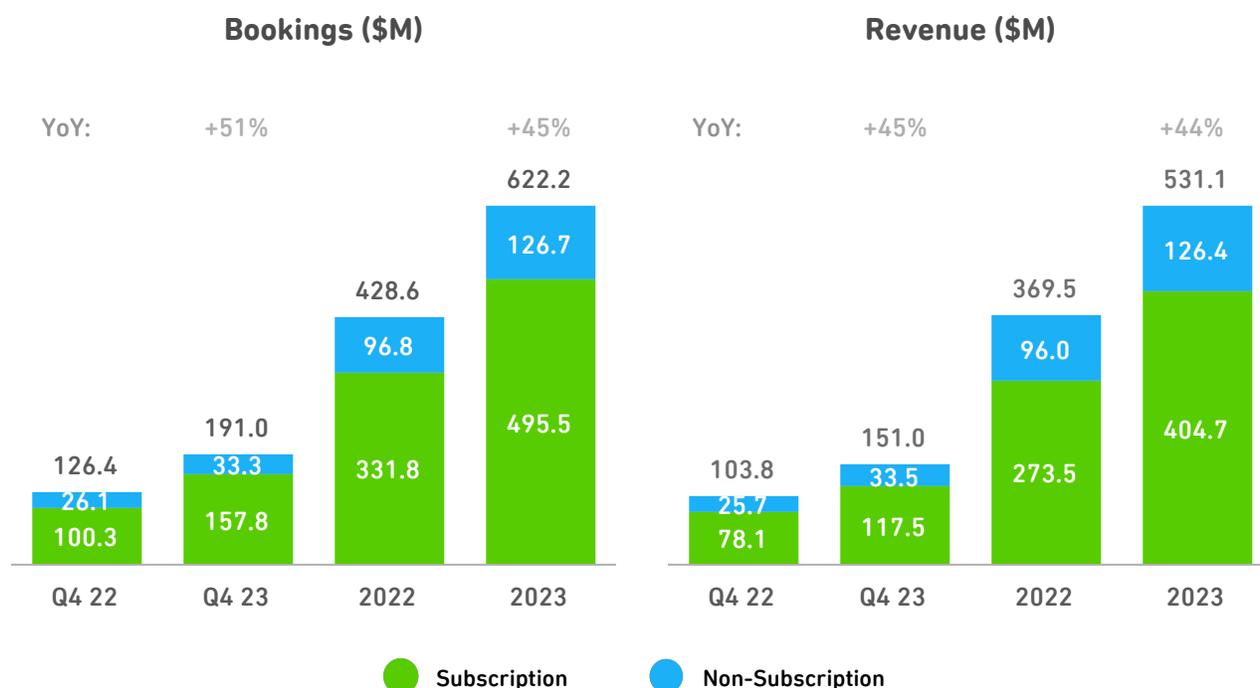
# financial performance and outlook

## Summary of Financial and Key Operating Metrics

(in millions)	Q4 2022	Q4 2023	YoY			
<b>User Metrics</b>						
Monthly active users (MAUs)	60.7	88.4	46%			
Daily active users (DAUs)	16.3	26.9	65%			
Paid subscribers (period end)	4.2	6.6	57%			
	Q4 2022	Q4 2023	YoY	2022	2023	YoY
<b>Operating Metrics</b>						
Subscription bookings	\$100.3	\$157.8	57%	\$331.8	\$495.5	49%
Total bookings	\$126.4	\$191.0	51%	\$428.6	\$622.2	45%
<b>GAAP Financial Metrics</b>						
Revenues	\$103.8	\$151.0	45%	\$369.5	\$531.1	44%
Gross profit	\$76.1	\$110.4	45%	\$270.1	\$389.0	44%
Gross margin (%)	73.3%	73.1%	~(10) bps	73.1%	73.2%	~15 bps
Net (loss) income	(\$13.9)	\$12.1	nm	(\$59.6)	\$16.1	nm
Net cash from operating activities	\$11.6	\$49.2	>100%	\$53.7	\$153.6	>100%
<b>Non-GAAP Financial Metrics (1)</b>						
Adjusted EBITDA	\$5.2	\$35.2	>100%	\$15.5	\$93.7	>100%
Free cash flow	\$11.3	\$47.7	>100%	\$46.2	\$144.3	>100%

(1) Please refer to the Appendix at the end of this letter for a reconciliation of these non-GAAP financial measures to the most directly comparable GAAP financial measure.

Amounts reported in millions are computed based on the amounts in thousands. As a result, the sum of the components reported in millions may not equal the total amount reported in millions due to rounding. In addition, percentages presented are calculated from the underlying numbers in thousands and may not add to their respective totals due to rounding.



