

# shareholder letter Q3 2023



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



## Q3 Highlights

User Metrics	Q3 2022	Q3 2023
Daily Active Users	14.9M	24.2M 63% YoY
Monthly Active Users	56.5M	83.1M 47% YoY
Paid Subscribers at period end	3.7M	5.8M 60% YoY
Paid Subscriber Penetration as % of MAU*	7.4%	8.0%

Financial Metrics	Q3 2022	Q3 2023
Revenue	\$96.1M	\$137.6M 43% YoY
Total Bookings	\$102.7M	\$153.6M 49% YoY
Net (Loss) Income	\$(18.4)M	\$2.8M
Adjusted EBITDA	\$2.1M 2.2% margin	\$22.5M 16.3% margin

\*LTM MAU

## Dear shareholders,

The momentum we had in the first two quarters of the year carried over to the third, and we continued to outperform our expectations. Here's a summary of our Q3 2023 results:

### Third Quarter Highlights

- DAUs increased 63% to 24.2 million and MAUs increased 47% to 83.1 million, compared to the prior year quarter;
- The number of paid subscribers totaled 5.8 million at the end of Q3, an increase of 60% compared to the end of the prior year quarter;
- Total bookings grew 49% and revenue grew 43%, compared to the prior year quarter (48% and 42%, respectively, on a constant currency basis);
- Subscription bookings increased 54% to \$121.3 million compared to the prior year quarter (51% on a constant currency basis);
- Our net income was \$2.8 million versus a net loss of \$18.4 million in the prior year quarter;
- We delivered a record high Adjusted EBITDA of \$22.5 million, compared to \$2.1 million in the prior year quarter, or a 16.3% and 2.2% Adjusted EBITDA margin, respectively; and
- Cash flow from operating activities was \$37.7 million compared to \$8.8 million in the prior year quarter, and free cash flow was \$33.5 million compared to \$6.1 million in the prior year quarter.

Based on our strong performance year to date, we are raising our full-year 2023 guidance: total bookings are now expected to grow about 40% year over year, and Adjusted EBITDA margin is expected to fall within the range of 16.6—16.9%, representing a nearly 13 point increase over the prior year.

### One App to Teach Them All

Last month at [Duocon 2023](#), we announced that we are launching a new Music course, and integrating both Math and Music into the main Duolingo app. We believe this will allow us to leverage the gamification mechanics that we've already built in order to more rapidly scale these new subjects.

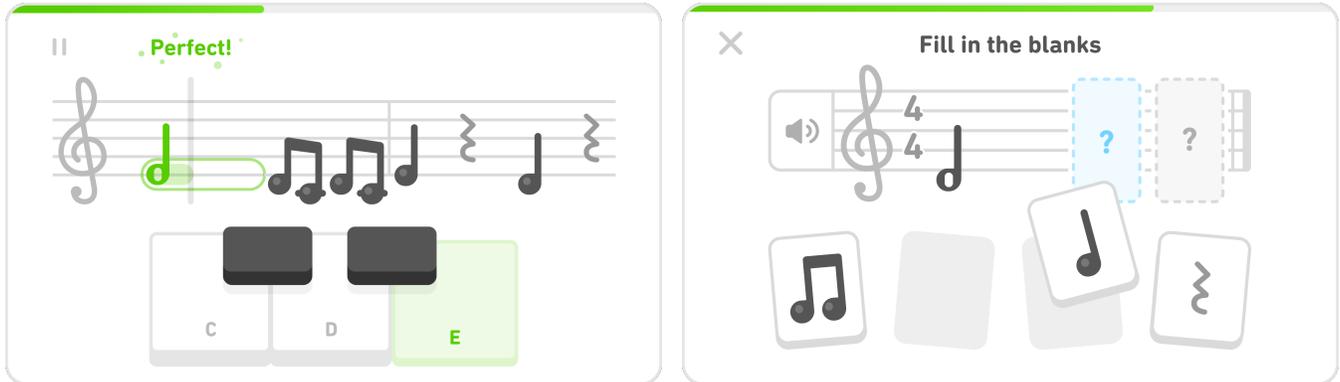
For learners, this creates new, compelling reasons to try or return to Duolingo—you can keep your streak alive by doing a math lesson one day and a music or language lesson the next. It also gives our 24+ million daily active users more reasons to recommend Duolingo to their friends and families.

