shareholder letter Q2 2022



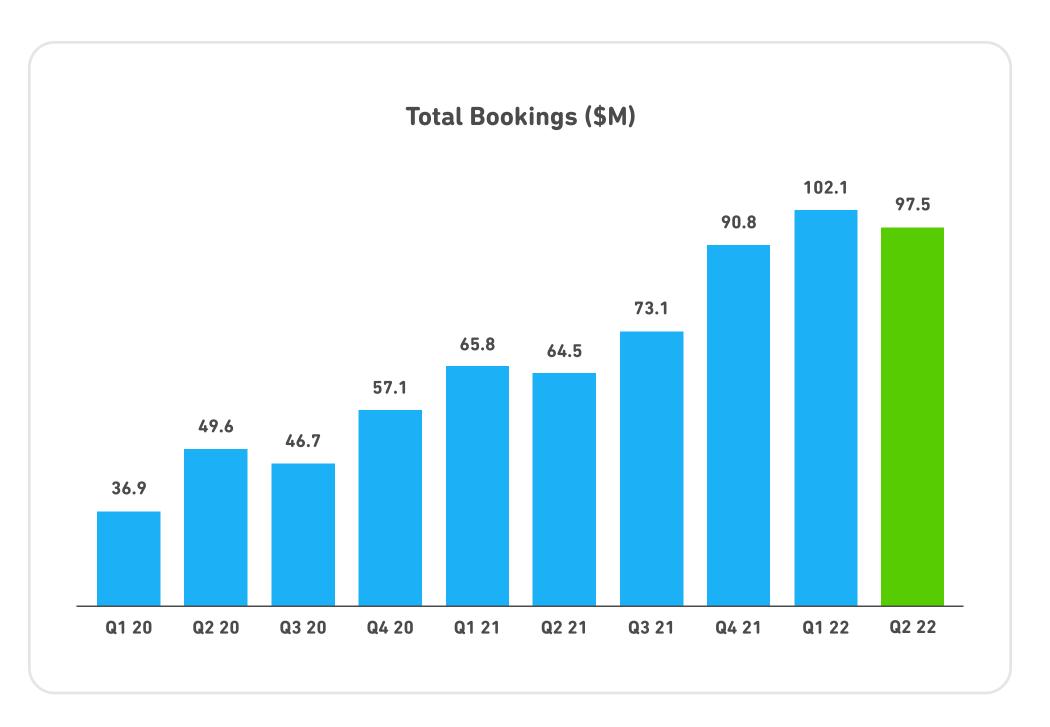
our mission is to develop the best education in the world and make it universally available.

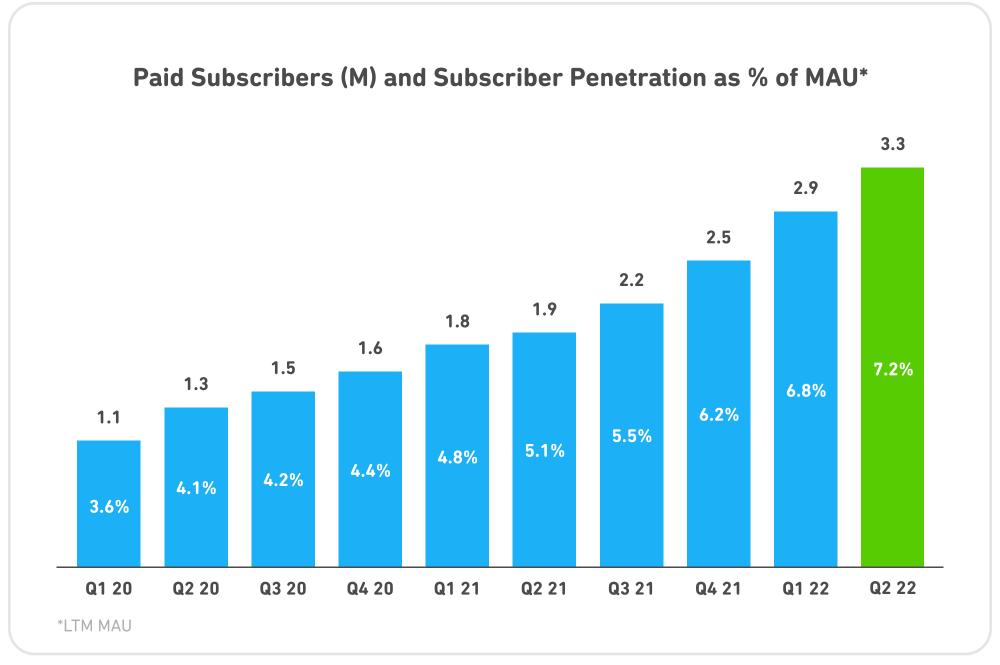


Q2 Highlights

	Q2 2021	Q2 2022
Daily Active Users	9.1M	13.2M +44% YoY
Monthly Active Users	37.9M	49.5M +31% YoY
Paid Subscribers at period end	1.9M	3.3M +71% YoY
Revenue	\$58.8M	\$88.4M +50% YoY
Total Bookings	\$64.5M	\$97.5M +51% YoY
Net Loss	\$(0.2)M	\$(15.0)M
Adjusted EBITDA	\$3.7M	\$4.2M

Percentages presented are calculated from the underlying numbers in thousands.