In Q4, total bookings reached a record high of \$191.0 million, growing 51% year over year on a reported basis (and 49% on a constant currency basis) primarily driven by a 57% increase in subscription bookings. In FY 2023, total bookings were \$622.2 million, up 45% year over year on both a reported and constant currency basis, driven primarily by a 49% increase in subscription bookings.

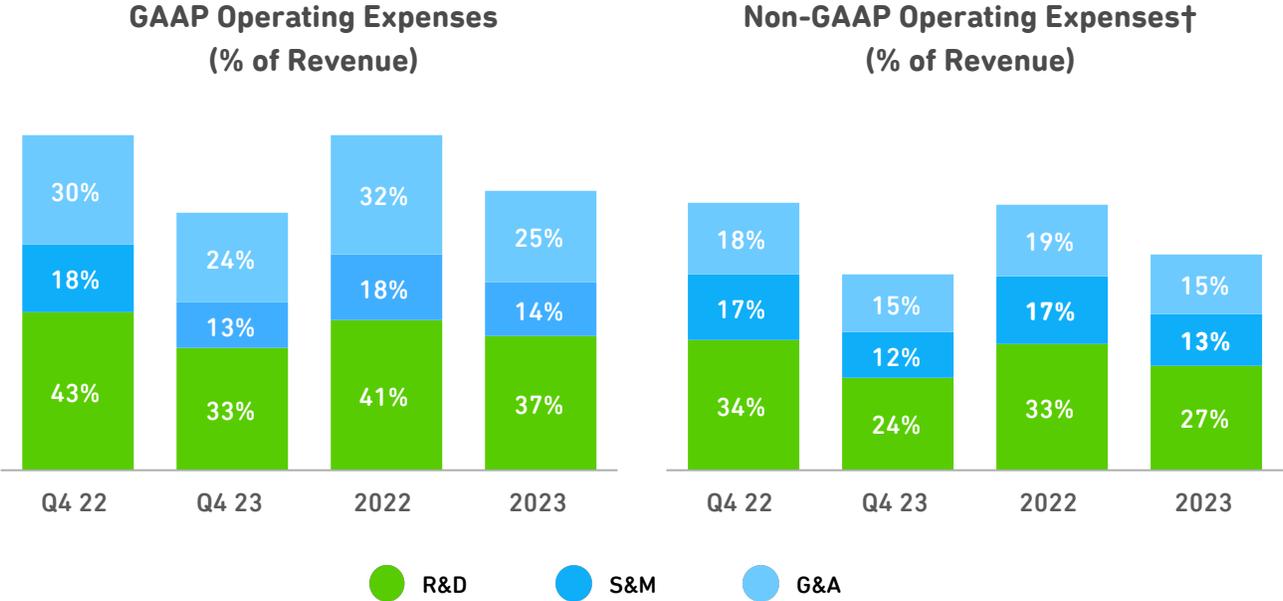
Revenues grew 45% year over year on a reported basis to \$151.0 million in Q4 (43% on a constant currency basis), driven primarily by an increase in subscription revenue, which grew 50% year over year, and comprised 78% of revenues. In FY 2023, revenues were \$531.1 million, 44% higher year over year on both a reported and constant currency basis, driven primarily by growth in subscription revenue, which was up 48% year over year, and comprised 76% of revenues.

The increase in both subscription bookings and subscription revenue was primarily attributable to an increase in the average number of paid subscribers year over year. In Q4, subscription revenue per subscriber declined 4% year over year, primarily due to stronger growth in non-U.S. countries that have lower average prices, which was partially offset by foreign currency benefits.

The table below provides revenues by product type:

(in millions)	Q4 2022	Q4 2023	Change	% Change	2022	2023	Change	% Change
Subscription	\$78.1	\$117.5	\$39.3	50 %	\$273.5	\$404.7	\$131.2	48 %
Advertising	11.1	13.5	2.3	21	44.7	49.9	5.1	11
Duolingo English Test	8.4	10.8	2.4	29	32.7	41.2	8.5	26
In-App Purchases	5.9	8.9	3.1	52	17.9	34.7	16.8	94
Other	0.3	0.3	0.0	12	0.6	0.7	0.1	9
<b>Total revenues</b>	<b>\$103.8</b>	<b>\$151.0</b>	<b>\$47.2</b>	<b>45 %</b>	<b>\$369.5</b>	<b>\$531.1</b>	<b>\$161.6</b>	<b>44 %</b>

Gross margin decreased by approximately 10 basis points year over year to 73.1% in Q4 primarily driven by lower advertising gross margin during the period, which was the result of lower advertising revenue per DAU, offset by higher subscription gross margin contribution from higher subscription revenue mix and slightly lower subscription margin. In FY 2023 gross margin increased by approximately 15 basis points year over year to 73.2%. This was mainly due to higher subscription margin, as well as higher margins on the Duolingo English Test primarily driven by higher pricing. These improvements were partially offset by lower advertising gross margin.