As with everything that we do, we are taking the long view with this multi-subject strategy, which means we will prioritize building the best product possible for our learners. We believe that adding new subjects will make our flagship app even more delightful and engaging, and will further enhance user retention, but we do not expect these new subjects to meaningfully contribute to monetization in the near-term.

We've shared before that about 80% of our learners in the U.S. were not learning a language before using Duolingo. Over time, we hope to see a similar dynamic with math and music in which we expand the market and grow the number of people learning these subjects.

## Duo Re Mi

Our new Music course will be available for learners on iOS this month and will teach basic music literacy, like how to read notes and play simple songs using an on-screen keyboard. Studies show that learning music can also help with reading, verbal, listening, and math skills... and learning music the Duolingo way is a lot of fun!



Our new music course uses fun, bite-sized lessons

## We Run Hundreds of Experiments to Get Better

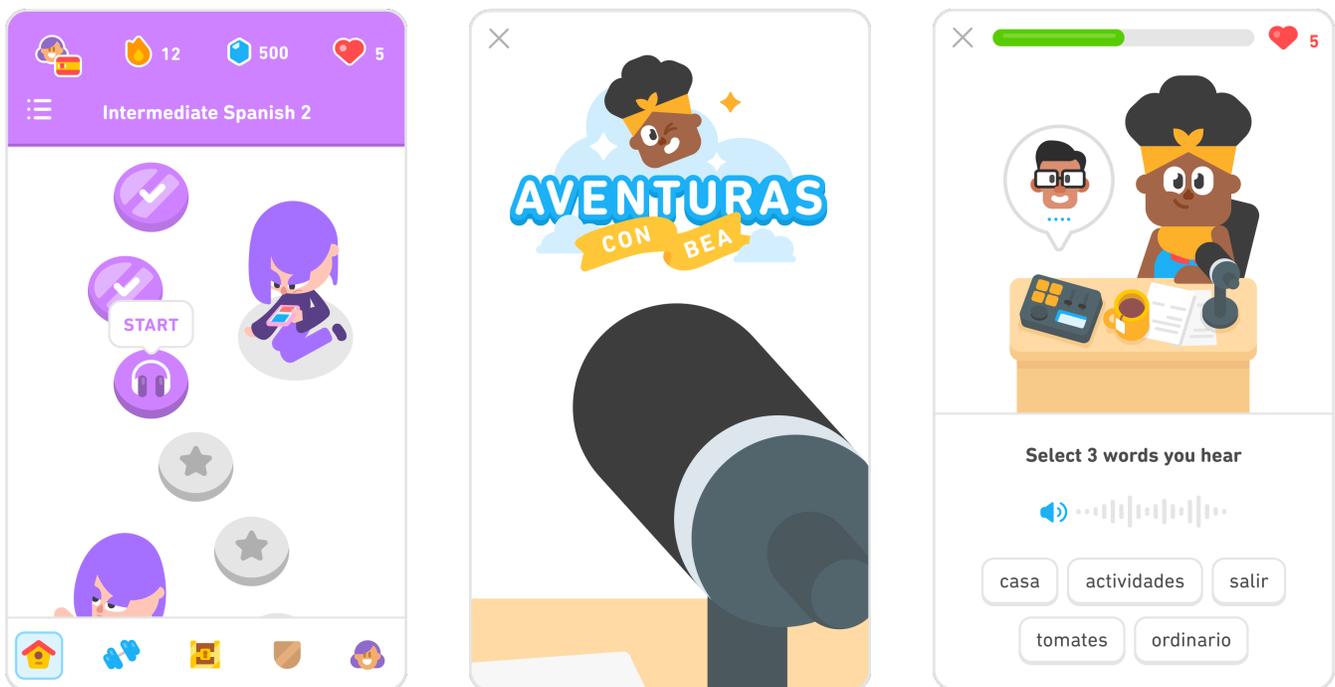
We're on track to have our best year ever in terms of user growth, bookings, revenue, and profitability. As we've mentioned in previous shareholder letters, we have achieved this in large part because of our **culture of experimentation** and A/B testing. Through our experiments, we strive to make incremental progress on user engagement, learning outcomes, and monetization. We are not only innovating with new initiatives, like Math and Music, but we are also continuing to improve existing gamification features like Leaderboards, Achievements, and Friends Quests. We continue to see improvement in our engagement metrics and today, over 70% of DAUs have a streak longer than one week, and nearly 20% have a streak longer than a year!