Dear Shareholders,

We again delivered strong performance this quarter: our user growth accelerated, and we beat our bookings and revenue expectations. Specifically, in the second quarter of 2022:

- DAUs of our language learning app increased 44% to 13.2 million and MAUs increased 31% to 49.5 million, compared to the prior year quarter;
- Paid Super Duolingo subscribers increased 71% to 3.3 million, compared to the prior year quarter;
- Total company bookings grew 51% and revenue grew 50% compared to the prior year quarter.

We're proud of this outperformance, especially in light of the uncertain macroeconomic environment. Taking both of these factors into account, **we're raising our 2022 full year guidance**, which now reflects 38% year over year growth in total bookings.

In the first quarter's shareholder letter, I mentioned that our growth is not driven by one specific thing, but rather a confluence of factors. Since we continue to get questions about what's driving our strong performance, I'd like to use this quarter's letter to further elaborate on the elements that make us special and help us grow: our mission, our culture, our business model, and our operating principles. Afterwards, I'll give a few other brief updates on our business.

The Fundamentals

Delivering best-in-class product innovation starts with having amazing employees. We believe we're able to attract and retain the best talent in large part because **our mission** of universal access to education is inspiring. Together we have changed the way people around the world learn languages and we believe we have helped millions improve their lives.

Our **company culture** has been over a decade in the making and can be characterized as fun, full of kindness, and one that celebrates innovation. This culture has led to extremely high employee retention, which in turn has led to stable, experienced teams that overperform.

Our freemium **business model** has also been crucial to our growth. As I reflect on our journey, I can confidently say that two of the best decisions we made when we first launched the Duolingo app were (1) giving it away for free and (2) making it fun. Rather than monetizing through a paywall or degrading the free user experience, we focused on creating an engaging free app that gamifies the language learning process. We believe this strategy allowed us to build a huge pool of learners who use and love our product, who tell their friends about it, and who we can convert to paid subscribers.

The final element that has helped us grow is one of our core **operating principles**: Test Everything, by which we actually mean "A/B test everything." And while some investors already understand the concept of A/B testing, I thought it would be helpful to pull back the curtain on our approach to experimentation and elaborate on how it helps us grow.

Duolingo's A/B Testing Process

Imagine that we want to determine if changing a button from saying "Start free trial" to "Start my free week" leads to more people starting a free trial of our premium subscription, Super Duolingo, and subsequently to higher bookings. Our infrastructure allows us to easily set up an A/B test to measure this, in which we select a fraction of learners who satisfy certain criteria and expose half of them to the control condition ("Start free trial") and the other half to the experiment condition ("Start my free week"). For instance, we can randomly pick 10% of our learners in the United States, and then half of them (5%), chosen at random, would see "Start free trial" and the other half would see "Start my free week." After a few days of both groups seeing their respective buttons, our tools tell us which group has higher bookings and what the impact is on other metrics like user retention, and, if "Start my free week" is better than the control condition, we change the button for all of our users.

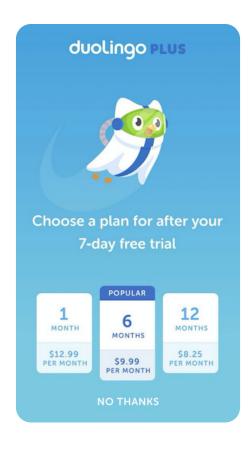
We use A/B testing to optimize nearly everything related to our products, from new gamification features, to our learning content, to our Super purchase page design, and even to the notifications that learners receive as reminders to do their lessons. These tests help us grow users, teach better, and grow subscribers, all of which are key elements of our growth strategy. We run about 500 A/B tests every guarter.

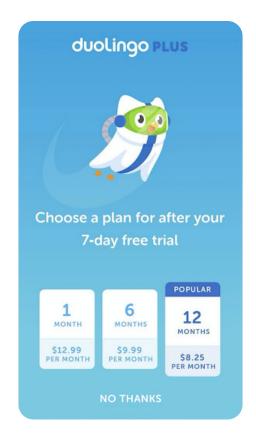
We start our A/B testing process with a hypothesis that comes from a combination of user feedback, data from our learners, past experiment learnings, and our own intuition. Every experiment that we run has defined measures of success and constraints that we call "guardrails." These measures fall into three categories that encapsulate what we care most about: learning efficacy, user engagement, and monetization. Usually a metric from one of these categories will be the measure of success and the other two will form the guardrails. For example, if we're trying to increase subscriber monetization by changing what a button says, like in the example above, we may look to optimize bookings without sacrificing learning efficacy or free user retention.

Below is a timeline of how our premium subscription **purchase screen** has evolved over time through our A/B testing process. Every screen in this sequence increased bookings compared to the previous one.