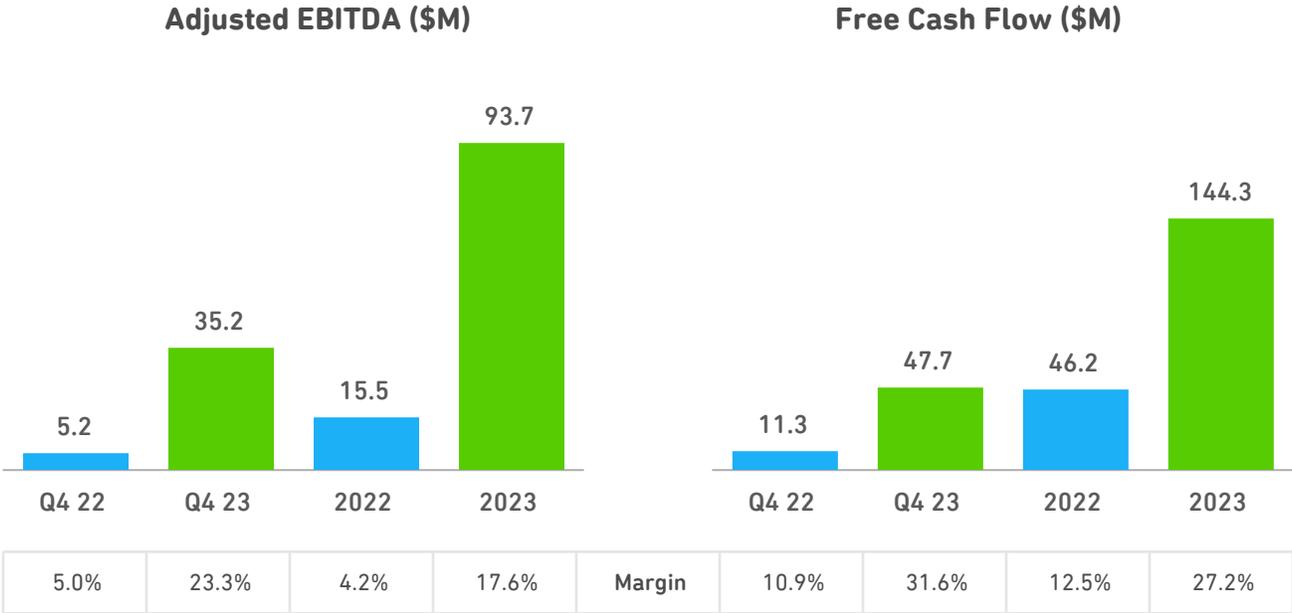
We report three categories of operating expenses: Research and development (R&D), Sales and marketing (S&M), and General and administrative (G&A). Non-GAAP operating expenses† represent GAAP expenses adjusted for depreciation, amortization, stock-based compensation expenses related to equity awards, as well as other expenses. The most significant adjustment in Q4 and FY 2023 was for stock-based compensation (SBC) expenses related to equity awards of \$27.3 million and \$99.2 million, respectively. Nearly one quarter of our SBC expense in Q4 was related to our pre-IPO founder equity awards, which are intended to serve as the sole equity award opportunity for our founders through 2031.

In Q4 and FY 2023, we achieved significant leverage across total operating expenses, both on a GAAP and non-GAAP basis.

In Q4, GAAP R&D expense decreased from 43% to 33% of revenue year over year, and in FY 2023, GAAP R&D expense decreased from 41% to 37% of revenue. On a non-GAAP basis†, R&D expense decreased year over year from 34% to 24% in Q4, and decreased from 33% to 27% in FY 2023. Our product-focused strategy has delivered meaningful top line growth that has outpaced our investment in R&D. Our R&D expenses are mainly personnel costs for engineers, designers and product managers who work to improve our products through experimentation and iteration, aimed to drive user growth and conversion to paid subscribers.

In Q4, GAAP S&M expense decreased from 18% to 13% of revenue year over year, and in FY 2023, GAAP S&M expense decreased from 18% to 14%. On a non-GAAP basis†, S&M expense decreased year over year from 17% to 12% in Q4, and decreased from 17% to 13% in FY 2023. We continued to see benefits from our cost-effective, social-first marketing strategy, and we've seen meaningful improvements in attracting new users more efficiently over time.