Our experimentation is not limited to A/B tests in the product. For example, while the vast majority of our new user growth is organic, there are a couple of times during the year when we step up our paid user acquisition, namely in the summer and around the New Year. During August and September, when children are going back to school and adults are getting back into a routine, we take advantage of seasonally lower ad rates and run tests to see if we can become more efficient. This year our summer campaign did exceptionally well, driving about 50% more new users than last year with essentially flat costs, showing that we have become increasingly efficient at acquiring new users through marketing.

## AI-Enhanced Learning

Thanks to the approximately 10 billion exercises our users complete every week, we have more data on how people learn languages than anyone in history. Our trove of data has made AI a consistently important tool for us, and it's inspiring to see how much progress we've made using generative AI over the past few quarters. Generative AI is accelerating our work by helping us create new content dramatically faster. Additionally, Duolingo Max, which we're still experimenting with, was rolled out to more learners in Q3 and we are seeing increased usage of Max's AI features.

We also revealed an exciting new feature at Duocon that is enabled by AI: **DuoRadio**. This is a new lesson format that improves how we teach listening. Learners can enjoy short, podcast-like radio shows featuring Duolingo characters as the hosts. AI is used to generate the episode scripts, which allowed us to launch this feature in less than two quarters. DuoRadio is already available to Spanish learners on Android, and we're currently testing it for Spanish learners on iOS.



DuoRadio is our newest lesson type in the learning path



## In Closing

I want to thank everyone who tuned in to Duocon in October, which drew record attendance. We have already exceeded our expectations and had an incredible 1.6M views in less than 30 days! Thanks to our fans, we're not only the world's most popular education app, but also one of the world's largest communities of lifelong learners. And a huge thanks to our entire team for continuously striving for excellence.

Until next time, don't forget to do your language, math, or music lessons on Duolingo!