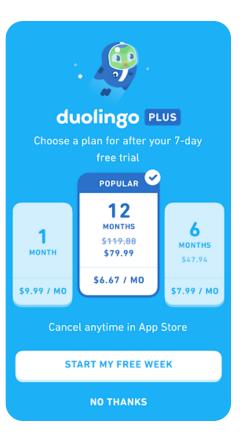




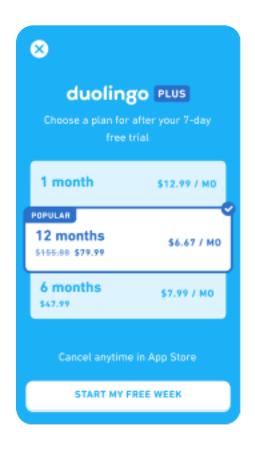




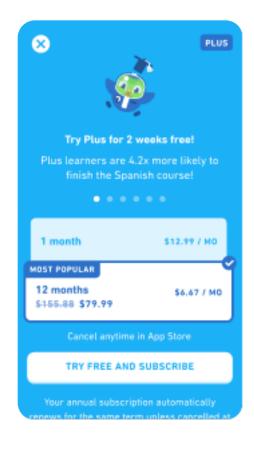


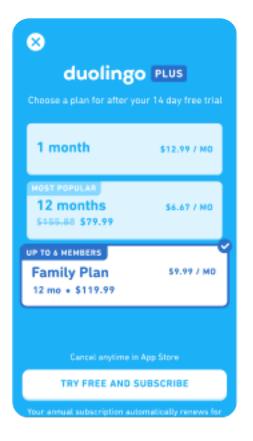


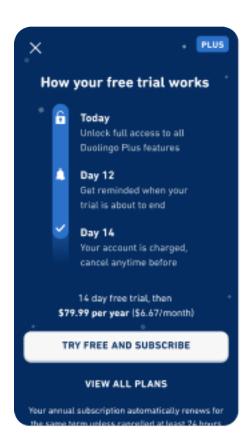


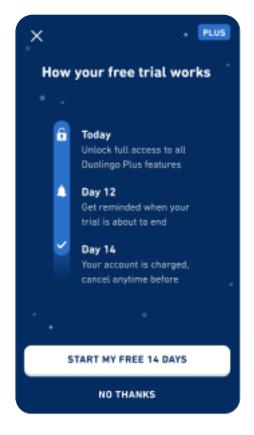


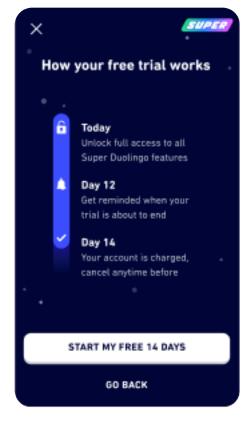


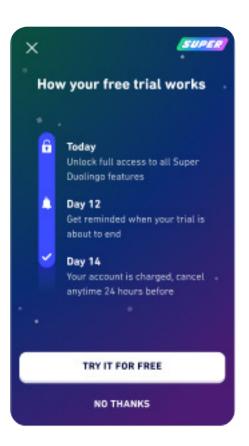












The purchase screen is an example of one of the thousands of features, designs, flows, and mechanics that we've optimized through A/B testing. We believe this constant product iteration accounts for not only a better product, but also a significant portion of our organic growth, engagement, and subscriber conversion.

Product Updates

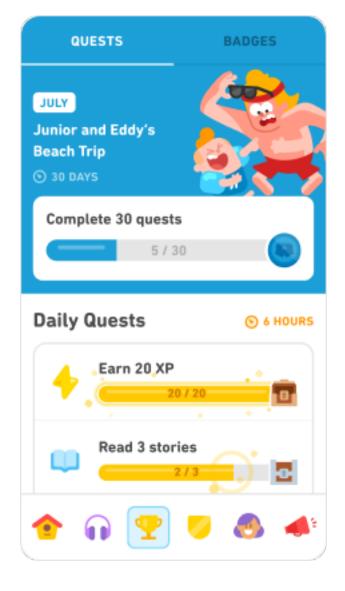
Several new features that have come out of A/B testing are expected to launch in the coming months, and I'm excited to preview two of them for you here. The first feature, **Quests tab**, is designed to increase user engagement and the second feature, **Side Quests**, is designed to increase revenue. I should mention that since Duolingo is constantly evolving through experimentation, the screenshots shown below may differ from what you actually see in the app.

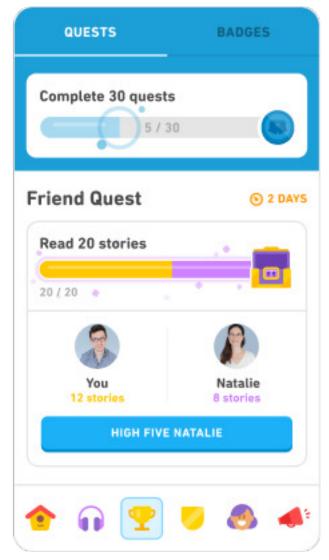
Quests Tab

The Quests tab introduces a home for a fun, unified system of challenges called Quests, which motivate our learners to take a variety of actions. The tab consists of:

- **Daily Quests** that gamify the daily actions of learners by providing a variable set of recommended tasks that change each day (e.g., finish two perfect lessons). By completing each quest, learners earn gems.
- A **Friends Quest**, which pairs you with a friend to complete a shared goal. These also foster additional social interactions like nudges and congratulatory completion messages.
- An overarching **Monthly Goal** that provides learners a sense of longer-term progress, with a collectible themed badge upon completion.