In Q4, GAAP G&A decreased from 30% to 24% of revenue year over year, and in FY 2023 GAAP G&A decreased from 32% to 25%. On a non-GAAP basis†, G&A expense decreased year over year from 18% to 15% in Q4, and decreased from 19% to 15% in FY 2023. Year over year operating leverage in G&A primarily came from employee, office, and travel expenses.



We continue to manage the business with cost and capital discipline. In Q4, we achieved our highest quarterly Adjusted EBITDA†, which increased by \$30.0 million year over year to \$35.2 million, or a 23.3% Adjusted EBITDA margin†. In FY 2023, Adjusted EBITDA increased by \$78.2 million to \$93.7 million, or a 17.6% Adjusted EBITDA margin. The increase was driven by growth in revenue and improved leverage across all categories of operating expenses.

During Q4 and FY 2023, we generated free cash flow (FCF)† of \$47.7 million (a 31.6% FCF margin†) and \$144.3 million (a 27.2% FCF margin†), respectively, driven primarily by an increase in cash from operations.

†Please refer to the Appendix at the end of this letter for a reconciliation of these non-GAAP financial measures to the most directly comparable GAAP financial measure.

## Q1 and FY 2024 Guidance

Duolingo is providing the following guidance for the first quarter ending March 31, 2024 and the full year ending December 31, 2024.

(in millions)	Q1 24	FY 2024
<b>Bookings</b>	<b>\$187 - \$190</b>	<b>\$790 - \$802</b>
YoY Bookings Growth	34% - 36%	27% - 29%
<b>Revenues</b>	<b>\$164 - \$167</b>	<b>\$717.5 - \$729.5</b>
YoY Revenue Growth	42% - 44%	35% - 37%
<b>Adjusted EBITDA</b>	<b>\$35.3 - \$37.6</b>	<b>\$154.3 - \$171.4</b>
<b>Adjusted EBITDA margin</b>	<b>21.5% - 22.5%</b>	<b>21.5% - 23.5%</b>

With regards to the non-GAAP Adjusted EBITDA and Adjusted EBITDA margin outlook provided above, a reconciliation to GAAP net (loss) income, the most directly comparable financial measure presented in accordance with GAAP, has not been provided as the quantification of certain items included in the calculation of GAAP net (loss) income cannot be calculated or predicted at this time without unreasonable efforts. For example, the non-GAAP adjustment for stock-based compensation expenses related to equity awards requires additional inputs such as number of shares granted and market price that are not currently ascertainable, and the non-GAAP adjustment for certain legal, tax and regulatory reserves and expenses depends on the timing and magnitude of these expenses and cannot be accurately forecasted. For the same reasons, we are unable to address the probable significance of the unavailable information, which could have a potentially unpredictable, and potentially significant, impact on our future GAAP financial results.

## Video Webcast

Duolingo will host a video webcast to discuss its fourth quarter and full year results today, February 28, 2024, at 5:30 p.m. ET. This live webcast and related materials will be publicly available and can be accessed at [investors.duolingo.com](https://investors.duolingo.com). A replay will be available on the Investor Relations website two hours following completion of the webcast and will remain available for a period of one year.

## About Duolingo

Duolingo is the leading mobile learning platform globally. Its flagship app has organically become the world's most popular way to learn languages and the top-grossing app in the Education category on both Google Play and the Apple App Store. With technology at the core of everything it does, Duolingo has consistently invested to provide learners a fun, engaging, and effective learning experience while remaining committed to its mission to develop the best education in the world and make it universally available.

## Definitions

**Subscription Bookings and Total Bookings.** Subscription bookings represent the amounts we receive from a purchase of any Duolingo subscription offering. Total bookings include subscription bookings, income from advertising networks for advertisements served to our users, purchases of the Duolingo English Test, and in-app purchases of virtual goods. We believe bookings provide an indication of trends in our operating results, including cash flows, that are not necessarily reflected in our revenues because we recognize subscription revenues ratably over the lifetime of a subscription, which is generally from one to twelve months.

**Monthly Active Users (MAUs).** MAUs are defined as unique users who engage with our Duolingo App or the learning section of our website each month. MAUs are reported for a measurement period by taking the average of the MAUs for each calendar month in that measurement period. The measurement period for MAUs is the three months ended December 31, 2023 and the same period in the prior year where applicable, and the analysis of results is based on those periods. MAUs are a measure of the size of our global active user community on Duolingo.