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

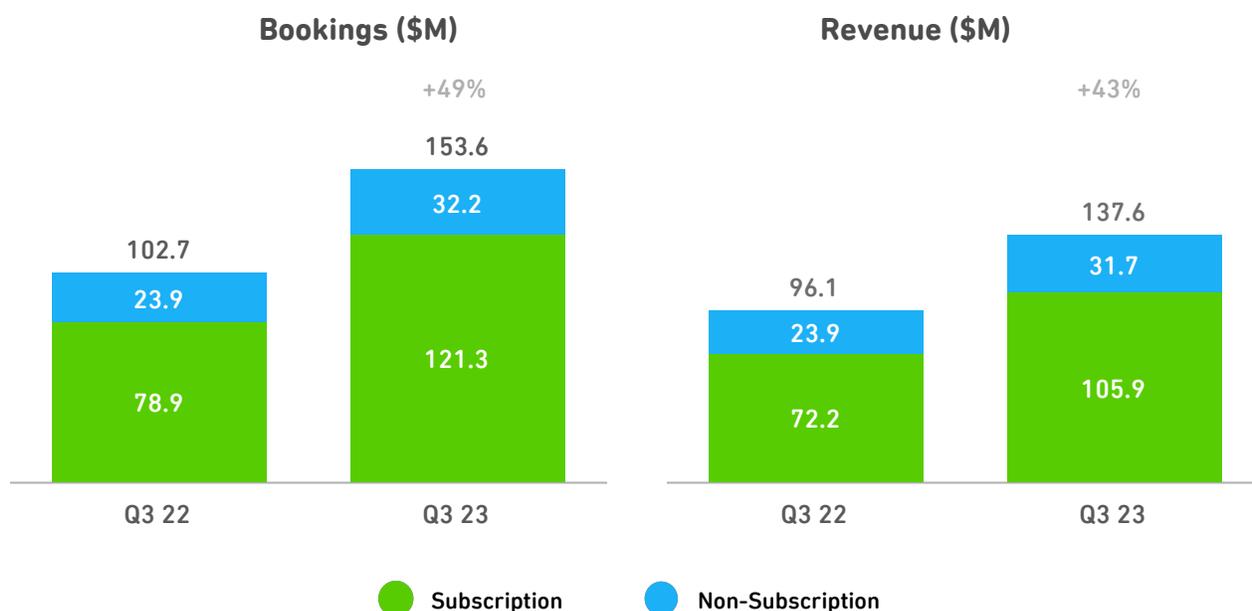
# financial performance and outlook

## Summary of Financial and Key Operating Metrics

(in millions)	Q3 2022	Q3 2023	YoY
<b>User Metrics</b>			
Monthly active users (MAUs)	56.5	83.1	47 %
Daily active users (DAUs)	14.9	24.2	63 %
Paid subscribers (period end)	3.7	5.8	60 %
<b>Operating Metrics</b>			
Total bookings	\$ 102.7	\$ 153.6	49 %
Subscription bookings	\$ 78.9	\$ 121.3	54 %
<b>GAAP Financial Metrics</b>			
Revenues	\$ 96.1	\$ 137.6	43 %
Gross profit	\$ 69.8	\$ 101.4	45 %
Gross margin (%)	72.6 %	73.7 %	~100 bps
Net (loss) income	\$ (18.4)	\$ 2.8	nm
Net cash from operating activities	\$ 8.8	\$ 37.7	>100%
<b>Non-GAAP Financial Metrics (1)</b>			
Adjusted EBITDA	\$ 2.1	\$ 22.5	>100%
Free cash flow	\$ 6.1	\$ 33.5	>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 the third quarter, total bookings grew 49% year over year on a reported basis (and 48% on a constant currency basis) to \$153.6 million, driven primarily by a 54% increase in subscription bookings (51% on a constant currency basis). Revenues grew 43% year over year on a reported basis to \$137.6 million in the third quarter (and 42% on a constant currency basis), driven primarily by growth in subscription revenue, which grew 47% year over year, and comprised 77% of revenues.

The increase in both subscription bookings and subscription revenue was primarily attributable to an increase in the average number of subscribers year over year. Subscription revenue per subscriber declined 7% year over year, primarily due to stronger growth in non-U.S. countries that have lower regional pricing, partially offset by foreign currency changes.

The table below provides revenues by product type:

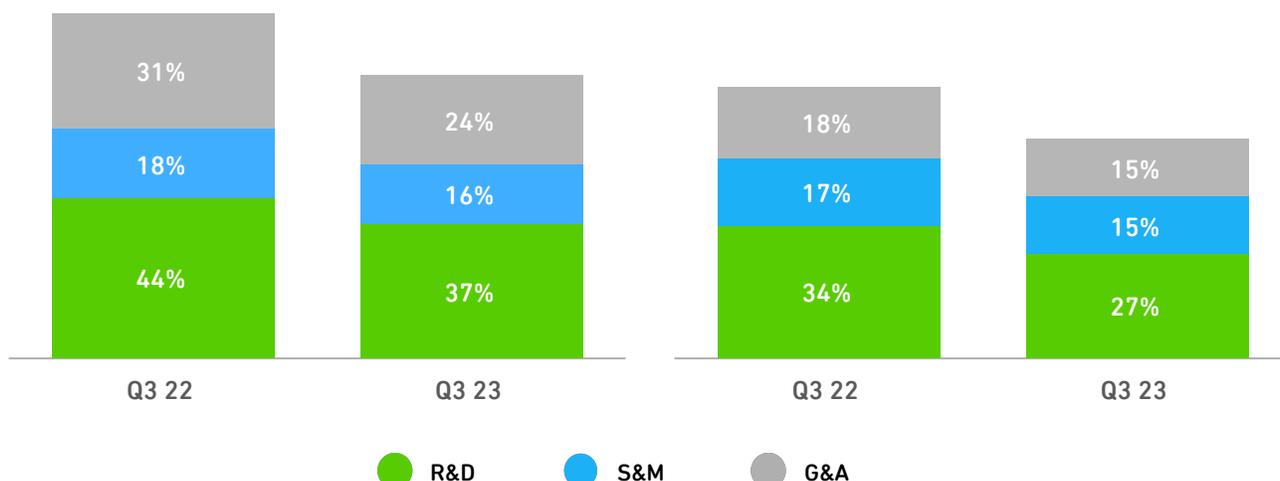
(in millions)	Q3 2022	Q3 2023	Change	% Change
Subscription	\$ 72.2	\$ 105.9	\$ 33.7	47 %
Advertising	10.6	11.7	1.1	10
Duolingo English Test	8.2	10.6	2.4	30
Other *	5.1	9.4	4.4	86
<b>Total revenues</b>	<b>\$ 96.1</b>	<b>\$ 137.6</b>	<b>\$ 41.6</b>	<b>43 %</b>