Here's what the Quests tab looks like:





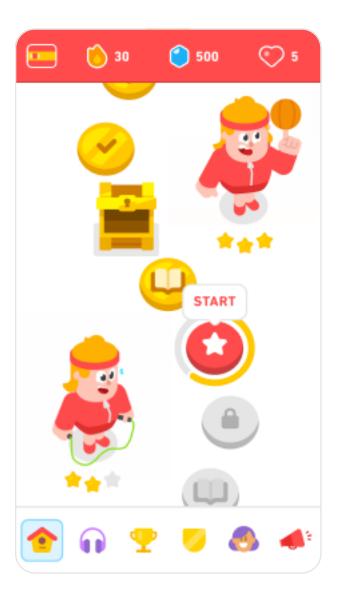


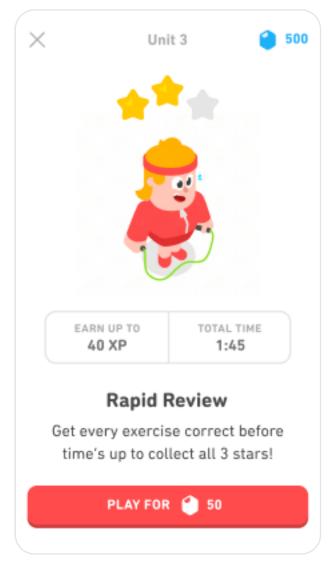
To get to the point of launching this tab to all learners, we've A/B tested every component of it, including the difficulty and type of each quest, the tab layout, etc. For this feature, we're primarily hoping to increase DAUs and time spent learning, two measures of engagement, and our results so far are very positive.

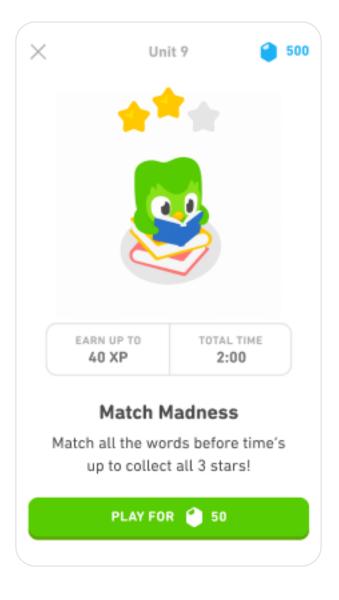
Side Quests

As I mentioned in our previous shareholder letter, our new home screen is a **linear progression path** that unlocks characters as the learner progresses through their course. **Side Quests** are optional, fun learning challenges that learners can enter by tapping on the characters alongside the path and spending their gems. Since Side Quests cost gems, and gems can either be earned through Duolingo usage (e.g., by completing Daily Quests) or purchased via in-app purchases (IAPs), this feature aims to increase revenue by encouraging more people to buy gems.

Here's what Side Quests will look like:







DET Update

The Duolingo English Test (DET) is our second largest product, and, like our language learning app, also continues to have strong momentum. In Q2, DET revenue grew 66% year over year. DET revenue grows as more people take the test, which in turn happens as more institutions accept our test results. This year, we're focused on expanding acceptance in institutions in four strategically important countries: US, Canada, UK, and Australia. As of the end of Q2, over 3,700 higher education programs accept the DET.

In a future shareholder letter, we'll provide a deeper look into our DET business, its track record of success, and growth opportunities.

China Reinstatement

I'm pleased to report that we were reinstated on the Chinese app stores at the end of May 2022. As you may recall, we were among many apps that were removed from the app stores in China in Q3 2021, so, while existing users were able to continue using Duolingo, new users were not able to download it.

Since the reinstatement, we've seen our China DAUs nearly double as of June 30, 2022, returning to the levels we had before the removal. I should mention that while China is an important opportunity for us, it's still a small portion of our business, representing about 1-2% of DAUs and MAUs, and less than 1% of paying subscribers in Q2.

Join us for Duocon on August 26th

Duocon, our annual conference for language enthusiasts and learners around the world, is scheduled for Friday, August 26th and will be streamed live. Last year, over 130,000 Duolingo enthusiasts watched Duocon live. You can learn more about this year's program and speaker lineup at duolingo.com/duocon. I hope you can join us!

In closing, I'd like to thank the entire team for continuing to strive for excellence and for driving outstanding results. Looking ahead to the rest of 2022 and beyond, we're as energized as ever to pursue exciting opportunities, and we look forward to reporting on our progress.

Until next time, keep up those lessons!

Luis von AhnCEO and Co-Founder

financial performance and outlook

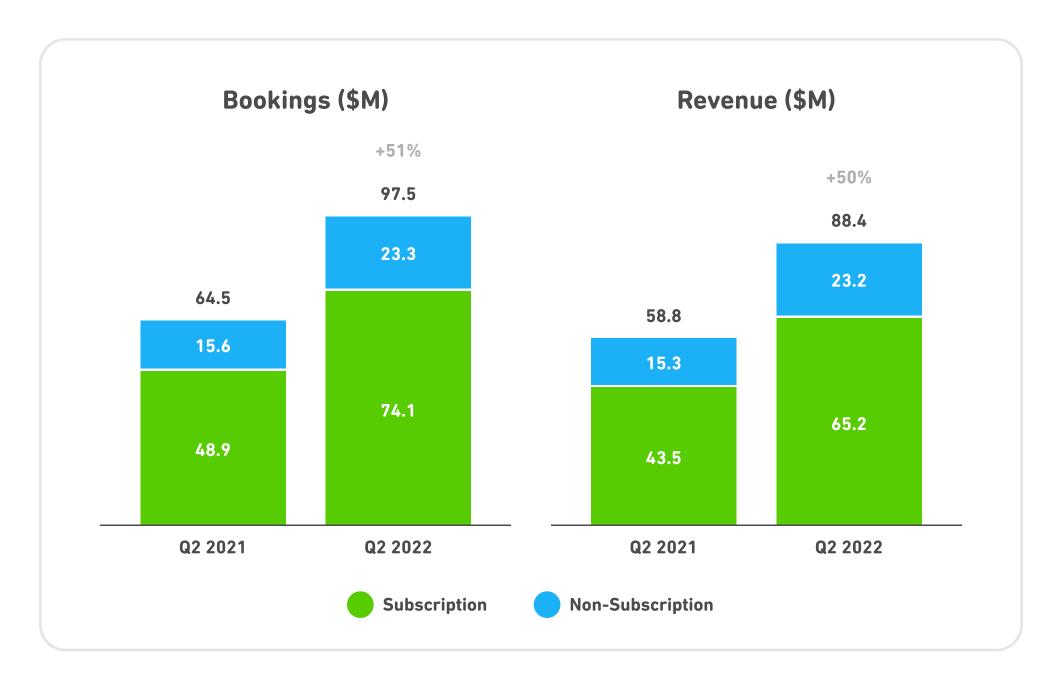
Summary of Financial and Operating Metrics