**Daily Active Users (DAUs).** DAUs are defined as unique users who engage with our Duolingo App or the learning section of our website each calendar day. DAUs are reported for a measurement period by taking the average of the DAUs for each day in that measurement period. The measurement period for DAUs is the three months ended December 31, 2023 and the same period in the prior year where applicable, and the analysis of results is based on those periods. DAUs are a measure of the consistent engagement of our global user community on Duolingo.

**Paid Subscribers.** Paid subscribers are defined as users who pay for access to any Duolingo subscription offering and had an active subscription as of the end of the measurement period. Each unique user account is treated as a single paid subscriber regardless of whether such user purchases multiple subscriptions, and the count of paid subscribers does not include users who are currently on a free trial or who are non-paying members of a family plan.

## Limitation of Key Operating Metrics and Other Data

We manage our business by tracking several operating metrics, including MAUs, DAUs, paid subscribers, and subscription and total bookings. While these metrics are based on what we believe to be reasonable estimates of our user base for the applicable period of measurement, there are inherent challenges in measuring how our platform is used. These metrics are determined by using internal data gathered on an analytics platform that we developed and operate and have not been validated by an independent third party. This platform tracks user account and session activity. If we fail to maintain an effective analytics platform, our metrics calculations may be inaccurate. Because we update the methodologies we employ to create metrics, our operating metrics may not be comparable to those in prior periods. Other companies, including companies in our industry, may calculate these metrics differently.

## Non-GAAP Financial Measures

We use certain non-GAAP financial measures to supplement our consolidated financial statements, which are presented in accordance with GAAP. Non-GAAP financial measures include Adjusted EBITDA; Adjusted EBITDA margin; non-GAAP R&D expense, non-GAAP S&M expense and non-GAAP G&A expense (collectively, the “non-GAAP operating expenses”); Free cash flow, and Free cash flow margin. Please refer to the definitions and reconciliation at the end of this letter. We use these non-GAAP financial measures for financial and operational decision-making and as a means to evaluate period-to-period comparisons. By excluding certain items that may not be indicative of our recurring core operating results, we believe that these non-GAAP financial measures provide meaningful supplemental information regarding our performance. Accordingly, we believe these non-GAAP financial measures are useful to investors and others because they allow for additional information with respect to financial measures used by management in its financial and operational decision-making and they may be used by our institutional investors and the analyst community to help them analyze the health of our business. However, there are a number of limitations related to the use of non-GAAP financial measures, and these non-GAAP financial measures should be considered in addition to, not as a substitute for or in isolation from, our financial results prepared in accordance with GAAP. Other companies, including companies in our industry, may calculate these non-GAAP financial measures differently or not at all, which reduces their usefulness as comparative measures.

The effect of currency exchange rates on our business is an important factor in understanding period to period comparisons. We use non-GAAP percentage change in constant currency revenues, which exclude the impact of fluctuations in foreign currency exchange rates, for financial and operational decision-making and as a means to evaluate period-to-period comparisons. We believe this information is useful to investors to facilitate comparisons and better identify trends in our business. The impact of changes in foreign currency may vary significantly from period to period, and such changes generally are outside of the control of our management. We calculate constant currency revenues by using current period foreign currency revenues and translating them to constant currency using prior year comparable period exchange rates for the entire period of related bookings. Constant currency revenue percentage change is calculated by determining the change in current period revenues over prior year comparable period revenues where current period foreign currency revenues are translated using prior year comparable period exchange rates.