\* Other primarily includes in-app sales of virtual goods

Gross margin increased by approximately 100 basis points year over year to 73.7% in the third quarter. This was primarily driven by higher subscription margins as a result of a reduction in third-party payment processing fees per subscriber, as well as higher margins on the Duolingo English Test primarily driven by higher pricing. These improvements were partially offset by lower advertising margins during the period due to lower advertising revenue per DAU.

### GAAP Operating Expenses (% of Revenue)

### Non-GAAP Operating Expenses (% of Revenue)



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, and IPO and public company costs, as well as other expenses. The most significant adjustment in Q3 2023 was for stock-based compensation (SBC) expenses related to equity awards† of \$26 million. Approximately a quarter of our SBC expense in Q3 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. As a reminder, these founder awards are intended to align our founders’ economic interests with those of shareholders because they vest, in part, based upon the achievement of stock price hurdles that, if achieved, would result in significant value creation for our equity holders. However, these founder awards are expensed even if none of the stock price hurdles are achieved. The next hurdle would be achieved if our stock price averaged \$178.50 per share for 60 days.

In Q3, we achieved significant leverage across total operating expenses, both on a GAAP and non-GAAP basis.

GAAP R&D expense decreased from 44% to 37% of revenue year over year. On a non-GAAP basis, R&D expense decreased year over year from 34% to 27%. Our top line performance has outpaced our growth in R&D expense, which is primarily driven by hiring talented engineers, product managers, and designers who work to continuously improve our products to improve engagement and efficacy which, we believe, drives organic user growth.

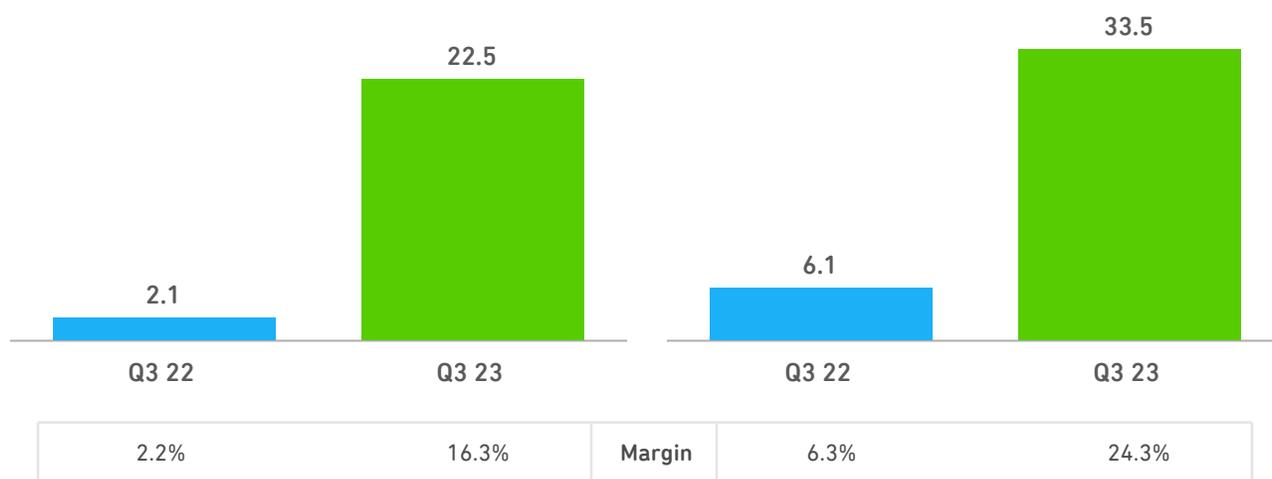
GAAP S&M expense decreased from 18% to 16% of revenue year over year. On a non-GAAP basis, S&M expense decreased year over year from 17% to 15%. We are becoming increasingly efficient at spending our marketing dollars strategically through experimentation and applied learnings.