(in millions)	Q2 2021	Q2 2022	YoY
Operating Metrics			
Monthly active users (MAUs)	37.9	49.5	31%
Daily active users (DAUs)	9.1	13.2	44%
Paid subscribers (period end)	1.9	3.3	71%
Total bookings	\$64.5	\$97.5	51%
Subscription bookings	\$48.9	\$74.1	51%
GAAP Financial Metrics			
Revenues	\$58.8	\$88.4	50%
Gross profit	\$42.7	\$64.5	51%
Gross margin (%)	72.6%	73.0%	40 bps
Net loss	(\$0.2)	(\$15.0)	_
Net cash from operating activities	(\$0.9)	\$12.7	_
Non-GAAP Financial Metrics (1)			
Adjusted EBITDA	\$3.7	\$4.2	13%
Free cash flow	\$2.1	\$9.9	371%

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.

DUOLINGO Q2 2022

⁽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.



In the second quarter, total bookings were \$97.5 million, growing 51% year over year. Subscription bookings grew 51% year over year to \$74.1 million, driven by the growth in first-time and renewing paid subscribers, and the continued shift to annual plan subscriptions.

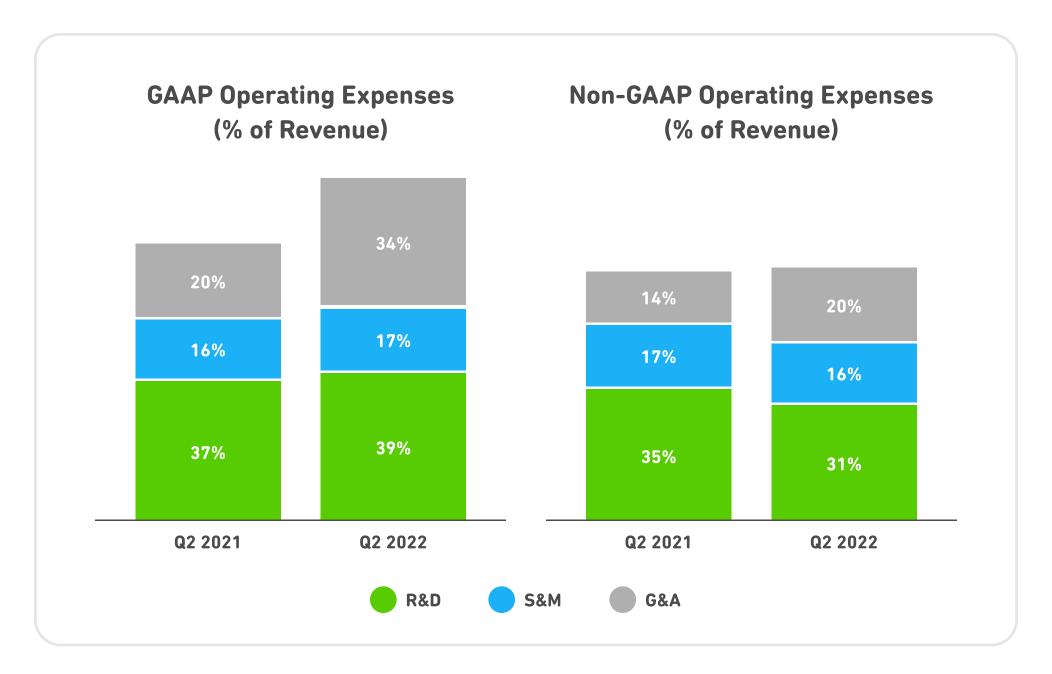
In the second quarter, revenues were \$88.4 million, growing 50% year over year. Total revenue growth was largely driven by growth in subscription revenue, which in turn was driven by the increase in the average number of paid subscribers during the period.

The table below provides revenues by product type:

(in millions)	Q2 2021	Q2 2022	Change	% Change
Subscription	\$43.5	\$65.2	\$21.7	50%
Advertising	9.1	11.2	2.2	24%
Duolingo English Test	4.8	8.0	3.2	66%
Other *	1.4	3.9	2.5	179%
Total revenues	\$58.8	\$88.4	\$29.6	50%

Gross margin increased over 40 basis points year over year to 73.0%, primarily driven by higher subscription margins, which were offset by lower margins in advertising and DET.