## Forward-Looking Statements

This Shareholder Letter contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. We intend such forward-looking statements to be covered by the safe harbor provisions for forward-looking statements contained in Section 27A of the Securities Act of 1933, as amended (the "Securities Act") and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). All statements other than statements of historical facts contained in this letter, including without limitation, statements regarding our business model and strategic plans for growth and monetization, including the anticipated release of, and the expected benefits and efficacy of, new products, the effectiveness of our marketing efforts, our market opportunity, and our financial outlook are forward-looking statements. Without limiting the generality of the foregoing, you can identify forward-looking statements because they contain words such as "may," "will," "shall," "should," "expects," "plans," "anticipates," "could," "intends," "target," "projects," "contemplates," "believes," "estimates," "predicts," "potential," "goal," "objective," "seeks," or "continue" or the negative of these words or other similar terms or expressions that concern our expectations, strategy, plans, or intentions. Such forward-looking statements are neither promises nor guarantees, but involve a number of known and unknown risks, uncertainties and assumptions that may cause our actual results, performance or achievements to differ materially from those expressed or implied in the forward-looking statements due to various factors, including, but not limited to: our ability to retain and grow our users and sustain their engagement with our products; competition in the online language learning industry; our limited operating history; our ability to maintain profitability; our ability to manage our growth and operate at such scale; the success of our investments; our reliance on third-party platforms to store and distribute our products and collect revenue; our reliance on third-party hosting and cloud computing providers; our ability to compete for advertisements; acceptance by educational organizations of technology-based education; our ability to access, collect, and use personal data about our users and payers, and to comply with applicable data privacy laws; regulatory and legislative developments on the use of artificial intelligence and machine learning; potential intellectual property-related litigation and proceedings; our ability adequately obtain, protect and maintain our intellectual property rights; and the other important factors more fully detailed under the caption "Risk Factors" in our Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2023, as any such factors may be updated from time to time, including without limitation our Annual Report on Form 10-K for the fiscal year ended December 31, 2023 and in our other filings with the SEC, accessible on the SEC's website at [www.sec.gov](http://www.sec.gov) and the Investor Relations section of the Company's website at [investors.duolingo.com](http://investors.duolingo.com). All forward-looking statements speak only as of the date of this letter. While we may elect to update such forward-looking statements at some point in the future, we disclaim any obligation to do so, even if subsequent events cause our views to change.

## Website Information

We routinely post important information for investors on the Investor Relations section of our website, [investors.duolingo.com](http://investors.duolingo.com), and also from time to time may use social media channels, including our Twitter account [twitter.com/duolingo](https://twitter.com/duolingo) and our LinkedIn account [linkedin.com/company/duolingo](https://www.linkedin.com/company/duolingo), as an additional means of disclosing public information to investors, the media, and others interested in us. It is possible that certain information we post on our website and on social media could be deemed to be material information, and we encourage investors, the media, and others interested in us to review the business and financial information we post on our website and on the social media channels identified above, in addition to following our press releases, SEC filings, public conference calls, presentations, and webcasts. The information contained on, or that may be accessed through, our website and our social media channels is not incorporated by reference into, and is not a part of, this document.

**DUOLINGO, INC. AND SUBSIDIARIES**  
**CONDENSED CONSOLIDATED BALANCE SHEETS**

<b>(in thousands)</b>	<b>December 31, 2022</b>	<b>December 31, 2023</b>
<b>ASSETS</b>		
Cash and cash equivalents	\$608,180	\$747,610
Accounts receivable	46,728	88,975
Deferred cost of revenues	35,041	53,931
Prepaid expenses and other current assets	7,234	7,282
Noncurrent assets	50,164	56,159
<b>Total assets</b>	<b>\$747,347</b>	<b>\$953,957</b>
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>		
Accounts payable	\$1,177	\$2,447
Deferred revenues	157,550	249,192
Other current liabilities	23,039	25,723
Long-term obligation under operating leases	23,503	21,094
<b>Total liabilities</b>	<b>205,269</b>	<b>298,456</b>
<b>Total stockholders' equity</b>	<b>542,078</b>	<b>655,501</b>
<b>Total liabilities and stockholders' equity</b>	<b>\$747,347</b>	<b>\$953,957</b>

**DUOLINGO, INC. AND SUBSIDIARIES**  
**CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS AND**  
**COMPREHENSIVE (LOSS) INCOME**

<b>(in thousands)</b>	<b>Three Months Ended December 31,</b>		<b>Year Ended December 31,</b>	
	<b>2022</b>	<b>2023</b>	<b>2022</b>	<b>2023</b>
Revenues	\$103,824	\$150,985	\$369,495	\$531,109
Cost of revenues	27,770	40,571	99,431	142,105
Gross profit	76,054	110,414	270,064	389,004
Operating expenses:				
Research and development	44,470	50,256	150,444	194,352
Sales and marketing	19,029	19,118	66,967	75,788
General and administrative	30,707	36,245	117,848	132,123
Total operating expenses	94,206	105,619	335,259	402,263
(Loss) income from operations	(18,152)	4,795	(65,195)	(13,259)
Other income (expense), net	665	1,054	(676)	(55)
(Loss) income before interest income and income taxes	(17,487)	5,849	(65,871)	(13,314)
Interest income	4,273	9,284	7,235	31,091
(Loss) income before income taxes	(13,214)	15,133	(58,636)	17,777
Provision for income taxes	716	3,016	938	1,710
Net (loss) income and comprehensive (loss) income	(\$13,930)	\$12,117	(\$59,574)	\$16,067