GAAP G&A expense decreased from 31% to 24% of revenue year over year. On a non-GAAP basis, G&A expense decreased year over year from 18% to 15%. Year over year operating leverage in G&A primarily came from employee, office, and insurance expenses.

†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.

### Adjusted EBITDA (\$M)

### Free Cash Flow (\$M)



In Q3, we achieved our highest quarterly Adjusted EBITDA†, which increased by \$20.4 million year over year to \$22.5 million, a 16.3% Adjusted EBITDA margin. The increase was driven by growth in revenue and improved leverage across all categories of operating expenses.

During Q3, we generated free cash flow (FCF)† of \$33.5 million, a 24.3% FCF margin†, 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.

## Q4 and FY 2023 Guidance

Duolingo is providing the following updated guidance for the fourth quarter and the full year 2023.

(in millions)	Q4 2023	FY 2023
<b>Bookings</b>	<b>\$167 - \$170</b>	<b>\$598 - \$601</b>
YoY Bookings Growth	32% - 35%	40% - 40%
<b>Revenues</b>	<b>\$145 - \$148</b>	<b>\$525 - \$528</b>
YoY Revenue Growth	40% - 43%	42% - 43%
<b>Adjusted EBITDA</b>	<b>\$28.7 - \$30.7</b>	<b>\$87.2 - \$89.2</b>
<b>Adjusted EBITDA margin</b>	<b>19.8% - 20.8%</b>	<b>16.6% - 16.9%</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 third quarter results today, November 8, 2023, 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 Duolingo users who engage with our mobile language learning application or the language 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 September 30, 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 Duolingo users who engage with our mobile language learning application or the language 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 September 30, 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. These 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. 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, including the anticipated release of, and the expected benefits and efficacy of, new products, the effectiveness of our marketing efforts, 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 Annual Report on Form 10-K for the fiscal year ended December 31, 2022, as any such factors may be updated from time to time, including without limitation our Quarterly Report on Form 10-Q for the quarterly period ended September 30, 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://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**  
**UNAUDITED CONDENSED CONSOLIDATED BALANCE SHEETS**

(in thousands)	December 31, 2022	September 30, 2023
<b>ASSETS</b>		
Cash and cash equivalents	\$ 608,180	\$ 701,737
Accounts receivable	46,728	61,711
Deferred cost of revenues	35,041	46,124
Prepaid expenses and other current assets	7,234	9,533
Noncurrent assets	50,164	51,609
<b>Total assets</b>	<b>\$ 747,347</b>	<b>\$ 870,714</b>
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>		
Accounts payable	\$ 1,177	\$ 2,712
Deferred revenues	157,550	208,888
Other current liabilities	23,039	23,334
Long-term obligation under operating leases	23,503	20,961
<b>Total liabilities</b>	<b>205,269</b>	<b>255,895</b>
Total stockholders' equity	542,078	614,819
<b>Total liabilities and stockholders' equity</b>	<b>\$ 747,347</b>	<b>\$ 870,714</b>

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

(in thousands)	Three Months Ended September 30,	
	2022	2023
Revenues	\$ 96,065	\$ 137,624
Cost of revenues	26,302	36,254
Gross profit	69,763	101,370
Operating expenses:		
Research and development	41,976	50,305
Sales and marketing	17,721	22,335
General and administrative	30,228	33,400
Total operating expenses	89,925	106,040
Loss from operations	(20,162)	(4,670)
Other expense, net of other income	(490)	(1,023)
Loss before interest income and income taxes	(20,652)	(5,693)
Interest income	2,260	8,625
(Loss) income before income taxes	(18,392)	2,932
Provision for income taxes	53	125
<b>Net (loss) income and comprehensive (loss) income</b>	<b>\$ (18,445)</b>	<b>\$ 2,807</b>