^{*}Other primarily includes in-app sales of virtual goods.

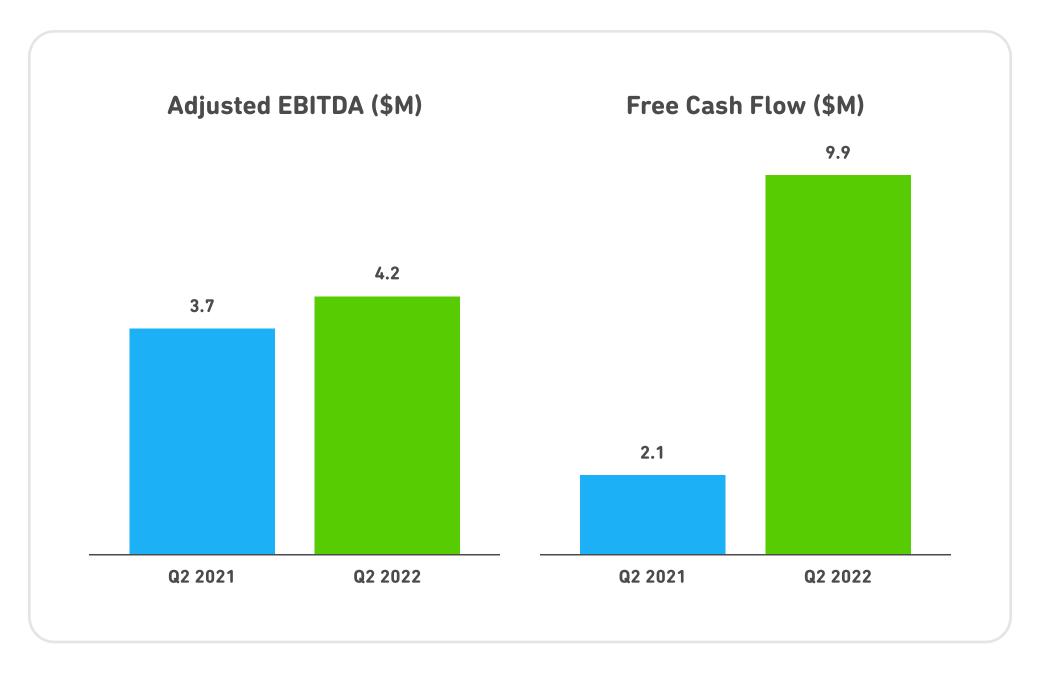


We report three categories of operating expenses: Research and Development (R&D), Sales and Marketing (S&M), and General and Administrative (G&A). Non-GAAP operating expenses† represent GAAP expenses adjusted for depreciation, amortization, stock-based compensation, and IPO and public company costs, as well as other expenses. In Q2 2022, we recognized \$18.1 million in stock-based compensation, roughly half of which was related to founder equity awards.

GAAP R&D expense increased from 37% to 39% of revenue year over year. In absolute dollar terms, GAAP R&D increased by \$12.3 million or 56% year over year, to \$34.2 million, primarily due to our growth in headcount. On a non-GAAP basis, R&D expenses decreased from 35% to 31% of revenue year over year. The absolute dollar increase in non-GAAP R&D expense was \$7.0 million, or 34% growth. We continue to prioritize product improvements in order to drive organic user growth and engagement. We believe these investments in R&D are also driving higher free-to-paid conversion and stronger retention of our subscribers.

GAAP S&M expense increased from 16% to 17% of revenue year over year. In absolute dollar terms, GAAP S&M expense increased by \$5.7 million, or 59% over the prior year quarter, to \$15.3 million, as we added marketing headcount and spent strategically on marketing in priority markets to drive awareness. On a non-GAAP basis, S&M expenses declined from 17% to 16% of revenue year over year. In absolute dollar terms, non-GAAP S&M expense increased \$4.4 million, or 44%, over the prior year quarter.

GAAP G&A expense increased from 20% to 34% of revenue year over year. In absolute dollar terms, GAAP G&A expense increased \$18.5 million, or 159% to \$30.1 million, driven primarily by stock-based compensation related to founder equity awards, higher headcount and facilities expenses as we expanded our office footprint, and the additional costs associated with becoming a public company. On a non-GAAP basis, G&A expenses increased from 14% to 20% of revenue year over year. In absolute dollar terms, non-GAAP G&A expense increased \$9.4 million or 111%, due to the reasons described above with the exception of stock-based compensation.



Adjusted EBITDA† increased by \$0.5 million to \$4.2 million in the second quarter compared to the prior year quarter. The increase was primarily driven by revenue growth and improved gross margin.

During the second quarter, we generated \$9.9 million in free cash flow†, an increase of \$7.8 million over the prior year quarter, driven by an increase in cash from operations. As a reminder, we define free cash flow as net cash provided by operating activities, reduced by purchases of property and equipment and capitalized software development costs, and increased by IPO and public company costs, taxes paid related to stock-based compensation equity awards and other costs, as we believe they are not indicative of future liquidity.

[†]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.

3Q22 and FY22 Guidance

Duolingo is providing the following guidance for the third quarter and the full year ending December 31, 2022.