**DUOLINGO, INC. AND SUBSIDIARIES**  
**CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS**

(in thousands)	Year Ended December 31,	
	2022	2023
Cash flows from operating activities:		
Net (loss) income	(\$59,574)	\$16,067
Adjustments to reconcile net (loss) income to net cash provided by operating activities:		
Depreciation and amortization	4,870	7,095
Stock-based compensation expense	73,820	95,221
Gain on sale of capitalized software	—	(100)
Loss on disposal of leasehold improvements	—	433
Changes in assets and liabilities:	34,540	34,898
<b>Net cash provided by operating activities</b>	<b>53,656</b>	<b>153,614</b>
<b>Net cash used for investing activities</b>	<b>(14,174)</b>	<b>(13,584)</b>
<b>Net cash provided by financing activities</b>	<b>14,776</b>	<b>2,135</b>
Net increase in cash, cash equivalents and restricted cash	54,258	142,165
Cash, cash equivalents and restricted cash - Beginning of period	553,922	608,180
Cash, cash equivalents and restricted cash - End of period	\$608,180	\$750,345

# appendix

## Reconciliation: Adjusted EBITDA and Adjusted EBITDA Margin and GAAP Operating Expenses and Non-GAAP Operating Expenses

Adjusted EBITDA is defined as net (loss) income excluding interest income, income taxes, depreciation and amortization, stock-based compensation expenses related to equity awards, IPO and public company costs, transaction costs related to an acquisition, acquisition earn-out costs, gain on sale of capitalized software and loss on disposal of leasehold improvements. Adjusted EBITDA margin is defined as Adjusted EBITDA as a percentage of revenues. GAAP operating expenses consist of research and development, sales and marketing, and general and administrative expenses. Non-GAAP operating expenses are defined as the respective GAAP operating expenses excluding depreciation and amortization, stock-based compensation expenses related to equity awards, and, as applicable, transaction costs related to an acquisition and acquisition earn-out costs. These non-GAAP financial measures are used by management to evaluate the financial performance of our business and we present these non-GAAP financial measures because we believe that they are helpful in highlighting trends in our operating results and that they are frequently used by analysts, investors and other interested parties to evaluate companies in our industry. The following tables present a reconciliation of our net (loss) income and GAAP operating expenses, the most directly comparable financial measure presented in accordance with GAAP, to Adjusted EBITDA and Adjusted EBITDA margin and non-GAAP operating expenses, respectively.

(in thousands)	Q4 2022	Q4 2023	2022	2023
<b>Net (loss) income</b>	<b>(\$13,930)</b>	<b>\$12,117</b>	<b>(\$59,574)</b>	<b>\$16,067</b>
Add (deduct):				
Interest income	(4,273)	(9,284)	(7,235)	(31,091)
Provision for income taxes	716	3,016	938	1,710
Depreciation and amortization	1,444	2,042	4,870	7,095
Stock-based compensation expenses related to equity awards (1)	21,105	27,288	75,822	99,226
Public company costs (2)	—	—	338	—
Acquisition transaction costs (3)	8	—	185	—
Acquisition earn-out costs (4)	113	—	113	338
Gain on sale of capitalized software (5)	—	—	—	(100)
Loss on disposal of leasehold improvements	—	16	—	433
<b>Adjusted EBITDA</b>	<b>\$5,183</b>	<b>\$35,195</b>	<b>\$15,457</b>	<b>\$93,678</b>
Revenues	\$103,824	\$150,985	\$369,495	\$531,109
<b>Adjusted EBITDA margin</b>	<b>5.0 %</b>	<b>23.3 %</b>	<b>4.2 %</b>	<b>17.6 %</b>

## Reconciliation: GAAP to Non-GAAP Operating Expense

(in thousands)	Q4 2022	Q4 2023	2022	2023
<b>Total GAAP Operating Expense</b>	<b>\$94,206</b>	<b>\$105,619</b>	<b>\$335,259</b>	<b>\$402,263</b>
Less: Depreciation and amortization	(1,121)	(1,229)	(4,000)	(5,075)
Less: Stock-based compensation expenses related to equity awards (1)	(21,094)	(27,273)	(75,784)	(99,171)
Less: Other adjustments (2) (3) (4)	(121)	—	(636)	(338)
<b>Non-GAAP Operating Expense</b>	<b>\$71,870</b>	<b>\$77,117</b>	<b>\$254,839</b>	<b>\$297,679</b>

## Reconciliation: GAAP to Non-GAAP R&D Expense

(in thousands)	Q4 2022	Q4 2023	2022	2023
<b>Total GAAP R&amp;D Expense</b>	<b>\$44,470</b>	<b>\$50,256</b>	<b>\$150,444</b>	<b>\$194,352</b>
Less: Depreciation and amortization	(276)	(419)	(1,500)	(1,650)
Less: Stock-based compensation expenses related to equity awards (1)	(9,053)	(13,297)	(27,074)	(46,812)
<b>Non-GAAP R&amp;D Expense</b>	<b>\$35,141</b>	<b>\$36,540</b>	<b>\$121,870</b>	<b>\$145,890</b>