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

(in thousands)	Nine Months Ended September 30,	
	2022	2023
Cash flows from operating activities:		
Net (loss) income	\$ (45,644)	\$ 3,950
Adjustments to reconcile net (loss) income to net cash provided by operating activities:		
Depreciation and amortization	3,426	5,053
Stock-based compensation expense	53,188	70,219
Gain on sale of capitalized software	—	(100)
Loss on disposal of leasehold improvements	—	417
Changes in assets and liabilities:	31,078	24,882
Net cash provided by operating activities	42,048	104,421
Net cash used for investing activities	(9,229)	(9,436)
Net cash provided by (used for) financing activities	13,226	(1,428)
Net increase in cash and cash equivalents	46,045	93,557
Cash and cash equivalents - Beginning of period	553,922	608,180
<b>Cash and cash equivalents - End of period</b>	<b>\$ 599,967</b>	<b>\$ 701,737</b>

# 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, transaction costs related to an acquisition, acquisition earn-out costs, 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. These 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)	Q3 2022		Q3 2023	
<b>Net (loss) income</b>	<b>\$</b>	<b>(18,445)</b>	<b>\$</b>	<b>2,807</b>
Less: Interest income		(2,260)		(8,625)
Plus: Provision for income taxes		53		125
Plus: Depreciation and amortization		1,482		1,657
Plus: Stock-based compensation expenses related to equity awards (1)		21,123		26,007
Plus: Acquisition transaction costs (2)		177		—
Plus: Acquisition earn-out costs (3)		—		113
Plus: Loss on disposal of leasehold improvements		—		417
<b>Adjusted EBITDA</b>	<b>\$</b>	<b>2,130</b>	<b>\$</b>	<b>22,501</b>
Revenues	\$	96,065	\$	137,624
<b>Adjusted EBITDA margin</b>		<b>2.2 %</b>		<b>16.3 %</b>

## Reconciliation: GAAP to Non-GAAP Operating Expense

(in thousands)	Q3 2022	Q3 2023
<b>Total GAAP Operating Expense</b>	<b>\$ 89,925</b>	<b>\$ 106,040</b>
Less: Depreciation and amortization	(1,208)	(1,255)
Less: Stock-based compensation expenses related to equity awards (1)	(21,112)	(25,992)
Less: Other adjustments (2) (3)	(177)	(113)
<b>Non-GAAP Operating Expense</b>	<b>\$ 67,428</b>	<b>\$ 78,680</b>

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

(in thousands)	Q3 2022	Q3 2023
<b>Total GAAP R&amp;D Expense</b>	<b>\$ 41,976</b>	<b>\$ 50,305</b>
Less: Depreciation and amortization	(627)	(415)
Less: Stock-based compensation expenses related to equity awards (1)	(8,243)	(12,610)
<b>Non-GAAP R&amp;D Opex</b>	<b>\$ 33,106</b>	<b>\$ 37,280</b>

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

(in thousands)	Q3 2022	Q3 2023
<b>Total GAAP S&amp;M Expense</b>	<b>\$ 17,721</b>	<b>\$ 22,335</b>
Less: Depreciation and amortization	(286)	(270)
Less: Stock-based compensation expenses related to equity awards (1)	(799)	(1,171)
<b>Non-GAAP S&amp;M Expense</b>	<b>\$ 16,636</b>	<b>\$ 20,894</b>

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

(in thousands)	Q3 2022	Q3 2023
<b>Total GAAP G&amp;A Expense</b>	<b>\$ 30,228</b>	<b>\$ 33,400</b>
Less: Depreciation and amortization	(295)	(570)
Less: Stock-based compensation expenses related to equity awards (1)	(12,070)	(12,211)
Less: Other adjustments (2) (3)	(177)	(113)
<b>Non-GAAP G&amp;A Expense</b>	<b>\$ 17,686</b>	<b>\$ 20,506</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 and transaction costs related to an acquisition, 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)		Q3 2022	Q3 2023
<b>Net cash provided by operating activities</b>	<b>\$</b>	<b>8,759</b>	<b>\$ 37,650</b>
Less: Capitalized software development costs and purchases of intangible assets		(1,437)	(3,994)
Less: Purchases of property and equipment		(2,079)	(759)
Plus: Taxes paid related to stock-based compensation equity awards		635	575
Plus: Acquisition transaction costs (2)		177	—
<b>Free cash flow</b>	<b>\$</b>	<b>6,055</b>	<b>\$ 33,472</b>
Revenues	\$	96,065	\$ 137,624
<b>Free cash flow margin</b>		<b>6.3 %</b>	<b>24.3 %</b>

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

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

(3) Represent costs incurred related to the earn-out payment on an acquisition.

## 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)