(in millions)	Q3 2022	FY 2022
Bookings	\$94 - 97	\$404 - 410
YoY Bookings Growth	29% - 33%	37% - 39%
Revenues	\$93 - 96	\$361 - 367
YoY Revenue Growth	46% - 51%	44% - 46%
Adjusted EBITDA	\$(4.5) - (1.5)	\$4 - 7

With regards to the Non-GAAP Adjusted EBITDA outlook provided above, a reconciliation to GAAP net loss, 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 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 quarterly results today, August 4, 2022, at 5:30 p.m. ET. This live webcast and related materials will be publicly available and can be accessed at **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 a subscription to Super Duolingo (formerly called Duolingo Plus). Total bookings represent the amounts we receive from a purchase of a subscription to Super Duolingo, a purchase of a Duolingo English Test, an in-app purchase for a virtual good, and from advertising networks for advertisements served to our users. 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. 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. DAUs are a measure of the consistent engagement of our global user community on Duolingo.

Throughout this document, the measurement period for MAUs and DAUs is the three months ended June 30, 2022 and the same period in the prior year where applicable, and the analysis of results is based on those periods.

Paid Subscribers. Paid subscribers are defined as users who pay for access to Super Duolingo, including subscribers who pay for a family plan, 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.

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. 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 Adjusted EBITDA provides 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 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.

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 and our financial outlook for the third quarter and fiscal year 2022 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 subject to a number of known and unknown risks, uncertainties and assumptions, and actual results may 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 achieve 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; 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, 2021, as any such factors may be updated from time to time, including in our Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2022 and in our other filings with the SEC, accessible on the SEC's website at www.sec.gov and the Company's Investor Relations website at investors.duolingo.com. All forward-looking statements speak only as of the date of this letter and, except as required by applicable law, we have no obligation to update or revise any forward-looking statements contained herein, whether as a result of any new information, future events, changed circumstances or otherwise.

Website Information

We routinely post important information for investors on the Investor Relations section of our website, investors.duolingo.com, and also from time to time may use social media channels, including our Twitter account twitter.com/duolingo and our LinkedIn account 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, 2021	June 30, 2022
Cash and cash equivalents	\$553,922	\$591,160
Accounts receivable	33,163	28,209
Deferred cost of revenues	24,219	29,218
Prepaid expenses and other current assets	7,967	6,563
Non-current assets	42,040	45,900
Total Assets	\$661,311	\$701,050
Accounts payable	\$7,818	\$1,504
Deferred revenues	98,267	128,194
Other current liabilities	13,046	17,628
Long-term liabilities	29,124	25,505
Total liabilities	148,255	172,831
Total stockholders' equity	513,056	528,219
Total liabilities, convertible preferred stock and stockholders' equity	\$661,311	\$701,050

DUOLINGO INC. AND SUBSIDIARIES UNAUDITED CONDENSED CONSOLIDATED STATEMENTS OF NET LOSS AND COMPREHENSIVE LOSS

	Three Mont	
(in thousands)	2021	2022
Revenues	\$58,803	\$88,386
Cost of revenues	16,137	23,869
Gross profit	42,666	64,517
Operating expenses:		
Research and development	21,940	34,217
Sales and marketing	9,619	15,277
General and administrative	11,585	30,057
Total operating expenses	43,144	79,551
Loss from operations	(478)	(15,034)
Other income (expense), net	303	130
Loss before provision for income taxes	(175)	(14,904)
Provision for income taxes	<u> </u>	141
Net loss and comprehensive loss	\$(176)	\$(15,045)

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

	Six Months En	ded June 30,
(in thousands)	2021	2022
Net loss	\$(13,648)	\$(27,199)
Adjustments to reconcile net loss to net cash provided by operating activities:		
Depreciation and amortization	1,236	1,944
Stock-based compensation	5,458	32,700
Changes in assets and liabilities	11,181	25,844
Net cash provided by operating activities	4,227	33,289
Net cash used for investing activities	(3,634)	(5,713)
Net cash provided by (used by) financing activities	(6,447)	9,662
Net increase in cash and cash equivalents	(5,854)	37,238
Cash and cash equivalents - Beginning of period	120,490	553,922
Cash and cash equivalents - End of period	\$114,636	\$591,160

appendix

Reconciliation: Adjusted EBITDA

Adjusted EBITDA is defined as net loss excluding interest (income) expense, net, income tax provision, depreciation and amortization, Initial Public Offering ("IPO") and public company costs, stock-based compensation expenses related to equity awards, tender offer-related costs and other expenses. Adjusted EBITDA is used by management to evaluate the financial performance of our business and we present Adjusted EBITDA because we believe that it is helpful in highlighting trends in our operating results and that it is frequently used by analysts, investors and other interested parties to evaluate companies in our industry. The following table presents a reconciliation of our net loss, the most directly comparable financial measure presented in accordance with GAAP, to Adjusted EBITDA.