## Reconciliation: GAAP to Non-GAAP S&M Expense

(in thousands)	Q4 2022	Q4 2023	2022	2023
<b>Total GAAP S&amp;M Expense</b>	<b>\$19,029</b>	<b>\$19,118</b>	<b>\$66,967</b>	<b>\$75,788</b>
Less: Depreciation and amortization	(290)	(231)	(1,072)	(1,165)
Less: Stock-based compensation expenses related to equity awards (1)	(819)	(1,042)	(2,585)	(4,001)
<b>Non-GAAP S&amp;M Expense</b>	<b>\$17,920</b>	<b>\$17,845</b>	<b>\$63,310</b>	<b>\$70,622</b>

## Reconciliation: GAAP to Non-GAAP G&A

(in thousands)	Q4 2022	Q4 2023	2022	2023
<b>Total GAAP G&amp;A Expense</b>	<b>\$30,707</b>	<b>\$36,245</b>	<b>\$117,848</b>	<b>\$132,123</b>
Less: Depreciation and amortization	(555)	(579)	(1,428)	(2,260)
Less: Stock-based compensation expenses related to equity awards (1)	(11,222)	(12,934)	(46,125)	(48,358)
Less: Other adjustments (2) (3) (4)	(121)	—	(636)	(338)
<b>Non-GAAP G&amp;A Expense</b>	<b>\$18,809</b>	<b>\$22,732</b>	<b>\$69,659</b>	<b>\$81,167</b>

## Reconciliation: Free Cash Flow and Free Cash Flow Margin

Free cash flow represents net cash provided by operating activities, reduced by capitalized software development costs and purchases of property and equipment and increased by taxes paid related to stock-based compensation equity awards, IPO and public company costs, transaction costs related to an acquisition and an acquisition earn-out payment as we believe they are not indicative of future liquidity. Free cash flow margin is defined as Free cash flow as a percentage of revenues. We believe that free cash flow is a measure of liquidity that provides useful information to our management, investors and others in understanding and evaluating the strength of our liquidity and future ability to generate cash that can be used for strategic opportunities or investing in our business. Free cash flow has certain limitations in that it does not represent our residual cash flow for discretionary expenditures and our non-discretionary commitments. The following table presents a reconciliation of net cash provided by operating activities, the most directly comparable financial measure calculated in accordance with GAAP, to free cash flow.

(in thousands)	Q4 2022	Q4 2023	2022	2023
<b>Net cash provided by operating activities</b>	<b>\$11,608</b>	<b>\$49,193</b>	<b>\$53,656</b>	<b>\$153,614</b>
Less: Capitalized software development costs and purchases of intangible assets	(603)	(3,224)	(4,562)	(10,493)
Less: Purchases of property and equipment	(292)	(924)	(5,562)	(3,191)
Plus: Taxes paid related to stock-based compensation equity awards	473	2,286	2,002	4,005
Plus: Public company costs (2)	—	—	338	—
Plus: Acquisition transaction costs (3)	8	—	185	—
Plus: Acquisition earn-out payment (4)	113	338	113	338
<b>Free cash flow</b>	<b>\$11,307</b>	<b>\$47,669</b>	<b>\$46,170</b>	<b>\$144,273</b>
Revenues	\$103,824	\$150,985	\$369,495	\$531,109
<b>Free cash flow margin</b>	<b>10.9 %</b>	<b>31.6 %</b>	<b>12.5 %</b>	<b>27.2 %</b>

(1) In addition to stock-based compensation expense, this includes costs incurred related to taxes paid on equity transactions.

(2) Public company costs include costs associated with the establishment of our public company structure and processes, including consultant costs, a one-time fee associated with the set-up of our initial proxy statement, and fees paid to consultants and Deloitte for work in connection with remediation of the material weakness disclosed in our Annual Report on Form 10-K for the fiscal year ended December 31, 2021.

(3) Represents costs incurred related to an acquisition, including integration costs.

(4) Represents costs incurred related to the earn-out payment on an acquisition.

(5) Represents proceeds from a sale of capitalized software.

## Contacts

### Investor Relations:

Deborah Belevan, VP of Investor Relations

[ir@duolingo.com](mailto:ir@duolingo.com)

### Press:

Sam Dalsimer, Global Head of Communications

[press@duolingo.com](mailto:press@duolingo.com)