(in thousands)	Q2 2021	Q2 2022
Net Income (Loss)	\$(176)	\$(15,045)
Less: Interest Income	(1)	(669)
Plus: Provision for Income Taxes	1	141
Plus: Depreciation & Amortization	636	1,170
Plus: IPO and Public Company Costs (1)	1,213	107
Plus: Stock-based compensation expenses related to equity awards (2)	2,907	18,494
Plus: Other expenses (3)	(878)	_
Adjusted EBITDA	\$3,702	\$4,198

Reconciliation: Free Cash Flow

Free cash flow represents net cash provided by operating activities, reduced by purchases of property and equipment, capitalized software development costs, and increased by IPO and public company costs, taxes paid related to stock-based compensation equity awards and other costs, as we believe they are not indicative of future liquidity. 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. 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)	Q2 2021	Q2 2022
Net cash provided by operating activities	\$(896)	\$12,662
Less: Capitalized Software Development Costs	(717)	(1,405)
Less: Purchases of Property and Equipment	(1,139)	(1,864)
Plus: IPO and Public Company Costs (1)	1,213	107
Plus: Taxes Paid Related to Stock-Based Compensation on Equity Awards (4)	-	380
Plus: Other (3)	3,643	_
Free Cash Flow	\$2,104	\$9,880

- (1) IPO and public company costs include costs associated with IPO readiness incurred in 2021 and 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.
- (2) In addition to stock-compensation expense, this includes costs incurred related to taxes paid on equity transactions.
- (3) Represents one-time cash awards to Duolingo contributors under our non-employee volunteer program included within Sales and marketing expenses within our Unaudited Condensed Consolidated Statements of Operations and Comprehensive Loss.

(4) Includes costs incurred related to taxes paid on equity transactions.

Reconciliation: GAAP to Non-GAAP Operating Expense

Non-GAAP G&A Expense

(in thousands)	Q2 2021	Q2 2022
Total GAAP Operating Expense	\$43,144	\$79,551
Less: Depreciation & Amortization	(636)	(897)
Less: Stock-based Compensation	(2,907)	(18,104)
Less: Other Adjustments	(335)	(487)
Non-GAAP Operating Expense	\$39,266	\$60,063
Reconciliation: GAAP to Non-GAAP R&D Expense		
(in thousands)	Q2 2021	Q2 2022
Total GAAP R&D Expense	\$21,940	\$34,217
Less: Depreciation & Amortization	(34)	(463)
Less: Stock-based Compensation	(1,105)	(5,773)
		(147)
Less: Other Adjustments	<u>-</u>	(17/)
Non-GAAP R&D Expense Reconciliation: GAAP to Non-GAAP S&M Expense	\$20,801	\$27,834
Non-GAAP R&D Expense	\$20,801 Q2 2021	
Non-GAAP R&D Expense Reconciliation: GAAP to Non-GAAP S&M Expense (in thousands)		\$27,834
Non-GAAP R&D Expense Reconciliation: GAAP to Non-GAAP S&M Expense (in thousands)	Q2 2021	\$27,834 Q2 2022
Non-GAAP R&D Expense Reconciliation: GAAP to Non-GAAP S&M Expense (in thousands) Total GAAP S&M Expense Less: Depreciation & Amortization	Q2 2021 \$9,619	\$27,834 Q2 2022 \$15,277
Non-GAAP R&D Expense Reconciliation: GAAP to Non-GAAP S&M Expense (in thousands) Total GAAP S&M Expense	Q2 2021 \$9,619 (152)	\$27,834 Q2 2022 \$15,277 (268)
Non-GAAP R&D Expense Reconciliation: GAAP to Non-GAAP S&M Expense (in thousands) Total GAAP S&M Expense Less: Depreciation & Amortization Less: Stock-based Compensation	Q2 2021 \$9,619 (152) (72)	\$27,834 Q2 2022 \$15,277 (268) (595)
Reconciliation: GAAP to Non-GAAP S&M Expense (in thousands) Total GAAP S&M Expense Less: Depreciation & Amortization Less: Stock-based Compensation Less: Other Adjustments Non-GAAP S&M Expense	Q2 2021 \$9,619 (152) (72) 638	\$27,834 Q2 2022 \$15,277 (268) (595)
Reconciliation: GAAP to Non-GAAP S&M Expense (in thousands) Total GAAP S&M Expense Less: Depreciation & Amortization Less: Stock-based Compensation Less: Other Adjustments Non-GAAP S&M Expense Reconciliation: GAAP to Non-GAAP G&A Expense	Q2 2021 \$9,619 (152) (72) 638	\$27,834 Q2 2022 \$15,277 (268) (595)
Reconciliation: GAAP to Non-GAAP S&M Expense (in thousands) Total GAAP S&M Expense Less: Depreciation & Amortization Less: Stock-based Compensation Less: Other Adjustments Non-GAAP S&M Expense Reconciliation: GAAP to Non-GAAP G&A Expense (in thousands)	\$9,619 (152) (72) 638 \$10,033	\$27,834 Q2 2022 \$15,277 (268) (595) (9) \$14,405
Reconciliation: GAAP to Non-GAAP S&M Expense (in thousands) Total GAAP S&M Expense Less: Depreciation & Amortization Less: Stock-based Compensation Less: Other Adjustments Non-GAAP S&M Expense Reconciliation: GAAP to Non-GAAP G&A Expense (in thousands) Total GAAP G&A Expense	Q2 2021 \$9,619 (152) (72) 638 \$10,033	\$27,834 Q2 2022 \$15,277 (268) (595) (9) \$14,405
Non-GAAP R&D Expense Reconciliation: GAAP to Non-GAAP S&M Expense (in thousands) Total GAAP S&M Expense Less: Depreciation & Amortization Less: Stock-based Compensation Less: Other Adjustments	Q2 2021 \$9,619 (152) (72) 638 \$10,033	\$27,834 Q2 2022 \$15,277 (268) (595) (9) \$14,405 Q2 2022 \$30,057

DUOLINGO Q2 2022 23

\$17,824

\$8,432

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